

UNIVERSITY OF CAPE COAST

MANAGEMENT AND COPING STRATEGIES OF HYPERTENSIVE  
PATIENTS SEEKING TREATMENT AT BRONG AHAFO REGIONAL  
HOSPITAL, SUNYANI

PRINCE OWUSU ADOMA

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PATIENTS SEEKING TREATMENT AT BRONG AHAFO REGIONAL  
HOSPITAL, SUNYANI

BY

PRINCE OWUSU ADOMA

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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.

Signature ..... Date.....

Name: Prince Owusu Adoma

### Supervisors' Declaration

We hereby declare that the preparation and presentation of this 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: Dr. Daniel Apaak

Co-supervisor's Signature .....Date.....

Name: Dr. Edward Wilson Ansah

## ABSTRACT

The purpose of this study was to explore the management and coping strategies of hypertensive patients seeking treatment at Brong Ahafo Regional Hospital, and to examine participants' experiences of living with the condition. A mixed method design was used and all 508 consenting patients were selected for the quantitative aspect, and 16 were conveniently sampled for the qualitative one. Instruments (questionnaire and in-depth interview guide) derived from five pre-existing ones were used for data collection. The questionnaire yielded reliability coefficient between 0.73 and 0.80. Multiple linear regression, binary logistic regression and interpretative phenomenological analysis were employed for the data analysis. The results revealed a high patients' perception on quality of care (90.4%), while the participants used task-oriented (TOC) [58.5%], emotion-oriented (EOC) [49.6%] and avoidance (AC) [36.5%] coping strategies. Almost all the patients were not compliant with their treatment regimen, except for physical activity (79.5%). Multiple linear regression analysis showed that AC, TOC and EOC were predictors of the current BP level [ $F(3,117) = 12.390$  and  $p = 0.000$ ]. Binary logistic regression indicates that age ( $\chi^2 = 4.29$ ,  $p = 0.04$ ), education ( $\chi^2 = 7.15$ ,  $p = 0.03$ ), marriage ( $\chi^2 = 5.16$ ,  $p = 0.02$ ), employment ( $\chi^2 = 7.45$ ,  $p = 0.01$ ) and religion ( $\chi^2 = 7.29$ ,  $p = 0.01$ ) predicted significantly compliance to treatment. Phenomenological data revealed that participants experienced good treatment at the Hospital, however, there were concerns of side effects of medications, poor pharmaceutical services and long waiting time. Management of BAR Hospital needs to encourage patients to develop and implement measures that improve coping skills and compliance.

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## DEDICATION

To my parents, Solomon Adomah and Rose Poma Adomah

## TABLE OF CONTENTS

	<b>Page</b>
DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENTS	iv
DEDICATION	v
TABLE OF CONTENTS	vi
LIST OF TABLES	ix
LIST OF FIGURES	x
CHAPTER ONE: INTRODUCTION	1
Background to the Study	1
Statement of the Problem	8
Purpose of the Study	11
Research Questions	11
Significance of the Study	11
Delimitations	13
Limitations	13
Organisation of the Study	13
CHAPTER TWO: REVIEW OF RELATED LITERATURE	15
Concept of Hypertension and Measurement	15
Treatment and Management of Hypertension	18
Patients' Compliance and Hypertension Treatment	21
Patient Characteristics and Compliance	32
Perceptions and Quality of Care of Patients	38
Coping Strategies used by Hypertensive Patients	43



Lived Experiences of Hypertensive Patients	50
Theoretical Framework	54
Conceptual Framework	69
CHAPTER THREE: RESEARCH METHODS	82
Research Design	82
Population	84
Sampling Procedure	85
Data Collection Instruments	87
Data Collection Procedure	97
Data Processing and Analysis	100
CHAPTER FOUR: RESULTS AND DISCUSSION	105
Research Question 1: What are the Perceptions of Hypertensive Patients on the Quality of Care Provided by BAR Hospital?	105
Research Question 2: What Coping Strategies do Hypertensive Patients Seeking Treatment at BAR Hospital Use?	111
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS	144
Summary	144
Main Findings	147
Conclusions	148
Recommendations	150
Recommendations for Further Studies	152
REFERENCES	153
APPENDICES	199
APPENDIX A: Questionnaire for Facility Based Data	199

APPENDIX B: In-Depth Interview Guide	213
APPENDIX C: Ethical Clearance	219
APPENDIX D: Research Proposal	220
APPENDIX E: Introductory Letter, Co-Supervisor	221
APPENDIX F: Introductory Letter, Head of department	222

## LIST OF TABLES

Table		Page
1	Perceptions and Quality of Care by BAR Hospital	106
2	Coping Strategies used by Hypertensive Patients	113
3	The Extent to which Respondents Complied with Treatment	119
4	Regression of Coping Strategies on Current BP of Patients	126
5	Regression of Socio-demographic Factors on Compliance with Treatment	131

## LIST OF FIGURES

Figure		Page
1	Management of Hypertension Framework	80

## CHAPTER ONE

### INTRODUCTION

#### Background to the Study

Hypertension is a prominent non-communicable disease (NCD) that forms a major part of the increasing portion of the disease burden in the developing world (World Health Organization [WHO], 2013). It is defined as a systolic pressure  $\geq 140$  mmHg and a diastolic pressure  $\geq 90$  mmHg (Center for Disease Control [CDC], 2014). Hypertension is the leading cause of cardiovascular disease (CVD) and deaths in the world with nearly 10.4 million fatalities per year (Forouzanfar et al., 2015). Almost three-quarters of people with hypertension (639 million people) live in developing countries (Tibazarwa & Damasceno, 2014). However, these nations have limited health resources and report very low awareness rate of the disease among their population (WHO, 2012). They are also more likely to record poorer health outcomes such as complications and comorbidities, compared with developed nation citizens as a result of hypertension (Tenkorang & Kuuire, 2016).

Hypertension is the most noticeable cardiovascular disease because it is a precursor to most NCDs such as diabetes, stroke and other cardiovascular diseases (Shikha, Ravis & Gyan, 2017). Hypertension is, thus, the leading cause of death and disability globally, claiming several lives and making several others disabled, affecting 1.8 billion people globally with 50% unaware of their condition (WHO, 2019). A recent baseline survey from two districts in Ghana (Lower Manya-Krobo District and Akuapim South Municipality) revealed that the prevalence of hypertension were 31.4% and 33.4%, respectively (Lampthey et al., 2017). Meanwhile, among those who are

aware and receiving treatment, about 25% do not comply with hypertension information in preventing and controlling the disease. Non-compliance has devastating effect on hypertension treatment. It leads to several complications since hypertension is a precursor the most NCDs. The non-compliance results in 75% of the world's hypertensive population being at risk of many other NCDs such as coronary heart disease, cardiac arrest, stroke, kidney disease, liver failure or even sudden death (WHO, 2013).

According to WHO (2017), NCDs are the leading cause of death and disability in the world. They include cardiovascular diseases, diabetes, cancer and chronic respiratory diseases. In 2017, NCDs killed 40 million people, accounting for 70% of the global deaths. The majority of such deaths were caused by the four main NCDs, namely, cardiovascular disease, diabetes, cancer and chronic respiratory disease. Accordingly, 17.7 million people died of cardiovascular diseases annually, accounting for about 45% of all NCD deaths. In addition, WHO indicated that cancer claimed 8.8 million lives (22%), chronic respiratory disease swept 3.9 million people (10%) and diabetes also took 1.6 million (4%) people.

Non-communicable diseases are forecast to increase considerably in the world especially in sub-Saharan Africa [SSA] (Mitra & Mawson, 2017). The prevalence of NCDs is increasing considerably, with already high communicable diseases (Agyei-Mensah & De-Graft Aikins, 2010). This rise in both communicable diseases and NCDs is increasing mortality and morbidity among the population in SSA. Notable diseases of concern include malaria, diarrhea, HIV infection, hypertension, diabetes mellitus and road traffic accidents (Ofori-Asenso & Garcia, 2016). The Non-communicable Disease

Progress Monitor (NCDM) report showed that Ghana recorded 101,000 NCD deaths, representing 44% of national deaths in 2016 (WHO, 2017). Although the report still indicated that the risk of dying from any one of the four main NCDs between ages 30 and 70 decreased from 23% in 2000 to 19% in 2015, it is still high. For instance, in Ghana, the risk of premature death from target NCDs is 21% (Ministry of Health, 2012) which is unacceptably high.

Hypertension is one of the major cardiovascular diseases with increased mortality and morbidity cases in SSA countries (Adeloye & Basquill, 2014). In addition to the risk of dying from hypertension, a major concern is the occurrence of comorbidities in developing countries. For instance, in Bangladesh, about 50% of NCD patients have at least one other NCD of which hypertension is the most frequent (Hossain, Boonshuyar & Ekram, 2011). Also, over the past years, studies on evaluating hypertension in Ghana have revealed that most of such patients suffer from one or more other NCDs (Bosu, 2015; Colosia, Palencia & Khan, 2013; Mogre, Apala, Nsoh & Wanaba, 2016). The high prevalence of hypertension and its associated comorbidities in Ghana is a public health challenge and thus, the need to focus on effective diagnosis and treatment (De-Graft Aikins, Addo, Offei, Bosu & Agyeman, 2012).

Hypertension normally occurs differently in different regions of the world with regard to rate of increase and age at which it occurs. Although there were no significant differences in the prevalence, awareness, treatment and control of hypertension between developed and developing countries, except for a higher prevalence among men in developed countries (Pereira, Lunet, Azevedo & Barros, 2009). In the developing nations, the prevalence of

hypertension is higher, and occurs among relative younger population as compared to developed countries (Adoma & Yendaw, 2014). One reason is the poverty situation in these regions making it more challenging to deal with the condition (Seedat, 2015). Therefore, it calls for urgent attention to reduce incidence as well as develop proper management options for hypertension cases.

Hypertension management is interconnected to issues of globalization, urbanization and ageing. It is associated with changes in lifestyle, from a traditional active way of life to a modern sedentary lifestyle (Martins et al., 2015). Lifestyles such as unhealthy diets, physical inactivity, abuse of alcohol and smoking are the major immediate risk factors for the disease. These conditions combined with genetic susceptibility are probably associated with hypertension (WHO, 2010). Therefore, a comprehensive management scheme is needed to tackle the menace. For example, hypertension education and counseling, regular physical exercise, diet modification and compliance to medical treatment could prove effective in case management and to avert co-morbidities (Addo, Smeeth & Leon, 2008; Alemanno, 2014; Awuah, Anarfi & Agyemang, 2014; Kumar, 2015).

Hypertension treatment requires comprehensive care, which includes education, emotional treatment, medical treatment and behaviour change (Steyn & McHiza, 2014; Tagoe & Dake, 2011). Its management involves interventions such as self-management, with BP self-monitoring (Kumar, 2015), reduced sodium intake, reduced consumption of saturated fats, increased consumption of fiber, fruits and vegetables, increase physical activity/exercise, and weight loss (Ogedegbe et al., 2013). However, the



education programmes are silent on the issue of how to cope with the psychosomatic component of stress that accompanies treatment, which is eminent with the condition. Healthy coping with hypertension involves assessing the individual's personal coping style, relearning negative coping mechanisms, and learning positive coping strategies (Anyan & Knizek, 2017). This can be accomplished by cognitive behaviour therapy or coping skills training, administered by a clinical psychologist or a trained hypertension care professional (Kalra et al., 2009).

The treatment and management of hypertension may also require counseling (Steyn & McHiza, 2014; Tagoe & Dake, 2011). Counseling is a therapeutic activity offered by healthcare professionals, which equips patients with relevant knowledge and skills to accept their condition and adopt a positive coping mechanism to treatment. This is essential to hypertension treatment because patients with hypertension play a significant role in the management of their condition, which influences the treatment options. Therefore, when counseling patients, healthcare professionals need to be patient-centred to help patients manage their BP and improve upon treatment. Thus, it is important to establish a good relationship between patients and the healthcare team (Illloh et al., 2014). This facilitates the counseling process, and gives good results to effective treatment and management of hypertension.

In the management of hypertension, the traditional role of patients as passive recipients of health no longer holds true. Bengtsson, Kasperowski, Ring and Kiellgren (2014) indicated that self-management programmes have been shown to reduce the severity of symptoms, improve confidence, resourcefulness and self-efficacy of patients with hypertension. The role of

patients in the management of hypertension is, therefore, essential and as such, it must be advocated and supported through effective patient education and sensitization. Therefore, healthcare professionals need to ensure that patients and their families have adequate information and skills to manage their hypertension conditions (Atulomah, & Florence, 2010). This concept highlights a new paradigm in the current clinical practice, and requires effective communication skills, behavioural change techniques, patient education and counseling skills of healthcare professionals to care for the patients.

Healthcare professionals, especially nurses, play a key role by acting as coordinators in organising holistic care to meet patients' needs (Atwine & Hjelm, 2017). The aim is to teach patients to become well-informed and educated on their own disease and self-management. In this case, good communication between healthcare professionals and patients becomes essential, which should be supported by evidence-based information tailored to the patient's needs (Delaney, 2018). Also, treatment and care and the information patients are given about their condition should be culturally appropriate (Meinema et al., 2015). In addition, the package of hypertension management services would depend on the level of health facility. The range of services will include health promotion, psycho-social counselling, management (out-and-in-patient), day care services, home-based care, and palliative, referral for specialized services as needed (Osamor, 2015).

Blood pressure control is one of the important elements in the management of hypertension. In developed world, evidence shows that a great deal of successful experience has been achieved in the prevention and control

of the condition (Gebrihet et al., 2017). Management activities are carried out in local areas and demonstration areas over the years (Moser & Roccella, 2013). For example, four decades of activities of the National High Blood Pressure Education Programme (NHBPEP) indicated that the publics' awareness, treatment, and control have increased remarkably (Moser & Roccella, 2013). As a result, the number of times people visit the physician has reduced. However, the situation is different in the developing world. Evidence shows that almost one-quarter of persons with hypertension do not even know that they have the condition. Thus a large proportion of the hypertensive population is not on treatment. According to Sanuade et al. (2018), among participants who had hypertension, it was only 45.6% who aware of their hypertension status; 40.5% were treating the condition while 23.8% had their blood pressure controlled (BP <140/90 mmHg). Thus, effectively tackling hypertension and their key risk factors requires a detailed understanding of the current status and progress being made at the country level.

Coping strategies of hypertensive patients play an important role for post-rehabilitation of hypertension. Coping is an individual's efforts to master demands (conditions of harm, threat or challenge) that are appraised (or perceived) as exceeding or taxing his or her resources (Gunther, 1994). The choice of strategy adopted by hypertensive patients would determine the choice of health seeking behaviour, which impacts on the patients' condition positively or negatively as part of the recovery process. For example, religion is the most widely used coping strategy for NCDs. However, patients have divergent views and principles about religion such that it becomes difficult to

modify it to suit a patient's recovery process (Dein, 2009). Positive coping strategies may have positive and even protective effects on hypertensive treatment, whereas negative strategies may increase complications (Yancura & Aldwin, 2008).

There are several protocols in the management and coping strategies of hypertension treatment. However, the general principles on management are early detection and proper treatment to prevent irreversible and multiple organ damage (James et al., 2013; National Institute of Clinical Excellence [NICE], 2011). The control of BP is crucial for the management of the adverse outcomes. Factors that account for poor BP control include unhealthy lifestyle habits, non-adherence to medical therapy, lack of funds to buy medications and ignorance about the chronic nature of the condition (Bosu, 2010; NICE, 2011; WHO, 2009).

### **Statement of the Problem**

Hypertension control target is very difficult to achieve, hence, patients do not attain their treatment targets (Kumar, 2015). Generally, BP control in the population remains terribly low (Lloyd-Sherlock et al., 2014). For example, it is less than 5% in Ghana (Awuah et al., 2014). Similarly, Sanuade et al. (2018) observed that out of 67.6% participants who were aware of their condition and on treatment, only 11.6% of them had their hypertension controlled. At the BAR Hospital, due to probably ineffective hypertension control, death as a result of the condition is very high. According to Ghana News Agency (2019), the medical director of the Hospital indicated that hypertension and diabetes recorded high fatality rates and were among the leading cause of deaths at the Hospital in 2018. Therefore, any delays in

instituting effective treatment and management measures would most likely pose a greater public health challenge, on the already overburdened healthcare system (Bosu, 2013).

Patients with hypertension do not achieve their treatment targets, and, thus, makes treatment very stressful (Rosendaal et al., 2016). Moreover, hypertension treatment comes with a high economic burden, family neglect and change in lifestyle especially, with diet and medication (Chiavarino et al., 2012; Rueda & Perez-Garcia, 2013). Consequently, it pushes patients to adopt coping strategies that are mostly maladaptive, such as avoidance, denial and negative thoughts (Anyan & Knizek, 2018). These maladaptive coping strategies are major challenges in the treatment of hypertension because they prevent the achievement of BP control targets.

Again, it is difficult to achieve hypertension control targets because there is no functional system of reminders in appointment-making or routine check-ups. It was evident from the BAR Hospital report (2016) that the Hospital had no functional system of reminder for hypertensive patients. Majority of patients report that they refuse to meet their appointment because their treatment had remained under their own discretion (Glynn et al., 2010). Fici et al. (2017) noted that there is lack of follow-up by the healthcare system. This may be attributed to the nature of our healthcare system and lack of support from family members and healthcare personnel. Perhaps, these reasons explain why the number of hypertensive patients seeking treatment at Brong Ahafo Regional (BAR) Hospital has declined considerably over the years, from 1,014 patients in 2012 to 353 in 2016 (BAR Hospital, 2016).

Studies on hypertension treatment concentrate on how hypertension is

treated within the public and private healthcare systems (Addo, Sencherey & Babayara, 2018). Health facilities treat and manage hypertension almost exclusively in ambulatory care settings according to evidence-based guidelines (Bailey et al., 2010) such as BP measurements obtained under prescribed conditions (Weder, 2011). Other recommendations cover how to deal with hypertension in dialysis units (Weder, 2011) and emergency departments (Shao et al., 2018). None of these studies addresses a very commonly encountered problem of achieving hypertension management targets (Tenkorang & Kuuire, 2016) in the midst of maladaptive coping situations. According to Tenkorang and Kuuire (2016), the non-achievement of treatment targets is as a result of the commonly encountered problems in hypertension management. These problems include non-compliance to dietary sodium restriction, medical check-ups, and medication, physical inactivity, alcoholism, and poor BP measurement. The problems have made it difficult for patients to achieve BP control targets since little is done to prevent and improve upon its outcome.

Mixed methods designs have been employed in studies on hypertension management (Addo, Smeeth & Leon, 2008; Bengtsson et al., 2014; Bosu, 2015) and coping strategies (Anyan & Knizek, 2017). However, most of these studies refused to use the mixed method approach to address hypertension management and coping strategies together. Thus, the lived experiences of patients treating hypertension and quantitatively exploring their perception on quality of care, compliance with treatment and coping strategies, especially at the BAR Hospital where no such studies had been conducted.

### **Purpose of the Study**

The purpose of this study was to explore management and coping strategies among hypertensive patients seeking treatment at Brong Ahafo Regional (BAR) Hospital, and to examine participants' experiences of living with the condition.

### **Research Questions**

The following research questions were posed:

1. What are the perceptions of hypertensive patients on the quality of care provided by BAR Hospital?
2. What coping strategies do hypertensive patients seeking treatment at BAR Hospital use?
3. To what extent do hypertensive patients seeking care at BAR Hospital comply with treatment?
4. To what extent do coping strategies influence current BP of patients seeking treatment at BAR Hospital?
5. What socio-demographic factors determine compliance among hypertensive patients seeking treatment at BAR Hospital?
6. What are the experiences of hypertensive patients seeking treatment at BAR Hospital?

### **Significance of the Study**

Public health efforts have failed to reach the goal of meeting hypertension treatment target in improving high BP among patients (Awuah et al., 2014), who continues to experience uncontrolled BP (Lloyd-Sherlock et al., 2014). Therefore, it is imperative to explore the management and coping

strategies among hypertensive patients to enable and empower them to seek treatment to achieve BP control targets.

The results of the research would help hypertensive patients to be abreast with information on management and coping strategies for hypertension treatment. The findings of this study may be a source of information to update and educate patients on the effective ways of managing and coping with hypertension treatment. This may enable patients to adopt the best management and coping strategies that would help improve upon hypertension treatment. By so doing, it would improve upon health seeking behaviour of patients and management measures in order to improve upon recovery and management targets.

The findings of the study may also shape BAR Hospital's plan on management and treatment measures employed at the facility. The findings would assist BAR Hospital in designing evidence-based management of hypertension to reduce complications and incidence of other non-communicable diseases, promote positive coping with hypertension and save resources.

The findings may aid Ghana Health Service (GHS), Ministry of Health (MoH), policy makers, students and other relevant agencies in research and designing interventions to improve management and healthy coping strategies for hypertension treatment in the healthcare settings. Besides, the results of the study would help the GHS, MoH, and other relevant agencies to strengthen relevant management and coping strategies to promote hypertension treatment and protect the spread of hypertension, especially those seeking treatment at BAR Hospital.



### **Delimitations**

The study was delimited to only hypertensive patients who seek treatment at BAR Hospital in the Sunyani Municipality in the Brong Ahafo Region. Also, it was delimited to patients aged 18 years and above, chronic hypertensive patients who have sought for care not less than six months and mentally sound patients.

### **Limitations**

Considering the personal and sensitive nature of hypertension treatment at BAR Hospital. I acknowledge that there may be some under-reporting, misrepresentations and misinformation by participants especially in the in-depth interview. Even though the study provides important explorative insights into some of the key experiences of patients treating hypertension, it may not be an entirely accurate measure for generalizing treatment outcome among all patients seeking treatment. Recognition of the differences may exist in the determinants, experiences and treatment. The findings of the study are only representative of the hypertensive patients at BAR Hospital and not the entire municipality. This is because the samples were chosen purposively. The facility-based data (hypertensive patients) used may limit the generalizability of the research findings.

### **Organisation of the Study**

The study is organized in five chapters. Chapter One entails the background of the study, statement of problem, purpose of the study, research questions, significance of the study, delimitation and limitations. Chapter Two discusses the review of related literature; concept of hypertension and measurement, treatment and management of hypertension, patients'

compliance and hypertension treatment, patients characteristics and compliance, perception and quality of care of patients, coping strategies used by hypertensive patients, and lived experiences of hypertensive patients. Theories such as health belief model, chronic care model and coping theory, and the self-management are also reviewed under this chapter. Chapter Three, the methodology, focuses on the research design, population, and sampling procedure used. The research instrument used for data collection, validity and reliability of the instrument, pretest, procedures for data collection and data analysis were also part of the chapter three. Chapter Four is composed of the results and discussion, while Chapter Five comprises summary, conclusions, main findings and recommendations.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

The purpose of this study was to explore management and coping strategies among hypertensive patients seeking treatment at Brong Ahafo Regional (BAR) Hospital, and to examine participants' experiences of living with the condition. To be able to understand the necessary empirical and theoretical issues on hypertension treatment, this chapter reviewed existing literature and related theories on the management and coping strategies of hypertensive patients under the following sub-headings:

1. Concept of Hypertension and Measurement
2. Treatment and Management of Hypertension
3. Patients' Compliance and Hypertension Treatment
4. Patient Characteristics and Compliance
5. Perceptions and Quality of Care of Patients
6. Coping Strategies used by Hypertension Patients
7. Lived Experiences of Hypertensive Patients
8. Theoretical Framework
9. Conceptual Framework

#### **Concept of Hypertension and Measurement**

Blood pressure (BP) is determined both by the amount of blood the heart pumps and the amount of resistance to blood flow in the arteries (Carretero, Oparil & Oparil, 2000). High BP is present when the resting BP is persistently at or above 140/90 mmHg for most adults (Poulter, Prabhakaran & Caulfield, 2015). High BP, which is also known as hypertension, means that there is too much pressure in the blood vessels in relation to the task of

pumping blood from the heart (Carretero et al., 2000). Anyone can develop high BP, but it becomes more common as a person advances in age (Adoma & Yendaw, 2015; Beberio, 2002). High BP is a common condition in which the long-term force of the blood against the artery walls is high enough that it may eventually cause health problems, such as heart disease (Sundstrom et al., 2015).

People can have hypertension for years without any symptoms which makes it mostly asymptomatic, showing no sign and symptoms. According to Lee and Park (2015), hypertension affects the structures and functions of small muscular arteries, arterioles and other blood vessels. It can cause damage at variable rate to various target organs including kidney, brain and eye (Escobales et al., 2005; Hock et al., 1995). The condition can be detected easily in recent times (Dionne, Abitbol, Flynn & Abitbol, 2012). Once a person is diagnosed of hypertension, there is the need for the health provider to identify the type of hypertension in order to develop an appropriate mechanism to work alongside with the patient to control and manage it.

### **BP Measurement and Diagnosis**

Diagnosis of high BP is based on a persistently high resting BP measurement. According to NICE (2011), hypertension is diagnosed by taking three separate resting sphygmomanometer measurements at monthly intervals. Similarly, the American Heart Association (AHA) recommends that hypertension diagnosis is based on the assumption that at least three resting measurements have to be recorded on at least two separate healthcare visits (Aronow et al., 2011).

Apart from the definition by NICE and AHA, there is Ambulatory Blood Pressure (ABP), which is concerned with the monitoring of a person's BP over 12 to 24 hours. This approach has been identified by Siu (2015) as the most accurate method to confirm the diagnosis of hypertension. This is because ABP measurement monitors BP at regular intervals. It is believed to reduce white coat hypertension effect. White coat hypertension is a rise in BP while visiting a doctor/healthcare centre. Falkner (2009) added that the initial assessment of hypertension should be based on patient's medical history and physical examination. These elements are considered to be very essential to hypertension diagnosis because it is more reliable and produce valid outcome of a hypertension diagnosis.

Practically, the diagnosis of hypertension is done by taking the measurement of pressure used to pump blood through the blood vessels to the entire parts of the body. This measurement is done by an instrument called sphygmomanometer. BP is expressed by two measurements; the systolic and diastolic pressures, which are the maximum and minimum pressures, respectively (CDC, 2015). Normal BP at rest is within the range of 100 – 140 millimeters mercury (mmHg) systolic and 60 – 90 mmHg diastolic (Giuseppe et al., 2013). Measurement of hypertension is done among adults, that is, 18 years of age and above. Meanwhile, the diagnosis for children and adolescents (less than 18 years) are based on age, sex, and height, and are available in standardized tables. Repeat BP values on three separate visits greater than the 95<sup>th</sup> percentile for the age, sex, and height of the patient, or it is  $\geq 130/80$  mmHg. Thus, the diagnosis is dependent upon routine accurate measurements of BP using a standardized procedure and equipment (Mattoo,

2019). For the adults, hypertension diagnosis is based on a systolic and/or a diastolic BP measurement consistently higher than an accepted normal value [currently 150 mmHg systolic, 90 mmHg diastolic] (Giuseppe et al.).

At times, based on the purpose of investigation, the accepted normal value of hypertension may not be used; it may use the value above the normal (that is, above 140 mmHg systolic or 90 mmHg diastolic) or below the normal (that is, below 135 mmHg systolic or 85 mmHg diastolic). However, the normal value is mostly used in hypertension studies (Aronow et al., 2011). For instance, in Ghana a study done by Addo et al. (2012) defined hypertension as BP >160/95 mmHg. The study was done to investigate patients with mild and worse forms of hypertension who needed both lifestyle changes and medications for treatment.

Diagnosis of hypertension takes place at the health facility, but in some cases at places such as screening programmes, pharmacy shops, and homes. A study by Chinnakali et al. (2012) to estimate the prevalence of hypertension and understand the health-seeking behavior among the elderly in rural Puducherry, south India found that among the previously diagnosed cases of hypertension, 55% were diagnosed at government health facilities, whereas 45% were diagnosed by private providers. About 81% of diagnosed cases of hypertension had 'giddiness' or 'fainting' for which they sought care and were subsequently diagnosed of the condition. It, thus, established the fact that hypertension diagnosis were most identified in emergency situations.

### **Treatment and Management of Hypertension**

Treatment and management of hypertension is mostly successful when multiple factors in the patient's condition are addressed. Treatment at an early

stage is very essential (Bianchi, Bigazzi & Campese, 1999). However, many people do not find out that they have hypertension until they have problems with their heart, kidney or brain (Awuah et al., 2014).

One can lower the risk of high BP with a healthy lifestyle, including: maintaining a healthy weight, increasing physical activity, eliminating tobacco use, limiting alcohol consumption, building relaxation into your workday, and developing healthy eating habits (Nsiah-Asamoah, Setorglo & Mie, 2017; Ofori-Asenso & Garcia, 2016). Again, hypertensive patients must work with their medical team to achieve hypertension control targets.

The primary goal of hypertensive patients is to achieve their treatment targets to reduce the risk of CVD. This requires treatment of all the reversible risk factors and the management of raised BP. Hypertension could be managed by basically resorting to lifestyle modifications and pharmacological therapy (Sacks, Svetkey & Vollmer, 2001). One of the most important management measures for hypertension is lifestyle changes. These changes may include dietary changes, physical activity, and weight loss (Nsiah-Asamoah et al., 2017). These measures are evidenced-based in scientific advisories (Go et al., 2013; Nsiah-Asamoah et al., 2017). Hypertension also requires immediate use of medications. However, if the BP is very high it requires both medications and lifestyle changes.

Anti-hypertensive medications are effective in reducing high BP and have shown to significantly reduce the risk of CVDs (Chobanian et al., 2003). There are several classes of medications for treatment and management of hypertension. The firstline medications include thiazide-diuretics, calcium channel blockers, angiotensin converting enzyme inhibitors and angiotensin

receptor blockers (Boima et al., 2015; Hill & Smith, 2005). The majority of hypertensive patients require more than one medication to control their hypertension (Wright et al., 2014).

Healthy diet has shown to reduce high BP especially when a critical attention is given to diets with low sodium (Aburto et al., 2013; Poulter et al., 2015). A notable diet recommended for hypertensive patients is the Dietary Approaches to Stopping Hypertension (DASH) diet (Appel et al., 1997; Sacks et al., 2001). The DASH diet is low in sodium and high in fruits, vegetables, and low fat dairy products. The DASH diet is to reduce sodium in diet, and is rich in nutrients such as potassium, calcium and magnesium that help lower BP (Go et al., 2013). Consuming DASH diet is known to decrease 11.5 mmHg mean systolic BP (Sacks et al., 2001). Appel et al. (1997) found it to reduce systolic BP by 5.5 mmHg and diastolic BP by 3.0 mmHg.

Also, vegetarian diets which include only foods from plants like fruits, vegetables, legumes (dried beans and peas), grains, seeds and nuts are essential for hypertension management (Aburto et al., 2013).

Physical activity is a good health seeking behaviour which has been shown to reduce high BP (Fagard & Cornelissen, 2007). It may include strengthening, stretching, isometric resistance exercise, aerobic exercise, resistance exercise and device-guided breathing (Ofori-Asenso & Garcia, 2016). Regular physical activity and physical fitness are associated with lower BP (Kisokanth et al., 2018).

A single episode of physical activity yields an acute lowering of the BP. However, repeated sessions of it is a strategy for lowering BP. Therefore, to attain a lasting reduction of BP, a regular exercise is required (Park, Rink &



Wallace, 2006). The UK National Health Service (2018) advises 150 minutes (2 hours and 30 minutes) of moderate-intensity aerobic activity per week to help prevent hypertension.

Available data from a meta-analysis show that aerobic fitness training lowers BP approximately 7/5 mmHg in people with mild to moderate hypertension (Lewington et al., 2002). Also, a study by Hegde and Solomon (2015) discovered that among hypertensive patients, physical activity has been associated with paradoxical regression, suggesting a mechanism of regular physical exercise as one of the most effective anti-hypertensive therapies.

Hypertension management with medication, diet and physical activity has been shown to lower BP of participants (Schulman-Green et al., 2012; Tan et al., 2017). One weakness of these interventions is compliance. The question is whether the patients would be able to adopt the intervention for its long-term benefits. Patients, therefore, need motivation and encouragement to sustain these interventions.

### **Patients' Compliance and Hypertension Treatment**

Compliance, used in this study, means a patient's behaviours, in terms of taking medication, following dietary plan, keeping appointments and engaging in physical exercise, which align with healthcare providers' recommendations. The achievement of effective treatment and fulfillment of the benefits of treatment depends on compliance. Compliance among patients with hypertension is generally low, dropping most after the first six months of treatment (Adisa & Fakeye, 2014).

The ultimate aim of any prescribed treatment regimen is to achieve certain desired outcomes in the patients concerned (Jin et al., 2008). These

desired outcomes are part and parcel of the objectives in the management of the diseases or conditions. However, despite all the intentions and efforts on the part of the healthcare professionals, those outcomes might not be achievable if the patients are non-compliant. This challenge may have serious and detrimental effects from the perspective of disease management. Hence, compliance has been a concern due to the widespread nature of non-compliance with treatment. Compliance with treatment includes patient compliance with medication, physical activity, salt restriction, intake of fruits and vegetables, white meat consumption, fat intake reduction and meeting scheduled appointment/check-up (Rao, Kamath, Shetty & Kamath, 2014; Sumantra, 2015).

Treatment and management of hypertension is far from optimal, especially in the developing countries (Tibazarwa & Damasceno, 2014; Luscher, Vetter, Siegenthaler & Vetter, 2005). A qualitative study to among patients at OPD in the Democratic Republic of Congo observed that compliance among patients with chronic conditions is low, dropping most dramatically after the first six months of therapy (Haynes et al., 2002). Literature confirmed that compliance with hypertension treatment was generally low (Daniel & Veiga, 2013; Osamor & Owumi, 2011). In Bangladesh and India, a WHO study found satisfactory compliance in only 25% of patients (Thankappan & Hypertension Study Group, 2001). Obirikorang et al. (2018) also found non-compliance to antihypertensive therapy considerably high among patients seeking treatment in Ghana. It has been established that sub-optimal compliance contributed to the burden of uncontrolled hypertension (Hamdidouche et al., 2017; Mastsumura et al.,

2013). These attest to the patients' inability to achieve their treatment target and the poor treatment outcome in developing countries. Sub-optimal compliance is one of the largest problems in hypertension treatment, the most important cause of uncontrolled BP (Osamor & Owumi, 2011).

Several reasons account for non-compliance. These include ignorance on the need for regular treatment (Kabira et al., 1999) and lack of funds to purchase drugs. The authors also added that other factors were side effects of drugs (12.1%), non-availability of drugs in patients' place of domicile (8.0%), exhaustion of prescribed drugs and non-attendance at scheduled clinic day (4.8%). Other reasons include forgetfulness (3.0%), and busy schedules (1.8%) (Kabira et al.). Patients' decision to take treatment is based on their personal belief about their illness and treatment (Hashmi et al., 2007). Poor compliance is associated with belief, poor knowledge, understanding and perception about hypertension treatment (Gebreyohannes et al., 2019). Therefore, it is important to explore these reasons thoroughly to develop evidence-based interventions to help patients overcome their challenges.

It is usual to consider patients to be sufficiently compliant when they take at least 80% of their prescribed treatment especially, medication (Sackett et al., 2008; Guerrero, Rudd, Bryant-Kosling & Middleton, 2003). Rao, Kamath, Shetty and Kamath (2014) found optimal compliance with hypertension treatment among patients at Coastal Population of Southern India. In an outpatients care, compliance to anti-hypertensive medication ranged from 20% to 80% (Sackett et al., 2008). According to the Sackett et al., slightly more than half of the patients (54%) had good compliance.

A study carried out at University Hospital in Switzerland indicated that poor compliance was observed in only 20% of patients (Muesch et al., 2001). Similarly, Isezuo and Opara (2000) found that 64% of patients were taking 95-100% of prescribed drugs. However, most of these studies were not conducted in sub-Saharan Africa. Thus, it implies that compliance is achievable and that stakeholders should employ interventions suitable for patients in order to promote compliance in the sub-region.

It has been established that patients' compliance is beneficial to their treatment. Rizvi, Afzal, Chaudhry and Baig (2009) found that about 99% of participants who complied with physical activity had normal BP values. Experimental evidence from interventional studies confirmed a relationship between BP and physical activity, and its recorded favourable effects on BP reduction (Diaz & Shimbo, 2013).

On the other hand, previous studies have found participating in aerobic exercise to be relatively low among hypertensive patients (Egan, 2017; Heymann et al., 2011; Steptoe & McMunn, 2009). The Jackson Heart Study found that less than one in every four African American adult complied with recommended levels of physical activity. It was observed that only 8.2% of white, 7.7% of black, and 9.1% of Hispanic Americans met the recommended level of physical activity (Egan, 2017).

Poor compliance attenuated optimum clinical benefit and paved the way for poor treatment outcomes. A study found that patients who did not comply with physical activity had their BP raised, and they were in pre-hypertension stage (Rao et al., 2014). It is, therefore, concluded that non-

compliance with physical exercise remains a key barrier to better patient outcomes.

Clinical trials (DASH and TOHP studies) have shown that dietary factors are fundamental in the prevention and control of BP (Milan, Mulatero, Rabbia & Veglio, 2002). Excess dietary sodium predisposes one to high BP (He & MacGregor, 2007; Meneton, Jeunemaitre, de Wardener & MacGregor, 2005). In National Health and Nutrition Examination, only 19.4% of hypertensive participants complied with dietary salt (Mellen, Gao, Vitolins & Goff, 2008; Scheltens et al., 2010). According to Centres for Disease Control and Prevention Morbidity and Mortality Weekly Report in 2005, only 9.6% of adults treating hypertension met recommended guidelines for sodium intake of less than 1.5 g/d for persons with hypertension, middle age and older adults as well as blacks and less than 2.3 g/d for all other adults.

Salt is an essential electrolyte to life of human beings, and is used universally in cooking, seasoning, and preserving manufactured food stuffs around the world (Delahaye, 2013). One of the main organ systems vulnerable to the adverse effects of excessive salt in the diet is the cardiovascular system. Besides, sodium serves as an important nutrient in the body, and helps nerves and muscles to function correctly. It is also involved in the auto-regulation of the water and fluid balance of the body. High dietary salt intake presents a major challenge to the kidneys to excrete large amounts of salt administered. According to Kolata (2013), one of the main organ systems vulnerable to the adverse effects of excessive sodium in the diet is the cardiovascular system. Excess dietary sodium predisposes one to high BP (He & MacGregor, 2007;

Meneton et al., 2005). When large amounts of salt are taken, the pulse will stiffen or harden (Delahaye, 2013).

Over the years, salt reduction has become one of the main strategies in managing hypertension due to its effective measure to reduce BP. A reduction in dietary salt from the intake of 9-12 g/day to the recommended level of less than 5-6 g/day will have major beneficial effects on hypertension treatment (Ha, 2014). A technical report produced by WHO and the Food and Agricultural Organization of the United Nations recommended the consumption of less than 5g of salt per day as a population nutrient intake goal (WHO, 2016). It is a very difficult thing to reduce the salt intake below 1 g/day in the everyday food intakes in humans. Van der Wal et al. (2006) reported that patients found it difficult to comply with their diet because the sodium-restricted diet was not palatable.

Also, it was established that bland food (food that is tasteless, because it does not contain salt) due to low salt content does not taste good, which makes it difficult to comply with diets low in sodium. Likewise, Schutte et al. (2003) reported that patients' inability to eat from outside (restaurants, canteens, chop bars) serves as a barrier to comply with low-sodium restriction. Ha (2014) reported that WHO has strongly recommended reduced dietary salt as one of the top priority actions to tackle the global non-communicable disease crisis. It, therefore, encouraged and urged member nations to take action to reduce dietary salt intake to decrease the number of deaths from hypertension (Ha, 2014).

Osamor and Owumi (2011) found that two-thirds of the patients attended clinic appointments 'every time'. In a study (Kuria et al., 2018) to

determine compliance with scheduled clinic appointments, it was observed that about three-fourth of patients complied with periodic medical check. Keeping clinic appointments is positively associated with high self-reported compliance. For example, Osuji (2012) reported that 46.4% of the patients did not attend clinic at all after discharge, 30.8% attended a few times, and 7.6% had moderate attendance. Meanwhile, only 12.2% of the patients had full clinic attendance for the duration of the study. However, there are instances patients do not comply with scheduled appointment irrespective of its benefit.

The level of compliance with appointment varies from patient to patient. Bakhsh et al. (2017) who conducted a study to assess knowledge, awareness and self-care practices of hypertension among hypertensive patients, found that only 38% of the participants claimed that they visit a doctor or healthcare provider monthly for BP check-up while most of the patients, 74(53%), go for check-up every 3-6 months and 11(5.2%) visit their doctors every 12 months. Patients with high BP frequently fail to meet their appointment. These are like to have poor consequences on patients' treatment and BP control.

Compliance with anti-hypertension medication is one of the essential aspects of hypertension treatment. In a study in Seychelles to monitor one-year compliance with anti-hypertension medication in a general hospital setting, the prevalence of poor compliance was found to be 46% (Bovet et al., 2002). Also, Muesch, Schroeder, Dieterle, Martina and Battegay (2001) found during a systematic review of effective interventions for improved compliance that simplified dosage regimens, improved doctor-patient communication and motivational strategies in combination was more effective than patient

education alone. Similarly, optimal control of hypertension was impeded by poor patient-physician communication, excessive dietary sodium, and cost of anti-hypertensive medication and laboratory studies (Campbell, Johnson & Campbell, 2012; Ha, 2014).

Consumption of fruits and vegetable has been shown to have a positive impact on the treatment of hypertension. Wang, Manson, Gaziano, Buring, and Sesso (2012) reported that when fruits and vegetables were analyzed separately, higher intake of all fruits but not all vegetables remained significantly associated with a reduced risk of hypertension. This indicated that the consumption of fruits is very relevant in hypertension treatment. On the other hand, the consumption of some vegetables might have little or no effect on reduced BP.

### **Improving Compliance**

Non-compliance can be improved by intensifying measures such as effective counseling, patient-centred education and efficient healthcare delivery system (Bilal et al., 2015). It was recommended that sustained health promotion and education should be undertaken at all levels of patient contact to ensure good compliance (Lubaki et al., 2009). Educating patients on the need to be compliant with their medication regimen, and the complications that could arise from non-compliance during their treatment should form part of the clinical sessions for their treatment (Addo, Sencherey & Babayara, 2018).

Evidence suggests that patients perceived themselves to be at a lower risk for elevated BP and heart attack if they met with the HCPs on a regular basis (Nsiah-Asamoah et al., 2017). However, the situation is quite different at



the various care centres. For instance, a study found that 60% of the patients were not informed by their physicians of the need for continued and regular treatment, as well as following-up on patients' treatment (Olubodun et al., 1990). This implies that HCPs do not provide the relevant education and directions to their patients. Healthcare providers should engage and provide relevant information for patients' treatment. Pender, Murdaugh and Parsons (2002) who wrote on health promotion in nursing practice, reported that it is crucial for healthcare providers to enquire about patients' priorities, because it may be helpful in improving the quality of hypertensive patients' care. There is the need for HCPs to participate actively in their patients' treatment with their skills, knowledge, relationship and motivation (Nau, Read & Lipowski, 2007).

The family also plays an important role to boost patients' compliance. Family is supposed to provide reminders, support and encouragement. Cognitive and functional impairment in elderly patients increase their risk of poor drug compliance, so they need a family to remind, support and assist them in taking drugs (WHO, 2003).

Based on the literature on compliance and hypertensive treatment, there is a need for a comprehensive educational approach involving healthcare providers, patients and the general public. This is to educate patients on the need to take treatment regularly in the manner prescribed. Prescribing an effective, inexpensive, one daily medication with minimal side effects will improve patient compliance considerably. Poor compliance compromises the effectiveness of treatment, it a critical issue in a population's health (WHO, 2003).

Reiners and Nogueira (2009) study on raising patients' consciousness about treatment compliance discovered that despite health professionals' efforts to promote health, patients have their own way of managing their hypertension, for example they could decide not to take treatment. A study to report on the rate of compliance to medication, sodium use and appointment keeping of hypertensive adults established that patients need to be familiar with different methods that can be used to assist them comply with hypertension regimens (Mafutha & Wright, 2013). Patients' understanding of hypertension treatment helps to improve compliance, thereby preventing complications of hypertension and the debilitating outcomes.

### **Measurement of Compliance**

There is no gold standard by which compliance can be quantified (Vrijens et al., 2017). The method available for measuring compliance can be divided into direct and indirect methods of measurement (Anghel et al., 2019). The direct method is mostly used for measuring medication compliance. It uses blood and urine to test the presence of drugs or its metabolite in them. Direct methods are expensive, burdensome to the healthcare provider, and susceptible to distortion by the patient. On the other hand, indirect methods include asking the patient about how easy it is for him or her to take prescribed medication, assessing clinical response, performing pill counts, ascertaining rates of refilling prescriptions, and collecting patient questionnaires. These are done, using electronic medication monitors, measuring physiologic markers and asking the patient to keep a medication diary (Walsh et al., 2002).

Questioning the patient (or using a questionnaire), patient diaries, and assessment of clinical response are all methods that are relatively easy to use, but questioning the patient can be susceptible to misrepresentation and tends to result in overestimation of patients' compliance. Patients' self-reports can simply and effectively measure compliance (Walsh et al., 2002).

The measurement of compliance is a crucial part of patients' treatment and is imperative for attaining treatment targets. Proper measurement of compliance may have a far greater impact on the health of the patients than any improvement in specific medical treatment (Nguyen, Caze & Cottrell, 2014; Sackett et al., 2008). In measuring compliance with questionnaires, most authors set a recommended cutoff value. Patients that take 80% or more of their treatment or medicines are considered as compliant (Nguyen, Caze & Cottrell, 2014; Sackett et al., 2008). For example, Medical Event Monitoring Systems (MEMS) reports that patients who meet the cutoff value are judged as compliant, and those who take less than the cutoff value are reported as non-compliant.

Meanwhile, some scales like the Medication Adherence Questionnaire (MAQ), Morisky Medication Adherence Scale (MMAS), and the Brief Medication Questionnaire rank the degree of compliance instead of defining an absolute cutoff for adherence. The rationale of ranking can either be determined by clinical outcomes or a researcher's expertise. As many scales have been identified, this thesis will focus on those that are considered most useful covering the extent to which patients comply with their treatment by setting a cut of value to measure compliance.

## **Patient Characteristics and Compliance**

The implication of socio-demographic factors is peculiar to a patient's compliance because it influences their decision with compliance. The achievement of treatment target may be dependent on socio-demographic factors. Case, Menendez and Ardington (2005) examined patterns of health seeking behaviour of patients and was discovered that significant positive associations exist between individuals' socio-demographic factors and their use of medical treatment. Also, evidence from a study by Jing et al. (2008) indicated that non-compliance was affected by patient-centred factors such as age, ethnicity, gender, education, and marital status. These factors predict patients' compliance, and are very important to consider these factors in their treatment. A patient's gender can predict his or her compliance with treatment.

Generally, studies that established a relationship between gender and compliance indicated that females were found to be more compliant than males (Fodor et al., 2005; Jing et al., 2008). A study by Joho (2012) in Dar es Salaam, revealed that there was a statistically significant difference with gender. Females were found to be more compliant than males. Contrary to Joho's study, males were found to be significantly more compliant than females in Taiwan by Lin et al. (1995). Likewise, in Joho's finding, males were significantly more compliant than females in Taiwan. However, it is not all the time that gender determines compliance. A study found no significant difference between gender and compliance. Akoko et al. (2017) found no statistically significant association existed between gender and compliance. A similar result was observed in the studies conducted at Maiduguri (Okoro & Ngong, 2012) and the Democratic Republic of Congo (Ikama et al., 2013), in

which no statistically significant association existed between gender and compliance.

Age is positively associated with hypertension, however, the question as to whether age determines compliance is dependent on the patients' characteristics. A statistically significant association was found to exist between age and compliance, the results indicated that older participants were more compliant than younger ones in Democratic Republic of Congo (Ikama et al., 2013). Similarly, findings observed in a study by Ambaw et al.'s (2012), indicated that older patients were more compliant than younger ones. It has been established there are several reasons why patients do not comply with their treatment. Some of these reasons included poor education, deliberate act, forgetfulness and side effects of medication (Almas et al., 200; DiMatteo et al., 2002). It was also found that denial contributed to poor compliance among patients. In a study by Jokisalo et al. (2001), it was established that 66% of the patients refused to accept that they were hypertensive. Another challenging revelation about denial is that it is high among the younger age groups who are productive (Jokisalo, 2005). It is a great challenge to help patient endure and accept being hypertensive in order to accept treatment.

Contrary, Joho (2012) revealed that participants who were 64 years and below had higher level of treatment compliance than those who were 65 years and above. A similar finding was observed in North America by Krousel-Wood et al. (2004), where relatively younger persons were found to be more compliant than older patients seeking treatment. Also, in Shiraz, Iran, similar results were recorded by Hadi and Rostami-Gooran (2004) on poor compliance among older patients as compared to younger patients. However,

current finding by WHO (2018) indicated that patients aged 60 and below were more likely not to be compliant than those 61 and above. However, Mweene et al. (2010) found no significant relationship between age and compliance. The reasons young patients are likely to be more compliant than older ones may be that younger patients may have a higher income since they are able to work and, thus, can afford to buy medication compared to older people (Holt et al., 2014). Also, older people might have more than one chronic disease due to ageing, which might have led them to use many drugs that make them tired, hence, stop taking drugs or treatment (Elliott & Booth, 2014).

Education has a positive impact on compliance. The level of education is one of the most influencing factors of compliance with hypertension. Patients with higher educational level might have higher compliance (Ghods & Nasrollahzadeh, 2003; Okuno et al., 2001; Yaruz et al., 2004). It was also observed that 72% of the respondents who had formal education were compliant with their treatment compared to 47% of the respondents without formal education (Kabira et al., 1999). Also, it was established that about 72% of the respondents who had formal education were compliant with their treatment compared to 47% of the respondents without formal education (Kabira et al., 1999).

In the UK, however, a study by Senior et al. (2004) found that patients without formal education had better compliance with medication. This may be due to the fact that patients with lower educational level may have more trust in physicians' advice compared to those with higher levels of education. Patients without formal education level (56%) had high treatment compliance

compared to those with high education (38%). From these results, it seems that educational level may not be a good predictor of treatment compliance.

Conflicting results by Sumantra (2015) indicated that patients with higher education take their medication regularly, but were less compliant to patients with lower education. According to the author, patients with higher education were largely taking medication on a regular basis (58.33%) for a shorter period and the patients with lower levels of education, in an irregular manner but taking their medication (72.41%) for a longer time. There was no clear-cut trend with a high self-reported compliance ( $\chi^2=6.683$ ,  $p=0.245$ ), although those with primary education showed a higher frequency of high self-reported compliance when compared with respondents with other categories of educational levels (Osamor, & Owumi, 2011). These findings indicated that education does not have a direct relationship with compliance. It may depend on several factors to establish compliance with education. Other studies, however, found no relationship between education and compliance (Stilley et al., 2004; Wai et al., 2005). Similarly, Ikama, Nsitou, Loumouamou, Kimbally-Kaky and Nkoua (2013) as well as Joho (2012) studies found that educational status had no significant association with compliance.

Various studies have demonstrated the influence of marriage on health (Cooper et al., 2005; Okoro & Ngong, 2012). This is because married people are said to be more likely to see the doctor for check-ups, screening and other early detection than the non-married with the same symptoms, functioning and general level of health (Lisa & Breslow, 2003; Neale, Victoria, Tilley & Sally, 2006).

Marital status may play an important role in hypertension. Marital status is considered a measure of social network, and is associated with improved hypertension control (He et al., 2002). According to Trivedi et al. (2008), being married was associated with higher probability of medication adherence (OR = 1.66,  $p < .01$ ). The results obtained in Maiduguri by Okoro and Ngong (2012), recognised that married participants were found to be significantly more compliant than unmarried patients. This is because marital status might influence patients' compliance with medication positively. The help and support from a spouse could be the reason why married patients were more compliant to treatment than unmarried patients. This result was, however, contrary to findings in Dar es Salaam by Joho (2012) and in Shiraz, Iran by Hadi and Rostami-Gooran (2004) who established that unmarried patients were more likely to comply with their treatment than married patients.

The occupation of patients is also a determinant of compliance with treatment. A study by Landsbergis et al. (2015) to assess associations of occupational categories and job characteristics with prevalence of hypertension found a relationship between occupation and BP levels. Landsbergis et al. established in that higher job decision latitude was associated with a lower prevalence of hypertension. They concluded that lower job decision latitude is associated with hypertension prevalence in many occupations. Participants in active employment are more likely to be compliant than those who were unemployed (Davila et al., 2012). Contrary result were found in studies by Lin et al. (1995) in Taiwan and by Ikama et al. (2013) in Democratic Republic of Congo, where no association between occupational status and compliance was established.



Similarly, religion plays a key role in compliance with treatment. Spiritual and religious beliefs formed core components of the lifestyles of patients, spirituality ( $p = 0.018$ ) and no religiosity ( $p = 0.474$ ) related directly with medication non-compliance (Kretchy, Owusu-Daaku & Danquah, 2013). The religion of patients was found to be statistically significant with compliance, in a sense that Christians were less likely to be compliant (Hatah, et al., 2015). On the other hand, the findings from Osamor and Owumi's (2011) study showed that high self-reported compliance was not associated with the religion professed by the respondent. Osamor and Owumi (2011) reported that almost equal percentages of Muslims (57.8%) and Christians (59.2%) showed high self-reported compliance ( $\chi^2=0.797$ ,  $p=0.671$ ).

In recent times, the treatment of hypertension is patient centred (Regione & Lombardia, 2014). It has been observed that persistence among patients with chronic conditions is disappointingly low, dropping most dramatically after the first six months of therapy (Haynes et al., 2002). Calsbeek et al. (2006), indicated patients lose trust in their treatment when it is prolonged, becoming frustrated, intolerant and tired. This means that patients have to participate actively in their treatment. Therefore patients' efforts to improve upon treatment efficacy should exceed the role HCPs and any other stakeholder. Thus, the role of patients in this regards go beyond the role of the healthcare system to educate, monitor and support patients to manage their condition (Newman & Tonkens, 2011). As such, the burden of care lies in the patients' domain. It calls for prepared and well informed patients to take up this role to improve treatment efficacy.

## Perceptions and Quality of Care of Patients

Patients' perceptions toward health and illness affect their treatment outcomes. According to Mendhe et al (2017) perception determines patients' utilization of healthcare services. This is because the ideas and attitudes provide an ideological basis for the healthcare system (Omosho, 2010; WHO, 2002). In Nigeria, and in many developing countries, the factors that commonly affect the way patients perceive quality of treatment include religious beliefs, attitudes of healthcare professionals, healthcare resources, state of art facilities, Traditional African Medicine (TAM), and denial of reality (Omosho, 2010). These factors, according to the author, may influence efficacy of treatment either positively or negatively depending on the surrounding circumstances. For instance, it is established that the quest for health easily shades into issues of morality and religion in most communities (Ewhrudjakpor, 2007). This is because the religion plays a significant aspect in one's social life.

There is growing evidence in literature that suggests that patients' perceived quality of care is the single most important variable influencing utilisation and treatment outcomes (Abaerei, Ncayiyana & Levin, 2017; Dansereau et al., 2015; Adam & Awunor, 2014; Wang, Chen, Hsu & Wang, 2012). In recent times, patients demand high quality service from hospitals than ever, and do not hesitate to switch to other healthcare providers if they do not obtain their targets (Ramsaran-Fowdar, 2008). There is evidence that patients who have positive healthcare experiences have improved outcomes, resulting in a more efficient healthcare system (Doyle, Lennox & Bell, 2013; Sofaer & Firminger, 2005). Also, studies have shown that patients tend to

exhibit higher rates of compliance with medical recommendations when they perceive their medical recommendation to be of high quality (Institute of Medicine, 2001; Wolf et al., 2008).

Goyal et al. (2016) conducted a study to improve the quality of services rendered at tertiary care facilities by utilizing the clients' perceptions about the services. It was observed in that study that 93.9% of the participants perceive quality of services as good. Dansereau et al.'s (2015) study was conducted to examine the associations between perceived quality of care and patients' satisfaction among HIV and non-HIV patients in Zambia. Results from this study by Dansereau et al. indicated that patients perceived service quality by rating treatment effectiveness as very good or excellent. Goyal et al. (2016) observed that 87.8% of the respondents were satisfied with the services rendered at the hospital whereas the remaining 12.2% were not satisfied with the service delivery of the hospital.

However, Erah and Chuks-Eboka (2008) conducted a study to investigate patients' perceptions of the benefits of regular participation in pharmaceutical care services in the management of hypertension at outpatient clinic in University of Benin Teaching Hospital, Benin City (UBTH). The results of the study showed that patients generally rated the services provided by the health professionals to be poor. Erah and Chuks-Eboka's study further revealed that specific information on medication and other health related problems including side effects, weight and BP control, and others that could enhance medication therapy were hardly discussed with the patients. In such situations, the services rendered by the healthcare system would be more

likely not to meet patients' expectation and thereby contributing to poor patients' perceived quality of care.

A study by Akande, Musa and Hussain (2005) observed poor perceived satisfaction in terms of services provided by the pharmacy department. Akande et al.'s study showed that about half of the patients did not get the required services from the pharmacy. There is a perception about the quality of care provided by the healthcare system. Such perception has a great consequence on patients' treatment since patients' perceived quality of care plays an important role in compliance (Kisokanth et al., 2018; Rahman et al., 2015).

Patients' perceived quality of care may be optimal when patients believes in his/her treatment, is assured of achieving treatment targets, satisfied, provided with enough information and education, as well as having sufficient time to discuss his/her treatment outcome with the HCP (Rao & Satyanarayana, 2014). For instance it has been established that positive experiences have a well-documented relationship to quality of care (Dansereau et al., 2015). Patients with better healthcare experiences are often more engaged in their care, more committed to treatment plans, and more receptive to medical advice (McGlynn et al., 2003).

Wagialla et al. (2019) reported that only 29.9% patients were satisfied with the waiting time in the clinic which is relatively low. A qualitative study that gathered data from seven focus group discussions by Gascon et al. (2004) observed that inadequate consultation time provided by service providers in addition to high workload contributed to poor treatment outcomes among hypertensive patients. It has also been observed in other studies that the clinical encounter was viewed as unsatisfactory because of its length of time

spent on treatment, few explanations given by the physician and low physician-patient interaction (Parker et al., 2012).

Edmonds et al. (2005) studied 37 hypertensive patients who had been taught self-measurement. Their study (Edmonds et al.) revealed that patients who followed HCP's instructions increased their compliance with treatment from 65% at the beginning of the study to 81% after three months of self-measurement. In addition, 70% of the patients who were non-compliant at the beginning of the study rose up. The plausible reason why perceived quality of care was high could be ascribed to a similar and clear expectation as well as views expressed between patients and HCPs. However, Rahman (2015) observed that doctors and patients have different expectations of each other and a divergent view on what constitutes successful hypertension management. This created a fundamental gap between the beliefs of doctors and patients as to who should be responsible for the patients' hypertension management. Therefore, there is the need for the HCP to develop the willingness to adjust patient interaction to suit their needs.

The WHO global patient safety challenge has indicated that in developing countries, there is a high probability of patients being harmed (Ten Facts on Patient Safety, 2009). Patients are the recipients of the healthcare service, and their perspective is relevant in determining the quality of care. Their perspective is usually influenced by their knowledge, beliefs and experiences to determine whether the service meets their expectations. The patient perceives quality of care in the light of accessibility and affordability of healthcare, promptness of delivery, early diagnosis and effective treatment,

thereby ensuring early return to productivity and to be treated with empathy, respect, and concern (Cleary, 2003).

Rockville (2013) established that wide variations in healthcare quality, access, and outcomes persist. Patients' assessments of care are increasingly being considered as an important dimension of quality of care (Brennan, 2000). The concept of error and failure in healthcare delivery has been suggested as part of a strategy to protect patients from adverse events (Kirk et al., 2007). Perception about the quality of care has a great consequence on patients' treatment. Hence, treatment of hypertension and patients satisfaction depends on the perception they build on their treatment. Thus, the focus of quality of care must be on the results produced (Kemmel, 1989). According to Steiner (2017), the emphasis should be on what is achieved and not what is done.

Also, there is a belief that healthcare professionals know all and can cure all, irrespective of patient and healthcare system factors, provided the right conditions are fulfilled (Ewhrudjakpor, 2007). One important belief is that treatment of diseases may be classified as "common" or "ordinary". Such treatment is diffused using either traditional or allopathic medicines while those classified as "severe" or "extraordinary" usually require special (traditional) attention (Olujimi, 2006; Omotosho, 2010). The popular notion as revealed by Kroeger, (2003) and Twumasi (1988) is that people do not just suffer illness by chance. They believe that people get sick when they wrong the gods. Therefore, serious illness is believed to have its origin in a primary supernatural cause. These believes explain why religious coping form essential part of hypertension treatment.

Quality of care is a vital component of the right to health, and the path to equity and dignity for patients (WHO, 2016). In order to achieve quality of care, it is essential to deliver services that meet patients' quality of care criteria. However, healthcare delivery is an increasingly complex and high-risk activity (Kapoor, 2011). Despite the dedication and professionalism of staff, things can go wrong. It is not in doubt that the right care for the patients at the right time is their first experience at the hospital. Most patients build their perception on the quality of care at their first visit. Patients perceived quality of care is determined by competent and motivated healthcare professionals, effective communication and community expectations and engagement (WHO, 2016). Therefore, healthcare providers should ensure the best care is given at the first stage of patients' treatment to boost their interest and perception in their treatment.

### **Coping Strategies used by Hypertensive Patients**

Patients with hypertension may experience changes in their daily lifestyle and activities. These included their diet, physical activity, access to healthcare, and change to retirement (Berkman, 2006). Furthermore, hypertension patients may be concurrently managing other chronic diseases such as obesity or overweight and diabetes (Chobanian et al., 2004). These and other health issues may increase the stress level of patients and contribute to the difficulty of controlling their hypertension.

A study by Tang, Harms and Vezeau (2008) revealed that almost all diseases have psychosomatic components and that any kinds of diseases such as hypertension, is affected by stress and stressful events. Accordingly, alleviating stressful factors is an effective technique in reducing the BP.

Although the existence of stress is inevitable and having adequate levels of stress confers growth and development, high levels of stress leads to ineffective coping strategies that are harmful (Rueda & Peerez-Garci, 2013). Ariff et al. (2011) reported that patients with hypertension tend to apply inefficient coping strategies and that the application of these strategies brings about excess stress and poor treatment targets.

However, Thalina et al. (2012) in their work on lifestyle, coping, and job stress on BP found no direct effect of perceived stress on resting BP, but found an inverse relationship between positive attitudinal coping mechanism and BP levels. Again, patients believed hypertension happens at older age, an assumption that promotes denial of the condition (Anyan & Knizek, 2018). Thus, it becomes very stressful for younger persons when they are diagnosed of hypertension. According to Anyan and Knizek, such patients tend to use maladaptive coping strategy that leads to poorer treatment outcomes.

Aina et al. (2016) have demonstrated in their study that the attainment of target BP among hypertensive patients still remains a challenge among the study population. The authors further showed that there is the need to pay attention to the psychosocial aspect of hypertensive management, as those with positive coping strategies tend to have achieved better BP control.

There are two coping strategies applied by individuals when facing specific problems and diseases such as hypertension: the problem-focused coping strategy and the emotion-focused coping strategy (Graven & Grant, 2013). These coping strategies have different outcomes in relation to hypertension treatment. It has been established that problem-focused strategy, which is a task-oriented coping strategy has positive outcomes whereas the



emotion-focused coping strategy has negative consequences (Aina et al., 2016).

Problem-focused coping strategy has the objective for individuals to perform a problem-solving activity; and if they believe that the situation is beyond their capabilities, they can apply the emotion-focused coping strategy. However, in the emotion-focused coping strategy, the objective is to focus on emotion but not the problem, thus it is to control emotional distress associated with the condition (Graven & Grant, 2013).

Ariff, Suthahar and Ramli (2011) found that most of hypertensive patients used task-oriented coping for their treatment than the other coping strategies. Meta-analytic results by Ersek, Turner and Kemp (2006) showed that the most frequently reported coping strategy was task persistence, followed by activity avoidance, coping self-statement and the least being asking for assistance and relaxation. The study by Ersek et al. indicated that patients focus on their treatment by engaging in activities to improve upon their condition. However, patients also used emotion coping strategy to compensate for their inability to use any meaningful activity for their treatment. It suggests that if treatment is favourable and less stressful patients are likely to use task-oriented coping strategies.

The preference for task-oriented coping strategy may be attributed to its efficacy with hypertension treatment. Task-oriented coping strategies were considered to be positive, well adaptive and functional coping strategies. According to Endler and Parker (1999), task-oriented coping refers to purposeful effort to solve a problem, cognitive restructuring of the problem, or attempts to alter the situation. Task-oriented coping encompasses all the

elements needed to explain task of coping in this instance. Sithu et al. (2018) reported that maladaptive coping strategy was found to lower BP. It is, therefore, established that those who used these coping strategies were likely to adapt well, and effectively reduce their stress or anxiety level (Kasi, 2012).

Ariff et al. (2011) found that participants with a high task-oriented score showed a significantly lower risk of hypertension compared to those with a low score. Patients with high emotion-oriented coping scores were associated with an increased risk of hypertension. The authors (Ariff et al.) further indicated that significant relationship existed between hypertension and coping styles. Therefore, it was concluded that productive steps must be taken to promote positive coping in order to improve upon hypertension treatment.

A cross sectional study by Aina et al. (2016) to determine the type of coping strategies employed by patients observed that patients were found to have adopted more than one strategy, especially problem solving and social contact. It was found that the distributions of the patients among the domains of coping strategies were problem solving (72%), social contact (64%), and problem avoidance (19%). The mean BP among different coping domains (systolic/diastolic) was problem solving (134.76/80.32), problem avoidance (149.20/87.00), and social contact (134.55/80.18).

The results of Aina et al.'s study indicated that problem solving and social contact coping were associated with lower BP than avoidance coping. Attainment of target BP was lowest among the problem avoidance group. Therefore, the attainment of target BP of <140/90 among the coping domains were problem solving (50%), problem avoidance (14%), and social contact (51%). Again, coping strategies adopted by the patients are mainly problem

solving and social contact. Out of the three coping domains, the problem solving and social contact were regarded as positive (adaptive) while problem avoidance was negative (maladaptive).

Wright and Sweenet (1989) hypothesized that individuals experiencing higher diastolic BP were more likely to cope using strategies characterized by wishful thinking, avoidance and minimization of threat than were individuals exhibiting lower BP. These authors suggested that individuals are more likely to adopt task-oriented coping strategies to lower their BP. Therefore, BP of patients will be high or low depending on the coping strategies used. Those with high emotion-oriented coping strategies may be associated with an increased risk of hypertension than those with task-oriented coping strategies. It was concluded in the study by Wright and Sweenet that patients who chose task-oriented coping may be more likely to have lower BP.

The treatment of hypertension remains a challenge, as the exact pathogenesis is unclear and it is manifesting earlier in populations (Rampal et al., 2008). Lindquist, Beilin and Knuimen (1997) reported that various adaptive or maladaptive coping mechanisms were identified and independently related to high BP levels. The chronic nature of hypertension treatment enhances the choice for maladaptive coping strategies. Although, the role of such stressors associated with high BP is still unclear (Beilin, 1997), stress associated with treatment can cause activation of the Hypothalamo-Pituitary-Adrenal axis (HPA) in human body (Barrett, Barman, Boitano, Brooks & Ganong, 2012) that raises BP. The ways that individuals reported coping with stress were significantly related to BP. Lindquist et al., then, concluded that there is the need to target individual coping strategies in

planning cardiovascular health promotion programmes. However, it has also been demonstrated by some studies that both diastolic and systolic BP were negatively correlated with task oriented coping style (Lemogoum et al., 2003).

Olanrewaju et al. (2011) in a study at a tertiary hospital in Nigeria observed that where positive coping contributed to systolic and diastolic BP control of 53%, those in the negative coping domain scored lower. Ernest et al. (2010) also recorded 49% and 26% attainment of target BP among patients using positive and negative coping in central Kenya respectively (Lisa & Breslow, 2003). These studies attest to the helpful outcomes of positive coping on hypertension treatment.

Omosho (2010) indicated that religious belief was a factor that commonly affected the way patients perceive quality of treatment because religion plays a significant aspect of social life. It explains why patients used religious coping in stressful events (Cozier et al., 2018). It is established that when patients perceive healthcare services as insufficient to provide the requisite services needed to improve upon their condition, they resort to religious coping (Kroeger, 2003). The reason may be that patients perceived hypertension to be a spiritual condition that requires religious coping for supernatural treatment (Mbiti, 2007).

A qualitative study explored the role of religious faith among hypertension patients in Accra observed that participants used a deferring-collaborative style of religious coping. This seemed to have provided them with an avoidance strategy that protected the participants from conscious confrontation with their illness (Anyan & Knizek, 2018). Religious faith and beliefs also afforded the participants a sense of coherence that enabled the

participants to manage their stress, reflect on their external and internal resources to promote effective coping and adaptive functioning in a health-promoting manner.

Spirituality and religious coping (Cozier et al., 2018; Hixson et al., 1998; Steffen et al., 2001) have been found to positively affect hypertension prevalence and BP. Religion and/or spirituality was found by Cozier et al. (2018), to be associated with decreased risk of hypertension in African American women, especially among those reporting higher levels of stress. The authors, therefore, concluded that there is religion form the core of coping with stressful events.

In general, previous research has demonstrated that controlling stressful conditions such as hypertension need effective coping strategies as it is useful in treating the hypertension (Ariff, Suthahar & Ramli, 2011; Graven & Grant, 2013). Assisting patients to cope with the uncertainty associated with this hypertension treatment is essential and beneficial, if patients successfully adjust to the demands of the illness and its treatment, there is high probability of achieving better outcomes (Flattery, Pinson, Savage & Salyer, 2005). Ariff, Suthahar and Ramli (2011) believed that improving lifestyle components help patients to stay healthy and cope with daily stresses. Learning effective coping strategies leads to the maintenance and promotion of health and achievement of treatment targets (Rueda, & Peerez-Garci, 2013).

Public health interventions often occur at multiple levels (Brownson, Seiler, & Eyler, 2010). Intervention for adaptive coping requires a multi-level approach tailed to patients' need. For the patients who use task-oriented coping, they should be encouraged and motivated to continue with such

strategies. Also, patients who use maladaptive coping strategies should be re-oriented and encouraged to change such coping strategies. In order to effectively deal with coping strategies effectively, the WHO recommendation that lifestyle measures for reducing hypertension should include learning to cope with stress association with hypertension treatment (WHO, 2016).

### **Lived Experiences of Hypertensive Patients**

Patients' experiences with hypertension care are very important to their treatment outcome. The inability of the healthcare system to provide satisfactory and adequate services leads to bad experiences among patients. Amkongo (2013) conducted a qualitative study with the purpose of exploring and describing the lived experiences of patients diagnosed with hypertension in Namibia. The findings indicated that participants received inadequate information from healthcare workers regarding the disease process as well as types of effects medicines could have on the body. Participants also had inadequate social support systems and had negative experiences with regard to treatment. This means that medicine dosages and appointment scheduling might not be totally individualized (Rivera, Martin & Landry, 2019). It was concluded by Amkongo that healthcare workers did not prepare these participants as to how to manage and cope with their chronic illness, and that contributed to their poor experiences at the hospital.

Akande, Musa and Hussain (2005) observed bad experiences among patients when they rated services at the pharmacy to be poor and unsatisfactory. The authors reported that about half of the patients did not get the required services. This resulted in a large proportion of the patients' dissatisfaction. Furthermore, a study by Wagialla et al. (2019) also observed

that only one-quarter of patients were satisfied with the waiting time in the clinic.

Participants reported that physician-recommended treatments were difficult to follow within the context of their family life and social situations (Horowitz et al., 2004; Sharpe & Mezoff, 1995). Patients experienced difficulty adhering to diets because of the social meanings with food (Sharpe & Mezoff, 1995). They believed the prescribed diets were expensive and different from their traditional diets. It made them feel socially isolated, and treatment became ineffective.

Player et al. (2007) aimed to explore the influence of trait anger and long-term psychological stress on the progression of hypertension and the incidence of coronary heart disease in pre-hypertensive men and women. The study results showed that high long term stress and high hostility were positively associated with hypertension progression. In addition to stress, other psychosocial factors associated with hypertension are depression and a lack of social support (Bosworth et al., 2003; Strogatz et al., 1997).

However, Shamsi et al. (2017) found in a qualitative study that patients obtained positive experiences following their compatibility with hypertension. Another study by Wagialla et al. (2019) observed that that most of the participants agreed that the provided services by the hospital were good. According to the authors, other areas with high satisfactions were the attitudes of the care providers and constant availability of the services.

Good experiences at hospital encourage good compliance. Literature on compliance indicates that it forms the core of hypertension treatment. Akoko et al. (2017) found that the long-term nature of treatment was a factor

that led to poorer compliance. Drug complexity, poor instructions and patient's disagreement about their need for treatment may also serve as reasons for non-compliance with treatment.

Female patients were found by some studies to be tolerant, accommodative and better comply with treatment than men (Fodor et al., 2005; Jing et al., 2008). Compliance is, therefore, a major factor accounting for poor treatment (Luscher et al., 2005). Men might not be compliant due to their experiences at the hospital. Impotence is one of the side effects of hypertension medication among men (Doumas et al., 2006). This has contributed to patients' negative experiences with hypertension treatment.

Llisterri et al. (2001) found that among male hypertensive patient who reported to have suffered from impotence due to their medication, only few of the treated patients reported improvement in sexual function. Observational and clinical studies have consistently associated antihypertensive medication with sexual dysfunction (Llisterri et al., 2001; Doumas et al., 2006). According to Llisterri et al., duration and severity of hypertension medications were undoubtedly associated with erectile dysfunction. As a result, patients with long-standing (> 5 years) and severe hypertension are expected to suffer more frequently from sexual dysfunction, which indeed appears in a more severe form. It is expected that if these sexual dysfunctions and other challenges associated with hypertension treatment are not properly dealt with, then, it would compel patients to resort to other treatment measures or drop out of treatment.

A wide range of interventions has been developed to help patients follow their prescribed treatment. These includes simplified dosing,



educational interventions, telephone and computer assisted monitoring, family interventions, increased convenience of care with provision of care at the worksite, and a team approach with increased involvement of a community nurse and/or a community pharmacist (Tan et al., 2017). These interventions are very helpful in hypertension treatment since it contributes significantly to compliance and treatment efficacy.

Almas et al. (2006) conducted a study at Aga Khan University, Pakistan, and observed that non-compliance was affected by forgetfulness, deliberately missing doses, side effects and trauma associated with increased number of tablets. Patients' benefits to antihypertensive medication can be reduced because of low compliance (DiMatteo et al., 2002). Non-compliance was found to be either unintentional or intentional, whereby a patient makes a decision not to take treatment based on their personal beliefs about their illness and treatment (Hashmi et al., 2007). As such, there should be a functional mechanism in place to help patients remember and take their prescribed treatment as scheduled in order to improve compliance with treatment.

The healthcare provider contributes extensively to the experiences of patients. The role of HCPs may contribute to treatment either positively or negatively. Bad experiences of patients towards treatment has been found to be attuned to HCPs inability to provide satisfactory services, leading to a large proportion of patients who are ill informed about their treatment (National Clinical Guideline Centre, 2011). This is because HCPs spend inadequate time with their patients and refuse to explain patients' treatment to them. Similarly, Rahman et al. (2015) observed that patients were anxious as they found it

difficult to regulate their BP because they lacked information on how to regulate the BP.

Nonetheless, if HCPs fail to participate actively in their patients' treatment, patients have the right to solicit for information and assistance from other places to boost their treatment. A study expressed that most patients made some attempt to incorporate strategies that would be helpful to their condition (Williams et al., 2004) even though HCPs refuse to provide such assistance needed in their treatment. The authors further stated that patients often felt they wanted advice from healthcare professionals to avoid self-harm and improve upon self-management. However, the provision of sufficient information does not become absolute solutions to negative experiences. Erah and Chuks-Eboka (2008) affirmed that minority of patients felt that the greater their understanding of high BP, the more they had to worry about it.

To improve treatment efficacy, patient-based approaches should include multilevel, multicomponent, and socio-environmental elements (Karwalajtys & Kaczorowski, 2010). Integrating services provided by public health and clinical facilities could promote an effective management plan that also provides resources for individuals treating hypertension.

### **Theoretical Framework**

Theories and concepts are formulated to explain, predict and help understand phenomena. In many cases, it challenges and extends existing knowledge within the limits of critical bounding assumptions. This section reviews theories and concept that are relevant to the themes and objectives of the study. Therefore, to help explore and better understand the purpose of the study, the study reviews the following theories and concept:

1. Health Belief Model (HBM);
2. Self-management Concept; and
3. Coping Theory.
4. Chronic Care Model (CCM)

### **Health Belief Model**

The Health Belief Model (HBM) is one of the models that explain behaviour change. The HBM was developed by Hochbaum (1958). The HBM, reviewed by Becker (1974) and Sharma and Romas (2008), and is a cognitive model, which posits that behaviour is determined by a number of beliefs about threats to an individual's well being, the effectiveness and outcomes of particular behaviours. The premise of the theory is that behaviours depend on two main elements that must be present for behaviour to change (Hochbaum, 1958). The main elements are perceived threat and outcome expectation. The HBM suggests that a person's belief in a personal threat of an illness or disease together with a person's belief in their efficacy of the recommended health behaviour will forecast the probability that the person will adopt the behaviour. The wider the gap in the perceived likelihood of experiencing health problems between the conditions of participation and non-participation in the healthcare service, the greater the perceived threat reduction (Nau, 2007). Also, the HBM states that an individual's course of action often depends on the person's opinions of the benefits and barriers related to health behaviour (Sharma & Romas, 2008). Based on these two main elements, the variables that explain the HBM can be put into six components.

The first component of HBM is perceived susceptibility. This component assumes the person's perception of the risk of a disease. The

second component of HBM is perceived severity. This component also assumes a person's feelings on the significance of diminishing disease. In other words, the belief that the disease is serious and harmful. The third component of HBM is perceived benefits. Perceived benefits component suggest that a person's perception of the efficacy of various actions presented lessen the threat of a disease.

The fourth component of HBM is perceived barriers. This component assumes a person's feelings on the obstacles to perform a suggested health action. The belief of whether the barriers to change can be overcome. As the result, the person would assess the effectiveness of the actions against the perceptions (Becker, 1974). Most importantly, behaviour change occurs when the perceived benefits outweigh the barriers and negative effects of the disease. The fifth component of HBM is cue to action. This component assumes the stimulus required to start the decision-making process to admit a recommended health action. These signals can be internal or external. The sixth component of HBM is self-efficacy, which refers to the level of a person's assurance in his/her ability to successfully perform the behaviour. Self-efficacy is a concept in many behavioural theories because it directly relates to whether a person accomplishes the chosen behaviour.

This model is applicable to hypertensive patients seeking treatment. How a patient perceives his/her treatment will determine how severe the condition will impact their quality of life. Based on their perception on the severity of the illness, the patient will determine how the interventions and medication will benefit him/her and improve his/her quality of life. To perceive the benefits of the intervention, the HCP should explain the positive

aspects of complying with the medicine, information about the intervention and its benefits. Bowry et al. (2011) state that patients who recognize high susceptibility, severity, benefit, and cue to action, will have a higher compliance with their treatment. This will build a strong self-efficacy that will give the patient the ability to change the behaviour towards treatment for better outcomes.

A study by Joho (2012) on the relationship between HBM constructs and hypertension treatment compliance showed that the constructs which significantly showed a relationship were perceived susceptibility of being at risk of getting hypertension complications, perceived benefit of using medicine, perceived barrier to treatment and cues to action. Perceived severity to hypertension did not show a significant relationship with treatment compliance. Importantly, the results correspond closely to those of a previous study by Richardson et al. (1993) which revealed perceived barrier as the most important predictor of non-compliance to antihypertensive drugs. Joho further explained that compliance to anti-hypertensive treatment was high (53%) among study participants, female being more compliant to treatment than males. Other social demographic factors in the study were not significant. With the use of HBM, the strongest variable was perceived barrier to treatment, the remaining HBM variables were not statistically significant.

The HBM guided this study to explore the behaviours associated with treatment and management of hypertension. These behaviours included patients' compliance, diet, physical activity, appointment making, and perception on quality of care. The model looks at the personality characteristics of the patients with regards to their perceive belief on quality of

care and treatment. The behaviour predicts the management and coping strategies likely to be adopted by the patients. It therefore suggests that hypertensive patients' compliance to treatment and perception on efficacy of care is based on their perceived belief. The extension will look at how patients' behaviour influences management and coping strategies of those seeking hypertension treatment.

### **Self-management Concept**

Self-management concept was developed from nursing science around 1960s. Nursing science has contributed to the development of self-management through research that defines the concept, describes its theoretical underpinnings, and development, as well as examines the effectiveness of self-management interventions in various settings (Bodenheimer, Lorig, Holman & Grumbach, 2002; Holman & Lorig, 2000). This has contributed to a lack of clarity and agreement in the literature (Ryan & Sawin, 2009). Self-management is defined as the strategies a person undertakes to control a disease, promote health, and live well with illness (Schulman-Green et al., 2012). The concept also means the day-to-day management of chronic conditions by individuals over the course of an illness (Clark et al., 1991; Lorig & Holman, 2003). It refers to the process in which patients take responsibility and decision making for achieving BP control, effective treatment and well-being through a wide range of hypertension treatment.

Available studies suggest that sustainability to quality of health would largely be contingent on people's ability to self-manage their conditions (Newman & Tonkens, 2011; Regione & Lombardia, 2014). The approaches to

manage chronic illness are shifting from the traditional provider-patient relationship to a paradigm in which individuals with chronic conditions play a key role in guiding their care, assisted by HCPs. As such, self-management has become core to hypertension treatment.

Self-management goes beyond merely the provision of information and increasing patient knowledge. It entails the process of self-management, self-management intervention programmes and the description of outcomes gained by engaging in self-management practices (Ryan & Sawin, 2009). Five core self-management processes are broadly outlined by nurse scientists; problem solving, decision-making, resource utilization, partnerships with healthcare providers, and taking action (Lorig & Holman, 2003). More recently, Schulman-Green, Jaser and Martin (2012) has expanded current descriptions of self-management processes from the perspective of individuals living with chronic conditions. These include (1) focusing on illness needs, (2) activating resources, and (3) living with chronic illness.

According to Corbin and Strauss (1985), self-management concept comprised three (3) sets of tasks that are associated with the work of living with a chronic illness. The tasks are medical management, behaviour management and emotional management. The first two tasks of the concept focus on illness and role management whereas the last one deals with the inner process to reformulate identities and life goals when chronic condition impacts way of living.

Medical management is a collaborative process that facilitates recommended treatment plan to ensure that appropriate medical care is provided to patients. It refers to the planning and coordination of healthcare

services appropriate to achieve treatment efficacy. Mole, Williams and Goebel (2012) indicated that medical management should follow general principles and good practice, but should also incorporate an appreciation of the special needs of patients. Early access to medical management services provide patients with the education and support necessary to maintain and enhance their wellness and quality of life (Mole et al.; Schulman-Green et al.).

Medical management services include medications, laboratory analysis, reviews, disease management, medical records retrieval, interventions and therapies as well as pre-certification (Dollery, Perry, Dustan & Lyons, 1963). Treatment of hypertension, thus, requires both clinical and preventive management. The strategies are designed to modify patient and healthcare provider behaviour to improve the quality and outcome of healthcare delivery (Owusu-Afriyie, 2015).

Behaviour management encompasses all the actions and attitudes to enhance the probability of patients choosing behaviours that are personally fulfilling, productive, and socially acceptable to their conditions (Baldwin & Baldwin, 1986). According to Cancio and Johnson (2007), behaviour management includes attitude towards seeking treatment, exercising, eating healthy and managing stress. It is effective when patient manipulate behaviour by first identifying what is rewarding. Once the rewards of patients are known, then, the rewards can be selected in exchange for good behaviour. In order to effectively address behaviour problems, the patient must be persuaded to choose health seeking behaviour that is believed to be appropriate to his/her condition (Cancio & Johnson, 2007). This is done by teaching the individual



the difference between right and wrong behaviours including the reasons for opting for the right behaviour.

Emotional management is often not visible as the other two tasks. It may include a variety of strong and weak feelings as well as thoughts (Cancio & Johnson, 2013). Emotional management has either positive or negative impact on patients' treatment. It is the ability to realize, readily accept as well as successfully control your own feelings (Endler & Parker, 1994). Therefore, emotions are real and must be dealt with (Fisher, Ury & Patton, 1991). It is essential for patients to develop emotional management skills in order to master their own emotions.

For the purposes of developing emotion management skills, it is not enough for the patients to be open with their thoughts and feelings (Endler & Parker, 1994). It is necessary that the patient obtains complete authority over changing thoughts and feelings that are generated whenever the values are touched by the actions of a person or an event (Fisher et al., 1991). The concept of self-management has been used to explain the concepts in managing chronic diseases in some theories. Self-management is also one of the six (6) essential elements identified in the chronic care model (Wagner, 1998). The chronic care model seeks to improve quality and outcomes by focusing on system-level changes that have an impact on patient-related and provider-related factors (Wagner et al., 2001). Another theory is the individual and family self-management theory. This theory proposed that self-management consists of three (3) dimensions: context, process and outcomes with the contextual factors influencing the process and outcomes of self-management practices (Ryan & Sawin, 2009).

In the context of my study, this concept explains how patients contribute to their treatment by self-management of hypertension. The management of hypertension may take the 3 main tasks: medical, behaviour and emotion. Medical in this sense may refer to how patients would comply with treatment as received by the BAR Hospital. Also, the behaviour management signifies how patients comply with diet, physical activity and appointment making, whereas the emotional management denotes coping strategies used by patients to manage their condition.

### **Coping Theory**

The coping theory was propounded by Lazarus and Folkman (1984) to explain how people cope with stressful situations. The theory looks at how specific efforts, both behavioural and psychological, are employed by people to reduce or minimize stressful events. Theories of coping with stress build on the social cognitive theories of human behaviour (Lazarus & Folkman, 1984; Livneh et al., 2007). Coping was defined as the constantly changing cognitive and behavioural efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person (Lazarus & Folkman, 1984). Thus, coping is considered as the dynamic process of the individual's efforts to manage a challenging situation.

The illness and hospital treatment of hypertension both represent serious challenges to the patient. These challenges are likely to stimulate a range of problem-focused (such as seeking help, information, and social support and initiating life style changes) as well as emotion-focused strategies (such as fear, anxiety, asking for help, relaxation and religious coping). Studies have found that individual patients tend to use both problem-focused

and emotion-focused coping strategies, depending on their specific needs and how they perceive the situation (Bennett et al., 2007). This was also evident in Sorlie and Sexton (2001) study that a surgical patients at the University Hospital of Northern Norway, reporting higher levels of distress as well as a higher general coping response (including both problem-focused and emotion-focused strategies) prior to admission and at hospital discharge, and relatively lower levels of both distress and coping response at 2 and 4 months after surgery.

Other distinctions have been made between different types of coping. They include active versus passive, monitoring versus blunting, and various types of repressive or avoidant versus approaching or attentive coping (Carver, Scheier & Weintraub, 1989; Carver & White, 1994; Finset et al., 2002; Miller, 1987; Lazarus et al., 1984; van Elderen, Maes & Dusseldorp, 1999; Sorlie & Sexton, 2001b). The approach versus avoidant differentiation is of particularly interest in this thesis.

Avoidant coping may include strategies such as emotional distancing, disengagement, distraction, withdrawal, escape, social inhibition, self-control and denial. These strategies belong to the emotion-focused group of coping strategies as they function primarily as strategies to cope with the patient's own emotional reactions. Avoidant coping has some negative connotations, reflecting an unwillingness to face the facts and take the necessary actions required by the situation. This strategy is assumed to have negative consequences. The idea originates from the early psychodynamic theories explaining such strategies as defence strategies acted out by the individual when facing a reality that is too painful and stressful (Finset et al., 2002).

Coping strategies characterised by avoidance, denial and inhibition have been found to have positive effects on emotional and psychosocial well-being, and even on mortality rates (Havik & Maland, 1988; Levine et al., 1987). However, the positive effects have been suggested to be mainly short term (Klein, Turvey & Pies, 2007; van Elderen, Maes & Dusseldorp, 1999). In patients' coping with hypertension, approaching or attending strategies are expected to have more favourable long-term effects on emotional well-being and outcomes than avoidant strategies (Klein et al., 2007; van Elderen et al., 1999). Even though the literature is not conclusive about the effect of avoidant coping strategies on hypertension, there are reasons to believe that prolonged use of avoidant strategies may have negative effects on patients' recovery.

This theory is related to the current study because coping strategies employed by hypertensive patients are most likely important contributors to the overall success in the management of the condition. This is because treatment and management of hypertension comes along with stress. The stress may come as a result of the fact that complying with hypertension treatment for a long time poses a great challenge to the patients. Hypertension, like most other chronic illnesses, requires active participation and motivation on the part of the patient for effective management.

It is established that while those with positive coping strategies will need encouragement, those with the negative form of coping strategies will require special attention and reorientation. Therefore, management outcome would be influenced by the strategies employed by the patient in coping with the reality of hypertension. The underpinnings of the theory would, therefore, help the study to explore the coping strategies employed by the patients in

identifying patient characteristics that contribute to the choice of coping strategy.

### **Chronic Care Model**

Chronic Care Model (CCM) is one of the popular models of chronic disease management. This model was developed by Wagner (1998) through a wide review of the international literature on the management of the chronic illnesses, as a response to the situations of health involving a high prevalence of chronic conditions and the failure of the healthcare systems in the USA. According to the proponents of this model, people can better lives healthier life that will reduce the healthcare costs (Mendes, 2012). CCM is a model that has generally received widespread acceptance and has been extensively adopted in various studies (Mendes, 2012; Wagner et al., 2001).

Since its introduction, the model has evolved and a number of modified versions exist. There are certain core elements to the model. Wagner's (1998) CCM holds that a chronic disease is best managed by productive interaction between a patient and a physician health team, where chronic care is dealt with in reliable and evidence-based practices for self-management (Wagner, 1998). The CCM is made up of six elements, subdivided in two main fields: the healthcare system and the community. In the healthcare system, the changes must be made in the organization of the healthcare, in the design of the line of care, in support for clinical decisions, in the clinical information systems and in support for self-care (Mendes, 2012). In the community, the changes are centred on the articulation of the health services with the community's resources. In order to implement the CCM, whether totally or partially, it is necessary to know what the use of each

element requires, taking into account the changes which are required for each one (Piatt et al., 2006). These six elements present interrelations allowing the development of people who are informed and active, and of a health team which is prepared and proactive to produce better health and functional results for the population (Mandes, 2010).

The first element is self-management support, which gives clinicians a viable way to deliver self-management support. Healthcare organizations and the community at large empower patients to manage their health (Piatt et al., 2006). Healthcare providers are to provide patients with the necessary tools and skills to change lifestyle behaviours. Changing patients' lifestyle and behaviour may improve outcomes, moving beyond education to empowering patients to take control of their own disease and to affect positive changes in their day-to-day life (Coleman, Austin, Brach & Wagner, 2009). According to Wagner, Austin and Von Korff (1996), patients are provided with access to the necessary information and to supports in goal setting, action planning, problem solving and other techniques that allow them to play a major role in maintaining their health.

The next element is the delivery system design. The aim is to ensure effective and efficient healthcare and 'support for self-care'. This component seeks to change the way primary healthcare is organised. The delivery system design does that by giving specific roles and tasks to deal with chronic care in a reliable fashion. Coleman et al. (2009) observed that these facilitate patient empowerment and self-monitoring, regular updates and reliable tools for self-monitoring.

Decision support is another element that is aimed to promote healthcare that is consistent with scientific evidence and with the preferences of the service users (Wagner, 1998). It promotes physician-to-physician support, especially between general practitioners and specialists as well as the dissemination of evidence-based guidelines for the best way to deliver care (Si, Bailie & Weeramanthri, 2008). It is to prepare and empower the people for them to manage their own health and the care provided. Clinical care is delivered according to best practice (Addo, Sencherey & Babayara, 2018). Evidence-based guidelines are embedded in clinical practice at the point of patient contact. Members of the healthcare team have access to, and are educated in the most up-to-date clinical care information. Specialist services are organized to support primary care (Tan et al., 2017).

Clinical information systems element suggests creating innovative ways for storing and accessing patient information (diagnosis, lab reports, monitoring frequency of visits and more) in a way that best suits the patient and clinician team (Wagner, 1998). It is used to organize the data regarding the population and the service users so as to facilitate more effective and efficient healthcare (Wagner, Grothaus & Sandhu, 2001). Individual and aggregate patient data are available and organized to facilitate efficient patient care. Information is efficiently transferred between providers, across care boundaries and is shared with the patient. Alerts and reminders as well as outcome measures are used to facilitate optimum care (Piatt et al., 2006).

Community resources and policies element builds awareness about self-management programmes within the community. This is in view of encouraging patients to seek support and create supportive partnerships within

the community, specific to their disease (Greenlick, 1995). It is to mobilize these resources to meet the service users' needs. The larger community supports the care of individual patients and patient groups. Community organizations, resources and policies are organized to contribute to the self-management and care of patients with chronic diseases (Von Korff et al., 1997).

The last component is the healthcare organization. This component aims to create a culture, an organization and mechanisms, which promote safe and high quality care (Wagner, 1998). It calls for a fundamental healthcare system redesign, in which a reactive primary care transforms into one that focuses on preventative measures for patients with and without chronic diseases (Wagner, 1998). The healthcare organization and its culture promote safe, high-quality chronic disease care. All levels of the organization, including senior leadership, support improvement and coordination of care (Mendes, 2012).

In relation to the evaluation of the CCM, there is evidence in the international literature regarding its positive effects in the care for the chronic conditions, whether in joint evaluation, or in the evaluation of its elements separately (Coleman et al., 2009; Piatt et al., 2006). In spite of having been developed, applied and evaluated in the USA, the original proposal of the CCM has been adapted in various countries and situations, and has generated series of derived models in both developing and developed countries (Wagner et al., 2001).

Hypertension is a lifelong disease that is manageable but generally not curable. The chronic care model is, therefore, particularly suited to the



management of hypertension. Under the auspices of the GHS, and particularly the Regenerative Health and Nutritional Programme, the healthcare sector and other partners in healthcare delivery are responsible for the health of all individuals with, or at risk of, identified chronic diseases. This is the primary goal of MoH in conjunction with GHS. In Ghana, hypertension has been identified as one of the chronic diseases that the country targets to reduce its occurrence. This is because of its inter-relations with other chronic diseases such as diabetes, stroke and others. This model is important and explains the management of hypertension among hypertensive patients because hypertension is best managed by productive interactions between patient and a physician health team, where chronic care is dealt within reliable and evidence-based practices for self-management.

### **Conceptual Framework**

The conceptual framework was developed by incorporating the various dimensions of hypertension management (that is, personal factors, compliance, perception, and coping strategies) based on empirical and theoretical evidence. Hypertension management is multifaceted, comprising basically personality characteristics and healthcare system factors (Jin et al., 2008; Kardas, Lewek & Matyjaszczyk, 2013). According to a number of authors (Jin et al.; Kardas et al.), effective treatment is meaningfully achieved through the existence of favourable patient and healthcare system factors. However, the current study investigated only patients' perspective towards treatment, which is depicted by the conceptual framework (Figure 1). Given that hypertension treatment requires treatment and management that is complex and chronic in nature, it presents a series of challenges that make it

difficult to achieve optimal treatment. The challenges include non-compliance, maladaptive coping, poor perceptions, poor treatment regimens and ill-informed patients (Addo, Sencherey & Babayara, 2018; Arief et al., 2011; Rao & Satyanarayana, 2014; Wang et al., 2012).

Therefore, optimal hypertension management cannot be adequately explained with a single theory, hence the conceptual framework was underpinned by the health belief model (HBM), coping theory, chronic care model and empirical evidence on self-management concept, compliance and perception on quality of care. The framework explains how personal characteristic, compliance, perception on quality of care and coping strategy influences treatment to determine the current BP of patients. The chronic care model explains the personality characteristics while the coping theory explains the coping strategies used by the patients and the HBM explains the perception on the quality of care provided by the healthcare facility. In addition, empirical evidence on compliance explains the compliance to treatment regimens and the self-care concept explains the treatment of hypertension that determines the current BP of patients.

According to the framework, hypertension treatment is central to its management (Aburto et al., 2013; Nsiah-Asamoah et al., 2017). Self-management concept explains how patients individually treat their hypertension (Newman & Tonkens, 2011). However, self-management is influenced by personality characteristics (Sharma & Romas, 2012), compliance (Nguyen, Caze & Cottrell, 2014), perceptions on quality of care (Dansereau et al., 2015), and coping strategies (Lazarus & Folkman, 1984). These factors may determine the current BP of the patients to be either optimal

or suboptimal. The approach in managing hypertension is shifting from the healthcare professionals towards the patients' domain in which they take pragmatic steps to deal with the disease.

### **Treatment of hypertension**

According to this framework, treatment of hypertension is situated under the self-management concept. Self-management refers to the process in which patients take responsibility and decision making for achieving optimal BP control, effective treatment and well-being through a wide range of hypertension treatment regimens. In a broader sense, it is the strategies patients undertake to manage their condition to achieve optimal BP control. The concept was first used by Thomas Creer to suggest that patients are active participants in their own treatments (Lorig, 2003). In recent times, self-management is widely used; it describes a variety of definitions and conceptualizations. In the mid 80s, Corbin and Strauss (1985) used the concept as part of the daily process of managing chronic conditions. It has been used quite recently in a number of studies to explain how patients independently manage their hypertension (Newman & Tonkens, 2011; Regione & Lombardia, 2014).

A study by Schulman-Green et al. (2012) expanded the current descriptions of self-management processes from the perspective of individuals living with chronic conditions. These include (1) focusing on illness needs, (2) activating resources, and (3) living with chronic illness. Corbin and Strauss (1985) also categorised self-management concept into three sets of tasks: medical, behaviour and emotional management. According to Corbin and Strauss, the first two tasks of the concept focus on illness and role

management whereas the last one deals with the inner process to reformulate identities and life goals when chronic condition impacts ways of living.

For the purposes of this study, I adapted behaviour management as the only task to explain hypertension treatment. The current study focuses on patient factors to explain hypertension treatment. Medical management, however, deals with how the healthcare system in conjunction with patients medical team to jointly treat hypertension. As a result, medical management cannot be used to explain self-management under the current study. However, according to Endler and Parker (1999), emotional management is an aspect of coping strategy for hypertension treatment. However, the operational definition of management in this study does not cover the emotional aspect of patients' treatment.

Behaviour management, according to this conceptual framework, deals with the behaviour associated with hypertension treatment. This task measures patient behaviour towards taking medication, meeting scheduled appointment, white meat intake, fruits and vegetable consumption, restricting salt and fat intake, as well as engaging in physical activity. Studies have shown that taking up these behaviours have a positive impact on BP reduction (Boima et al., 2015; Nsiah-Asamoah, Setorglo, & Mie, 2017; Poulter, Prabhakaran & Caulfield, 2015). According to United Kingdom National Health Service (2018), these behaviours have an enormous effect on hypertension treatment. Patients' inability to take up this task is likely to result in poor treatment outcomes. The patients are required as part of their treatment to keep track and take up these tasks in order to have a holistic view of the status of their BP.

### **Personality characteristics**

Patients are active participants in their own treatments. The achievement of optimal treatment may be dependent on personality factors (Kardas et al., 2013). For instance, evidence from a study indicates that patient-centred factors such as belief, age, ethnicity, gender, education, and marital status influence the attainment of BP goals (Jing et al., 2008; Reisner et al., 2009). The chronic care model explains the personality factors that influence treatment of hypertension. This model was developed by Wagner (1998) as a response to the situations of health involving a high prevalence of chronic conditions and the failure of the healthcare systems in the USA in treating chronic diseases effectively. The model has been extensively adopted in various studies (Mendes, 2012; Wagner et al., 2001). The model explains that chronic disease is best managed by productive interactions between community based factors and healthcare system factors. The model is to build a prepared, proactive practical team and informed active patients to deal with their treatment. It is done in a more reliable and evidence-based manner. It has also been established that people can live healthier lives irrespective of treating chronic diseases and healthcare costs (Mendes, 2012).

Although the CCM model has six elements, is subdivided in two: healthcare system factors and the personal factors. With the healthcare system, changes must be made in the organization of the healthcare, in the design of the line of care, in support for clinical decisions, in the clinical information systems and in support for self-care (Wagner, 1998). On the other hand, the patient factors deal with inherent attributes and characteristics that contribute to their treatment (Sharma and Romas, 2008). Wagner's CCM

holds that chronic disease is best managed by productive interactions between patient and a physician healthcare team (Wagner et al., 2001). For the purposes of this study I adapted the patient factors which explain the personality characteristics for hypertension treatment. The others variables (healthcare system, community and healthcare team) underpinning the model cannot explain the current study since the purpose and data collected for the study does not cover that.

The personality factors include patients' age, gender, education, marital status, employment and religion. These personal characteristics of the patient have a direct influence on their treatment. These characteristics are fundamental to patients' treatment. According to Kadas et al. (2013), a patient's characteristics are a good predictor of his/her treatment. For example, age has been shown to be positively associated with hypertension treatment. A study by Joho (2012) shows that participants who were less than 64 years had recorded optimal treatment than those aged 65 years and above. Likewise, the level of education is one of the most influencing factors of hypertension treatment. Patients with a higher educational levels tend to have higher compliance and hence controlled BP (Sumantra, 2015). Consequently, treatment of hypertension may be efficacious depending on the personality characteristics patients would present.

### **Perception on quality of care**

Perceptions of patients play a vital role in determining utilisation and treatment outcomes (Abaerei, Ncayiyana & Levin, 2017). Perceptions are opinions built on a particular phenomenon. It is built based on the patients' experiences, education, culture, and belief. Studies have shown that beliefs

form the core of developing a perception (Omotosho, 2010). Usually, perceptions are built with first patients' first experiences at the hospital. Studies have shown that it becomes difficult to change or modify such perceptions (Abaerei, 2017; Kapoor, 2011). Patients demand for high quality service in recent times from hospitals due to improved education on their right to quality healthcare. The inability to meet their expectation may result in building negative perceptions about treatment (Ramsaran-Fowdar, 2008).

Perception in this study is underpinned by the HBM. It is one of the models that explain behaviour change. The model was developed by Hochbaum, (1958) and reviewed by Sharma and Romas (2008). According to the model, behaviour is determined by a number of beliefs about threats to an individual's well-being, the effectiveness and outcomes of particular behaviours. The main principle of the model is that behaviours depend on two main elements, perceived threat and outcome expectation that must be present for behaviour change (Hochbaum, 1958). In relation to the current study, patients' perception on quality of care may determine whether they would continue to seek care or otherwise. Therefore, I adapted the two elements: perceived threat and outcome expectation to explain patients' perceived quality of care provided by the Hospital.

A patient's course of action often depends on the person's opinion on the benefits and barriers related to health behaviour (Sharma & Romas, 2012). Thus, if treatment is perceived to be beneficial patients are likely to rate it high, hence leading to improved utilisation. One of the most threatening events an individual can face in their lifetime is to manage a disease for the rest of their life. Such situations compel patients to form beliefs about their

treatment. The belief that hypertension treatment is essential and requires serious attention is key to achieving treatment targets (Bowry et al., 2011). Also, when the patient believes that treatment is beneficial, he/she becomes motivated to remove all barriers to achieve BP control targets (Nau, 2007). Thus, according to Joho (2012), positive beliefs about treatment builds compliance to treatment and improves the acceptance of treatment. On the other hand, if the patient does not believe in the treatment, that is if he/she believes that it is not helpful and that it can be harmful. It serves as a barrier to treatment (Bowry et al., 2011). It is, therefore, likely that the treatment may not yield any positive results in achieving optimal BP.

Patients' perception about the treatment is also central to achieving treatment targets (Abaerei, Ncayiyana & Levin, 2017; Dansereau et al., 2015). The perceptions may include treatment being ineffective, the chronic nature of the disease, frustration and the untreatable nature of it. These could lead to poor perceived quality of care. The positivity or negativity of the perception may influence the patients' choice of treatment measure and compliance behaviour. Negative perception on treatment leads to non-compliance and other treatment regimens such as herbal treatment, denial and religious coping (Martin & Nwankwo, 2000). In all, perception defines patients' compliance to and utilisation of their treatment.

### **Compliance with treatment**

Compliance with treatment, as used in this framework, is based on empirical evidence. The primary goal of hypertensive treatment is to achieve BP control target. This requires treatment regimen favourable to control raised BP. Hypertension could be managed by basically resorting to treatment



regimens (Addo, Sencherey & Babayara, 2018; Tibazarwa & Damasceno, 2014; Sacks, Svetkey & Vollmer, 2001). This shortfall may also have serious and detrimental effects from the perspective of disease management. Hence, compliance has been a concern due to the widespread nature of non-compliance with treatment (Obirikorang et al., 2018). Compliance with treatment includes patient compliance with medication, physical activity, salt restriction, intake of fruits and vegetables, white meat consumption, fat intake reduction and meeting scheduled appointment/check-ups.

In order to evaluate the possible impact of non-compliance on patients' outcomes, numerous studies using various methods have been conducted. It has been established that the compliance rate of long-term medication therapies was between 40% and 50% (Kardas et al., 2013). The rate of compliance for short-term therapy was much higher, between 70% and 80% (Nguyen, Caze & Cottrell, 2014), while the compliance with chronic conditions was the lowest at 20%–30% (DiMatteo, 1995; Nguyen, Caze & Cottrell, 2014; Sackett, Haynes, Gibson & Taylor, 2008).

Aerobic exercise was found to be relatively low among hypertensive patients with high BP (Egan, 2017). Poor compliance is associated with belief, poor knowledge, understanding and perception about hypertension treatment (Gebreyohannes et al., 2019). Compliance to hypertension treatment is key to successful management. It means a change in the patient's behaviours, in terms of taking or following a dietary plan, observing regular physical activity and taking medication. Executing lifestyle changes, which coincide with healthcare providers' recommendations for health and medical advice are essential for health seeking behaviour (Wolf et al., 2008). Patients'

compliance is beneficial to their treatment. For instance, Afzal, Chaudhry and Baig (2009) found that about 99% of participants who complied with physical activity had normal BP values. Sodium serves as an important nutrient in the body and helps nerves and muscles to function correctly. Kolata (2013) indicated that one of the main organs vulnerable to the adverse effects of excessive sodium in the diet is the cardiovascular system.

Non-compliance can be improved by intensifying measures such as effective counseling, patient-centred education and efficient healthcare delivery system (Bilal et al., 2015). There is the need for patients to participate actively in their treatment with their skills and knowledge (Nau, Read & Lipowski, 2007). Health promotion and education should be undertaken at all levels of patient contact to ensure good compliance (Lubaki, Mabuza, Malete, Maduna & Ndimande, 2009). Therefore, educating patients on the need to be compliant with their medication regimen, diet and lifestyle may improve compliance and reduce the complications of high BP (Addo, Sencherey & Babayara, 2018).

### **Coping strategies**

Sticking to the treatment instructions for a long-term illness poses a great challenge to most hypertension patients (WHO, 2003). This may lead to stress that is managed by coping strategies: task-oriented coping, emotion-oriented coping or avoidance coping. According to Lazarus and Folkman (1984), there are two broad categories of coping: coping directed at managing and altering the problem causing the distress (problem-focused coping), and coping directed at regulating the emotional responses to the problem (emotion-focused coping). Lazarus and Folkman suggest that emotion-focused coping is

more likely when the situation is appraised as unsolvable, while problem-focused coping is more probable when the problem is appraised as being possible to change (Folkman & Lazarus, 1984).

For the purposes of this study coping has been put into three categories. Task-oriented coping which deals with thoughts that are directed toward effecting change in the hypertension treatment. Generally, such thoughts are positive whereas emotion-oriented coping also deals with negative thoughts about treatment. Such thoughts are mostly negative; and avoidance coping which deals with denial and reliance on relatives for treatment. Available studies suggest that optimal treatment is largely contingent on people's ability to self-manage their conditions (Newman & Tonkens, 2011; Regione & Lombardia, 2014).

### **Current BP of patients**

Quality of life per the framework looks at the outcome of treatment. The outcome may be acceptable BP values or high BP. Patients who achieved their BP control targets are rated as achieving treatment target, whereas those who could not attain acceptable BP values may have failed in their treatment. Patients have a target to meet as part of their treatment and are set out in their BP control target. Therefore, their ability to achieve the target may be stressful, thus, worsening their treatment. However, attaining BP control target encourages patients to work harder to maintain it.

Figure 1 displays the management of hypertension framework developed from health belief model (HBM), coping theory, chronic care model and empirical evidence on self-management concept, compliance and perception on quality of care.

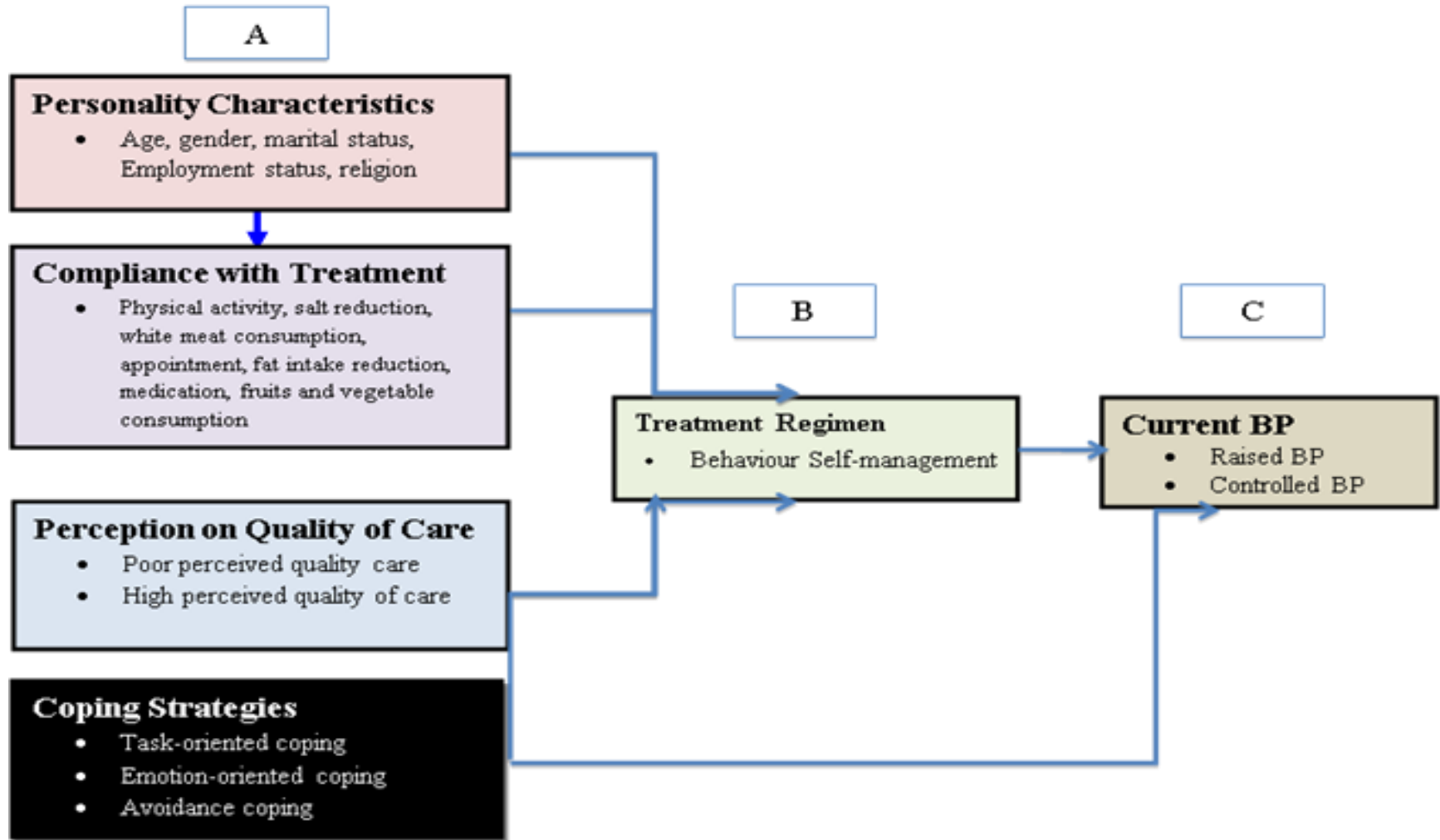


Figure 1: Management of Hypertension Framework

Source: Corbin & Strauss, 1985; Hochbaum, 1958; Lazarus & Folkman, 1984; Wagner, 1998

The model is depicted by A, B and C. A shows the variables influencing hypertension treatment. The first on top of A is personality characteristics shown in the wine box. The personality characteristics that influences treatment regimen are the age, gender, marital status, education and religion. Under the personality characteristics is compliance with treatment in the violet box. Patients may comply with physical activity, salt reduction, white meat consumption, appointment, fat intake reduction, medication and fruits and vegetable consumption. The blue arrow between the personality characteristics and compliance with treatment indicates that there is a relationship between the two variables. Thus, personality characteristics predict compliance with treatment. Beneath the compliance with treatment is perceptions on quality of care shown in blue box. Patients perceive their treatment to be either poor or good depending on their expectation. The last determinant of treatment regimen is coping strategy shown in black box.

B depicts treatment regimen of patients displayed in the green box, patients using behavioural self-management for treating hypertension. Patients' ability to self-manage their behaviour would depending on how the variables in A influence it, either positively or negative. The outcome of their treatment is depicted in C, known as current BP shown in the brown box. It indicated whether the patient achieved a BP control target or not. Also, coping strategy has a direct influence on current BP and it can influence it directly without it forming part of their treatment.

## CHAPTER THREE

### RESEARCH METHODS

The purpose of the study was to explore the management and coping strategies among hypertensive patients seeking treatment at Brong Ahafo Regional Hospital, and to examine participants' experiences of living with the condition. This chapter focused on the research design, population, sampling procedure, instrument for data collection, data collection procedure, and data processing and analyses.

#### **Research Design**

A mixed-method research design was used to explore management and coping strategies of hypertensive patients seeking treatment at BAR Hospital. The mixed method design was most appropriate because it enables the application of both quantitative and qualitative methods to capture data (Creswell & Plano-Clark, 2011). These two methods complement each other and offer richer insight into the study.

The quantitative component comprised data on patients' compliance with treatment, perception on efficacy of care provided by BAR Hospital and coping strategies. On the other hand, data for the qualitative part included the lived experiences of patients with regard to quality, compliance with treatment, management and coping strategies of hypertension.

The incessant debate on the appropriate research philosophy to adopt in social science research seems endless, but the fundamental consensus indicates that none of the methods is superior and better than the other (Tashakkori & Teddlie, 2003). However, the pragmatist research philosophy was suitable for this study (Saunders et al., 2009). Pragmatism, according to

some scholars, bridges the gap between positivism and interpretism (Creswell & Plano-Clark, 2011). Importantly, the mixed method is often underpinned by the pragmatist philosophical school of thought (Creswell & Plano-Clark, 2011).

Pragmatism focuses on employing 'what is feasible' using diverse research approaches, giving priority to the importance of the research problem and question, and valuing both objective and subjective knowledge (Morgan, 2007; Sarantakos, 2005). Pragmatism is derived from the teachings of Charles Sanders Peirce (1839-1914), who believed that thought must produce action, rather than linger in the mind, and lead to indecisiveness (Dalvi, 2014). Thus, pragmatism permits researchers to exploit the strengths of positivist and interpretivist philosophies, at the same time reducing their weaknesses (Creswell & Plano-Clark, 2011; Sarantakos, 2005).

The use of pragmatism research philosophy enabled the study to integrate more than one research approach and research strategies within the same study. Moreover, pragmatism research philosophy uses inductive techniques of research to constructively explore management and coping strategies of hypertension treatment. The philosophical assumption is to determine whether the prognostic generalizations of the hypothesis hold true (Creswell, 2009).

The use of the two approaches (quantitative-qualitative) in combination further improved the validity and reliability of the results obtained in ways that one form of methodology cannot achieve (Creswell & Plano-Clark, 2011). Validity and reliability were critical in this study because they bordered on the quality of the research findings and the dependability of

its outcomes. Whereas the quantitative part of the study provided the ability to measure some observables that were considered to be universally associated with the management and coping strategies of hypertensive patients seeking treatment, the qualitative aspect provided an in-depth lived experience on management and coping strategies that are observed in the hypertensive patients treatment.

### **Population**

The study was conducted at BAR Hospital, with the purpose of recruiting all patients seeking treatment at the facility. The facility is located at New Dormaa, a suburb in Sunyani in the Brong Ahafo region. The target population for this study included all hypertensive patients seeking treatment at BAR Hospital between May, 2018 to February, 2019. Records from BAR Hospital showed that the population of females to males was about three-folds: 83 males to 270 females (BAR Hospital, 2016).

The study included all consenting hypertensive patients seeking treatment at the BAR Hospital. Specifically, consenting hypertensive patients aged  $\geq 18$ ; of sound mind; and who had been diagnosed of hypertension for at least six months, and are currently seeking treatment at the BAR Hospital. Those excluded were pregnancy induced hypertensive patients and hypertensive patients as a result of contraceptive pills/injectable or on hormone replacement. Hypertensive patients with psychiatric illness, acutely ill hypertensive patients requiring admission, terminally ill patients that cannot talk nor give consent and others who refused to give consent were also excluded.



### **Sampling Procedure**

Two different sampling procedures were used to collect both the quantitative and qualitative data. For the quantitative part, all the hypertensive patients seeking treatment at BAR Hospital were involved. This is because the number of patients seeking care as at 2016 was relatively small (353) (BAR Hospital, 2016). According to Fraenkel and Wallen (2000), in a descriptive survey, a minimum sample size of 100 cases are to be considered if any meaningful generalization is to be made. Here, all consenting hypertensive patients who have sought for treatment for the past six months formed part of the study.

The strength of the census method is to achieve a true representation and generalization of the findings. The results of the census method are accurate, and it is, therefore, appropriate for planning and allocation of funding, resources, developmental projects and policy interventions. It also provides a true measure of the population (that is no sampling error). Benchmark data may be obtained for future studies and detailed information about small sub-groups within the population is more likely to be available. There is no need for a statistical theory if a census rather than a sample is used to obtain information about a populations (Mugo, 2002).

There are times a census method may not be practical, and is almost never economical, especially, when it is difficult to enumerate all units within the population at an available time, and the costs involved both in time and monetary terms is an achievable. Generally, it takes longer to collect, process, and release census data. Therefore, the use of any of the other sampling techniques such as simple random method, systematic sampling, stratified

sampling, quota sampling, cluster sampling, convenience sampling, purposive sampling, and others may be employed (Statistical Language – Australia Bureau of Statistics, 2013).

For the qualitative aspect, the participants were conveniently selected based on their willingness to participate, ability to transport themselves to a serene venue for the interview, have sought for treatment for the past six months. The convenience sampling method made it possible to get participants who were willing to spend hours of their time for the discussions. Thus, the application of any other type of sampling procedure may have resulted in getting participants who would not have been willing to spend time for the discussions, making it difficult for data gathering. The sample size was determined when saturation level attained. Data saturation in qualitative studies is reached when there is enough information to replicate the study (O'Reilly & Parker, 2012; Walker, 2012), when the ability to obtain additional new information has been attained, and when further coding is no longer feasible (Guest et al., 2006). Thomson's (2002) conducted a study to determine saturation level for qualitative studies and concluded that (a) small sample size studies generally involved more contact time with each participants (longer interviews and/or repeated interviews); (b) theoretical saturation generally occurs between 10 and 30 participants; and (c) once a researcher believes saturation has occurred, he/she should conduct several additional interviews to test whether existing themes and categories are sufficient. In regards to my study, a relatively small sample size of 16 was obtained where I realized that saturation was reached.

## Data Collection Instruments

Two main instruments were used to collect data. The study adapted standardised and validated instruments for quantitative (questionnaire) and qualitative (in-depth interview) data. The instruments were referred to as Adoma Facility-Based Hypertension Management (Adoma-FHMC) and Adoma Lived Experiences of Hypertensive Patients Interview Guide (Adoma-IDI) respectively.

The development of the questionnaire was based on a pre-existing standardized instruments. Consequently, the adapted items from the Adherence to Systemic Hypertension (QASH) Treatment (Rodrigues et al. (2014) measured compliance; and items from Service Quality (SERVQUAL) Questionnaire (Rao & Satyanarayana, 2014) measured the perception of patients on quality of care. Items adapted from the University of Wisconsin-Madison School of Pharmacy (2006) Questionnaire (Patient Survey about High Blood Pressure and Its Treatment - 1) measured hypertension management, and the items adapted from Coping Inventory for Stressful Situations-21 (CISS-21) Questionnaire (Endler & Parker, 1999) assessed coping strategies.

The Questionnaire on Adherence to Systemic Hypertension (QATSH) Treatment was developed by Rodrigues et al. (2014) in Fortaleza, Northeastern Brazil to elaborate and validate an instrument on adherence to treatment for systemic arterial hypertension, based on Item Response Theory (IRT). The instrument proved to be an adequate tool to assess adherence to treatment for systemic arterial hypertension since it managed to differentiate individuals with high from those with low adherence (Rodrigues et al., 2014).

The use could facilitate the identification and verification of compliance to prescribed therapy, besides allowing the establishment of goals to be achieved (De Souza et al., 2016).

It is a 12-item adherence scale, with Chronbach's Alpha coefficient ( $\alpha$ ) of 0.81. The six-level scale range from 60 to 110, with the highest level representing the greatest adherence to treatment (De Souza et al., 2016). QATSH questionnaire was tested and validated in Brazil (Rodrigues et al., 2014).

These instruments were selected because they are widely used with most empirical research supporting their reliability and validity (De Souza et al., 2016; Aghamolaei et al., 2014; Iloh et al., 2017). Nevertheless, I evaluated the appropriateness of the items and made suitable modifications for their use in Ghana. The study modified and eliminated some items that were not relevant to the purpose of the study and added items that are appropriate to the Ghanaian setting. For example, the word 'adherence' was synonymous with 'compliance' and interchangeable in this study (Lehane & McCarthy, 2009). Four items were deleted (2, 3, 5 and 11), two were also modified: the word "systemic hypertension (SH)" in all the items was replaced with "hypertension treatment" since the study was on hypertension treatment. Item 12 was modified by adding "prescribed" to treatment. Three (3) new questions were added to measure type of hypertension treatment patients comply with, patient perception of his/her compliance and difficulty patients face with compliance.

The Service Quality (SERVQUAL) Questionnaire was deemed fit to measure the quality as it measured the expectations of the patients and provided feedback on their perception of the services received (Rao &

Satyanarayana, 2014). Also, based on the notion that patients are often unable to accurately evaluate the technical quality of care (Al Fraihi & Latif, 2016), the research focused on the functional quality, how the service delivery was considered as quality of care. The original SERVQUAL questionnaire was developed by Parasuraman, Zeithaml and Berry (1988), to measure service quality in organizations. It has been tested across four service environments: banking, credit card services, repair and maintenance long distance telephone services (Negi, 2009; Kumar et al., 2009).

Negi (2009) used SERVQUAL to investigate the relevance of customer-perceived service quality in determining their overall satisfaction of mobile services (telecommunication). Also, Kumar et al. (2009) used the instrument to determine the relative importance of critical factors in delivering service quality of banks in Malaysia (Kumar et al., 2009). It has also been used at hospital services (Babakus & Mangold, 1992) to determine patients' perception on service quality. A study by Aghamolaei et al. (2014) applied it to determine the service quality gap of the main hospital at Hormozgan province in Southern Iran. The reliability of the questionnaire is 0.94.

The questionnaire included 15-paired questions and an overall rating scale. The variables used for measuring were put into the following service quality attributes: tangibles – up to date equipment, visually appealing physical facilities, neat hospital employee; reliability – timely service as promised, sympathetic and reassuring employees and accurate billing; responsiveness – tell patients when service will be performed, prompt service and willingness to help patients; assurance – feel safe in interaction with hospital employees, knowledgeable employees and adequate support from

employees; empathy – personal attention from employees and patients best interest at heart; and overall satisfaction. Each item was rated on a five-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

For the purposes of this study, the questionnaire was modified by deleting seven items. The items put under the following service quality attributes: tangibles (3) and reliability (3) were entirely deleted because they did not form part of the operational definition of quality of service for this study. Also, some items (*prompt service and tell a patient when service would be performed*) under the responsiveness were deleted because the study used only variables under “willingness to help patient” to define responsiveness.

The Patient Survey about High BP and its Treatment – 1 Questionnaire was developed by University of Wisconsin-Madison, School of Pharmacy in 2006 with 42 items (University of Wisconsin System, 2006). The questionnaire was compiled for the Team Education and Adherence Monitoring (TEAM) Study, to measure patient BP treatment. For the purposes of this study, it was adapted to measure hypertension management. The instrument has 6 sections (A, B, C, D, E and F). Section A solicits data on distance and patients’ utilisation of healthcare services; B on health history; and C on patient’s high blood pressure and lifestyle. Section D is on medical and pharmacy services in the past 6 months; while E measures health state ‘today’ and finally F on demographic information – sex, age, ethnicity, education, employment, household characteristics and income status.

For the purposes of this study, only Section C, on high blood pressure and lifestyle, was selected and adapted for the study. This section contains 19 items (11 - 29). The following items have sub-questions: 7<sup>th</sup> item (question 17)

has 6 sub-questions (a - f); 8<sup>th</sup> item (question 18) has 4 sub-questions (a - d), 9<sup>th</sup> item (question 19), 4 sub-questions (a – d) and the 19<sup>th</sup> item (question 29), 5 sub-questions (a - e). The items cover BP goals and treatment (life style modification - medication, alcohol use, smoking, body weight, salt intake, fruits and vegetable consumption, physical activity and BP monitoring records). For this study, the following items were entirely deleted, item 17 sub-questions d and e, item 18, item 19 sub-question d, item 24, 25, 26, 27, 28 and item 29 sub-question d. These items were deleted because some were not applicable in our setting while some variables were not considered in this study. In all, the items for the study are 13 with sub-questions 7 (a - d), 8 (a - c) and 13 (a - d), covering BP goals, medication, salt intake, fruits and vegetable consumption, physical activity and BP monitoring records.

The questionnaire was used to develop a scale to measure health history, high blood pressure and lifestyle, medical and pharmacy service, health state ‘today’ and finally, complications (University of Wisconsin System, 2006). The instrument was generated based on content, face and construct validity, internal consistency, test re-test reliability and discriminative validity procedures (University of Wisconsin System, 2006). The scale was applied to 457 individuals aged  $\geq 18$  years, and 408 of them were re-evaluated for test-retest reliability. The six sub-dimensions encompassed 60.3% of the total variance. Cronbach alpha coefficients of 0.82 for the entire scale, 0.92, 0.59, 0.67, 0.77, 0.72, and 0.76 for the sub-dimensions of definition, health history, high blood pressure and lifestyle, medical and pharmacy service, health state today and complications, respectively (University of Wisconsin System, 2006). The questionnaire was

adapted by Iloh et al. (2017) to determine the role of treatment satisfaction in medication adherence, and BP control among adult Nigerians with essential hypertension.

The Coping Inventory for Stressful Situations-21 (CISS-21) Questionnaire developed by Calsbeek et al. (2006) was adapted for the current study. The CISS-21 is theoretically derived, generic measuring instrument that has proven to have good psychometric characteristics in adult samples (Calsbeek et al., 2006). The CISS-21 has been developed to assess three coping strategies: task-oriented, emotion-oriented and avoidance coping. Task-oriented coping refers to purposeful task-oriented efforts aimed at solving a problem, cognitively restructuring the problem or attempts to alter the situation, with emphasis is on the task or planning, and attempts to solve the problem. Emotion-focused coping refers to emotional reactions that are self-oriented with the aim to reduce stress. Reactions include emotional responses, self-preoccupation and fantasizing. Avoidance coping refers to activities and cognitive changes aimed at avoiding the stressful situation via distracting oneself with other situations or tasks or via social diversion as a means of alleviating stress (Endler & Parker, 1999).

The instrument contains a total of 21 items, with 7 each for avoidance coping, task-oriented coping and emotion-oriented coping. But for the purposes of this study, some of the items had been modified to suit items for measuring coping strategies. After the modification, there were 15 items, five measuring avoidance coping, six measuring task-oriented coping and five for the measurement of emotion-oriented coping. The items deleted included two items measuring avoidance, two item measuring task-oriented coping and two



on emotion-oriented coping. Calsbeek et al. (2006) used the instrument to assess coping in adolescents and young adults with chronic digestive disorders and the impact on school and leisure activities. Accordingly, Cronbach's Alphas was found to be 0.78 or higher, in diagnostic groups as well as in controls and in several age groups.

The Adoma FHMCSQ contained 53 items, consisting of six sections (A, B, C, D, E and F). Section A composed of nine items, (1-9), sought information on socio-demographic characteristics of patients such as gender, age, education, occupation, religion, age of diagnosed of hypertension, number of months/years seeking hypertension treatment at BAR Hospital, and facility which first diagnosed the patients of hypertension. Each question has answer choices and participants were asked to select the answer that best fit their situation. They did this by placing a mark in the boxes provided for the multiple choice types items while they wrote in the space provided where needed. Section B was composed of items 10 to 20, measuring the extent to which hypertensive patients complied with treatment. Compliance included patients' adherence to treatment: appointments, special diet, physical activity, medication, and the difficulties in compliance, and the reasons for non-compliance with treatment. In this section, participants were provided with responses ("yes" and "no") to the questions and as such, they were to place a mark in the boxes provided for the multiple choice types items while they wrote in the spaces where applicable.

Section C was on perceptions on the quality of care and contained six questions (21 – 26). This section also measured hypertensive patients' perception on the quality of care provided by the BAR Hospital. Participants

were asked whether they follow their treatment, their satisfaction and assurance, provision of sufficient information and education, and sufficient time to discuss their condition. The section also determined whether patients are at ease to visit the Hospital, the relationship between the HCP and patients and the perception of patients on the attitude of the providers. Participants had responses classified as strongly agree (5), agree (4), neutral (3), disagree (2) strongly disagree (1). For all the items in this section, the participants responded by circling the best option that described their perceptions on the quality of care.

Section D contained twelve items (27 – 38), which measured the management strategies employed by the hypertensive patients. Setting BP goals, current BP, routine check-ups, medications, salt/sodium restriction diet, and exercise. Section E contained 15 items (39 – 53), exploring the coping strategies of hypertensive patients with questions on task-oriented coping (*taking corrective action, focus on problem, analyzing problem, thinking and understanding of the situation*), avoidance coping (*thoughts on lost of faith in treatment, neglect of treatment and religious coping*), and emotion-oriented coping (*a form of conditioning the mind that lead to blame, upset, frustration, anxiety, grief and worry*); and reliance on assistance and relaxation.

The in-depth interview guide (Adoma IDI) explored lived experiences of hypertensive patients seeking treatment at BAR Hospital. It explored experiences with compliance treatment, management and coping strategies. I adapted items from interview guide by Rimando (2010) in a phenomenological study to understand the lived experiences of older adult patients diagnosed with uncontrolled hypertension at Northeast Georgia

Health District Cardiovascular Health Clinic at the Clarke County Health Department. The interview guide was structured into 3 sections (A, B and C) aside the demographic information and related factors. Section A was on lived experiences of patients at the clinic; B on Diagnosis/Treatment Concerns: patients' lived experiences after diagnosed with hypertension and how life has changed afterwards. Section C on Control/Management solicited data on how patients' experience the management of their hypertension state (Rimando, 2010).

The interview guide was adapted to suit this study. Some of the interview questions were modified for the purpose of this study. After the modification, there were 4 sections, A measured lived experiences at the Hospital, B, experiences with treatment and compliance with hypertension, C, experiences with management of hypertension. Finally, D measured lived experiences on coping with hypertension treatment.

### **Validity of the instrument**

The Adoma FHMCSQ and Adoma IDI were subjected to scrutiny and editing to ensure validity. The initial questionnaire developed contains 56-items. The first version underwent semantic analysis to verify the understanding of the items. Two patients with different levels of schooling and ages assessed the instruments. Changes were made to the phrasing of seven items to correct misunderstanding.

The instrument was sent to my supervisors (Principal and Co-supervisor) at the Department of Health, Physical Education and Recreation (HPER) for the phrasing and understanding of the items to be assessed, along with its conceptual pertinence regarding management and coping strategies for

treatment. Evaluations were compared and suggestions with agreement of 80.0% or over were included. Several items were excluded (2, 8, 22, 32, 45, 51), others were reformulated (6, 7, 11, 12, 13, 15, 18) and new items included (21, 23, 44). After evaluation by these experts, the instrument consisted of 53-items, which were standardized regarding wording and domain.

The in-depth interview guide contains 10 questions. It was subjected to critical scrutiny and editing by my supervisors and a lecturer from School for Development Studies, UCC, who is also a researcher in qualitative study.

### **Pre-testing of the Instrument**

The instruments were pre-tested to assess its face and content validity and its reliability to check the appropriateness of the questionnaire. The study instruments were pre-tested at Sunyani Municipal Hospital (SMH) at Sunyani in the Bono Region of Ghana. This facility offers similar services to BAR Hospital (Sunyani Municipal Hospital, 2018). It also serves as a referral centre for Community-based Health Planning and Services (CHPS) Compounds, health centres and clinics in the Municipality. For the study instrument, 84 copies were distributed to hypertensive patients seeking treatment at the Hospital. The pre-testing exercise was conducted from 24<sup>th</sup> to 25<sup>nd</sup> January, 2019.

The data were screened and coded into SPSS version 21.0. In addition, reliability of the questionnaire was examined. The Cronbach's Alpha scores ranged from 0.73 to 0.80 which indicated reliability of the individual items. For example, perception on quality of care yielded Cronbach Alpha of 0.73. To achieve this reliable value for the instrument, some items were deleted, 23, 25 and 28 (*'During my visit, I realized that HCP are not actively involved in*

*my treatment*'; *Healthcare providers do not follow up if I don't honour my appointment*'; and *I would recommend the facility to someone*, respectively) since such items were not correlating high with items. Also, item 41 (*Please check the number of times you have eaten/skip the following foods/medication in the past 2/7 days, not counting today*) was entirely deleted since it was not reliable. In section E, one items 42 (*I don't believe I have hypertension*) was deleted to make the instrument reliable at a Cronbach Alpha 0.793 (see Table 1). In all, five items were deleted after the reliability test, making the study instrument 53-items.

For the in-depth interview, six hypertensive patients seeking treatment at BAR Hospital, 2 males and 4 females, were involved in the pre-testing. In essence, six in-depth interviews were conducted for the pre-testing exercise. The discussions were recorded and later transcribed verbatim. The transcripts were compared to the original intents of the questions on the Adoma IDI guide to ensure that the responses adequately reflected the intent of the questions. Subsequently, some of the questions were slightly reworded to reflect the intent of the questions so as to yield the desired data.

### **Data Collection Procedure**

Data collection proceeded immediately after approval was sought from my research supervisors; and ethical clearance (Appendix C; ID: UCCIRB/CES/2019/12) from Institutional Review Board (IRB) of University of Cape Coast (UCC). Also, an approval and an introductory letter (Appendix F; Introductory letter) from the Department of Health, Physical Education and Recreation (HPER) assisted me to obtain permission from the BAR Hospital. The cover letter (Appendix E; cover letter) attached to the questionnaire and

interview guide addressed the purposes of the study and assured the participants of their confidentiality and voluntary participation. The letter also estimated the time it may take a participant to complete the survey. In addition, the participants completed an informed consent form (Appendices A and B; informed consent) before taking part in the study. At the hospital, permission was sought from the medical superintendent; clinic in-charges at the hypertension unit to identify hypertensive patients and help distribute questionnaire.

### **Recruitment and Training of Research Assistants**

Four Research Assistants (RAs) were recruited and trained to help with the data collection (fieldwork). These RAs included first-degree graduates doing their National Service at the BAR Hospital. These RAs were selected because of their familiarity at the facility, experience, and their ability to ensure ethical issues at the Hospital. The purpose of the study was explained to the RAs which made them abreast of the work. The training was based on how to identify hypertensive patients, assisting patients who cannot read and write, recording and management of data as well as the translation of the contents of the instruments into the languages spoken by the respondents. To achieve these, the RAs were selected based on their language competencies in English and Twi which were the dominant languages spoken by the patients. The RAs were further trained on how to handle ethical issues at the facility. The four RAs were made to engage in mock data collection practices especially, conducting interviews and the administration of the questionnaire. The training of the field assistants lasted for two days (from 27<sup>th</sup> to 28<sup>th</sup>

January, 2019). Trained RAs assisted in the administration of the questionnaire and in-depth interview.

The recruitment of patients took place during the hours of 9am to 5pm from Monday to Friday at the facility. Special attention was given to a selected unit at the facility, “Diabetic and Hypertensive Clinic” where most hypertension cases are treated. It has been estimated that 25 patients with hypertension present to the facility each days in the week. But, on Thursday, between 50 - 60 patients report to the Clinic. This is because Thursday is a day specially set for education, counseling and treatment of hypertension and diabetes. It was also established that it takes a maximum of two months for patients to come for review. Therefore, to ensure complete enrollment of participants into the study, data collection must last for two months.

In all, 520 copies of the questionnaire were distributed to patients face-to-face by either the RAs or Ward In-charges at the clinic within the two months. Upon establishing contact with the Ward In-charges, the RAs were introduced to the patients after they were done with their daily morning devotion. The questionnaire administration was done at the premises of the clinic, when patients await to see the doctor. The vital statistics would have been taken already. The questionnaire was supposed to be returned that very day before the patients leave the clinic. Patients answered the items after they had given permission and signed the consent form on the first page of the questionnaire. In situations where the patient could not read and write, and/or busy, the RAs assisted in that regard. Patients who were not comfortable and required a different setting (home, community center, etc.) were followed up to administer the questionnaires.

Data collection showed 98% return rate. This was as a result of the fact that the Hospital is a busy place and also patients feel uncomfortable to stay there for a long time. Moreover, due to the nature of their condition, some patients came with caregivers who would not wait for them to complete the questionnaire before leaving the clinic. Some patients also felt too tired and weak, in the process forgot to fill the questionnaire.

For the IDI, before the interview was conducted, the purpose of the study was explained to the patients. Those who were not comfortable with the study were given the chance to withdraw. Once a selected patient withdraws from the study, another patient who was invited for interview, till data saturation was reached. For patients who were not comfortable to be interviewed at the Hospital, special arrangements were made to visit them at home.

To ensure natural a flow of discussions, a voice recorder was used to record interviews. All the IDIs were conducted in two main languages (Twi and English) explicable to the interviewees. The average time spent on each interview was 28 minutes. Despite targeting 30 patients for IDI, 16 were conducted to data saturation (Thomson, 2002). The basic criteria used to select the patients were willingness to participate, proximity to homes of patients who were not comfortable to be interviewed at the clinic, availability on a suitable fixed date and ability to easily commute to the venue. Data collection started from 28<sup>th</sup> January through to 25<sup>th</sup> March, 2019.

### **Data Processing and Analysis**

As part of the quantitative data analysis, the data were first crosschecked and edited to ensure completeness for analysis. Statistical



Package for Service Solution (SPSS) Version 21.0 was used for the processing. Data were screened for missing values for continuous and string variables, univariate and multivariate outliers were checked using frequency distributions and box plots.

**Research Question 1: What are the perceptions of hypertensive patients on the quality of care as received at BAR Hospital?**

This research question sought to measure the perceptions of hypertensive patients on the quality of care as received at BAR Hospital. I used frequencies and percentages to determine the perceptions on quality of care provided by BAR Hospital to the patients.

**Research Question 2: What coping strategies do hypertensive patients seeking treatment at BAR Hospital use?**

Research question 2 sought to explore the coping strategies used by hypertensive patients who seek treatment at BAR Hospital. Descriptive statistics such as frequencies and percentages were used to determine the strategies employed by hypertensive patients with the hypertension condition.

**Research Question 3: To what extent do hypertensive patients seeking care at BAR Hospital, comply with treatment?**

For the purpose of this research question was to find out the extent to which hypertensive patients seeking health at BAR hospital comply with treatment. These variables were taken into consideration; aerobic exercise, salt reduction, white meat intake, reduction of fat intake, meeting appointment, medication intake and fruits and vegetables intake. Frequencies and percentages, means and standard deviations were utilized. For the purpose of this analysis, the response (Yes, Always; Yes, Somehow; and No) were reduced from the three categories to only two (Yes and No). Also, a minimum cut off percentage of 80% was set to measure the extent of compliance to

treatment, and a percentage below 80% under category 'Yes' would mean no compliance.

**Research Question 4: To what extent do coping strategies influence current BP of patients seeking treatment at BAR Hospital?**

This research question measured the influence of coping strategies on current BP of patients using multiple linear regression analysis. The independent variable (IV), coping strategies were categorised into three: task-oriented, emotion-oriented and avoidance coping. The IV, coping strategies, is measured on the Likert scale 1 to 5 and the dependent variable (DV), current BP of patient on continuous.

The multiple linear regression used current BP of patient (Systolic) as the dependent variable and coping strategies as the independent variables. Since linear regression cannot have more than one dependent variable, the systolic BP target of patients was used to represent the BP targets of patients. The means of the coping strategies under each group was computed. For example, the means of these variables under avoidance coping (*spend time praying to God; spend time with a special person; treat myself to a favourite food or snack; and phone a friend and go for vacation*) were computed and used to represent avoidance coping strategy to have only one variable. The same applied to task-oriented coping and emotion-oriented coping.

The variables explored based on these assumptions; normality, homogeneity of variance (Homoscedasticity) and multicollinearity. The normality assumption was tested using the normal plot of regression standardized residuals and histograms with normal curves. The distribution was closer to the diagonal line of the normal plot. In addition, histogram revealed a normally distributed data. Thus, normality assumption met. The

Levene's statistic revealed a statistical significance i.e.  $p < 0.05$  for each variable, indicating that the variances of the population were heterogeneous, violating the assumption. Variance Inflation Factor (VIF) should be below 10 or between 1 and 10. The diagnostic revealed the VIF for AC as 1.137, TOC as 1.722 and EOC as 1.900 meaning that there is no collinearity among the variables. The study reported the standardised coefficient, t statistics and the significance level.

**Research Question 5: What socio-demographic factors determine compliance among hypertensive patients seeking treatment at BAR Hospital?**

This research question sought to measure the socio-demographic factors as IV to determine compliance (“Compliance” or “No Compliance”) as DV among hypertensive patients seeking care at BAR Hospital. The IVs included age, gender, education, employment status, marital status, religion, age at which patient was diagnosed of hypertension and time spent for treatment at BAR hospital. The binary logistic regression was used. This tool was used because the study would want to establish the likelihood that socio-demographic factors of patients predicted their compliance with hypertension treatment. Since the binomial logistic regression is supposed to be measured on a dichotomous scale (Ranganathan, Pramesh & Aggarwal, 2017), a new variable for compliance was created; Yes and No. The study reported on the wald, significance level, odds ratio and confidence interval.

**Research Question 6: What are the experiences of hypertensive patients seeking treatment at BAR Hospital?**

Research question 6 explored the lived experiences of hypertensive patients seeking treatment at BAR Hospital. The Colaizzi-style (Colaizzi, 1978) method consisting of reading the descriptions, extracting the significant

statements and formulating meanings was used for the analysis. It also consists of organizing formulated meanings into clusters of themes, exhaustively describing the investigated phenomena of hypertension treatment, and validating the exhaustive description by each participant.

In Colaizzi's step 1, I listened to the participants' audiotapes and read their transcripts to obtain an understanding of their experiences living with hypertension. In step 2, I extracted relevant statements and phrases pertaining directly to treatment of hypertension to gather in-depth details on their lived experiences. In step 3, I formulated meanings from these significant statements and phrases to answer the research questions posed and made interpretation about the participants' lived experiences as applied to hypertension management and coping strategies.

I derived themes or categories from the data, and then combined them to form a comprehensive description of the phenomena of hypertension treatment among patients. Data analysis continued until I determined that saturation level had been reached with the emergence of regularities or patterns in data. I obtained and maintained truly subjective data by allowing themes to arise from the data, reflecting on the data and uncovering common themes from particular quotations (Crotty, 1996).

## CHPATER FOUR

### RESULTS AND DISCUSSION

The purpose of this study was to explore the management and coping strategies among hypertensive patients seeking treatment at Brong Ahafo Regional (BAR) Hospital, and to examine participants' experiences of living with the condition. This chapter presented and discussed the results of the study.

#### **Research Question 1: What are the Perceptions of Hypertensive Patients on the Quality of Care Provided by BAR Hospital?**

The purpose of this analysis was to determine patients' perceptions on the quality of care, using frequency and percentage analysis. Results indicated that 90.4% of patients agreed that BAR Hospital provided high quality of care to them. Generally, all the dimensions of quality of care were perceived to be high among the patients. The dimensions were ranked as follows: perception on following treatment to lower BP (98.4%); satisfaction of care (97.4%); assurance that patient can manage and cope with treatment (97.2%); provision of sufficient information and education on treatment (87.8%); and provision of adequate time to discuss treatment outcome (71%). However, 28.6% of patients disagreed that during their visit, HCP provided sufficient time to discuss their treatment outcomes (see Table 2 for details). Therefore, patients perceived quality of care as received from the Hospital to be very high.

The plausible reasons for the high perception on quality of care may be a belief that healthcare professionals "know all", and "can cure all", irrespective of patient and healthcare system factors, provided the right conditions are fulfilled (Ewhrudjakpor, 2007).

**Table 2: Perceptions of Quality of Care at BAR Hospital**

	Agree	Disagree	Total
	Freq. (%)	Freq. (%)	Freq. (%)
During my visit, I realised that my over all perception is high	459 (90.4)	49 (9.6)	508 (100.0)
During my visit, I believed that I should follow my treatment to lower my BP	500 (98.4)	8 (1.6)	508 (100.0)
During my visit, I was satisfied with the services provided by the BAR Hospital	495 (97.4)	13 (2.6)	508 (100.0)
During my visit, HCP assured me that I can manage and cope with treatment easily	494 (97.2)	14 (2.8)	508 (100.0)
During my visit, the HCP provided sufficient information and education on my treatment	446 (87.8)	62 (12.2)	508 (100.0)
During my visit, HCP provided sufficient time to discuss my treatment outcomes	361 (71.0)	145 (29.0)	506 (10.0)

Source: Adoma, 2019

It could also be that patients' expectations at the Hospital were met, and thus were satisfied with the services provided. This is because in recent times patients demand high quality service from hospitals than ever, and do not hesitate to switch to other healthcare providers if they do not obtain their targets (Ramsaran-Fowdar, 2008).

Another possible reasons why perceived quality of care was high could be ascribed to similar and clear expectation, and views expressed between patients and HCPs. However, Rahman (2015) observed that doctors and patients have different expectations of each other and a divergent view on

what constitutes successful hypertension management. It created a fundamental gap between the beliefs of doctors and patients as to who should be responsible for the patients' hypertension management. Therefore, there is the need for the HCP to develop the willingness to adjust patient interaction to suit their need. Patients' experiences can stimulate important insights into the kinds of changes that are needed to close the gap between the HCP and quality services.

There is growing evidence in literature suggesting that patients' perceived quality of healthcare services is the single most important variable influencing utilisation and treatment outcomes (Abaerei, Ncayiyana & Levin, 2017; Adam & Awunor, 2014; Dansereau et al., 2015; Wang, Chen, Hsu & Wang, 2012). Evidence suggests that patients who have positive healthcare experiences have improved outcomes, resulting in a more efficient healthcare system (Doyle, Lennox & Bell, 2013; Sofaer & Firminger, 2005). Also, studies have shown that patients tend to exhibit higher rates of compliance with medical recommendations when they perceived them to be of high quality (Institute of Medicine, 2001; Wolf et al., 2008).

The high perception on quality of care by patients in the current study confirmed that of Goyal et al. (2016) whose research aimed at improving the quality of services rendered at tertiary care facilities, by utilizing the clients' perception regarding such services. It was observed by the authors that most of the participants perceived quality of services as good. Similarly, Goyal et al. (2016) observed that large majority of their patients perceiving healthcare services received as high in quality and satisfactory.

Notwithstanding the findings of this current study, a contrary finding by Erah and Chuks-Eboka (2008) showed that patients generally rated the services provided by the health professionals to be poor. It further revealed that specific information on medication and other health related problems including side effects, weight and BP control, and others that can enhance medication therapy were hardly discussed with the patients. In such situations, the services rendered by the healthcare system is more likely not to meet patients' expectation and thereby contributing to poor perceived quality of care. Moreover, patients were not satisfied with the service provided by the pharmacy unit. It showed that about half of the patients did not get their required services from pharmacy (Akande, Musa & Hussain, 2005).

The time spent waiting for treatment or at healthcare facilities is also critical concern to patients. Wagialla et al. (2019) confirmed that a little over one quarter of patients were satisfied with the waiting time in the clinic. A qualitative study by Gascon, Sanchez-Ortuno, Llor, Skidmore and Saturno (2004) also observed that inadequate consultation time by service providers contributed to poor treatment outcomes among hypertensive patients. It has also been observed in other studies that the clinical encounter was viewed as unsatisfactory because of the length of time spent on treatment, which resulted in less interaction between physician and low physicians and patients (Parker, Steyn, Levitt & Lombard, 2012). However, if patients perceived quality of care as received from the Hospital as optimal, they believed in their treatment, assured of achieving treatment targets, and satisfied because they are likely to be provided with enough information and education, as well as sufficient time to discuss their treatment outcome with the HCP (Rao & Satyanarayana,



2014). For example, evidence shows that positive experiences have a well-documented relationship to quality of care (Dansereau et al., 2015). Patients with better healthcare experiences are often more engaged in their care, more committed to treatment plans, and more receptive to medical advice (McGlynn et al., 2003).

Despite the dedication and professionalism of staff, things can go wrong. Most at times perceptions are built with peoples' first experiences. Thus, perception on the quality of care may be obtained from patients first experiences with the services provided by the healthcare system. Most patients build their perception on the quality of care with their first treatment. Therefore, to monitor the quality of care, there is a need to measure the quality of services being rendered at the hospital against pre-determined norms or standards of performance. According to WHO (2016), quality of care is determined by competent and motivated healthcare professionals, effective communication and community engagement.

The patient perceive quality of care in the light of accessibility and affordability of healthcare, promptness of delivery, early diagnosis and treatment, thereby ensuring early return to productivity and to be treated with empathy, respect and concern (Cleary, 2003). Rockville (2013) established that wide variations in healthcare quality, access and outcomes persist. Hence, quality of care is perceived as ensuring safety of patients and preventing inappropriate and/or suboptimal care. Improving quality of care and patient safety are critical in accelerating improvement in hypertension treatment. Quality of care relates to structure, processes and outcomes. The structure represents the facilities and the human resources. The processes represent the

various clinical, supportive and administrative interactions between the providers and recipients. The outcomes reflect the changes in the healthcare status. Thus, effective treatment of hypertension and patients satisfaction represents outcomes, which focus of quality of care must be on the results produced (Kemmel, 1989). According to Steiner (2017), the emphasis should be on what is achieved and not what is done.

Patients' perception on quality of care, as received from the Hospital, has implications on their treatment, the Hospital and the healthcare system as a whole. Patients' perception on quality of care is an important dimension of their evaluation of services which affects the need to continue with treatment. According to Mendhe et al. (2017), perception determines patient utilization of healthcare services, and it affects their treatment outcomes. Thus, patients who perceive care as quality are more likely to continue and comply with their treatment (Abaerei, Ncayiyana & Levin, 2017), whereas the other patients with poor perception are likely to experience poor treatment outcomes and may drop out of treatment (Adam & Awunor, 2014). This is because their ideas and attitudes on their treatment provide an ideological basis for the healthcare system (Omotosho, 2010; WHO, 2002). To improve on patients' perception on quality of care, efforts need to be put in place to determine the standards for measuring quality, improve healthcare services and education.

Patients' assessments of care are increasingly being considered as an important dimension of quality of care (Brennan, 2000) which may affect the facility and the entire healthcare system. The concept of error and failure in healthcare delivery has been suggested as part of a strategy to protect patients from adverse events (Kirk et al., 2007). Thus, perception about the quality of

care has a great consequence on patients' treatment, playing an important role in patients' compliance. For instance, Goyal et al's. (2016) study on the quality of services at tertiary care facilities indicated that compliance increases considerably with good perception.

The high perception about care quality gives a good image of the hospital, and thus the confidence placed in the healthcare system. Health facilities often struggle to provide satisfactory services when it is perceived to provide poor services (Erah & Chuks-Eboka, 2008). A qualitative analysis showed that patient trust services they perceive to be quality and, thus contribute effectively to treatment. There is evidence that patients who have positive healthcare experiences have improved outcomes, resulting in a more efficient healthcare system (Doyle, Lennox & Bell, 2013).

The high perceived quality of care as received from BAR Hospital suggests that patients are more likely to continue their treatment at the Hospital. Furthermore, it paints a good picture of the services provided by the Hospital and thereby the entire healthcare system. This means that there are high chances of patients achieving their treatment targets. Notwithstanding, HCP need to be empathic and caring, providing interpersonal interactions, and a better designed medical services to ensure continual provision of high quality service.

### **Research Question 2: What Coping Strategies do Hypertensive Patients Seeking Treatment at BAR Hospital Use?**

The aim of this analysis was to explore coping strategies used by hypertensive patients seeking treatment at BAR Hospital, using frequency and percentage calculations. Results showed that almost two-third (63.5%) of the patients were not using avoidance coping strategy, with slightly more than half

(58.5%) employing task-oriented coping strategy. Also, almost half (49.6%) of the patients used emotion-oriented coping strategies. For the dimension of coping, religious coping was the highest strategy used by the patients for both emotion-oriented coping (98.0%) and avoidance coping (47.4%). About 78.3% of patients used a task of taking corrective action immediately as a major task-oriented coping strategy. The least dimension (27%) was avoidance coping where patients go on vacation to cope with their condition (Table 2).

The finding of the study suggested that coping strategy among the patients were relatively poor and maladaptive. Hypertension treatment and ineffective coping strategies were deemed significant variables among patients with hypertension. A previous study revealed that almost all diseases have psychosomatic components and that any kinds of diseases, particularly heart diseases and hypertension, are affected by stress and stressful events (Tang, Harms & Vezeau, 2008).

Accordingly, alleviating stressful factors is an effective technique in reducing the BP. Although the existence of stress is inevitable and having adequate levels of stress confers growth and development, high levels of stress leads to ineffective coping strategies which can be harmful (Rueda, & Peerez-Garci, 2013). Ariff, Suthahar and Ramli (2011) reported that patients with hypertension tend to apply inefficient coping strategies and that the application of these strategies brings about excess stress and emotional instability.

**Table 3: Coping Strategies used by Hypertensive Patients**

	Agree	Disagree	Total
	Freq. (%)	Freq. (%)	Freq. (%)
<b>Avoidance Coping</b>	<b>185 (37.0)</b>	<b>322 (64.0)</b>	<b>507 (100.0)</b>
Spend time praying to God	241 (47.4)	267 (52.6.4)	508 (100.0)
Spend time with a special person	226 (44.6)	281 (55.4)	507 (100.0)
Treat myself to a favourite food or snack	216 (42.5)	292 (57.5)	508 (100.0)
Phone a friend	162 (31.9)	346 (68.1)	508 (100.0)
Go for vacation	137 (27.0)	371 (73.0)	508 (100.0)
<b>Task-oriented Coping</b>	<b>295 (58.5)</b>	<b>209 (41.5)</b>	<b>504 (100.0)</b>
Take corrective action immediately	393 (78.3)	109 (21.7)	502 (100.0)
Focus on the problem and see how I can solve it	315 (62.0)	193 (38.3)	508 (100.0)
Think about the event and learn from my mistakes	299 (59.6)	203 (40.4)	502 (100.0)
Analyse my problem before reacting	257 (50.6)	251 (49.4)	508 (100.0)
Work to understand the situation	212 (42.2)	290 (57.8)	502 (100.0)
<b>Emotion-oriented Coping</b>	<b>252 (49.6)</b>	<b>256 (50.4)</b>	<b>508 (100.00)</b>
Blame myself for having gotten into this situation	113 (22.2)	395 (77.8)	508 (100.0)
Become very upset	170 (33.5)	338 (66.5)	508 (100.0)
Feel anxious about not being able to cope	195 (38.4)	313 (61.6)	508 (100.0)
Wish that I could change what had happened or how I felt	283 (55.7)	225 (44.3)	508 (100.0)
Focus on my God as my healer	498 (98.0)	9 (1.8)	507 (100.0)

Source: Adoma, 2019

The ways that individuals reported coping with stress were significantly related to blood pressure. Anyan and Kniek (2018) reported that various adaptive or maladaptive coping mechanisms were identified and independently related to blood pressure levels. The authors, then, concluded that there was the need to target individual coping strategies in planning cardiovascular health promotion programmes.

The coping strategies applied by individuals when facing specific problems and diseases such as hypertension are of two categories: the problem-focused coping strategy and the emotion-focused coping strategy (Graven & Grant, 2013). The problem focus strategy deals with tasks undertaken by the patients to improve upon their treatment. They are basically known to as task-oriented coping strategy. On the other hand, the emotion-focused strategy is not as visible as the problem-focused strategy. They are the feelings and sentiments expressed towards treatment. However, avoidance coping deals with aspects of emotion-focused and problem-focused strategies to avoid treatment. These coping strategies have different outcomes in relation to BP control. It has been established that problem-focus which is a task-oriented coping, has a positive outcome compared to emotion-focused coping strategies (Aina et al., 2016).

The finding in current study indicated that a little more than half of the patients used task-oriented coping. The current finding was in tandem with that of Ariff et al. (2011) who found that most of hypertensive patients used task-oriented coping for their treatment than the other coping strategies. The authors also observed that participants with a high task-oriented score showed a significantly lower BP compared to those with a low score. However, those

with a high emotion-oriented coping score were associated with an increased BP. The authors concluded that a significant relationship existed between hypertension and coping styles and productive steps must be taken to promote positive coping.

A meta-analytic result showed that the most frequently reported coping strategy was task persistence, followed by activity avoidance, coping self-statement and the least was asking for assistance and relaxation (Ersek, Turner & Kemp, 2006). Similarly, Aina, Ajayi, Kumolalo and Inubile (2016) revealed that the distributions of coping strategies among hypertensive patients were predominantly problem solving, followed by social contact, and finally, problem avoidance. These results indicated that patients used more of task-oriented coping strategies than avoidance-oriented coping strategies, and emotion-oriented coping strategies.

The preference for task-oriented coping strategy in relation to other coping strategies may be attributed to its efficacy with hypertension treatment. Task-oriented coping strategies were considered to be positive, well adaptive and functional in coping with ill health condition. It is, therefore, established that those who used these coping strategies were likely to adapt well, and effectively reduce their stress or anxiety level.

Findings from the current study further indicated that patients used mainly religious coping for hypertension treatment. Omotosho (2010) indicated that religious belief was a factor that commonly affected the way patients perceive quality of treatment because religion plays a significant aspect of social life. It is established that the quest for health easily shades into issues of morality and religion in most communities (Ewhrudjakpor, 2007),

explaining why patients used religious coping in stressful events (Cozier et al., 2018). The reason may be that patients perceived hypertension to be a spiritual condition that requires religious coping for supernatural treatment (Mbiti, 2007). Also, it is established that when patients perceive healthcare services as insufficient to provide the requisite services needed to improve upon their condition, they resort to religious coping (Kroeger, 2003). However, the current study found a high perceived quality of care among the patients and thus, it could not be attributed to this reason.

A qualitative study explored the role of religious faith among hypertensive patients in Accra, and observed that participants used a deferring-collaborative style of religious coping. This seemed to have provided them with an avoidance strategy that protected the participants from conscious confrontation with their illness (Anyan & Knizek, 2018). Religious faith and beliefs also afforded the participants a sense of coherence that enabled them to manage their stress, reflect on their external and internal resources to promote effective coping and adaptive functioning in a health-promoting manner. Spirituality and religious coping (Hixson et al., 1998; Steffen et al., 2001) have been found to positively affect hypertension prevalence and BP. Religion and/or spirituality was found (Cozier et al., 2018) to be associated with decreased risk of hypertension in African American women, especially among those reporting higher levels of stress. The authors, therefore, concluded that there is high involvement of religious and/or spiritual coping among patients treating hypertension, to deal with stressful events associated with their condition.



The task-oriented coping strategies used by patients were mainly patients' task to take a corrective action immediately to improve upon treatment. Patients could be asked to measure their own BP and would do so, if they take productive steps to improve upon their treatment. For instance, Edmonds et al. (2005) studied 37 hypertensive patients who had been on treatment for three months and had been taught self-measurement. It was evident that because of their task-oriented coping, their compliance rose from 65% at the beginning of the study to 81% after three months of self-measurement. In addition, most of the patients who were non-compliant at the beginning of the study rose up.

Poor coping strategies are maladaptive to hypertension treatment and often result in unmanaged BP, and feelings of frustration. Most participants believed hypertension happens at an older age; this is an assumption that promotes denial of the condition (Anyan, & Knizek, 2018). Thus, it becomes very stressful for younger persons when they are diagnosed of hypertension. According to Anyan and Knizek, such patients tend to use a maladaptive coping strategy that leads to poorer treatment outcomes. This might have explained the call for attention to aspects of individualization, especially with regard to the use of adaptive coping strategies in patients who are treating hypertension (Rivera, Martin & Landry, 2019).

Diagnosing a health condition such as hypertension is the first step in management. However, the healthcare providers fail to prepare patients to accept the condition, and learn how to live with it. For example, the treatment involves stressful conditions where patients take routine medication, restricted diet low in sodium, and low consumption of fat and red meat, and are expected

to undergo routine check-up and make modifications to other lifestyles. Even after patients had incorporated some coping strategies for managing the condition into their daily lives, they still face the major challenge of learning how to lower their BP (Rueda & Peerez-Garci, 2013). These stressful situations, if not properly managed, could lead to uncontrolled BP as a result of ineffective coping strategies employed.

Therefore, controlling stress associated with treatment and using effective coping strategies can be useful in treating hypertension (Ariff, et al., 2011; Graven & Grant, 2013). Assisting patients to cope with the uncertainty associated with hypertension treatment is essential and beneficial, if patients successfully would adjust to the demands of the illness and its treatment (Flattery, Pinson, Savage & Salyer, 2005). Ariff et al. (2011) believed that improving lifestyle components could help patients to stay healthy and cope with daily stresses, because a healthy lifestyle plays an effective role in individuals' happiness and prevention of stress and depression. Thus, learning effective coping strategies leads to the maintenance and promotion of health.

### **Research Question 3: To what Extent do Hypertensive Patients Seeking Care at BAR Hospital Comply with Treatment?**

The analysis aimed to establish the extent to which hypertensive patients complied with treatment. Frequency, percentage, mean and standard deviation were used for the analysis. Herein, treatment comprised physical activity, salt reduction, white meat intake, meeting appointment, fat intake reduction, medication intake, and fruits and vegetables consumption. A cut off value of 80% was set to determine patients' compliance with treatment (Nguyen, Caze & Cottrell, 2014; Sackett et al., 2008), and the closer the figure to cut off value, the better.

The frequency results (Table 4) showed that almost all the patients were not compliant with their treatment, except patients who engaged in physical activity. Statistically, patients who engaged in physical activity were approximately compliant (79.5%),  $M = 1.20$  and  $SD = 0.40$ . Meanwhile, two-thirds of the patients (66.5%) complied with the salt reduction,  $M = 1.33$  and  $SD = 0.47$ . This was followed closely by patients (64.8%) who consumed white meat.

Moreover, more than half of the patients (55.5%) complied with meeting appointment, while about one-third (39.6%) complied with their medication. The intake of fruits and vegetables were the least treatment (28.7%) that patients complied with. Hence, compliance was low among the patients since physical activity was the only treatment regimen that patients complied with. Patients are therefore, unlikely to achieve their BP targets since compliance is key to their treatment outcome.

**Table 4: The Extent to which Respondents Complied with Treatment**

	Yes	No	M	SD
	Freq. (%)	Freq. (%)		
Physical exercise	404 (79.5)	104 (20.5)	1.20	0.40
Salt reduction	338 (66.5)	170 (33.5)	1.33	0.47
White meat intake	329 (64.8)	178 (35.0)	1.35	0.48
Meeting appointment	282 (55.5)	226 (44.5)	1.44	0.50
Fat intake reduction	209 (41.1)	299 (58.9)	1.59	0.49
Medication intake	201 (39.6)	305 (60.0)	1.60	0.49
Fruits and Vegetables	146 (28.7)	362 (71.3)	1.71	0.45

Source: Adoma, 2019

M: Mean, SD: Standard Deviation, Cut off percentage = 80%

Overall, the finding indicated that compliance with treatment was found to be relatively low. Sub-optimal compliance with prescribed treatment contributed to the burden of uncontrolled hypertension (Hamdidouche et al., 2017; Mastsumura et al., 2013). Hence, the more compliant the patients are, the high probability of achieving BP targets. Poor compliance is associated with poor knowledge, understanding, and perception of hypertension or when a complex anti-hypertensive drug regime is prescribed (Gebreyohannes et al., 2019; Martin & Nwankwo, 1990).

Evidence suggests that compliance with hypertension treatment was generally low, especially in developing nations (Bovet et al., 2002; Muesch et al., 2001). In Bangladesh and India, a satisfactory compliance was only among 25% of patients (Thankappan & Hypertension Study Group, 2001), while Obirikorang et al. (2018) also found non-compliance to antihypertensive therapy considerably high among patients seeking treatment in Ghana, suggesting that patients seeking treatment are likely not to achieve their BP target.

Several reasons peculiar to patients account for non-compliance. Kabira et al. (1999) found poor compliance to be mainly due to ignorance on the need for regular treatment and lack of funds to purchase drugs. Other factors included side effects of drugs, non-availability of drugs in patients' place of domicile, exhaustion of prescribed drugs and non-attendance at scheduled clinic day. Kabira et al. also indicated that few patients refused to comply due to forgetfulness and busy schedule. It is usual to consider patients to be sufficiently compliant with their treatment when they take at least 80% of their prescribed medication (Guerrero et al., 2003; Krall, 2001; Sackett et

al., 2008). Rao et al. (2014) found optimal compliance to hypertension treatment. Similarly, in an outpatients care, compliance to anti-hypertensive medication ranged from 20% to 80% (Sackett et al.). According to the authors, slightly more than half of the patients had good compliance with treatment, whereas the remaining had poor compliance. A study carried out at University Hospital in Switzerland found poor compliance among few patients (Muesch et al., 2001), while Isezuo and Opara (2000) found two-thirds of their patients taking 95-100% of their prescribed medication.

Measuring compliance depended on the standard set. But, generally in order to encourage and improve upon the levels of compliance, cut off values are set at a higher percentage to encourage patients. Also, a study by Osamor and Owumi (2011) observed that half of the patients reported high compliance. Surprisingly, cognitive and functional impairment in elderly patients increased their risk of poor drug compliance (WHO, 2003). Evidence from the current study found that only patients who engaged in aerobic exercise were highly compliant. Similar finding (Rizvi et al., 2009) observed that almost all the patients complied with physical activity and recorded normal BP values. Experimental evidence from interventional studies confirmed a relationship between BP and physical activity, which has a favourable effect on BP reduction (Diaz & Shimbo, 2013).

This current finding is almost inconsistent with literature. However, exercise is relatively low among hypertensive patients and thus, patients do not comply (Egan, 2017; Heymann et al., 2011). Egan (2017) indicated that the Jackson Heart Study in 2008 reported less than one in every four African American adults treating hypertension complied with the recommended levels

of physical activity whereas only few white, black, and Hispanic Americans complied with the recommended levels of physical activity. Some studies have also indicated that about half of hypertensive patients do regular exercise as part of their treatment (Heymann et al., 2011; Sackett et al., 2008).

It was found in the current study that two-thirds of the patients complied with intake of salt reduction. Clinical trials (DASH and TOHP studies) have shown that dietary factors are fundamental in the prevention and control of BP (Milan et al., 2002). One of the main organ systems vulnerable to the adverse effects of excessive salt in the diet is the cardiovascular system. Excess dietary sodium predisposes to high BP (He & MacGregor, 2007; Meneton et al., 2005). In the National Health and Nutrition Examination, only 19.4% of hypertensive patients complied with dietary salt (Mellen et al., 2008; Scheltens et al., 2010). According to Centre for Disease Control and Prevention Morbidity and Mortality Weekly Report (2010), only 9.6% of adults treating hypertension met recommended guidelines for sodium intake of less than 1.5 g/d per person in their middle age and older adults, the blacks took less than 2.3 g/d and for all other adults.

It is very difficult to reduce the salt intake below 1 g/day in everyday food intakes in humans. Van der Wal et al. (2006) reported that patients found it difficult to comply with their diet because the sodium-restricted diet was not palatable. Also, it was established that bland food due to low salt content does not taste good, which makes it difficult to comply with diets low in sodium. Likewise, patients in Schutte et al. (2003) study reported that a restriction to eat out at restaurants as a barrier to low-sodium compliance made them not to comply.

The current study's finding on patients who complied with scheduled appointment was consistent with the finding of Osamor and Owumi (2011) who observed that the two-thirds of the patients attended clinic appointments 'every time'. Regularly keeping clinic appointments was positively associated with high self-reported compliance. In a study (Kuria, 2018), three-fourth of patients complied with periodic medical check. Besides, the level of compliance with appointment varies from patient to patient. Patients with high BP frequently fail to meet their appointment. For example, Osuji (2012) reported that less than half of the patients did not attend clinic at all after discharge, with one-third attending a few times, and one-tenth had moderate attendance. However, the author found only one-tenth of the patients to have full clinic attendance for the duration of the study. Likewise, a study (Bakhish et al., 2017) observed few patients to have complied with their scheduled appointment.

Compliance with medication was also very poor as low. In a study to monitor one-year compliance with anti-hypertension medication in a general hospital setting, the prevalence of poor compliance was found to be low (Bovet et al., 2002).

The finding further indicated that few patients complied with the consumption of fruits and vegetable. However, Wang et al. (2012) reported that when fruits and vegetables were analyzed separately, higher intake of all fruits but not all vegetables remained significantly associated with reduced risk of hypertension. This indicated that the consumption of fruits is very relevant in hypertension treatment. On the other hand, the consumption of some vegetables might have little or no effect on reduced BP. Compliance

among patients with chronic conditions is low, dropping most dramatically after the first six months of therapy (Haynes et al., 2002). Thus, sub-optimal compliance is one of the largest problems in hypertension treatment, the most important cause of uncontrolled BP (Osamor & Owumi, 2011). According to Rao et al. (2014), poor compliance attenuated optimum clinical benefits and paved way for poor treatment outcomes. The study recorded that patients who did not comply with physical activity had their BP raised, and they were in pre-hypertension stage.

The sub-optimal compliance observed in the current study may serve as a challenge in achieving treatment targets. Therefore, patients needs to be familiar with different methods that can be used to assist them comply with hypertension regimens (Mafutha & Wright, 2013). A study by Reiners and Nogueira (2009) discovered that despite health professionals' efforts to promote health, patients have their own way of managing their hypertension. For example, they could decide not to take treatment. The fact that patients manage treatment in their own way is not new in literature (Adisa & Fakeye, 2014; Hamdidouche et al., 2017), adapting their treatment to social habits. For the healthcare providers to ensure compliance, there is the need to understand patient's immediate competing demands. This is revealed by Pender et al. (2002), who wrote that it is crucial for healthcare providers to enquire about patients' priorities, because it may be helpful in improving the quality of hypertensive patients' care.

Healthcare providers have a dominant role to play in hypertension treatment such as being compassionate, sensitive and constantly giving care to patient. Nau et al. (2007) found that patients perceived themselves to be at a



lower risk for elevated BP and heart attack if they met with the HCPs on a regular basis, participate actively with their skills, knowledge, relationship and motivation. This decreased the likelihood of experiencing health related problems.

#### **Research Question 4: To what Extent do Coping Strategies Influence Current BP of Patients Seeking Treatment at BAR Hospital?**

The objective of research question was to use multiple linear regression to ascertain the extent to which coping strategies predict the current BP of patients. The coping strategies, which is the independent variable (IV) is categorised into three: Task-oriented coping (TOC), Emotion-oriented coping (EOC) and Avoidance coping (AC), and current BP (DV) of patient is a continuous variable. The linearity assumption was met when the normal plot of regression standardized residuals was generated. Levene's statistic was used to test the homogeneity of variance and it was statistical significance, that is  $p < 0.05$  for each variable. The data were basically heterogeneous.

The multiple linear regression results revealed that AC, TOC and EOC were significant predictors of the current BP of patients [ $F(3, 117) = 12.390$  and  $p = 0.000$ ]. In other words, AC, TOC and EOC explained 22.2% of the variability of current BP of patients ( $R^2_{adj} = 0.222$ ). Table 4 showed that AC, TOC and EOC were all individual significant predictors of current BP at the 5% level of significance representing:  $t = 3.455, p = 0.001$ ;  $t = 4.927, p = 0.000$  and  $t = -2.326, p = 0.022$  respectively. Also, the standardised beta coefficients indicated that TOC (52.1%) had the highest influence on current BP among patients seeking treatment, followed by AC (29.7%) and finally EOC (25.8%). Overall, coping strategies are good predictors of the current BP

level of the patients, with TOC being the best predictor, followed by AC and EOC.

**Table 5: Regression of Coping Strategies on Current BP of Patients**

Model	B	Std. Error	Beta	t	Sig.	Tolerance	VIF
Constant	82.546	4.036		20.451	0.000		
AC	5.201	1.505	0.297	3.455	0.001	0.880	1.137
TOC	11.073	2.248	0.521	4.927	0.000	0.581	1.722
EOC	-4.085	1.756	-0.258	-2.326	0.022	0.526	1.900

Source: Adoma, 2019

AC: Avoidance Coping, TOC: Task-Oriented Coping, EOC: Emotion-Oriented Coping

The finding revealed that TOC was the best predictor of current BP of patients as compared to EOC and AC. These findings were in tandem with literature on coping strategy and BP of patients. Aina et al. (2016) reported that the predominant coping strategies among the patients were in the positive domain (problem solving and social contact) with associated lower mean BP. Also, Lindquist et al. (1997) found that the various adaptive (TOC) or maladaptive (AC and EOC) coping mechanisms were identified and independently related to BP levels. Also, in a multiple logistic regression analysis with hypertension status, a high emotion-oriented coping score, a low task-oriented coping score, remain significant factors in the final model (Ariff et al., 2011). These studies indicated that coping strategies are predictors of patients' BP.

Furthermore, a study observed that participants with a high task-oriented score showed a significantly lower risk of hypertension compared to those with a low score (Aina et al., 2016). On the other hand, the author

reported that patients with a high emotion-oriented coping score were associated with an increased risk of hypertension. These findings confirmed the results from the current study indicating that TOC had a stronger relationship with patients' BP than EOC and AC. It also established that TOC was associated with low BP as compared to EOC and AC. Wright and Sweenet (1989) hypothesized that individuals experiencing higher diastolic BP were more likely to cope using strategies characterized by wishful thinking, avoidance and minimization of threat than individuals exhibiting lower BP. This suggested that individuals are more likely to adopt TOC to lower their BP. Therefore, the current BP of patients will be high or low depending on the coping strategies chosen or used. Those with a high emotion-oriented coping score were associated with an increased risk of hypertension (Ariff et al., 2011). It is concluded that patients who chose TOC were more likely to have lower current BP than patients who resorted to AC and EOC.

The treatment of hypertension remains a challenge, as the exact pathogenesis is unclear, and is manifesting earlier in populations (Rampal et al., 2008). The chronic nature of hypertension treatment, couple with the behavioural and medical changes enhance the choice for maladaptive coping strategies. Strategies for targeting adaptive coping are, therefore, essential in optimizing patient management and BP control. Although the role of such stressors associated with hypertension is still unclear (Beilin, 1997), stress associated with treatment can cause activation of the Hypothalamo-Pituitary-Adrenal axis (HPA) in human body (Barrett et al., 2012) that raises BP. This results in varying ways of coping (problem-oriented coping, emotion-oriented coping and avoidance-oriented coping) and dealing with challenges of

hypertension treatment.

Sithu et al. (2018) reported that maladaptive coping strategy was found to lower BP. Although the relationship between the role of coping strategies and BP has not been adequately studied (Bailin, 1997), it is not in that a relationship exist between the two matters. Ariff et al. (2011) found a significant difference in coping styles and BP of hypertensive and non-hypertensive groups. According to Endler and Parker (1999), task-oriented coping refers to a purposeful effort to solve a problem, cognitive restructuring of the problem or attempts to alter the situation. This might have explained why task-oriented coping was highly used among the patients. The use of task-oriented coping strategies is likely to be helpful for the control of patients' hypertension (Kasi, 2012).

Patients use emotional-oriented coping, and/or avoidance coping with the aim to reduce their current BP, which does not most of the times lead to successful outcomes. In fact, it might even result in increased BP in some cases. However, Ariff et al. (2011) found that patients who use counselling strategies which utilise cognitive-behavioural theories to provide insights, showed a positive impact on their BP. This implies that patients who used emotion-oriented coping strategies positively are likely to benefit from such coping strategies. Patients who used counseling strategies utilise cognitive-behavioural therapies to provide insights, showed a positive impact on their BP. However, the current study also found that patients adopted maladaptive coping strategies, suggesting they may be having a high level of current BP.

Coping strategies emanate from lifestyle related issues. Therefore, it calls for measures to reduce and prevent maladaptive strategies associated

with hypertension treatment. This is in line with the WHO recommendation that lifestyle measures for reducing hypertension include the cessation of smoking, weight loss, limiting alcohol consumption, reducing salt intake, making healthier food choices, regular exercise and learning to cope with stress of such conditions (WHO, 2016).

To be able to deal with such situations, there is the need to for BAR Hospital to individualise hypertension treatment. Intervention for adaptive coping requires a multi-level approach tailed to patients need. For the patients who used task-oriented coping, they need to be encouraged and motivated to continue with such strategies. On the other hand, patients that use maladaptive coping strategies need re-orientation and encouragement. Helping them to understand the science of hypertension treatment is a key step in the process of alleviating any misconceptions that facilitates the use of maladaptive coping, thereby encouraging and motivating patients to make lifestyle changes to reflect effective coping for treatment. Patients usually take a few weeks to come to terms with the idea of medication, so unless the risk is very high it pays to focus on explanation and lifestyle change initially.

**Research Question 5: What Socio-demographic Factors Determine Compliance among Hypertensive Patients Seeking Treatment at BAR Hospital?**

A binary logistic regression was calculated to determine the effects of gender, age, education, marital status, employment status, religion, age of diagnosed of hypertension and number of years of treatment of hypertension on the likelihood that patients complied with hypertension treatment. The logistic regression model was statistically significant,  $\chi^2(35) = 109.184$ ,  $p = 0.000$ . The model explained 28.3% (Nagelkerke  $R^2$ ) of the variance in

compliance with treatment and correctly classified 77.2% of the cases. The Hosmer and Lemeshow test showed that the model is a good fit to the data [ $\chi^2$  (8) = 6.518,  $p$  = 0.589], predicting the probability of membership of non-compliance.

The binary logistic results indicated that the variables were statistically significant (age –  $\chi^2$  = 4.294,  $p$  = 0.038; education –  $\chi^2$  = 7.151,  $p$  = 0.028; marital status –  $\chi^2$  = 5.156,  $p$  = 0.023; employment status –  $\chi^2$  = 7.447,  $p$  = 0.006; religion –  $\chi^2$  = 7.294,  $p$  = 0.008; age of diagnosed –  $\chi^2$  = 5.437,  $p$  = 0.020 and number of years of years of treatment –  $\chi^2$  = 4.276,  $p$  = 0.037), at predicting the level of compliance among the patients. However, gender was not statistically significant ( $\chi^2$  = 40391,  $p$  = 0.532). Thus, whether the patient is a male or a female does not determine his or her extent of compliance to hypertension treatment (Table 6).

The results further indicated that patients at the age 61 and above were 1.6 times likely not to comply with treatment (C.I. = 1.03 – 2.51). Besides, patients with basic education (0.97, C.I. = 0.60 – 1.56) and secondary education or higher (0.43, C.I. = 0.21 – 0.86) were likely not to comply with their treatment regimen than others having no formal education. Also, patients who were not married were 1.7 times likely not to comply with hypertension treatment (C.I. = 1.08 – 2.69) than the married ones. Patients who were unemployed were 1.2 times likely not to comply with their treatment (C.I. = 0.78 – 1.98) than those who were married.

Muslims were 0.64 times likely not to comply with treatment than Christians (C.I. = 0.29 – 1.38), while traditionalists were 3.96 times likely not to comply with treatment relative to Christians (C.I. = 0.23 – 68.81).

**Table 6: Regression of Socio-demographic Factors on Compliance with Treatment**

	B	S.E.	Wald	Sig.	Odds ratio	95% C.I.
<b>Gender</b>						
Male	-0.16	0.25	4.04	0.53	0.86	0.53 1.39
<b>Age</b>						
61 years and above	0.47	0.23	4.29	0.04	1.60	1.026 2.51
<b>Education</b>						
Basic Education	-0.03	0.24	5.44	0.02	0.97	0.600 1.56
Secondary or Higher Education	-0.85	0.35	5.75	0.02	0.43	0.214 0.86
<b>Marital Status</b>						
Unmarried	0.53	0.23	5.16	0.02	1.70	1.075 2.69
<b>Employment Status</b>						
Unemployed	0.22	0.24	7.45	0.01	1.24	0.778 1.98
<b>Religion</b>						
Islam	-0.46	0.40	5.02	0.03	0.64	0.292 1.38
Traditional	1.38	1.46	4.89	0.03	3.96	0.227 68.81
<b>Age Diagnosed</b>						
51 years and above	-0.39	0.22	5.44	0.02	0.68	0.438 1.04
<b>Years Treated</b>						
6 – 10 years	0.24	0.25	4.00	0.05	1.27	0.789 2.06
11 years and above	-0.22	0.28	7.95	0.01	0.80	0.459 1.40
Constant	-1.11	0.31	13.04	0.00	0.33	

Source: Adoma, 2019

Likewise, patients who were diagnosed of hypertension at age 51 and above were 0.6.8 times likely not to comply with treatment than those diagnosed at age 50 and below (C.I. = 0.44 – 1.04). Moreover, patients who have sought for treatment between 6 – 10 years were 1.27 times likely not to comply with treatment than those who have sought for treatment for less than 5 years (C.I. = 0.79 – 2.06). Meanwhile, patients who have sought for treatment 11 years and above were 0.80 times likely not to comply with their hypertension treatment than those less than 5 years (C.I. = 0.46 – 1.40). Therefore, age, education, marital status, employment status, religion, age diagnosed of hypertension and years of treatment of hypertension are good determinants of compliance to treatment among hypertensive patients seeking treatment at BAR Hospital.

Findings from the study showed that socio-demographic factors such as age, education, marital status, employment status, religion, age diagnosed of hypertension and years of treatment of hypertension could be used to determine whether the patients would comply with their treatment. The reason socio-demographic factors are good predictors of compliance with treatment regimen may be that these factors are inherent and personal to patients. For instance, levels of education and marital status have positive effect on compliance (Okoro & Ngong, 2012; Sumantra, 2015). According to Senior et al. (2004), highly educated patients have higher level of understanding and trust in their treatment, and hence more likely to comply, while married patients receives support and reminders from their partners which improve upon their compliance regimen (Okoro & Ngong, 2012).



It is also evident in this study that gender has no significant influence on compliance (Akoko et al., 2017). A similar result was noted in the studies of Maiduguri (Okoro & Ngong, 2012) and in Democratic Republic of Congo (Ikama et al., 2013) where gender had no significant relationship with patients compliance to treatment. However, in Dar es Salaam, where the study found that gender influenced patients' compliance, it was also noted that females were more compliant than males (Joho, 2012). Contrary to Joho's finding, males were significantly more compliant than females in Taiwan (Lin et al., 1995). The current finding also indicated that patients aged 60 and below were more likely not to be compliant than those 61 and above. It is sometimes argued that poor health is inevitable with ageing (WHO, 2015). This suggests that older patients may perceive poor health to be part of their age, thus working tirelessly to overcome the challenge. On the other hand, Jokisalo (2005) observed that denial is high among the younger patients who develop hypertension. This may attune to the perception that hypertension is an aged disease and it cannot be developed at a younger age (Gebreyohannes et al., 2019). Such patients may not comply with their treatment regimen, as they doubt their condition. A similar finding was observed by Joho (2012) which showed that participants aged 64 and below had a higher level of treatment compliance compared to those with 65 and above. In addition, a significant association was found between age and compliance, where older participants were found to be more compliant than younger ones in the Democratic Republic of Congo (Ikama et al., 2013) and in Shiraz, Iran (Hadi & Rostami-Gooran, 2004).

Nevertheless, another study (Almas et al., 2005) on factors affecting the compliance to antihypertensive, found age to be one of the determinants of compliance. These results were comparable to those reported in North America (Krousel-Wood et al., 2004) where age was found to be a good predictor of compliance. The possible explanation of these is that young people have higher income since they are able to work and thus, can afford to buy medication compared to older people (Holt et al., 2014). Another possible reason is that older people might have more than one disease due to ageing, which might have led them using many drugs which make them tired, hence, stop taking drugs or treatment (Elliott & Booth, 2014).

Sumantra (2015) found level of education as one of the most influencing factors that lead to lower medication compliance among patients with hypertension. The author further observed that patients with higher education took their medication regularly as compared to those with lower education although patients with primary education showed a higher frequency of self-reported compliance when compared with respondents with other categories of educational levels (Osamor, & Owumi, 2011). It was also observed that three-fourth of the patients who had formal education were compliant with their treatment (Kabira et al., 1999). A contrary finding was observed in Ikama et al. (2013) and Joho (2012) where they found that educational status had no significant association with compliance. Therefore, more effort was needed to increase patient education to promote their willingness to cooperate to improve treatment efficacy.

Marital status may play an important role in hypertension treatment. Marital status is considered a measure of social network, and is

associated with improved hypertension control (He et al., 2002). According to Trivedi et al. (2008) being married was associated with higher probability of medication adherence. Similar results were obtained in Maiduguri (Okoro & Ngong, 2012), in which married participants were found to be significantly more compliant than unmarried patients. This result was, however, contrary to the findings in Dar es Salaam (Joho, 2012) and Shiraz, Iran (Hadi & Rostami-Gooran, 2004) which established that unmarried patients were more likely to comply than married ones. This indicates that irrespective of the fact that several studies (Okoro & Ngong 2012; Trivedi et al., 2008) established a relationship between married patients and compliance with treatment regimen, there are times this relationship may not exist due to some circumstances.

There was a significant relationship between compliance and occupational status, and those in active employment are more likely to be compliant than the unemployed (Davila et al., 2012). This may be due to the fact that some jobs are so demanding that patients hardly get time to take their medication. A contrary result was found in Lin et al. (1995) studies in Taiwan and Ikama et al.'s (2013) studies in the Democratic Republic of Congo that no association between occupational status and compliance.

Spiritual and religious beliefs formed core components of the lifestyles of patients and it related directly with medication non-compliance (Kretchy et al., 2013). The current study found religion to be significant with compliance, Christians were less likely to be compliant than Muslims and Traditionalist. On the other hand, the findings from a study (Osamor & Owumi, 2011) showed that high self-reported compliance was not associated with the religion professed by the respondents, and that almost equal percentages of Muslims

and Christians showed high self-reported compliance. Religion is a way of life which comes with beliefs and culture. In situations where the associated beliefs and culture are inimical to treatment, it may lead to poorer outcomes (Cleary, 2003; Omotosho, 2010).

The finding also revealed that compliance to treatment among BP patients becomes a challenge as treatment prolongs. Thus, patients who have sought for treatment for five years and below were more likely to comply with treatment regimen than those six years or more years. Compliance rates are typically higher among patients with acute conditions, the shorter the condition, the higher the compliance (Adisa & Fakeye, 2014). Persistence among patients with chronic conditions is disappointingly low, dropping most dramatically after the first six months of therapy (Haynes et al., 2002). This may be as a result of sticking to the treatment instructions for a long-term illness poses a great challenge to most hypertension patients (WHO, 2003). According to Calsbeek et al. (2006), such patients lose trust in their treatment and become frustrated, intolerant and tired, thereby adopting maladaptive coping strategies.

The implications of socio-demographic factors are peculiar to patient's compliance because it influences their decision to comply with treatment. These factors are inherent personal factors that influence the patients' choice of meeting treatment demand. The treatment of hypertension is gradually moving towards self-management (Regione & Lombardia, 2014), demanding that patients play active roles in their treatment. Patients' efforts to improve upon treatment outcome efficacy far exceed the role HCPs since patients know themselves better and understand their health better than HCPs. The role of the

healthcare system is to educate, monitors and support patients to manage their condition (Newman & Tonkens, 2011) as such the burden of care lies in the patients' domain. This calls for prepared and well-informed patients to take up this role to improve treatment efficacy.

It is important for HCPs to investigate patients' factors and its relationship with compliance in detailed to encourage compliance to treatment. Although safe and effective medication and interventions are available for effective treatment, the management of hypertension is still far from optimal. Factors associated with non-compliance include the complexity of the treatment regimen and patient factors are important. Besides, multiple factors including the patients and healthcare system, logistics and community-based factors could be targeted to deal with the condition effectively. In addressing this challenge, much attention needs to focus on patients' factors such as age, sex, education, marital status, employment status, religion, prolonged treatment, and age diagnosed of hypertension.

Non-compliance can be prevented with measures such as proper counselling, patient-centered education and quality healthcare services (Bilal et al., 2015). Therefore, educating patients on the need to be compliant with their medication regimen, the complications arising from non-compliance during their treatment form part of the clinical sessions organized for patients with chronic conditions (Addo, Sencherey & Babayara, 2018).

**Research Question 6: What are the Experiences of Hypertensive Patients Seeking Treatment at BAR Hospital?**

The aim of this analysis was to qualitatively examine patients' lived experiences with hypertension and treatment, using a phenomenological interpretation. There were 16 patients involved, nine were 60 years and below,

and seven above aged 60. More women (11) were interviewed than men (5), with nine married while six unmarried. Also, six of the patients had sought treatment for less than five years, five between 6-10 years and five for more than 10 years.

Evidence from the IDI indicated that patients' lived experiences and perceptions at the Hospital were good. Most of the patients perceived medical treatment to be good and suitable for their condition. Patients expressed that they were getting proper medical care and satisfaction to the extent that some patients praised HCP for the progress they had made in their treatment. This was a summary of a patient's lived experience and perception of medical care at BAR Hospital. A patient retorted;

*"I (patient) owe my life to this hospital and particularly Miss A (a nurse) for the medical care I received from her. It has actually improve upon my health and now I'm very healthy."* [43 year-old male patient]

Another patient indicated;

*"I felt frustrated and thought I will not survive up to now, but when I obeyed what the doctor told me, here I am, and still feeling strong and energetic. If I don't say so then I am a hypocrite because I have improved upon my health."* [53-year-old female patient]

However, some patients expressed a great deal of concern over their treatment. They experienced side effects of the BP medications, unsatisfactory pharmaceutical services and long waiting time to see the doctor as major worries. Men expressed worry about the drug side effects as most suffer sexual weakness leading to displeasure and frustration. There were also complaints of constipation, waist pain and blurred vision.

A patient cried out;

*“I started experiencing sexual weakness 6 months after I have been put on medications. I reported it to the doctor, he changed my BP medication but I have not seen any improvement. I must be honest with you (interviewer) if nothing is done about it I will have no option than to go for traditional medicine because potency is manly”.* [56 year old male patient]

Eliciting patients’ views on how the Hospital can improve upon their care to ensure utmost quality of care, some patients expressed that the Hospital continues with the good services as provided. However, some patients complained about the time spent at the Hospital receiving care. Patients voiced that they spent longer hours before they got treatment, especially at the pharmacy and consulting room. A patient lamented;

*“My (patient) only problem is the length of time spent here (Hospital). I came very early today (around 5:20am) and I’m likely to leave here after 2:00pm. The doctors do not come early and what annoys me most is the pharmacy. It is mostly closed, but if I’m lucky and it is opened, I will spend not less than 3 hours before I would be served.”* [64 year old male patient]

The results from IDI indicated that patients felt frustrated complying with their treatment. They felt worried, anxious and upset when confronted with their treatment regimen because they were told to do many things at the same time for their treatment. For instance, one patient indicated that:

*“I (patient) was very frustrated and felt very bad when the doctor told me that I need to do several things to manage my condition. I never thought it could be as worrisome as this”. [59 year old man patient]*

However, the nature of the condition (hypertension) compelled most of them to strictly comply with treatment at the initial stages, but it became normal as time passed. A patient indicated that:

*“Hypertension is a very terrifying and deadly disease because when you get it, you will definitely die with it. So, what I needed from the doctor is to tell me whatever I need to do to get this hell (hypertension) out of me.” [71 year old man patient]*

They also seemed concerned about their condition because they believed hypertension is deadly, stressful, and lifetime disease but time and work sometimes limit them. One of the patients remarked:

*“I (patient) am very much aware that hypertension can hurt me if I don't follow my treatment. I used to go for jogging every morning, eat no salt and fresh meat, and never miss an appointment, but due to my busy schedule I rarely do them. I need to be more consistent with my treatment as I did in the beginning.” [62 years old female patient].*

Results from IDI stipulated that it has not been easy coping with hypertension treatment. Patients indicated that their lives had changed entirely and sometimes they felt too different from other people. For instance:

*“I don't know how to explain it, but I think this condition had made my life very difficult. I can't go for wedding and church camps. This is because I can't eat their food and behave the way they do. These were*



*events I cherished so much and now I can't enjoy them.*" [67-year-old female hypertensive patient]

It was recorded that patients used adaptive coping strategies than maladaptive coping strategies. The adaptive coping strategies included activities patients undertook in order to improve upon treatment. These included taking conscious efforts such as readiness to seek treatment, decision to take medication, eat less/no salt and cope with pain to do exercise. Religious coping, visiting friends, seeking for help, frustration, anxiety and blaming oneself, as well as anger were some of the maladaptive coping strategies used for their treatment. One of the patients indicated that:

*"I always do my possible best to do things that will lower my BP. I don't pity myself as I used to and I hardly take in salt even though it's difficult to do so. I do all these things with the belief that the good Lord will one day listen to my cry and heal me".* [51 year female patient]

Irrespective of the fact that religious coping is considered to be maladaptive and perceived to be negative, it was found to be helpful. It enabled patients to cope with stress associated with treatment effectively.

The current finding indicated that experiences were good at the Hospital. Shamsi et al. (2017) found in a qualitative study that patients' experiences were rated as good. The authors further opined that positive experiences were obtained following patients' compatibility with hypertension. Similarly, another study found that most of the participants to have good experiences at their hospital because they agreed that the services provided were good (Wagialla et al., 2019). Good experiences are crucial for

hypertension treatment. It actually shows patients' satisfaction of the services provided by the Hospital, thereby raising the image of the facility.

However, there were some concerns about their treatment. The finding revealed that patients were not satisfied with their medication and pharmaceutical services. Akande et al. (2005) confirmed the poor satisfaction received at the pharmacy, and reported that about half of the patients did not get the required services, resulting in patient's dissatisfaction. Likewise, Wagialla et al. (2019) observed that only one-quarter of patients were satisfied with the waiting time in the clinic.

Furthermore, Llisterri et al. (2001) also found that only few of the treated patients reported improvement in sexual dysfunction. Observational and clinical studies have consistently associated antihypertensive medication with sexual dysfunction (Doumas et al., 2006; Llisterri et al., 2001). The duration and severity of hypertension medications are undoubtedly associated with erectile dysfunction. Patients with long-standing (> 5 years) and severe hypertension are expected to suffer more frequently from sexual dysfunction, which would appear in a more severe form (Doumas et al., 2006). It was expected that if these sexual dysfunction and other challenges associated with hypertension treatment were not properly dealt with, then, it would compel patients especially the males resorting to other measures which may obstruct their care.

Compliance is core to hypertension treatment, wherever it differs with gender. The current study found female to be more compliant than males. This finding was consistent with studies, they established that female patients complied with treatment more than their male counterparts (Jing et al., 2008;

Fodor et al., 2005). According to the Luscher et al. (2005), male's poor compliance was a major factor accounting for ineffective treatment efficacy among the males as compared to the females. Almas et al.'s (2006) study at Aga Khan University, Pakistan also observed that non-compliance among the males was affected by forgetfulness, deliberately missing doses, side effects of BP medications, trauma associated with increased number of tablets, and denial. Male patients' benefits to antihypertensive medication reduced because of low compliance (DiMatteo et al., 2002).

Non-compliance was found to be either unintentional (such as forgetting) or intentional, whereby a patient makes a decision not to take treatment based on personal beliefs about their illness and treatment (Hashmi et al., 2007). Akoko (2017) found that the long-term nature of the treatment was a factor that led to poorer compliance. Drug complexity, poor instructions, and patient's disagreement about their need for treatment may also serve as a reason for non-compliance.

Wide ranges of interventions had been developed to help patients follow their prescribed treatment. These have included simplified dosing, educational interventions, telephone and computer assisted monitoring, family interventions, increased convenience of care with provision of care at the work site, and a team approach with increased involvement of a community nurse and/or a community pharmacist (Tan et al., 2017). Sadly, none of these interventions existed at BAR Hospital to help patients to manage their hypertension, and thus the discretion of patient towards their self-management remain a big challenge.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to explore the management and coping strategies among hypertensive patients seeking treatment at the Brong Ahafo Regional (BAR) Hospital, and to examine participants' experiences of living with the condition. This chapter focuses on summary, main findings, conclusions and the recommendations of the study.

#### Summary

Hypertension is a global public health challenge that contributes significantly to cardiovascular diseases such as stroke and heart failure, kidney failure, premature deaths, disabilities, and precursor for most NCDs. It is a chronic condition that requires periodic treatment and lifetime management. Hypertension usually emerges in people after a long exposure to modifiable risk factors such as an unhealthy lifestyle involving tobacco use, lack of regular physical activity and consumption of diets rich in highly saturated fats, sugars and salt. In addition, there are non-modifiable risks such as genetic factors and age which are associated with hypertension. Besides, studies have shown that the most important modifiable risk factors are unhealthy diet and excessive energy intake, physical inactivity and tobacco use. Therefore, proper treatment and management require reduction of these modifiable risk factors of hypertension.

In Ghana, hypertension is among the top five OPD reported diseases in health facilities. According to Ghana Health Service, hypertension is BP of 140/90 mm Hg or higher, plus persons taking antihypertensive medication. Population-based studies in Ghana have shown an increase in hypertension

prevalence and its significant impact on stroke morbidity and mortality over the last four decades. Despite these, hypertension awareness, treatment and control are poor in the country. For this reason, contemporary research and interventions are heavily drawn to evidence-based treatment measures in the midst of maladaptive coping strategies. Moreover, treatment of hypertension requires productive interactions between patient and a physician health team, where hypertension treatment is dealt with in reliable and evidence-based practices for self-management. Thus, approaches to managing hypertension are gradually shifting from the traditional provider-patient relationship to where individuals with hypertension play a key role in guiding their care, in partnership with healthcare providers. The self-management concept provides a comprehensive review of the variables essential to help and improve treatment of hypertension and the quality of life of patients.

Self-management goes beyond the mere provision of information and increasing patient knowledge. It entails the process of self-management; self-management intervention programmes; and the description of outcomes gained by engaging in self-management practices. The concept comprised three (3) sets of tasks; medical management of the condition, behaviour management, and emotional management. Besides human factors, and a weak healthcare system have been implicated in the poor management of hypertension. Increasing morbidity and mortality from hypertension and its complications reflect the inability of the healthcare system to promptly detect and manage the condition within the general population.

The essential management measures for hypertension treatment may include compliance with treatment, perception on the quality of care and

lifestyle changes. These are factors that influence patients' decision to seek care and their ability to result in treatment efficacy. It has become necessary in current times to situate hypertension care in a context that is more suitable, and centred on patients' needs for good compliance. Compliance in itself is generally low among patients. However, it is necessary for patients to be compliant so as to achieve optimal treatment. Compliance may include lifestyle changes such as dietary changes, physical exercise, medication and making appointment. These changes are behavioural in nature and become difficult for patients to comply, leading to unachievable BP targets.

The current study utilized a 53 item questionnaire and an IDI guide to collect data. The questionnaire measured patients' perceptions on the quality of care as received from BAR Hospital, and the coping strategies they used in the management of their condition. It further measured the extent to which patients complied with their treatment. The instrument also measured socio-demographic factors such as gender, age, education, marital status, employment status, age of diagnosed of hypertension and number of years on hypertension treatment. The questionnaire was pre-tested at Sunyani Municipal Hospital (SMH) at Sunyani and yielded Cronbach Alpha reliability co-efficient ranging from 0.733 to 0.799. On the other hand, the IDI measured patients lived experiences of treating hypertension.

Data were collected from BAR Hospital for the quantitative data. All consenting hypertensive patients (508) were selected for the study. The qualitative part involved sixteen (16) participants who were conveniently sampled to data saturation. Six research questions guided the study. Research question one and two were analysed using frequencies and percentage counts.

In addition, with the cut off point at 80%, the research question three was analysed with mean and standard deviation. Likewise, research question four and five were analysed using multiple linear regression and binary logistic regression respectively. Finally, phenomenological interpretation was used to examine the lived experiences of patients treating hypertension at BAR Hospital for research question six.

### **Main Findings**

The following findings were drawn based on the results:

1. There is generally a high patients' perception on the quality of care as received from BAR Hospital, though most patients do not achieve their treatment targets.
2. Coping strategies used by patients were mainly poor and maladaptive. Although, few patients used emotion-oriented coping and avoidance coping strategies, religious coping was the highest and the easiest dimension of coping strategies employed by the patients.
3. Coping strategies were predictors of current BP levels of patients with task-oriented coping the best predictor compared with emotion-oriented coping and avoidance coping.
4. Generally, compliance with hypertension treatment was low and sub-optimal among the patients. Patients were not compliant with treatment in salt reduction, white meat intake, appointment meeting, fat intake, medication intake, and fruits and vegetable consumption. However, most patients who engaged in physical exercise as a way of treatment were compliant.
5. Socio-demographic factors of patients such as age, education, marital

status, employment status, religion, age of diagnosed of hypertension and number of years treated of treatment were predictors of compliance with treatment.

6. Also, compliance increased with higher level of education, being married, being employed than lower level of education, unmarried and unemployed patients respectively. Besides, patients of Islamic origin were more compliant than Christians while Traditionalists were less compliant than Christians. Moreover, the longer a patient seeks treatment, the less compliant he/she become.
7. Patients' experiences and perception about BAR Hospital were good. However, patients felt frustrated, and anxious with their treatment such as the side effects of BP medications, poor pharmaceutical services and long waiting time to see doctors.
8. Patients felt worried, surprised and broken hearted when they were initially diagnosed of hypertension. These situations compelled them to be more compliant at the initial stages. However, patients believed that their lives had changed entirely and sometimes they felt too different from other people.

### **Conclusions**

The following conclusions are drawn based on the findings:

1. The high patients' perceived quality of care is a good indicator of hypertension treatment, since it is the single most important variable influencing utilisation and treatment outcomes of chronic health conditions.
2. The use of maladaptive coping strategies meant that patients are likely



to have poor treatment outcomes. This is likely to impede their treatment and preventing them from achieving their BP targets. The use of religious coping could result in both negative and positive effects on treatment, but most often, it has undesirable consequences, posing a health challenge to patients.

3. The type of coping strategy used by participants is likely to predict the current BP levels. However, since coping strategies employed by participants were mainly maladaptive, it is likely that patients would have poor current BP levels, making their treatment ineffective. Besides, participants who used task-oriented coping were likely to have their current BP controlled as compared to emotion-oriented and avoidance coping.
4. The sub-optimal compliance with treatment regimen among patients is likely to pose a threat to treatment efficacy since poor compliance with treatment contributes to the burden of uncontrolled hypertension. Few of the patients may have their BP levels under control since such participants comply with physical exercise regimen.
5. The socio-demographic factors of patients such as age, education, marital status, employment status, religion, age of diagnosed and number of years of treatment determine how they respond to treatment of hypertension. For example, participants with higher educational status, married ones, employed do comply better with their treatment regimen.
6. Likewise, patients of Islamic background are likely to have effective treatment outcome than Christians and Traditionalists, and non-

compliance rate increases as patients live with hypertension and continue to seek care.

7. Utilisation of healthcare is apparent and may produce treatment efficacy and better outcome among the patients if they record good treatment experiences from the facilities.
8. Patients' perception about their illness would worsen as their treatment progresses which is likely to complicate their level of compliance with treatment, attendance and poor health condition.

### **Recommendations**

These recommendations are outlined based on the findings:

1. To help patients adopt adaptive coping strategies, there is the need to encourage patients to cope effectively with their treatment. Patients need to be encouraged to develop and implement measures that improve coping skills. These coping skills need to be incorporated into their treatment.
2. Patients need to pay attention to their psychosocial aspect of hypertensive management as those with positive coping strategies achieved better BP control. Positive thought about hypertension treatment encourages adaptive coping. Therefore, patients would be able to cope with the lifestyle changes, including a healthy diet, regular physical activity, and meeting scheduled appointment which are essential to hypertension treatment efficacy. Importantly, patients need to learn how to use religious coping positively by modifying deficient religious beliefs.
3. The BAR Hospital needs to schedule a follow-up visit or provide a

follow-up phone call to increase patients' compliance. This could emphasize the importance of BP management and allow patients to ask questions that arose after leaving the medical facility.

4. There is the need for comprehensive education and sensitization on hypertension treatment by BAR Hospital for patients to improve compliance. It is important for patients to be knowledgeable about hypertension treatment. They need to be provided with adequate information about BP measurement and elevated BP reading. Information should be provided at an appropriate reading level for the participants and need to be presented verbally for those who cannot read.
5. In cases of patients starting treatment, healthcare providers need to consider designating patient-centred information tailed to their need as part of their treatment plan to encourage patient's compliance.
6. As part of patients' treatment, BAR Hospital is encouraged to provide adequate time to discuss patients' treatment outcome. This is because the participants felt that allowing patients time to ask their healthcare providers questions could contribute to their understanding and help them manage their condition.
7. Patients' role in the management of hypertension is very critical when it comes compliance. Therefore, there is the need for patients to adapt positive self-management skills as part of their hypertension treatment. Also, patients need to have positive attitude to encourage and motivate themselves to regularly comply with their treatment regimen.

### **Recommendations for Further Studies**

These study areas are also proposed:

1. There is the need to explore the management and coping strategies of hypertensive patients seeking treatment in Regional and Teaching Hospitals in the whole of Ghana.
2. A longitudinal study is required to explore the treatment regimen that has a more influence on hypertension management.

## REFERENCES

- Abaerei, A. A., Ncayiyana, J., & Levin, J. (2017). Health-care utilization and associated factors in Gauteng province, South Africa. *Global Health Action, 10*, 1-12.
- Aburto, N. J., Ziolkowska, A., Hooper, L., Elliott, P., Cappuccio, F. P., & Meerpohl, J. J. (2013). Effect of lower sodium intake on health: Systematic review and meta-analyses. *British Medical Journal, 346*, 13-26.
- Adam, V., & Awunor, N. (2014). Perceptions and factors affecting utilization of health services in a rural community in Southern Nigeria. *Journal of Medicine and Biomedical Research, 13*(2), 119-124.
- Addo, B., Sencherey, S., & Babayara, M. N. K. (2018). Medication non-compliance among patients with chronic diseases attending a primary health facility in a Periurban District in Ghana. *International Journal of Chronic Diseases, 71*, 10-18.
- Addo, J., Agyemang, C. L., Smeeth, L., De-Graft Aikins, A., Edusei, A. K., & Oge-Degbe, O. (2012). A review of population-based studies on hypertension in Ghana. *Review of Hypertension in Ghana, 46*(2), 66-74.
- Addo, J., Smeeth, L., & Leon, D. A. (2008). Prevalence, detection, management, and control of hypertension in Ghanaian civil servants. *Ethnicity Disease, 18*, 50-51.
- Adeloye, D., & Basquill, C. (2014). Estimating the prevalence and awareness rates of hypertension in Africa: A systematic analysis. *PLoS ONE, 9*(8), e104300.

- Adisa, R., & Fakeye, T. O. (2014). Treatment non-adherence among patients with poorly controlled type 2 diabetes in ambulatory care settings in southwestern Nigeria. *African Health Sciences, 14*(1), 1–10.
- Adoma, O. P., & Yendaw E. (2014). Ageing and chronic diseases in Ghana. A case study of Cape Coast Metropolitan Hospital. *International Journal of Nursing, 1*(1), 26-36.
- Aghamolaei, T., Eftekhaari, T. E., Rafati, S., Kahnouji, K., Ahangari, S., & Hoseini, S. H. (2014). Service quality assessment of a referral hospital in southern Iran with SERVQUAL technique: Patients' perspective. *BMC Health Services Research, 14*, 322-327.
- Agyei-Mensah, S., & De-Graft Aikins, A. (2010). Epidemiological transition and the double burden of disease in Accra, Ghana. *Journal of Urban Health, 87*(5), 879-897.
- Aina, F. O., Ajayi, E. A., Kumolalo, F. B., & Inubile, A. J. (2016). Coping strategies and blood pressure control among hypertensive patients in a Nigerian tertiary health institution. *Journal of Dental and Medical Sciences, 15*(6), 12-17.
- Akande, T., Musa, O., & Hussain, N. (2005). Perception of patients on quality of health care services at a Teaching Hospital in Ilorin, Nigeria. *European Journal of Scientific Research, 11*, 86-96.
- Akoko, B. M., Fon, P. N., Ngu, R. C., & Ngu, K. B. (2017). Knowledge of hypertension and compliance with therapy among hypertensive patients in the Bamenda Health District of Cameroon: A Cross-sectional Study. *Cardiology and Therapy, 6*(1), 53–67.

- Al Fraihi, K. J., & Latif, S. A. (2016). Evaluation of outpatient service quality in Eastern Saudi Arabia. Patient's expectations and perceptions. *Saudi Medical Journal*, 37(4), 420-428.
- Alemanno, A. (2014). *Garde, regulating lifestyle – Europe, alcohol, tobacco and unhealthy diets*. UK: Cambridge University Press.
- Almas, A., Hameed, A., Ahmed, B., & Islam, M. (2006). Compliance to antihypertensive therapy. *Journal of College of Physicians Surgeons Pakistan*, 16, 23-26.
- Amery, A., Birkenhager, W., Brixko, P., Bulpitt, C., Clement, D., Deruyttere, M., & Forette, F. (1985). Mortality and morbidity results from the European working party on high blood pressure in the elderly trial. *Lancet*, 1(8442), 1349-5134.
- Anghel, L. A., Farcas, A. M., & Oprean, R. N. (2019). An overview of the common methods used to measure treatment adherence. *Medicine and pharmacy reports*, 92(2), 117–122. doi:10.15386/mpr-1201
- Anyan, F., & Knizek, L. B. (2018). The coping mechanisms and strategies of hypertension patients in Ghana: The role of religious faith, beliefs and practices. *Journal of Religion and Health*, 57(4), 1402-1412.
- Appel, L. J., Moore, T. J., Obarzanek, E., Vollmer, W. M., Svetkey, L. P., & Karanja, N. (1997). A clinical trial of the effects of dietary patterns on blood pressure. DASH Collaborative Research Group. *The New England Journal of Medicine*, 336(16), 1117-1124.
- Arrif, F., Suthahar, A., & Ramli, M. (2011). Coping styles and lifestyle factors among hypertensive and non-hypertensive subjects. *Singapore Medical Journal*, 52(1), 29-34.

- Aronow, W. S., Fleg, J. L., Pepine, C. J., Artinian, N. T., Bakris, G., & Brown, A. S. (2011). ACCF/AHA 2011 expert consensus document on hypertension in the elderly: A report of the American College of Cardiology Foundation Task Force on Clinical Expert Consensus Documents developed in collaboration with the American Academy of Neurology, American Geriatrics Society, American Society for Preventive Cardiology, American Society of Hypertension, American Society of Nephrology, Association of Black Cardiologists, and European Society of Hypertension. *Journal of American Society of Hypertension*, 5(4), 259–352.
- Atulomah, N. O., & Florence, M. F. (2010). *Treatment adherence and risk of noncompliance among hypertensive's at a Teaching Hospital in Ogun State, South West Nigeria*. Retrieved on 4<sup>th</sup> January, 2019 from [www.actasatech.com](http://www.actasatech.com).
- Atwine, F., & Hjelm, K. (2017). Health professionals' knowledge and attitudes to healthcare-seeking practices and complementary alternative medicine usage in Ugandans with diabetes: A cross-sectional survey. *The Pan African Medical Journal*, 28(256). Retrieved from at <http://www.panafrican-medjournal.com/content/article/28/256/full>.
- Awuah, R. B., Anarfi, J. K., Agyemang, C., Ogedegbe, G., & De-Graft Aikins, A. (2014). Prevalence, awareness, treatment and control of hypertension in urban poor communities in Accra, Ghana. *Journal of Hypertension*, 32(6), 1203-1210.



- Babakus, E., & Mangold, G.W. (1992). Adapting the SERVQUAL scale to hospital services: An empirical investigation. *Health Services Research, 26*(6), 767-786.
- Bailey, J. E., Wan, J. Y., Tang, J., Ghani, M. A., & Cushman, W. C. (2010). Antihypertensive medication adherence, ambulatory visits, and risk of stroke and death. *Journal of General Internal Medicine, 25*(6), 495–503.
- Bakhsh, L. A., Adas, A. A., Murad, M. A., Nourah, R. M., Hanbazazah, S. A., & Alshareef, R. J. (2017). Awareness and knowledge on hypertension and its self-care practices among hypertensive patients in Saudi Arabia. *Annals of International Medicine and Dental Research, 3*(5), 58-62.
- Baldwin, J. D., & Baldwin, J. I. (1986). *Behavior principals in everyday life* (2nd ed.). New Jersey: Prentice Hall.
- Brong Ahafo Regional Hospital. (2016). *Annual Report for 2016*. Ghana: Brong Ahafo Regional Hospital.
- Barrett, K. E., Barman, S. M., Boitano, S., & Brooks, H. (2012). Ganong's <sup>[1]</sup><sub>[SEP]</sub>review of medical physiology (23<sup>rd</sup> ed.). United States: <sup>[1]</sup><sub>[SEP]</sub>The McGraw-Hill Companies.
- Becker, M. H. (1974). The health belief model and personal health behaviour. *Health Education Monographs, 2*, 12-20.
- Beilin, L. J. (1997). Stress, coping, lifestyle and hypertension: A paradigm for research, prevention and non-pharmacological management of hypertension. *Clinical Experimental Hypertension, 19*(5-6), 739-752.

- Bekoe, E. O., Kretchy, I. A., Sarkodie, J. A., Okraku, A., Sasu, D., & Twumasi, M. (2017). Ethnomedicinal survey of plants used for the management of hypertension sold in the Makola market, Accra, Ghana. *European Journal of Medicinal Plants, 19*(3), 1-9.
- Bennett, H., Laird, K., Margolius, D., Ngo, V., Thom, D. H., & Bodenheimer, T. (2009). The effectiveness of health coaching, home blood pressure monitoring, and home-titration in controlling hypertension among low-income patients: Protocol for a randomized controlled trial. *BioMedical Central Public Health, 9*, 441-456.
- Bengtsson, U., Kasperowski, D., Ring, L., & Kiellgren, K. (2014). Developing an interactive mobile phone self-report system for self-management of hypertension. Part 1: Patient and professional perspectives. *Blood Pressure, 23*(5), 288-295.
- Berkman, L., Lisa, F., & Lester B. (2003). *Health and ways of living: The alameda country study*. New York: Oxford University Press.
- Bloom, B. S. (1998). Continuation of initial antihypertensive medication after 1 year of therapy. *Clinical Therapy, 20*, 671-681.
- Bianchi, S., Bigazzi, R., & Campese, V. M. (1999). Microalbuminuria in essential hypertension: Significance, pathophysiology, and therapeutic implications. *American Journal of Kidney Disease, 34*(6), 973-995.
- Bilal, A., Riaz, M., Shafiq, N., Ahmed, M., Sheikh, S., & Rasheed, S. (2015). Non-compliance to anti-hypertensive medication and its associated factors among hypertensives. *Journal of Ayub Medical College Abbottabad, 27*(1), 24-31

- Bodenheimer, T., Lorig, K., Holman, H., & Grumbach, K. (2002). Patient self-management of chronic disease in primary care. *Journal of the American Medical Association*, 288, 2469-2475.
- Bosu, W. K. (2015). The prevalence, awareness, and control of hypertension among workers in West Africa: A systematic review. *Global Health Action*, 8, 10-17.
- Bosu, W. K. (2013). Accelerating the control and prevention of non-communicable diseases in Ghana: The key issues. *Postgraduate Medical Journal of Ghana*, 2(1), 45-52.
- Bosu, W. K. (2010). Epidemic of Hypertension in Ghana: A Systematic Review. *BMC Public Health*, 10, 41-48.
- Botchway, C. L. (2014). *Perception of antihypertensive drug and compliance among patients attending Achimota Hospital*. Ghana: University of Ghana Press.
- Bosworth, H. B., Bartash, R. M., Olsen, M. K., & Steffens, D. C. (2003). The association of psychosocial factors and depression with hypertension among older adults. *International Journal Of Geriatric Psychiatry*, 18(12), 1142-1148.
- Bovet, P., Burnier, M., Mandeleine, G., Waeber, B., & Paccaud, F. (2002). Monitoring one year compliance to antihypertensive medication in the Seychelles. *Bulletin of the World Health Organization*, 80(1), 33-38.
- Bowry, A. D., Shank, W. H., Lee, J. L., & Stedman, M. (2011). A systematic review of adherence to cardiovascular medication in resources limited settings. *Journal of General Internal Medicine*, 26, 1479-1491.

- Brownson, R., Seiler, R., & Eyster, A. (2010). Measuring the impact of public health policy. *Preventing Chronic Disease*, 7(4), 1-7.
- Calsbeek, H., Rijken, M., Bekkers, M. J. T. M., Henegouwen, G. P. B., & Dekker, J. (2006). Coping in adolescents and young adults with chronic digestive disorders: Impact on school and leisure activities. *Psychology and Health*, 21(4), 447-462
- Campbell, N. R., Johnson, J. A., & Campbell, T. S. (2012). Sodium Consumption: An Individual's Choice? *International Journal of Hypertension*, 12, 86-95.
- Cancio, E. J., & Johnson, J. (2013). Designing effective classwide motivation systems for students with emotional and behavioral disorders, preventing school failure: *Alternative Education for Children and Youth*, 57(1), 49-57.
- Carretero, O. A., & Oparil, S. (2000). Essential hypertension. Part I: Definition and etiology. *Circulation*, 101(3), 329-335.
- Case, A., Menendez, A., & Ardington, C. (2005). *Health seeking behaviour in northern KwaZulu-Natal*. Retrieved on 4<sup>th</sup> May, 2018 from <http://www.opensal.dru.uct.ac.za/handle/11090/665>
- Case, M. A., & Ardington, C. (2005). Health seeking behaviour in Northern KwaZulu-Natal. *Journal of Social Science and Medicine*, 24, 45-56.
- Centre for Disease Control. (2015). *High blood pressure fact sheet*. Retrieved on the 6<sup>th</sup> January, 2017 from [https://intranet.bixbycenter.ucsf.edu/publications/files/Brindis\\_FromTheoryToAction\\_2005.pdf](https://intranet.bixbycenter.ucsf.edu/publications/files/Brindis_FromTheoryToAction_2005.pdf).

- Centers for Disease Control and Prevention. (2014). *How much physical activity do adults need?* Retrieved on 3rd December, 2017 from <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>.
- Centers for Disease Control and Prevention. (2010). *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report*, 59. USA: Centers for Disease Control and Prevention.
- Chiavarino, C., Rabellino, D., Ardito, R. B., & Cavallero, E. (2012). Emotional coping is a better predictor of cardiac prognosis than depression and anxiety. *Journal of Psychosomatic Research*, 73, 473–475.
- Chinnakali, P., Mohan, B., Upadhyay, R. P., Singh, A. K., Srivastava, R., & Yadav, K. (2012). Hypertension in the elderly: Prevalence and health seeking behaviour. *North American Journal of Medical Science*, 4(11), 558–562.
- Chobanian, A. V., Bakris, G. L., Black, H. R., Cushman, W. C., Green, L. A., & Roccella, E. J. (2010). *The seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure: Complete report*. Retrieved on 12<sup>th</sup> November, 2017 from <http://www.nhlbi.nih.gov/guidelinws/hypertension/jnc7full.hmt>
- Chobanian, A. V., Bakris, G. L., Black, H. R., Cushman, W. C., Green, L. A., & Izzo, J. L. (2003). Seventh report of the Joint National Committee on prevention, detection, evaluation and treatment of high blood pressure. *Hypertension*, 42(6), 1206–1252.

- Clark, N. M., Becker, M. H., Janz, N. K., Lorig, K., Rakowski, W., & Anderson, L. (1991). Self-management of chronic disease by older adults. *Journal of Aging and Health, 3*, 23–27.
- Cleary, D. P. (2003). A hospitalization from hell: A patient's perspective on quality. *Annual International Medicine, 138*, 33–39.
- Colaizzi, P. F. (1978). Psychological research as the phenomenologist views it. In R. S. Valle & M. King (Eds.), *Existential phenomenological alternatives for psychology* (pp. 48-71). New York: Oxford University Press.
- Colemn, K., Austin, B. T., Brach, C., & Wagner, E. H. (2009). Evidence on the chronic care model in the new millennium. *Health Affairs, 28*(1), 75–85.
- Colosia, A. D., Palencia, R., & Khan, S. (2013). Prevalence of hypertension and obesity in patients with type 2 diabetes mellitus in observational studies: A systematic literature review. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy, 6*, 327-338.
- Cooper, C., Carpenter, I., & Katona, C. (2005). The AdHOC study of older adults' adherence to medication in 11 countries. *American Journal of Geriatric Psychiatry, 13*, 1067–1076.
- Corbin, J., & Strauss, A. (1985). Managing chronic illness at home: Three lines of work. *Qual Sociologia, 8*(3), 224-247.
- Cozier, C. Y., Jeffrey, Y., Wise, A. L., VanderWeele, J. T., Balboni, A. T., & Shields, E. A. (2018). Religious and spiritual coping and risk of incident hypertension in the black women's health study. *Annals of Behavioral Medicine, 52*(12), 989–998.

- Creswell, J. W., & Plano-Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). London: SAGE Publication.
- Creswell, J. W. (2009). *Research design: Qualitative and quantitative approaches*. (3rd ed.). London: SAGE Publication.
- Crotty, M. (1996). *Phenomenology and nursing research*. South Melbourne: Churchill Livingstone.
- Dalvi, R. J. (2014). *Introduction to physical education*. India: Laxmi Book Publication.
- Dama, M., S., Akhand, A. P., & Rajender, S. (2010). Nature versus nurture – plant resources in management of male infertility. *Frontiers in Biosciences*, 2, 1001-1014.
- Daniel, A. C. Q. G., & Veiga, E. V. (2013). Factors that interfere the medication compliance in hypertensive patients. *Einstein Sao Paulo*, 11(3), 331-337.
- Dansereau, E., Masiye, F., Gakidou, E., Masters, S. H., Burstein, R., & Kumar, S. (2015). Patient satisfaction and perceived quality of care: Evidence from a cross-sectional national exit survey of HIV and non-HIV service users in Zambia. *British Medical Journal Open*, 5, 97-100.
- Davila, E. P., Kuklina, E. V., Valderrama, A. L., Yoon, P. W., Rolle, I., & Nsubuga, P. (2012). Prevalence, management, and control of hypertension among US workers: Does occupation matter? *Journal of Occupational Environment and Medicine*. Retrieved on 2<sup>nd</sup> January, 2019 from <https://pdfs.semanticscholar.org/882e/d929de5907190c141386b1ddd30dc8406e0c.pdf>

- De-Graft Aikins, A. D. (2007). Ghana's neglected chronic disease epidemic: A developmental challenge. *Ghana Medical Journal*, *41*(4), 154-159.
- De-Graft Aikins, A. D., Addo, J., Offei, F., Bosu, W. K., & Agyeman, C. (2012). Ghana's burden of non-communicable diseases: Future directions in research, practice and policy. *Ghana Medical Journal*, *46*(2), 1-2.
- de Souza, A. C. C., Moreira, T. M. M., Oliveira, E. S., Menezes, A. V. B., Loureiro, A. M. O., & Silva, C. B. A. (2016) Effectiveness of educational technology in promoting quality of life and treatment adherence in hypertensive people. *PLoS ONE*, *11*(11), e0165311.
- Delahaye, F. (2013). Should we eat less salt? *Archives Cardiovascular Disease*, *106*, 324–332.
- Delaney, J. L. (2018). Patient-centered care as an approach to improving healthcare in Australia. *Australian Journal of Nursing Practice, Scholarship and Research*, *25*(1), 119-123
- Dein, S. (2009). *The faith of patients: Presentation given at the annual meeting of the Royal College of Psychiatrists, Liverpool*. Retrieved on 5<sup>th</sup> July, 2018 from <https://books.google.com.gh/books?id=9hOeDwAAQBAJ&pg=PA143&lpg>
- Devkota, S., Dhungana, R. R., Pandey, A. R., Bista, B., Panthi, S., Thakur, K. K., & Gajurel, R. M. (2016). Barriers to treatment and control of hypertension among hypertensive participants: A Community-based cross-sectional mixed method study in municipalities of Kathmandu, Nepal. *Frontiers in Cardiovascular Medicine*, *3*, 26.



- Diaz, M. K., & Shimbo, D. (2013). Physical activity and the prevention of hypertension. *Current Hypertension Report*, 15(6), 659-668.
- DiMatteo, M., Giordani, P., & Lepper, H. (2002). Patient adherence and medical treatment outcomes: A meta-analysis. *Medical Care*, 40, 794-811.
- Dionne, J. M., Abitbol, C. L., Flynn, J. T., & Abitbol, F. (2012). Hypertension in infancy: Diagnosis, management and outcome. *Pediatric Nephrology*, 27(1), 17-32.
- Dolan, C. A., Sherwood, A., & Light, K. C. (1992). Cognitive coping strategies and blood pressure responses to real-life stress in healthy young men. *Healthy Psychology*, 11(4), 233-240
- Dollery, C. T., Perry, H. M., Dustan, H. P., & Lyons, R. H. (1963). *Circulation*, XXVIII. Retrieved on 3<sup>rd</sup> June, 2018 from <https://www.ahajournals.org>
- Doumas, M., Tsakiris, A., Douma, S., Grigorakis, A., Papadopoulos, A., & Giamarellou, H. (2006). Factors affecting the increased prevalence of erectile dysfunction in Greek hypertensive compared with normotensive subjects. *Journal of Andrology*, 27(3), 469-477.
- Doyle, C., Lennox L., & Bell, D. (2013). A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. *British Medical Journal Open*, 3(1), e001570.
- Edmonds, D., Foerster, E., Groth, H., Greminger, P., Siegenthaler, W., & Vetter, W. (2005). Does self-measurement of blood pressure improve patient compliance in hypertension? *Journal of Hypertension*, 3(1), 31-34.

- Egan, M. B. (2017). Physical activity and hypertension knowing is not enough; We must apply. Willing is not enough; we must do-von Goethe. *Hypertension*, *69*, 404-406.
- Endler, N. S., & Parker, D. A. (1999). *Coping inventory for stressful situations (CISS): Manual* (2nd ed.). Toronto: Multi Health Systems.
- Endler, N. S., & Parker, J. D. A. (1994). Assessment of multidimensional coping: Task, emotion and avoidance strategies. *Psychological Assessment*, *1*, 50-60.
- Endler, N. S., & Parker, J. D. A. (1990). The multidimensional assessment of coping: A critical evaluation. *Journal of Personality and Social Psychology*, *58*, 844-855.
- Erah, P. O., & Chuks-Eboka, N. A. (2008). Patients' perception of the benefits of pharmaceutical care services in the management of hypertension in a tertiary health care facility in Benin City. *Tropical Journal of Pharmaceutical Research*, *1*, 897-905.
- Ersek, M., Turner, J. A., & Kemp, C. A. (2006). Use of the chronic pain coping inventory to assess older adults' pain coping strategies. *Journal of Pain*, *7*(11), 833-842.
- Ernest, M. M., Moses, M. G., Beth, M., Nell, M. (2014). Level of blood pressure control among hypertensive patients on follow-up in a regional referral hospital in central Kenya. *The Pan African Medical Journal*, *18*, 27-38.
- Ersek, M., Turner, J. A., & Kemp, C. A. (2006). Use of chronic pain coping inventory to assess older adults' coping strategies. *Journal of Pain*, *7*(11), 833-842.

- Ewhrudjakpor, C. (2007). Conceptualizing Africans' perception of disease as distinct from Euro-American practice. *Journal of Social Policy Issues*, 4(3), 8-11.
- Ewhrudjakpor, C. (2008). Cultural factors blocking the utilization of orthodox medicine: A case study of Warri area in Delta State of Nigeria. *Review of Sociology*, 14(1), 103-119.
- Fagard, R. H., & Cornelissen, V. A. (2007). Effect of exercise on blood pressure control in hypertensive patients. *European Journal of Cardiovascular Prevention and Rehabilitation*, 14, 12–17.
- Falkner, B. (2009). Hypertension in children and adolescents: Epidemiology and natural history. *Pediatric Nephrology*, 25(7), 1219–1224.
- Farmer, K. C. (1999). Methods for measuring and monitoring medication regimen adherence in clinical trials and clinical practice. *Clinical Therapeutics*, 21(6), 1074–1090
- Fisher, R., Ury, W., & Patton, B. (1991). *Getting to yes: Negotiating agreement without giving in* (2nd ed.). New York: Penguin Books.
- Fici, F., Seravalle, G., Koylan, N., Cagla, N., Korkut, Y., & Grassi, G. (2017). Follow-up of antihypertensive therapy improves blood pressure control: Results of HYT (Hypertension survey) follow-up. *High Blood Pressure and Cardiovascular Prevention*, 24(3), 289-296.
- Flattery, M. P., Pinson, J. M., Savage, L., & Salyer, J. (2005). Living with pulmonary artery hypertension: Patients' experiences. *Heart and Lung*, 34(2), 99-107.

- Fodor, G. J., Kotrec, M., Bacskai, K., Dorner, T., Lietava, J. & Sonkodi, S. (2005). Is interview a reliable method to verify the compliance with antihypertensive therapy? An international central-European study. *Journal of Hypertension*, 23(6), 1261-1266.
- Forouzanfar, M., Dajani, H. R., Groza, V. Z., Bolic, M., Rajan, S., & Batkin, I. (2015). Oscillometric blood pressure estimation: Past, present, and future. *IEEE Reviews in Biomedical Engineering*, 8, 44–63.
- Fouka, G., & Mantzorou, M. (2011). What are the major ethical issues in conducting research? Is there a conflict between the research ethics and the nature of nursing? *Health Science Journal*, 5(1), 3-14.
- Fraenkel, J. R., & Wallen, N. E. (2000). *How to design and evaluate research in education* (4th ed.). Boston: McGraw Hill.
- Gascon, J. J., Sanchez-Orrtuno, M., Llor, B., Skidmore, D., & Saturno, P. J. (2004). Why hypertensive patients do not comply with the treatment: Results from a qualitative study. *Family Practice*, 21(2), 125–130.
- Furtado, L. G., & de Nobrega, M. M. L. (2013). Model of care in chronic disease: Inclusion of a theory of nursing. *Scielo*, 22(4), 33-41.
- Gebreyohannes, E. A., Bhagavathula, A. S., Abebe, T. B., Tefera, Y. G., & Abegaz, T. M. (2019). Adverse effects and non-adherence to antihypertensive medications in University of Gondar Comprehensive Specialized Hospital. *Clinical Hypertension*, 25, 1-9.

- Gebrihet, T. A., Mesgna, K. H., Gebregiorgis, Y. S., Kahsay, A. B., Weldehaweria, N. B., & Weldu, M. G. (2017). Awareness, treatment, and control of hypertension is low among adults in Aksum town, northern Ethiopia: A sequential quantitative-qualitative study. *PLoS ONE*, *12*(5), e0176904.
- Ghana New Agency. (2019). *HIV/AIDS fatality rate high in Brong-Ahafo Region - Medical Director*. Retrieved on 3<sup>rd</sup> March, 2019 from <http://www.peacefmonline.com/pages/local/social/201903/376779.php>.
- Ghods, A., J., & Nasrollahzadeh, D. (2003). Non-compliance with immunosuppressive medications after renal transplantation. *Experimental Clinical Transplant*, *1*, 39–47.
- Glynn, L. G., Murphy, A. W., Smith, S. M., Schroeder, K., & Fahey, T. (2010). Interventions used to improve control of blood pressure in patients with hypertension. *Cochrane Database of Systematic Reviews*, *3*(182), 1002-1114.
- Giuseppe, M., Fagard, R., Narkiewicz, K., Redon, J., Zanchetti, A., & Bohm, M. (2013). 2013 ESH/ESC Guidelines for the management of arterial hypertension: The Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *European Heart Journal*, *34*(28), 2159–219.

- Go, A. S., Bauman, M., King, S. M., Fonarow, G. C., Lawrence, W., Williams, K. A., & Sanchez, E. (2013). An effective approach to high blood pressure control: A science advisory from the American Heart Association, the American College of Cardiology, and Centers for Disease Control and Prevention. *Hypertension*, *63*(4), 878–885.
- Go, A. S., Mozaffarian, D., & Roger, V. L. (2013). The American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Heart disease and stroke statistics – 2013 update: A report from the American Heart Association. *Circulation*, *127*, e6-245.
- Goldbeck, R. (1997). Denial in physical illness. *Journal of Psychosomatic Resources*, *43*, 575-593.
- Goyal, P., Kumar, D., Dixit, S., Srivastav, S., & Singh, A. (2016). Essential criteria for quality OPD services as perceived by patients in a tertiary care hospital in Faridabad City. *International Journal of Research in Medical Sciences*, *4*(2), 441-445.
- Graven, L. J., & Grant, J. S. (2013). Coping and health-related quality of life in individuals with heart failure: An integrative review. *Heart and Lung*, *42*, 183-194.
- Greenlick, M. R. (1995). The emergence of population-based medicine. *HMO Practice*, *9*, 120-122.
- Guerrero, D., Rudd, P., Bryant-Kosling, C., & Middleton, B. F. (2003). Antihypertensive-taking: Investigation of a simple regimen. *American Journal Hypertension*, *6*, 586-592.

- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59-82.
- Gunther, S. V. (1994). *A comparison of coping between grow members and public mental health system clients (Mental Health Masters)*. Wollongong: Wollongong University.
- Ha, S. K. (2014). Dietary salt intake and hypertension. *Electrolyte & Blood Pressure: E & BP, 12*(1), 7–18.
- Hadi, N., & Rostami-Gooran, N. (2004). Determinant factors of medication compliance in hypertensive patients of Shiraz, Iran. *Archives Iranian Medicine, 7*(4), 292–296.
- Hamdidouche, I., Jullien, V., & Boutouyrie, P. (2017). Drug adherence in hypertension: From methodological issues to cardiovascular outcomes. *Journal of Hypertension, 35*, 11-33.
- Hashmi, S. K., Afridi, M., Abbas, K., Sajwani, R. A., Saleheen, D., & Philippe, M. (2007). Factors associated with adherence to anti-hypertensive treatment in Pakistan. *PLoS ONE, 2*(3), e280.
- Hatah, E., Lim, K. P., Mohd, A. A., Shah, M. H., & Islahudin, F. (2015). The influence of cultural and religious orientations on social support and its potential impact on medication adherence. *Patient Preference and Adherence, 9*, 589-596.
- Haynes, R. B., McDonald, H. P., & Grag, A. X. (2002). Helping patients follow prescribed treatment: Clinical applications. *JAMA, 288*, 2880–2883.

- He, F. J., & MacGregor, G. A. (2007). Salt, blood pressure and cardiovascular disease. *Current Opinion Cardiology*, 22, 298–305.
- He, J., Muntner, P., Chen, J., Roccella, E. J., Streiffer, R. H., & Whelton, P. K. (2002). Factors associated with hypertension control in the general population of the United States. *Archives of Internal Medicine*, 162(9), 1051–1058.
- Hegde, S. M., & Solomon, S. D. (2015). Influence of physical activity on hypertension and cardiac structure and function. *Current Hypertension Reports*, 17(10), 77.
- Heymann, A. D., Gross, R., Tabenkin, H., Porter, B., & Porath, A. (2011). Factors associated with hypertensive patients' compliance with recommended lifestyle behaviors. *Israel Medical Association Journal*, 13(9), 553-557.
- Hixson, K. A., Gruchow, H. W., & Morgan, D. W. (1998). The relation between religiosity, selected health behaviors, and blood pressure among adult females. *Preventive Medicine*, 27(4), 545–552.
- Hochbaum, G. (1958). *Public participation in medical screening programs: A Socio- Psychological study*, (Vol. PHS Publication no 572). Washington, DC: US Government Printing Office.
- Hochbaum, G., Rosenstock, I., & Kegels, S. (1952). *Health belief model*. United States Public Health Service. Retrieved on 4<sup>th</sup> May, 2018 from [http://www.infosihat.gov.my/infosihat/artikelHP/bahanrujukan/HE\\_DAN\\_TEORI/DOC/Health%20Belief%20Model.doc](http://www.infosihat.gov.my/infosihat/artikelHP/bahanrujukan/HE_DAN_TEORI/DOC/Health%20Belief%20Model.doc).
- Holman, H., & Lorig, K. (2000). Patients as partners in managing chronic disease. *British Medical Journal*, 320, 526.



- Horowitz, C. R., Tuzzio, L., Rojas, M., Monteith, S. A., & Sisk, J. E. (2004). How do urban African American and Latinos view the influence of diet on hypertension? *Journal of Health Care for the Poor and Underserved, 15*(4), 631-644.
- Hossain, S. M., Boonshuyar, C., & Ekram, A. R. M. S. (2011). Non-adherence to antihypertensive treatment in essential hypertensive patients in Rajshahi, Bangladesh. *AKMMC Journal, 2*(1), 9–14.
- Ibrahim, M. M., & Damasceno, A. (2013). Hypertension in developing countries. *Medical Laboratory Journal, 14*(1), 23 – 38.
- Ikama, M. S., Nsitou, B. M., Loumouamou, M., Kimbally-Kaky, G., & Nkoua, J. L. (2013). Drug compliance and its factors in a group of hypertensive Congolese. *Pan African Medical Journal, 15*, 121-125.
- Iloh, G. U., & Amadi, A. N. (2017). Treatment satisfaction, medication adherence, and blood pressure control among adults Nigerians with essential hypertension. *International Journal of Health and Allied Science, 6*(2), 75-81.
- Iloh, G. U. P., Amadi, A. N., Okafor, G. O. C., Ikwudinma, F. U. O., & Ezinne, U. G. U. (2014). Adherence to life style modification among adult hypertensive in a primary care Clinic of a Tertiary Hospital in resource poor environment of Eastern Nigeria. *British Journal of Medicine and Medical Research, 4*(18), 3478-3490.
- Isezuo, A. S., & Opera, T. C. (2000). Hypertension awareness among Nigerians in a Nigerian tertiary health institution. *Sahel Medical Journal, 3*(2), 93-96.

- Iwelunmor, J., Blackstone, S., Gyamfi, J., Airhihenbuwa, K., Plange-Rhule, J., & Ogedegbe, G. (2015). A concept mapping study of physicians' perceptions of factors influencing management and control of hypertension in Sub-Saharan Africa. *International Journal of Hypertension*, 201, 1-9.
- James, P. A., Oparil, S., Carter, B. L., Cushman, W. C., Dennison-Himmelfarb, C. (2013). 2014 Evidence-based guideline for the management of high blood pressure in adults: Report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA*, 311(5), 507–520.
- Jing, J., Grant, E. S., Vernon, M. S., & Shu, C. (2008). Factors affecting therapeutic compliance: A review from the patient's perspective. *Semantic Scholar*, 4(1), 269-286.
- Joho, M. (2012). Factors affecting treatment compliance among hypertension patients in three district hospitals. *DAR ES SALAAM*, 12(3), 12-21.
- Jokisalo, E. (2005). *Compliance and patient-perceived problems in the treatment of hypertension*. Finland: Kuopio University Publications.
- Jokisalo, E., Kumpusalo, E., Enlund, H., & Takala, J. (2001). Patients' perceived problems with hypertension and attitudes towards medical treatment. *Journal of Human Hypertension*, 15, 755-761.
- Joint National Committee on Prevention. (1997). Sixth report of the Joint National Committee on Prevention, Detection, Evaluation and treatment of high blood pressure. *Archives of Internal Medicine*, 157, 2413-2446.

- Kabira, Z., Iliyasua, I., Abubakara, S., Jibrilb, M., & Farmer, K. (1999). Methods for measuring and monitoring medications regimen. *Clinical Therapeutics*, 21(6), 14-25.
- Kalra, S., Kalra, B., Agrawal, N., Sahay, R., Unnikrishnan, A., & Chawla, R. (2009). Coping strategies in diabetes. *The Internet Journal of Geriatrics and Gerontology*, 5(2), 32-40.
- Karwalajtys, T., & Kaczorowski, J. (2010). An integrated approach to preventing cardiovascular disease: Community-based approaches, health system initiatives, and public health policy. *Risk Management and Healthcare Policy*, 3, 39–48.
- Kapoor, P. (2011). Why quality in healthcare. *Medical Journal, Armed Forces India*, 67(3), 206–208.
- Kasi, P. M., Naqvi, H. A., Afghan, A. K., Khawar, T., Khan, F. H., & Khan, U. Z. (2012). Coping styles in patients with anxiety and depression. *ISRN Psychiatry*. Retrieved on 4<sup>th</sup> June, 2018 from <https://www.hindawi.com/journals/isrn/2012/128672/citations/>
- Kemmel, R. B. (1989). Agreeing on a definition of quality care may be healthcare's biggest challenge. *Modern Healthcare*, 19, 37-45.
- Kisokanth, G., Ilankoon, I. M. P., Arulanandem, K., Sundaresan, K. T., Goonewardena, C. S. E., & Joseph, J. (2018). Perceptions, attitudes and self-care practices on management of hypertension among hypertensive patients at Teaching Hospital, Batticaloa District, Sri Lanka. *The Open Hypertension Journal*, 10, 1-7.
- Kolata, G. (2013). *No benefit seen in sharp limits of salt in diet*. New York: The New York Times.

- Krall, R. (2001). *Interactions of compliance and patient safety*. In: *Patient compliance in medical practice and clinical trials*. New York: Raven Press.
- Kretchy, I. A., Owusu-Daaku, F., & Danquah, S. (2014). Patterns and determinants of the use of complementary and alternative medicine: A cross-sectional study of hypertensive patients in Ghana. *BMC Complementary and Alternative Medicine*, *14*, 44-49.
- Kretchy, I. A., Owusu-Daaku, F. T., & Danquah, S. A. (2014). Mental health in hypertension: Assessing symptoms of anxiety, depression and stress on anti-hypertensive medication adherence. *International Journal of Mental Health Systems*, *8*, 25-31.
- Kroeger, A. (2003). Anthropological and socio-medical healthcare research in developing countries. *Social Science Medicine*, *17*, 147-161.
- Krousel-Wood, M., Thomas, S., & Muntner, P. (2004). Medication adherence: A key factor in achieving blood pressure control and good clinical outcomes in hypertensive patients. *Current Opinion Cardiology PubMed*, *19*, 357–362.
- Kumar, S. (2015). Hypertension management through patient education. *Master's Projects and Capstones*, *158*, 12-19.
- Kumar, M., Kee, F. T., & Manshor, A. T. (2009). Determining the relative importance of critical factors in delivering service quality of banks: An application of dominance analysis in SERVQUAL model, *Managing Service Quality. An International Journal*, *19*(2), 211-228.

- Kuria, N., Reid, A., Owiti, P., Tweya, H., Kibet, C. K., & Kibachio, J. (2018). Compliance with fellow-up and adherence to medication in hypertensive patients in an urban informal settlement in Kenya: Comparison of three models of care. *Tropical Medical International Health*, 23(7), 785-794.
- Lamprey, P., Laar, A., Adler, J. A., Dirks, R., Caldwell, A., & Perel, P. (2017). Evaluation of a community-based hypertension improvement program (ComHIP) in Ghana: Data from a baseline survey. *BMC Public Health*, 17, 368-372.
- Landsbergis, P. A., Diez-Roux, A. V., Fujishiro, K., Baron, S., Kaufman, J. D., & Szklo, M. (2015). Job Strain, occupational category, systolic blood pressure, and hypertension prevalence: The multi-ethnic study of atherosclerosis. *Journal of Occupational and Environmental Medicine*, 57(11), 1178–1184.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Lee, J. H., & Park, J. H. (2015). Role of echocardiography in clinical hypertension. *Clinical Hypertension*, 21, 9-21.
- Lehane, E., & McCarthy, G. (2009). Medication non-adherence: Exploring the conceptual mire. *International Journal of Nursing Practice*, 15(1), 25-31.
- Lemogoum, D., Seedat, Y. K., Mabadeje, A. F. B., Mendis, S., & Bovet, P. (2003). Recommendations for prevention, diagnosis and management of hypertension and cardiovascular risk factors in sub-Saharan African. *Journal of Hypertension*, 21, 1993–2000.

- Lemogoum, D., Seedat, Y. K., Mabadeje, A. F., Mendis, S., Bovet, P., & Onwubere, B. (1993). International forum for hypertension control and prevention in Africa: Recommendations for prevention, diagnosis and management of hypertension and cardiovascular risk factors in sub-Saharan Africa. *Journal of Hypertension*, *21*, 1993-2000.
- Lewington, S., Clarke, R., Qizilbach, N., Peto, R., & Collins, R. (2002). Prospective studies collaboration. Age-specific relevance of usual blood pressure to vascular mortality. A meta-analysis of individual data from one million adults in 61 prospective studies. *Lancet*, *360*, 1903-1913.
- Llisterri, J. L., Lozano, V. J. V., Aznar, V. J., Argaya, R. M., Pol, B. C., Sanchez, Z. M. A., & Ferrario, C. M. (2001). Sexual dysfunction in hypertensive patients treated with losartan. *American Journal of Medical Science*, *32*(5), 336-341.
- Lloyd-Sherlock, P., Beard, J., & Minicuci, N. (2014). Hypertension among older adults in low- and middle- income countries: Prevalence, awareness and control. *International Journal Epidemiology*, *43*, 116-28.
- Lin, Y. P., Huang, Y. H., Yang, Y. C., Wu, J. S., Chang, C. J., & Lu, F. H. (1995). Adherence to antihypertensive medications among the elderly: A community-based survey in Tainan City, Southern Taiwan. *Taiwan Geriatric Gerontology*, *2*(3), 176-189.
- Lindquist, L. T., Beilin, J. L., & Knudman, W. M. (1997). Influence of lifestyle, coping, and job stress on blood pressure in men and women. *Hypertension*, *29*, 1-7.

- Livneh, H., & Martz, E. (2007). An introduction to coping theory and research. In E. Martz & H. Livneh (Eds.), *Coping with chronic illness and disability: Theoretical, empirical, and clinical aspects* (pp. 3–27). New York, NY: Springer
- Lorig, K. R., & Holman, H. R. (2003). Patient education: history, definition, outcomes, and mechanisms. *Annals of Behavioral Medicine*, 26, 1–7.
- Lubaki, J., Mabuza, L., Malete, N., Maduna, P., & Ndimande, J. V. (2009). Reasons for non-compliance among patients with hypertension at Vanga Hospital, Bandundu Province, Democratic Republic of Congo: A qualitative study. *African Journal of Primary Health Care & Family Medicine*, 1(1), 60-68.
- Luscher, T. F., Vetter, H., Siegenthaler, W., & Vetter, W. (2005). Compliance in hypertension: Facts and concepts. *Journal of Hypertension*, 3(1), 3-9.
- Mafutha, G. N., & Wright, S. C. D. (2013). Compliance or non-compliance of hypertensive adults to hypertension management at three primary healthcare day clinics in Tshwane. *Cura Onis*, 36(1), 52-58
- Martin, U., & Nwankwo, L. (1990). Blood pressure in Nigerian College males. *Journal of Human Hypertension*, 4, 72-73. <sup>[L]</sup><sub>[SEP]</sub>
- Martins, L. C. G., Lopes, M. V. O., Guedes, N. G., Nunes, M. M., Diniz, C. M., & Carvalho, P. M. O. (2015). Sedentary lifestyle in individuals with hypertension. *Revista Brasileira de Enfermagem*, 68(6), 1005-1012.

- Mastsumura, K., Arima, H., & Tominaga, N. (2013). Impact of antihypertensive medication adherence on blood pressure control in hypertension: The COMFORT study. *Monthly Journal of Association of Physicians, 106*, 90-99.
- Mattoo, T. K. (2019). *Definition and diagnosis of hypertension in children and adolescents*. Retrieved on 2<sup>nd</sup> June, 2019 from <https://www.uptodate.com/contents/definition-and-diagnosis-of-hypertension-in-children-and-adolescents>.
- Mbiti, Z., S. (2007). *African religions and philosophy*. London: McGraw-Hill, 120-165.
- McGlynn, E., Asch, S., & Adams, J. (2003). The quality of care delivered to adults in the United States. *The New England Journal of Medicine, 348*(26), 26-41.
- Meinema, J. G., van Dijk, N., Beune, E. J. A. J., Jaarsma, D. A. D. C., van Weert, H. C. P. M., & Haafkens, J. A. (2015). Determinants of adherence to treatment in hypertensive patients of African descent and the role of culturally appropriate education. *PLoS ONE, 10*(8), e0133560.
- Mellen, P. B., Gao, S. K., Vitolins, M. Z., & Goff, D. C. (1999). Deteriorating dietary habits among adults with hypertension: DASH dietary accordance, NHANES 1988–1994 and 1999–2004. *Archives Internal Medicine, 168*, 308–314.
- Menard, J., & Chatellier, G. (1995). Limiting factors in the control of BP: Why is there a gap between theory and practice? *Journal of Human Hypertension, 9*, 519-523.



- Mendes, E. V. (2012). *The care of chronic conditions in primary health care: The imperative of the consolidation of family health strategy*. Brasilia (DF): Pan American Health Organization.
- Mendes, E. V. (2010). Health care networks. *Cienc Saude Coletiva*, 15(5) 2297-2305.
- Meneton, P., Jeunemaitre, X., de Wardener, H. E., & MacGregor, G. A. (2005). Links between dietary salt intake, renal salt handling, blood pressure, and cardiovascular diseases. *Physiological Review*, 85, 679–715.
- Milan, A., Mulatero, P., Rabbia, F., & Veglio, F. (2002). Salt intake and hypertension therapy. *Journal of Nephrology*, 15(1), 1-6.
- Mills, K. T., Rubinstein, A., Irazola, V., Chen, J., Beratarrechea, A., & He, J. (2014). Comprehensive approach for hypertension control in low-income populations: Rationale and study design for the hypertension control program in Argentina. *The American Journal of the Medical Sciences*, 348(2), 139-45.
- Ministry of Health. (2012). *Strategy for the management, prevention and control of chronic non-communicable diseases in Ghana 2012 -2016*. Ghana: MoH.
- Mitra, A. K., & Mawson, R. A. (2017). Neglected tropical diseases: Epidemiology and global burden. *Tropical Medicine and Infectious Disease*, 2(36), 49-56.
- Morgan, D. L. (2007). Paradigm lost and paradigm regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1, 48-76.

- Mogre, V., Apala, P., Nsoh, J. A., & Wanaba, P. (2016). Adiposity, hypertension and weight management behaviours in Ghanaian type 2 diabetes mellitus patients aged 20–70 years. *Clinical Research and Review, 10*(1), 79-85.
- Mole, S., Williams, R., & Goebel, H. (2012). *General Principles of Medical Management*. USA: Oxford University Press.
- Moser, M., & Roccella, E. J. (2013). The treatment of hypertension: A remarkable success story. *The Journal of Clinical Hypertension, 15*, 88–91.
- Muesch, R., Schroeder, K., Dieterle, T., Martina, B., & Battegay, E. (2001). Relationship between insufficient response to antihypertensive treatment and poor compliance with treatment; A prospective case control study. *British Medical Journal, 32*, 143-145.
- Mugo, F. W. (2002). *Sampling in research*. Retrieved on 3<sup>rd</sup> March, 2018 from <http://trochim.human.cornell.edu/tutorial/mugo/tutorial.htm>
- Mweene, M. D., Banda, J., Andrews, B., Mweene, M. M., & Lakhi, S. (2010). Factors associated with poor medication adherence in hypertensive patients in Lusaka, Zambia. *African Journal Online, 37*(4), 252–261.
- National Institutes of Health. (2001). *Health and behaviour: The interplay of biological, behavioral, and societal influences*. Washington (DC): National Academics Press.
- National Clinical Guideline Centre. (2012). *Patient experience in adult NHS services: Improving the experience of care for people using adult NHS services*. London: National Clinical Guideline Centre.

- National Institute of Clinical Excellence. (2011). 7 diagnosis of hypertension, 7.5 link from evidence to recommendation. Hypertension (NICE CG 127). *National Institute for Health and Clinical Excellence*, 32, 102-115.
- National Institute for Health Care Evidence. (2011). *Hypertension: Clinical management of primary hypertension in adults*. On-line: NICE Clinical Guidelines.
- Nau, D. P., Read, L., D., & Lipowski, E. E. (2007). What makes patients think that their pharmacists' services are of value? *JAM Pharmacy Association*, 37, 91-98.
- Nazir, A., Muhammad, A., Syed, H. S., & Waqas, A. (2008). Compliance to antihypertensive drugs, salt restriction, exercise and control of systemic hypertension in hypertensive patients at Abbottabad. *Journal of Ayub Medical*, 20(2) 66-68.
- Neale, A. V., Barbara C. T., & Vernon, S. W. (2006). Marital status, delay in seeking treatment, and survival from breast cancer. *Social Science and Medicine*, 23, 305-312.
- Negi, R. (2009). Determining customer satisfaction through perceived service quality: A study of Ethiopian mobile users. *International Journal of Mobile Marketing*, 4(1), 31-38.
- Newman, J., & Tonkens, E. (2011). *Participation, responsibility and choice: Summoning the active citizen in Western European Welfare States*. Amsterdam: Amsterdam University Press.
- NHS. (2018). *Prevention*. Retrieved on 11<sup>th</sup> April, 2018 from *nhs.uk*.

- Nguyen, M. T., Caze, L. A., & Cottrell, N. (2014). What are validated self-report adherence scales really measuring? A systematic review. *British Journal of Clinical Pharmacology*, 77(3), 427–445.
- Nsiah-Asamoah, C., Setorglo, J., & Mie, J. B. (2017). Nutritional counseling for hypertensive patients: Have final-year nursing students learnt enough to be able to offer advice to such patients. *Journal of Biomedical Education*, 10(11), 55-64.
- Nyarko, S. H. (2016). Prevalence and sociodemographic determinants of hypertension history among women in reproductive age in Ghana. *International Journal of Hypertension*, 10(11), 55-77.
- Obirikorang, Y., Obirikorang, C., Acheampong, E., Anto, E. A., Gyamfi, D., & Amoa, B. (2018). Predictors of noncompliance to antihypertensive therapy among hypertensive patients Ghana: Application of health belief model. *International Journal of Hypertension*, 18(47), 1-9.
- Ofori, R., & Dampson, D. G. (2011). Research methods and statistics using SPSS. Amakom-Kumasi: Payless Publication Limited.
- Ofori-Asenso, R., & Garcia, D. (2016). Cardiovascular diseases in Ghana within the context of globalization. *Cardiovascular Diagnosis and Therapy*, 6(1), 67–77.
- Ogedegbe, G., Fernandez, S., Fournier, L., Silver, S., A., Kong, J., & Teresi, J. A. (2013). The counseling older adults to control hypertension (COACH) trial: Design and methodology of a group-based lifestyle intervention for hypertensive minority older adults. *Contemporary Clinical Trials*, 35, 70-79.

- Okoro, R. N., & Ngong, C. K. (2012). Assessment of patient's antihypertensive medication adherence level in non-comorbid hypertension in a tertiary hospital in Nigeria. *International Journal of Pharmacy Biomedical Resources*, 3(2), 47–54.
- Okuno, J., Yanagi, H., & Tomura, S. (2001). Is cognitive impairment a risk factor for poor compliance among Japanese elderly in the community? *European Journal of Clinical Pharmacology*, 57, 589–594.
- Olanrewaju, T. O., Aderibigbe, A., & Chijioke, A. (2011). Descriptive analysis of blood pressure control among treated hypertensive patients in a tertiary hospital in Nigeria. *African Journal of Medical Science*, 40(3), 207-212.
- Olubodun, J. O., Falase, A. O., & Cole, T. O. (1990). Drug compliance in hypertensive Nigerians with and without heart failure. *International Journal of Cardiology*, 27(2), 229-234.
- Olujimi, J. (2006). Significant factors affecting patronage of health facilities by rural dwellers in Owo Region. Nigeria. *Social Science*, 1(3), 206-215.
- Omosho, O. (2010). Health-seeking behaviour among the rural dwellers in Ekiti State, Nigeria. *International Multi-Disciplinary Journal*, 4(2), 125-138.
- Osamor, P. E. (2015). Social support and management of hypertension in south-west Nigeria. *Cardiovascular Journal of Africa*, 26(1), 29–33.
- Osamor, P. E., & Owumi, B. E. (2011). Factors associated with treatment compliance in hypertension in Southwest Nigeria. *Journal of Health Population and Nutrition*, 29(6), 619-628.

- Osuji, C. U. (2012). Compliance with clinic appointments by hypertensive patients after discharge in a tertiary hospital, South East Nigeria. *Tropical Journal of Medical Research, 16*(2), 50-54.
- O'Reilly, M., & Parker, N. (2012). Unsatisfactory saturation: A critical exploration of the notion of saturated sample sizes in qualitative research. *Qualitative Research Journal, 13*(2), 190-197
- Oppenheim, A. (2000). *Questionnaire design, interviewing and attitude measurement*. London: Pinter Publishers Ltd.
- Owusu-Afriyie, E. K. (2015). *Assessment of knowledge, attitudes and behaviours of hypertension patients at St. Michael hospital, Pramso. Ghana*. KNUST: University Press.
- Park, J. J., Kelly, P., Carter, B. L., & Burges, P. P. (2006). Comprehensive pharmaceutical care in the chain setting. *JAM Pharmacy Association, 36*, 443-451.
- Park, S., Rink, L. D., & Wallace, J. P. (2006). Accumulation of physical activity leads to greater blood pressure reduction than a single continuous session, in prehypertension. *Journal of Hypertension, 24*, 1761-1770.
- Parker, W., Steyn, N. P., Levit, N. S., & Lombard, C. J. (2012). Health promotion services for patients having non-communicable diseases: Feedback from patients and health care providers in Cape Town, South Africa. *BMC Public Health, 12*, 50-63.
- Parasuraman A., Berry L. L., & Zeithaml, V. A. (1988). SERVQUAL: A multiple-item scale for measuring customer perceptions of service quality. *Journal of Retailing, 49*, 41-50.

- Pender, N., Murdaugh, C., & Parsons, A. (2002). *Health promotion in nursing practice*. Prentice Hall: Upper Saddle River.
- Pereira, M., Lunet, N., Azevedo, A., & Barros, H. (2009). Differences in prevalence, awareness, treatment and control of hypertension between developing and developed countries. *Journal of Hypertension*, 27(5), 963-975.
- Player, M. S., King, D. E., Mainous, A. G., & Geesey, M. E. (2007). Psychosocial factors and progression from prehypertension to hypertension or coronary heart disease. *Annals of Family Medicine*, 5(5), 403-411.
- Piatt, G. A., Orchard, T. J., & Emerson, S. (2006). Translating the chronic care model into the community: Results from a randomized controlled trial of a multifaceted diabetes care intervention. *Diabetes Care*, 29(4), 811–817.
- Poulter, N. R., Prabhakaran, D., & Caulfield, M. (2015). Hypertension. *Lancet*, 386, 801–812.
- Rahman, A. R., Wang, J. G., Kwong, G. M., Morales, D. D., Sritara, P., & Sukmawan, R. (2015). Perception of hypertension management by patients and doctors in Asia: Potential to improve blood pressure control. *Asia Pacific Family Medicine*, 14(1), 2.
- Ramsaran-Fowdar, R. (2008). The relative importance of service dimensions in a healthcare setting. *International Journal of Health Care Quality Assurance*, 21(1), 104-124.

- Ranganathan, P., Pramesh, C. S., & Aggarwal, R. (2017). Common pitfalls in statistical analysis: Logistic regression. *Perspectives in Clinical Research*, 8(3), 148–151.
- Rao, C. R., Kamath, V. G., Shetty, A., & Kamath, A. (2014). Treatment compliance among patients with hypertension and type 2 diabetes mellitus in a coastal population of southern India. *International Journal of Preventive Medicine*, 5(8), 992–998.
- Rao, B. M. V., & Satyanarayana, N. (2014). A study on patient perceived service quality in a Tertiary Care Teaching Hospital. *IOSR Journal of Business and Management*, 16(11), 29-33.
- Reddy, K. S. (1996). Hypertension control in developing countries: Generic issues. *Journal of Human Hypertension*, 10, 533-538.
- Regione, L., & Lombardia, P. (2014). *Determinations regarding the management of the regional social-health service for the year 2014*. Retrieved on 4<sup>th</sup> May, 2018 from <http://www.sanita.regione>
- Reiners, A. A. O., & Nogueira, M. S. (2009). Raising hypertensive patients' consciousness about treatment compliance. *Revista La no-Americana de Enfermagem*, 17(1), 1–8.
- Rimando, C. M. (2010). *Patient experiences with hypertension in the Georgia Stroke and Heart attack Prevention Program*. Athens, GA: University of Georgia Press.
- Rivera, S. L., Martin, J., & Landry, J. (2019). Acute and chronic hypertension: What clinicians need to know for diagnosis and management. *Critical Care Nursing Clinics of North America*, 31(1), 97-108.



- Rodrigues, M. T. P., Moreira, T. M. M., & Andrade, F. (2014). Elaboration and validation of instrument to assess adherence to hypertension treatment. *Rev Saude Pública, 48*(2), 232-240
- Rockville, M. D. (2013). *2012 National Health Care Quality Report*. Agency for Healthcare Research and Quality. Retrieved on 14<sup>th</sup> May, 2018 from <http://www.ahrq.gov/research/ndings/nhqrdr/nhqr12/2012nhrpdf>.
- Rosendaal, N. T. A., Hendriks, M. E., Verhagen, M. D., Bolarinwa, O. A., & Sanya, E. O. (2016). Costs and cost-effectiveness of hypertension screening and treatment in adults with hypertension in rural Nigeria in the context of a health insurance program. *PLOS ONE, 11*(6), e0157925.
- Rueda, B., Perez-Garcia, A. M. (2013). Coping strategies, depressive symptoms and quality of life in hypertensive patients: Mediation and prospective relations. *Psychology and Health, 28*(10), 1152-1170.
- Ryan, P., & Sawin, K. (2009). The individual and family self- management theory: Background and perspectives on context, process, and outcomes. *Nursing Outlook, 57*, 217-225.
- Sackett, D., Haynes, R., Gibson, E., Taylor, D., Roberts, R., & Johnson, A. (2008). Patient compliance with antihypertensive regimens. *Patient Counseling and Health Education, 1*, 18-21.
- Sacks, F. M., Svetkey, L. P., Vollmer, W. M., Appel, L. J., Bray, G. A., & Miller, E. R. (2001). Effects on blood pressure of reduced dietary sodium and dietary approaches to stop hypertension (DASH) diet. DASH-Sodium Collaborative Research Group. *The New England Journal of Medicine, 344*(1), 3–10.

- Sanuade, O. A., Awuah, R. B., & Kushitor, M. (2018). Hypertension awareness, treatment and control in Ghana: A cross-sectional study. *Ethnicity & Health, 10*(10), 98-104.
- Sarantakos, S. (2005). *Social research*. (3rd ed.). New York: Palgrave MacMillan,
- Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students* (4th ed.). Essex: Person Education Limited.
- Scheltens, T., Beulens, J. W., Verschuren, W. M. M., Boer, J. M., Hoes, A. W., & Grobbee, D. E. (2010). Awareness of hypertension: Will it bring about a healthy lifestyle? *Journal of Human Hypertension, 24*, 561–567.
- Schlffrin, E. L. (2012). Hypertension: Treatments, diabetes, and developing regions. *Lancet Journal, 380*(9841), 539-541.
- Schutte, A. E., Van Rooyen, J. M., Huisman, H. W., Kruger, H. S., & De Ridder, J. H. (2003). Factors analysis of possible risk for hypertension in a black South African population. *Journal of Human Hypertension, 17*, 339–348.
- Schulman-Green, D., Jaser, S., Martin, F., Alonzo, A., Grey, M., & Whittemore, R. (2012). Processes of self-management in chronic illness. *Journal of Nursing Scholarship, 44*, 136-144.
- Seedat Y. K. (2015). Why is control of hypertension in sub-Saharan Africa poor?. *Cardiovascular journal of Africa, 26*(4), 193–195.

- Senior, V., Marteau, T. M., & Weinman, J. (2004). Self-reported adherence to cholesterol-lowering medication in patients with familial hypercholesterolaemia: The role of illness perceptions. *Cardiovascular Drugs Therapy*, *18*, 475–481.
- Shamsi, A., Dehghan Nayeri, N., & Esmaili, M. (2017). Living with Hypertension: A Qualitative Research. *International Journal of Community Based Nursing and Midwifery*, *5*(3), 219–230.
- Sharma, M. S., & Romas, J. A. (2008). *Theoretical foundations of health education and health promotion*. Boston: Jones and Bartlett Publishers.
- Sharpe, P. A., & Mezoff, J. S. (1995). Beliefs about diet and health: Qualitative interviews with low income older women in the rural south. *Journal of Women and Aging*, *7*(12), 15-18.
- Shikha S., Ravi S., & Gyan P. S. (2017). Prevalence and associated Risk factors of hypertension: A cross-sectional study in urban Varanasi. *International Journal of Hypertension*, *17*(20), 36-42.
- Shao J. P., Sawe, R. H., Murray, R. B., Mfinanga, J. J., Mwafongo, V., & Runyon, S. M. (2018). Profile of patients with hypertensive urgency and emergency presenting to an urban emergency department of a tertiary referral hospital in Tanzania. *BMC Cardiovascular Disorders*, *18*(158), retrieved from <https://doi.org/10.1186/s12872-018-0895-0>.
- Si, D., Bailie, R., & Weeramanthri, T. (2008). Effectiveness of chronic care model-oriented interventions to improve quality of diabetes care: A systematic review. *Primary Health Care Research and Development*, *9*(1), 25–40.

- Sithu, A., Ramli, M., Jamalludin A. R., Azarisman, S. M., & Aszrin, A. (2018). Relationship between coping mechanisms to psychosocial stress with blood pressure in young adults: A pilot study. *Bangladesh Journal of Medical Science*, *17*(3), 439-445.
- Siu, A. L. (2015). Screening for high blood pressure in adults: U.S. preventive services task force recommendation statement. *Annals of Internal Medicine*, *163*, 778–86.
- Statistical Language – Australia Bureau of Statistics. (2013). *Census and sample*. Retrieved on 3<sup>rd</sup> March, 2018 from <http://www.abs.gov.au/websitedbs/a3121120.nsf/home/statistical+language+census+and+sample>.
- Steffen, P., & Hinderliter, A., & Blumenthal, J., & Sherwood, A. (2001). Religious coping, ethnicity, and ambulatory blood pressure. *Psychosomatic Medicine*, *63*. 523-530.
- Steiner, R. (2017). *What exactly does quality mean in the healthcare context?* Retrieved on 12<sup>th</sup> June, 2019 from <https://www.elationhealth.com/healthcare-innovation-policy-news-blog/quality-healthcare/>.
- Stephoe, A., & McMunn, A. (2009). Health behaviour patterns in relation to hypertension: The English longitudinal study of ageing. *Journal of Hypertension*, *27*, 224–230.
- Steyn, N. P., & McHiza, Z. J. (2014). Obesity and the nutrition transition in sub-Saharan Africa. *Annals of the New York Academy of Sciences*, *13*(11), 88-101.

- Stilley, C., S., Sereika, S., & Muldoon, M., F. (2004). Psychological and cognitive function: Predictors of adherence with cholesterol lowering treatment. *Annual Behavioural Medicine*, 27, 117–124.
- Strogatz, D., Croft, J. B., James, S. A., Keenan, N. L., Browning, S. R., Garrett, J. M. (1997). Social support, stress, and blood pressure in Black Adults. *Epidemiology*, 8(5), 482-487.
- Sumantra I. G. (2015). The level of medication compliance of hypertension in adults. *Journal of Hypertension*, 33, 49-60.
- Sundstrom, J., Arima, H., Jackson, R., Turnbull, F., Rahimi, K., & Chalmers, J. (2015). Effects of blood pressure reduction in mild hypertension. *Annals of Internal Medicine*, 162, 184–191.
- Sunyani Municipal Hospital. (2018). *Annual report for 2018*. Ghana: SMH
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate statistics* (4th ed.). Boston: Allyn and Bacon.
- Tagoe, H. A., & Dake, F. A. (2011). Healthy lifestyle behavior among Ghanaian adults in the phase of a health policy change. *Globalization and Health*, 7, 7-16.
- Tan, C. S., Hassali, M. A., Neoh, C. F., Saleem, F. (2017). A qualitative exploration of hypertensive patients' perception towards quality use of medication and hypertension management at the community level. *Pharmacy Practice*, 15(4), 1074.
- Tang, H. Y., Harms, V., & Vezeau, T. (2008). An audio relaxation tool for blood pressure reduction in older adults. *Geriatric Nursing*, 29, 392–401.

- Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social and behavioral research*. London: SAGE Publication
- Ten Facts on Patient Safety. (2009). Retrieved on 12<sup>th</sup> April, 2019 from [http://www.who.int/features/factfiles/patient\\_safety/en/index.html](http://www.who.int/features/factfiles/patient_safety/en/index.html)
- Tenkorang, Y. E., & Kuuire, Z. V. (2016). Non-communicable diseases in Ghana: Does the theory of social gradient in health hold? *Health Education & Behaviour*, 43(1), 25 – 36.
- Thalina, L. L., Lawrence, J. B., Matthew, & W. K. (1997). Influence of lifestyle, coping, and job stress on blood pressure in men and in women. *Hypertension*, 29, 1-7.
- Thankappan, K., R., & Hypertension study group. (2001). Hypertension among the elderly in Bangladesh and India: A multicentre study. *Bulletin of the World health Organization*, 79(60), 490-499.
- Thompson. C. J., Locander, W. B., & Pollio, H. R. (1989). Putting consumer experience back into consumer research: The philosophy and method of existence-phenomenology. *Journal of Consumer Research*, 16(2), 133-146.
- Thomson, S. B. (2002). *Grounded theory — Sample size and validity*. Retrieved on 23<sup>rd</sup> July, 2018 from <http://www.buseco.monash.edu.au/research/studentdoc>.
- Tibazarwa, K. B., & Damasceno, A. A. (2014). Hypertension in developing countries. *Canadian Journal of Cardiology*, 30(7), 527-533.
- Twumasi, P. (1988). *The social foundation of the interplay between traditional and modern medicine*. Accra: Ghana Universities' Press.

- University of Wisconsin System. (2006). *Patient survey about high blood pressure and its treatment – 1*. Retrieved on 13<sup>th</sup> September, 2018 from <https://pharmacy.wisc.edu/wp-content/uploads/2016/05/patienthypertenion-survey-1.pdf>
- Van der Wal, M. H. L., Jaarsma, T., Morse, D. K., Veeger, N. J. G., Van Gilst, W. H., & Van Veldhuisen, D. J. (2006). Compliance in heart failure patients: The importance of knowledge and beliefs. *European Heart Journal*, 27, 434–440.
- von Korff, M., Gruman, J., Schaefer, J. K., Curry, S. J., & Wagner, E. H. (1997). Collaborative management of chronic illness. *Annals of Internal Medicine*, 127, 1097-1102.
- Vrijens, B., Antoniou, S., Burnier, M., de la Sierra, A., & Volpe, M. (2017). Current Situation of Medication Adherence in Hypertension. *Frontiers in Pharmacology*, 8, 100.
- Walker, J. L. (2012). The use of saturation in qualitative research. *Canadian Journal of Cardiovascular Nursing*, 22(2), 37-46.
- Walsh, J., Mandalia, S., & Gazzard, B. (2002). Responses to a 1 month self-report on adherence to antiretroviral therapy are consistent with electronic data and virological treatment outcome. *AIDS*, 16, 269-77.
- Wagialla, N. A., Mustafa, M. H., Bashir, A. O., Abdullah, A. E., Merghani, H. A., & Abdulrahman, A. M. A. (2019). Risk behaviors for proactive health promotion. *Public Health Open Journal*, 4(1), 15-23.
- Wagner, E. H., Austin, B.T., & Von Korff, M. (1996). Improving outcomes in chronic illness. *Managed Care Quarterly*, 4(2), 12-25.

- Wagner, J., H., Justice, A., C., Chesney, M., Sinclair, G., Weissman, S., & Rodriguez-Barradas, M. (2001). Patient- and provider-reported adherence: Toward a clinically useful approach to measuring antiretroviral adherence. *Journal of Clinical Epidemiology*, *54*, 91-98.
- Wagner, E. H., Grothaus, L. C., & Sandhu, N. (2001). Chronic care clinics for diabetes in primary care: A system-wide randomized trial. *Diabetes Care*. *24*(4), 695–670
- Wai, C. T., Wong, M. L., & Ng, S. (2005). Utility of the health belief model in predicting compliance of screening in patients with chronic hepatitis B. *Aliment Pharmacology Therapy*, *21*, 1255–1262.
- Wang, S. Y., Chen, L. K., Hsu, S. H., & Wang, S. C. (2012). Health care utilization and health outcomes: A population study of Taiwan. *Health Policy and Planning*, *27*(7), 590–599.
- Weder, A. B. (2011). Treating acute hypertension in the hospital. *Hypertension*, *57*, 18-20.
- Williams, B., Poulter, N. R., Brown, M. J., Davis, M., McInnes, G. T., & Potter, J. F. (2004). Guidelines for management of hypertension: Report of the fourth working party of the British Hypertension Society. *Journal of Human Hypertension*, *18*(3), 139–185.
- Wolf, D. M., Lehman, L., Quinlin, R., Rosenzweig, M., Friede, S., Zullo, T., Hoffman, L. (2008). Can nurses impact patient outcomes using a patient-centered care model? *Journal of Nursing Administration*, *38*(12), 532–540.



- World Health Organisation. (2019). *Hypertension key facts*. Retrieved on 20<sup>th</sup> June, 2019 from <https://www.who.int/news-room/fact-sheets/detail/hypertension>
- World Health Organisation. (2017). *Non-communicable diseases progress monitor*. Geneva: World Health Organisation.
- World Health Organisation. (2016). *Salt reduction*. Retrieved on 23<sup>rd</sup> July, 2018 from <https://www.who.int/news-room/fact-sheets/detail/salt-reduction>.
- World Health Organisation. (2016). *Action plan for the prevention and control of non-communicable diseases in the WHO European region*. Retrieved on 4<sup>th</sup> July, 2018 from [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0008/346328/NCD-ActionPlanGB.pdf?ua=1](http://www.euro.who.int/__data/assets/pdf_file/0008/346328/NCD-ActionPlanGB.pdf?ua=1)
- World Health Organisation. (2015). *World report on ageing and health*. Geneva WHO: WHO Press.
- World Health Organisation. (2013). *A global brief on hypertension: Silent killer, global public health crises, world health day*. Geneva: World Health Organization.
- World Health Organisation. (2012). *WHO global action plan for the prevention and control of NCDs 2013–2020*. Geneva: World Health Organization.
- World Health Organisation. (2010). *Global status report on non-communicable diseases 2010*. Geneva: World Health Organisation.
- World Health Organisation. (2005). *WHO Global Report. Preventing chronic disease: A vital investment*. Geneva: world Health Organisation.

- World Health Organization. (2003). *Adherence to long-term therapies: Evidence for action*. Geneva: WHO.
- World Health Organization (WHO). (2002). *Traditional medicine strategy 2001-2005*. Geneva: WHO.
- World Health Organization – International Society of Hypertension. (2009). Guidelines for the Management of Hypertension. Guidelines subcommittee. *Journal of Hypertension*, 17, 15–83.
- Wright, J. T., Fine, L. J., Lackland, D. T., Ogedegbe, G., & Dennison Himmelfarb, C. R. (2014). Evidence supporting a systolic blood pressure goal of less than 150mmHg in patients aged 60 years or older: The minority view. *Annals of Internal Medicine*, 160(7), 499–503.
- Wright, T., & Sweenet, D. (1989). Coping strategies and diastolic blood pressure. *Psychological Report*, 65(2), 443-449.
- Yancura, L. A., & Aldwin, C. M. (2008). Coping and health in older adults. *Current Psychiatry Report*, 10(1), 10-15.
- Zimmet, P. Z., & Alberti, G. M. M. (2006). World Health Organisation Report. Introduction: Globalization and the non-communicable disease epidemic. *Obesity*, 14, 1–3.
- Yancura, L. A., & Aldwin, C. A. (2008). Coping and health in older adults. *Current Psychiatry Report*, 10(1), 10-15.
- Yavuz, A., Tuncer, M., & Erdogan, O. (2004). Is there any effect of compliance on clinical parameters of renal transplant recipients? *Transplant Procedure*, 36, 120–121.

**APPENDICES**

**APPENDIX A**

**UNIVERSITY OF CAPE COAST**

**COLLEGE OF EDUCATION STUDIES**

**DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND**

**RECREATION**

**QUESTIONNAIRE FOR FACILITY BASED DATA**

**Dear Attendant**

I am Prince Owusu Adoma, a PhD (Health Promotion; Community Health) student at the Department of HPER, UCC. I am contacting you to participate in this academic research study: **“Management and coping strategies of hypertensive patients seeking treatment at Brong Ahafo Regional Hospital, Sunyani.”** This research aims to explore the management and coping strategies of hypertensive patients seeking treatment at BAR Hospital. Your participation in this study requires that you complete a 56-item survey. This may take between 30 to 40 minutes of your time. You were selected among a pool of participants and your responses will be analyzed as a group. Your participation in this study is completely voluntary and you are free to even stop answering the items should you find it necessary. Apart from your time, you are assured this study poses no harm to you. By taking part in this study, you are helping to find credible ways of exploring management and coping strategies beneficial for hypertension treatment. No information that will identify you is required.

Please complete the attached form before you respond to the survey.

I fully understand my participation in this study. I hereby willingly agree to participate.

Your Name (**optional**).....

Signature.....

Date.....

For any information contact my supervisors **Dr. Apaak (0208587866)** or **Dr. Edward Wilson Ansah (0247703379)**.

You may also contact me (Prince) on **0244974777** or [k.owusuadoma@gmail.com](mailto:k.owusuadoma@gmail.com)

Thank you for your participation.

## SECTION A: Background Information

**Instruction:** Read the statements below carefully and then tick [] in the box corresponding to best response that apply to you in each of the following statement

1. Gender:
  - a. Male
  - b. Female
2. How old are you?
  - a. |\_\_|\_\_| Years
3. Educational background:
  - a. No Formal Education
  - b. Basic Education
  - c. Secondary Education
  - d. Vocational Training
  - e. Tertiary Education
4. Marital status:
  - a. Single
  - b. Married
  - c. Separated
  - d. Divorced
  - e. Widowed
5. Employment status:
  - a. Unemployed
  - b. Government employment
  - c. Private employment

- d. Trade/business [ ]
  - e. Farmer [ ]
  - f. Housewife [ ]
  - g. Pensioned [ ]
  - h. Others (Specify) .....
6. Religion:
- a. Christianity [ ]
  - b. Islam [ ]
  - c. Traditional religion [ ]
  - d. Others (Specify) .....
7. How old were you when you were first diagnosed of hypertension?
- a. |\_\_|\_\_| Years
8. Which forum first diagnosed you of hypertension?
- a. BAR Hospital [ ]
  - b. Other hospital [ ]
  - c. At a pharmacy/drugstore [ ]
  - d. Screening/education programme [ ]
  - e. I cannot remember [ ]
  - f. Other (specify) .....
9. How long have you sought for hypertension treatment?
- a. |\_\_|\_\_| Years/Months
  - b. I do not Know [ ]

**SECTION B: Compliance and hypertension treatment**

**Instruction:** Read the statements below carefully and then indicate [√] in the box corresponding to whether you comply with each of the following statement below.

10. Which of the following do you comply with as part of your hypertension treatment? Tick as many as it applies.
- a. Appointment (check-up) [ ]
  - b. Medications [ ]
  - c. Physical activity [ ]
  - d. Special diet [ ]
  - e. No/reduce salt intake [ ]
  - f. Medical information [ ]
11. Have you ever neglected to take your hypertension medication?
- a. Yes, always [ ]
  - b. Yes, somehow [ ]
  - c. No [ ]
12. Do you use hypertension medication only when you have some kind of symptom?
- a. Yes, always [ ]
  - b. Yes, somehow [ ]
  - c. No [ ]
13. When you started hypertension treatment, did you decrease your salt intake?
- a. Yes [ ]
  - b. No [ ]

- c. I practically do not eat salt [ ]
14. When you started your hypertension treatment, did you decrease your fat intake?
- a. Yes, always [ ]
- b. Yes, somehow [ ]
- c. No [ ]
15. When you started hypertension treatment, did you begin to consume white (poultry, fish) meat rather than red?
- a. Yes, always [ ]
- b. Yes, somehow [ ]
- c. No [ ]
16. When you started hypertension treatment, did you decrease intake of sweets and sugary drinks?
- a. Yes, always [ ]
- b. Yes, somehow [ ]
- c. No [ ]
17. When you started hypertension treatment, did you begin to do at least 30 minutes of physical activity (walking, swimming, cycling) a day?
- a. Yes, always [ ]
- b. Yes, somehow [ ]
- c. No [ ]
18. Do you attend appointments for hypertension treatment as prescribed?
- a. Yes, always [ ]
- b. Yes, somehow [ ]
- c. No [ ]



19. How would you describe your compliance with hypertension treatment?

- a. Yes, strict compliance [ ]
- b. Yes, moderate compliance [ ]
- c. No, I don't comply [ ]

20. How difficult is it for you to comply with the selected hypertension treatment?

- a. Yes, very difficult [ ]
- b. Yes, somehow difficult [ ]
- c. No, not difficult at all [ ]

**SECTION C: Perception on the Quality of Care by the BAR hospital**

**Instruction:** Each person has it's own and unique point of view which must not necessarily apply to yours. Thus, read the statements here carefully and then indicate whether you agree with the statements or not in your situation by circling one number per line.

<b>Items</b>	<b>Strongly Agree</b>	<b>Agree</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
21. During my visit, I believed that I should follow my treatment to lower my BP indicated by healthcare provider (HCP)				
22. During my visit, HCP assured me that I can manage and cope with hypertension easily				
23. During my visit, HCP provided enough time to discuss my treatment outcomes				
24. During my visit, I was given enough information and education on my treatment				
25. During my visit, I was satisfied with the services provided by the hospital				
26. During my visit, I realized that my overall perception on quality of care provided by BAR Hospital is high				

**SECTION D: Management of hypertension**

**Instruction:** Each person has it's own and unique point of view which must not necessarily apply to yours. Thus, read the statements here carefully and then indicate whether you agree with the statements or not in your situation.

Circle one number per question.

27. Has your doctor or HCP ever told you what your BP GOAL should be?
- a. Yes, he/she told me my BP numbers should be: |\_\_|\_\_|or lower
  - b. Yes, he/she gave me a BP goal, but I do not remember [ ]
  - c. No, he/she has never told me what my BP numbers should be[ ]
  - d. I don't remember [ ]
28. What is your current BP no: |\_\_|\_\_|
29. What do you think your BP numbers should be?
- a. I think my BP numbers should be: |\_\_|\_\_| or lower. [ ]
  - b. I don't know what my BP numbers should be. [ ]
30. What do you think about your BP level today? Do you think it is...
- a. High [ ]
  - b. Borderline [ ]
  - c. Normal/OK [ ]
  - d. Low [ ]
  - e. Don't know [ ]
31. How often can you tell by the way you feel that your BP is too high?
- a. Never [ ]
  - b. Rarely [ ]
  - c. Sometimes [ ]
  - d. Usually [ ]

e. Always [ ]

32. How concerned are you about your blood pressure level at this time?

a. Very concerned [ ]

b. Somewhat concerned [ ]

c. A little concerned [ ]

d. Not at all concerned [ ]

33. Following are some medical guidelines for lowering blood pressure. In

columns I and II, please check how hard and how helpful you think it would be for you to follow each guideline, even if you have not tried to follow this guideline.

<b>Items</b>	<b>I</b> How <b><u>hard</u></b> do you think it would be for you to follow this guideline?	<b>II</b> How <b><u>helpful</u></b> do you think it would be for you to follow this guideline?
a. Reduce the salt or sodium in your diet if needed	1. [ ] Very hard 2. [ ] Moderately hard 3. [ ] Not at all hard	1. [ ] very helpful 2. [ ] Moderately helpful 3. [ ]not at all helpful
b. Walk or exercise 30 minutes per day 5 days a week	1. [ ] Very hard 2. [ ] Moderately hard 3. [ ] Not at all hard	1. [ ] very helpful 2. [ ] Moderately helpful 3. [ ]not at all helpful

c. Eat 5 or more servings of vegetables and fruit a day	1. <input type="checkbox"/> Very hard	1. <input type="checkbox"/> very helpful
	2. <input type="checkbox"/> Moderately hard	2. <input type="checkbox"/> Moderately helpful
	3. <input type="checkbox"/> Not at all hard	3. <input type="checkbox"/> not at all helpful
d. Take blood pressure medication every day	1. <input type="checkbox"/> Very hard	1. <input type="checkbox"/> very helpful
	2. <input type="checkbox"/> Moderately hard	2. <input type="checkbox"/> Moderately helpful
	3. <input type="checkbox"/> Not at all hard	3. <input type="checkbox"/> not at all helpful
e. Meeting appointment every time	1. <input type="checkbox"/> Very hard	1. <input type="checkbox"/> very helpful
	2. <input type="checkbox"/> Moderately hard	2. <input type="checkbox"/> Moderately helpful
	3. <input type="checkbox"/> Not at all hard	3. <input type="checkbox"/> not at all helpful

34. Do you currently use the following methods for monitoring your BP?

Item	Yes	No
a. I use a blood pressure monitor to check my blood pressure at home	<input type="checkbox"/>	<input type="checkbox"/>
b. I use a special booklet to keep track of my blood pressure readings	<input type="checkbox"/>	<input type="checkbox"/>
c. I use my discretion to predict my blood pressure	<input type="checkbox"/>	<input type="checkbox"/>

35. Think about the time you spent walking in the last 7 days. This includes at work and at home, walking to work and other places, and any other walking you do for recreation, sport, exercise, or leisure.

a. In the last 7 days, about how many days did you walk at least 30 minutes per day? (IF NONE, WRITE '0' ON THE LINE.)

|\_\_|\_\_| Days

36. Next, think about the time you spent doing other aerobic physical activities in the last 7 days. This includes any activity that takes physical effort and makes you breathe harder than normal (e.g., bicycling, water aerobics, basketball, dancing fast, washing floors, heavy lifting).

a. In the last 7 days, about how many days did you do other aerobic physical activities at least 30 minutes per day? (IF NONE, WRITE '0' ON THE LINE.)

|\_\_|\_\_| Days

37. How many servings of fruit do you eat in a typical day? A serving includes: 1 medium fruit, ½ cup fresh, frozen, or canned fruit, ¼ cup dried fruit, or 6 ounces fruit juice. (IF NONE, WRITE '0' ON THE LINE.)

|\_\_|\_\_| Fruits serving per day

38. How many servings of vegetables do you eat in a typical day? A serving includes 1 cup raw leafy vegetables, ½ cup cooked or cut-up vegetable, or 6 ounces vegetable juice. (IF NONE, WRITE '0' ON THE LINE.)

|\_\_|\_\_| Vegetable servings per day

**SECTION E: Coping strategies of hypertensive patients**

**Instruction:** Please respond to the following statements by marking [√] the column that most accurately represents your opinion of the extent to which you agree or disagree to these statements. There are no ‘correct’ or ‘wrong’ responses; it is your own views that are important.

Items	Strongly Agree	Agree	Disagree	Strongly Disagree
<b>Avoidance Coping</b>				
39. Spend time praying to God				
40. Spend time with a special person				
41. Treat myself to a favourite food or snack				
42. Phone a friend				
43. Go for vacation				
<b>Task-oriented Coping</b>				
44. Take corrective action immediately				
45. Focus on the problem and see how I can solve it				
46. Think about the event and learn from my mistakes				
47. Analyse my problem before reacting				
48. Work to understand the situation				

<b>Emotion-oriented Coping</b>				
49. Blame myself for having gotten into this situation				
50. Become very upset				
51. Feel anxious about not being able to cope				
52. Wish that I could change what had happened or how I felt				
53. Focus on my God as my healer				



**APPENDIX B**

**UNIVERSITY OF CAPE COAST**

**COLLEGE OF EDUCATION STUDIES**

**DEPARTMENT OF HEALTH, PHYSICAL EDUCATION AND**

**RECREATION**

**IN-DEPTH INTERVIEW GUIDE**

**Dear Attendant**

I am Prince Owusu Adoma, a PhD (Health Promotion; Community Health) student at the Department of HPER, UCC. I am contacting you to participate in this academic research study: **“Management and coping strategies of hypertensive patients seeking treatment at Brong Ahafo Regional Hospital.”**

This research aims to explore the management and coping strategies of hypertensive patients seeking treatment at BAR Hospital. Your participation in this study requires that you tell me your views, feelings and thoughts about your lived experiences with hypertension treatment by responding to the questions I may ask you. This may take between 60 to 70 minutes of your time. You were selected among a poll of participants and your responses will be analyzed as a group.

Your participation in this study is completely voluntary and you are free to even stop answering the items should you find it necessary. Apart from your time, you are assured this study poses no harm to you. By taking part in this study, you are helping to find credible ways of exploring management and coping strategies beneficial for hypertension treatment. No information that will identify you is required.

When we are finished, if you want to ask any general questions about blood pressure that I can answer as a public health person, I will be glad to try to answer them. Do you have any questions before we get started?

Please complete the attached form before you respond to the survey.

I fully understand my participation in this study. I hereby willingly agree to participate.

Your Name (**optional**).....

Signature.....

Date.....

For any information contact my supervisors **Dr. Apaak (0208587866)** or **Dr. Edward Wilson Ansah (0247703379)**.

You may also contact me (Prince) on **0244974777** or [k.owusuadoma@gmail.com](mailto:k.owusuadoma@gmail.com)

**Demographics:**

1. How old are you?
2. What is last school you attended? Did you finish college?
3. Are you married now? How many children do you have?
4. How many years have you been getting treatment for your blood pressure?
5. How long have you been coming to the blood pressure hospital?
6. Tell me about yourself and your family.
7. Thank you. Tell me what an average day is like for you this week. Or yesterday?

**Section A: Lived Experiences at BAR Hospital:**

I want to learn about your experiences and perceptions of care at BAR Hospital. Tell me about your perception on medical care you get in this facility.

***Probes:***

1. Do you think you are getting the proper medical care in this hospital?  
If not what is the reason?
2. Do you believe what the nurses/doctors are telling you?
3. Are you satisfied with the care you are getting? If yes, tell me why you are satisfied. If not, what is the reason?
4. Tell me how the nurses/doctors in the hospital are treating you.
5. What improvements or changes in the hospital would you suggest for better care?
6. What can the hospital do better to help you manage your blood pressure?

I will briefly summarize what the participant has answered. Is there anything

else you would like to say about the clinic?

### **Section B: lived Experiences with Treatment and Compliance**

Now I want you to think back to when you were first diagnosed with high blood pressure. Tell me how you felt and what happened with your doctor/nurse. Tell me what was going on in your life at that time.

Thank you for sharing that. Now, tell me what your life has been like since you were first diagnosed with high blood pressure. Have you made any changes in your life? Tell me about the changes you have made.

#### ***Probes:***

1. Do you believe that your high blood pressure is a problem that can hurt you?
2. Do you believe that your high blood pressure should be treated? Are you serious in following your blood pressure treatment?
3. Are you concerned that you have high blood pressure? Why?
4. Do you feel different than other people who do not have high blood pressure?
5. Are you aware of the complications of high blood pressure? If yes, what are the complications? If so, do these complications scare you?

I will briefly summarize what the participant has answered. Is there anything else you would like to say?

### **Section C: Lived Experiences with Management of Hypertension**

Do you control your blood pressure? Tell me how you control your blood pressure. What helps you control your blood pressure? Who helps you control your blood pressure?

***Probes:***

1. Are you following your appointments? If not, what is the reason? If yes, what keeps you coming back to the clinic? Tell me about a specific time.
2. Are you following your diet? If not, why? What do you eat and drink in a typical day this week? Is there anything that keeps you from following your diet? Tell me about a specific time.
3. Tell me about your exercise routine in a typical day this week. Is there anything that keeps you from exercising?

**Medications:** Are you using your medications like you should? If not, what is the reason? What do you do to make yourself take your medications? Do you need help so you can take your medications properly?

***Probes:***

1. Do you have any problems using your medications? What problems?
2. Are you scared of taking your blood pressure medications? Why?
3. Do you have a problem with the side effects (bad symptoms) of medications?
4. Is the cost of medications a problem for you?

I will briefly summarize what the participant has answered. Is there anything else you would like to say?

**Section D: Lived Experiences with Coping with Hypertension Treatment**

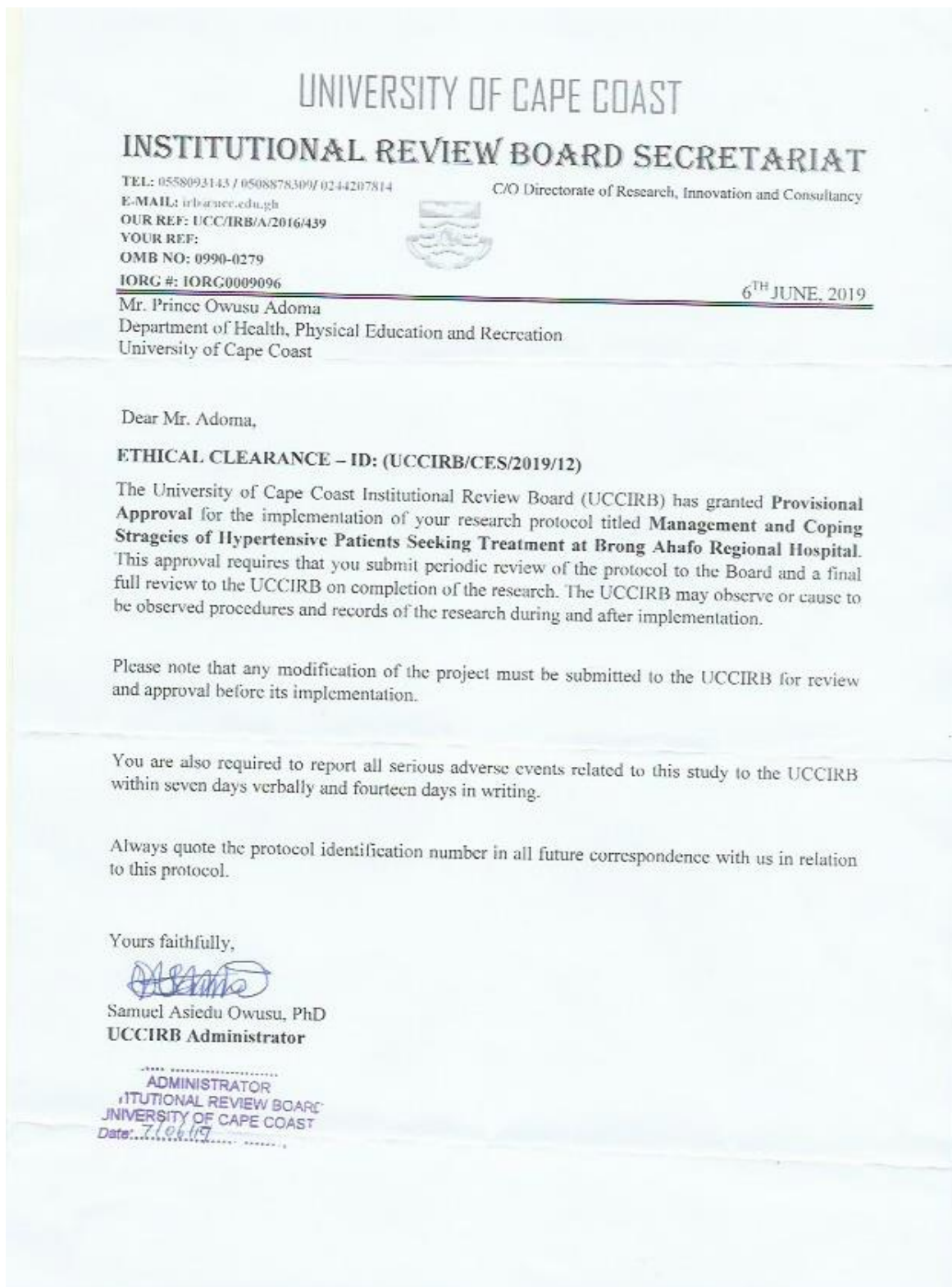
I want you to tell me how you have cope with hypertension treatment over the years. Has it been too difficult to cope or not? Why?

*Probe:*

1. What and/or who in your everyday life help you control your blood pressure?
2. Does worry, hassles, or everyday concerns affect how you control your blood pressure?
3. Are there things around you that can make your blood pressure go up?
4. Are you able to manage your stress? How do you deal with stress? Tell me about a specific time when you managed stress.
5. What do you do to manage stress? What do you do for relaxation? Tell me about a specific time.
6. Are there things you want to do but cannot do because of your blood pressure?

I will summarize what the participant has said. Is there anything else you would like to share with me? Is there anything else I have not asked that you would like to share about your blood pressure? Do you have any questions for me? Thank you for sharing your story with me and appreciate your time today.

APPENDIX C: Ethical Clearance



## APPENDIX D: Research Proposal

Dept. of HPER  
University of Cape Coast  
Cape Coast  
20<sup>th</sup> January, 2019

The Chairman  
Institutional Review Board  
University of Cape Coast  
Cape Coast

Dear Sir,


### RESEARCH PROTOCOL

I write to submit my research protocol to your reputable outfit for ethical clearance to enable me go for data collection. My thesis topic is "**Management and Coping Strategies of Hypertensive Patients Seeking Treatment at Brong Ahafo Regional Hospital**". All other relevant documents regarding my research have been attached to this letter.

I count on your usual cooperation.

Thank you.

Yours faithfully,

  
Prince Owusu Adoma  
ED/HTP/15/0008



## APPENDIX E: Introductory Letter, Co-Supervisor

The Director  
Institutional Review Board  
University of Cape Coast  
Cape Coast  
21<sup>st</sup> January, 2019.

Dear Sir,

### INTRODUCTORY LETTER

I introduce to you Mr. Prince Owusu Adoma, a Ph.D. Health Promotion candidate in the Department of HPER, where I supervise his thesis work, "**Management and Coping Strategies Hypertension Patients Seeking Treatment at Brong Ahafo Regional Hospital**". Prince has successfully defended his thesis proposal. I therefore be grateful if the necessary assistants be given him to get acquire ethical clearance for his field work.

I count on your usual cooperation.

Thank you.



Dr. Edward Wilson Ansah  
Lecturer/Supervisor  
HPER, UCC  
Tel: 0247703379  
Email: edward.ansah@ucc.edu.gh

DEPT. OF HEALTH, PHYSICAL  
EDUCATION & RECREATION  
UNIVERSITY OF CAPE COAST  
CAPE COAST

## APPENDIX F: Introductory Letter, Head of department

**UNIVERSITY OF CAPE COAST**  
CAPE COAST, GHANA  
COLLEGE OF EDUCATION STUDIES  
FACULTY OF SCIENCE AND TECHNOLOGY EDUCATION  
DEPARTMENT OF HEALTH, PHYSICAL EDUCATION & RECREATION

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Our Ref: ED/HTP/15/0008/



EMAIL: [hper@ucc.edu.gh](mailto:hper@ucc.edu.gh)

Cables & Telegrams:  
UNIVERSITY, CAPE COAST

21<sup>st</sup> January, 2019

The Chairman  
Institutional Review Board  
University of Cape Coast  
Cape Coast


**INTRODUCTORY LETTER:  
MR. PRINCE OWUSU ADOMA (ED/HTP/15/0008)**

The bearer, Mr. Prince Owusu Adoma, is a PhD student from the Department of Health, Physical Education and Recreation. He is conducting research for his thesis titled **“Management and Coping Strategies of Hypertensive Patients Seeking Treatment at Brong Ahafo Regional Hospital”** as part of the requirements for obtaining a Doctor of Philosophy degree in Health Promotion. He has satisfied the conditions for data collection and we kindly request that he is granted ethical clearance to enable him conduct the research.

We count on your usual co-operation.

Thank you.

Yours faithfully,

  
Dr. Daniel Apaak  
(Head of Department)  
Tel.: +233 (0)208587866  
Email: [daniel.apaak@ucc.edu.gh](mailto:daniel.apaak@ucc.edu.gh)