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Promotion of Lifestyle Changes by Community Pharmacists Among Adults with Hypertension in Nigeria

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2020

Abstract

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by

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MSc, University of Lagos, Lagos, Nigeria, 2010

Bachelor of Pharmacy, University of Ife, Ile-Ife, Nigeria, 1984

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The growing prevalence of hypertension is a global public health problem. Lifestyle modification is the first-line best practice for the management of hypertension, however there is not enough focus on healthcare professionals' competencies in managing hypertension in Nigeria. The perspectives of Community Pharmacists (CPs) about promotion of lifestyle modification (PLM) among adults with hypertension have not been explored in Nigeria though they play an essential role in healthcare in the community. This phenomenological study was conducted to document the experiences of CPs about PLM by using in-depth interviews. Social cognitive theory and the health promotion model were used as frameworks to guide the development of the interview questions and interpretation of findings. The knowledge, experiences, and barriers to the practice of PLM by 12 CPs were explored and answers provided to 3 research questions focused on their perspectives about the phenomenon and practice of PLM, and developing a practice protocol for PLM in adults with hypertension. From a thematic analysis of transcribed data, 10 categories of themes evolved to capture the perspectives and experiences of CPs about PLM in hypertension. The themes involved in the practice of PLM by CPs are cognitive factors, contextual factors, self-efficacy, and strategies. A practice protocol was developed that can serve as a guide to CPs while promoting lifestyle modification among adults with hypertension. This can promote social change along with future studies recommended to be carried out in other areas of Lagos State and other States of Nigeria, so the protocol can become standardized for use by all CPs in Nigeria.

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Dedication

This doctoral study is dedicated to the glory of God Almighty and for the benefit of mankind. I also dedicate it to my ever loving and supportive husband and children.

Acknowledgments

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Chapter 1: Introduction to the Study

Hypertension and other noncommunicable diseases (NCDs) have attained epidemic proportions globally and constitute a public health problem. But these chronic diseases are often preventable through the adoption and maintenance of healthy lifestyles (Joseph, Daniel, Thind, Benitez, & Pekmezi, 2016; Linden, Butterworth, & Prochaska, 2010). Modifiable risk factors for NCDs include physical inactivity, poor nutrition, cigarette smoking, and excessive alcohol consumption (Centers for Disease Control and Prevention, 2017). Interventions targeting these risk factors aimed at promoting the adoption of positive health behaviors have helped to reduce the incidence and prevalence of NCDs (Joseph et al., 2016). A major role performed by public health professionals is to conduct interventions that encourage healthy lifestyles and well-being in populations, individuals, and communities (Bauer, Briss, Goodman, & Bowman, 2014; Jepson, Harris, Platt, & Tannahill, 2010; Laliberté, Perreault, Damestoy, & Lalonde, 2012; World Health Organization [WHO], 2015). Pharmacists are knowledgeable, accessible, and trusted health professionals who have a role in promoting lifestyle modifications to address the prevalence of NCDs (Adeniyi , Nasir, Yakubu, David, & Sariem, 2015; Agomo, Arit-Udoh, Kpokiri, & Osuku-Opio, 2018; Brown, Portlock, & Rutter, 2012; Dennis et al., 2012; Laliberté et al., 2012; Um, Armour, Krass, Gill, & Chaar, 2013).

The incidence and prevalence of NCDs in Nigeria have been attributed to lifestyle issues (Maiyaki & Garbati, 2014). In Nigeria and some other African countries, community pharmacies are usually the first place for treatment of diseases and other health-related issues because they are accessible and do not charge any consultation fees

(Adeniyi et al., 2015; Adje & Oli, 2013; Agomo et al., 2018; Gelayee, Mekonnen, & Atnafe, 2017). Thus, community pharmacists (CPs) have a role to play in promoting lifestyle modifications in adults to prevent NCDs and reduce the prevalence of these diseases (Bauer et al., 2014; Jepson et al., 2010; Laliberté et al., 2012; WHO, 2015). However, it is not clear how effectively CPs in Lagos, Nigeria perform this role. Therefore, this study was used to explore the roles of CPs in promotion of lifestyle modification (PLM) among adults in Lagos suffering from hypertension. Phenomenology was used as the research paradigm and constructivism as a theoretical lens in this study. The results may contribute to understanding the roles of CPs in the PLM, with a view to planning more effective interventions by CPs that can contribute to reducing the prevalence of hypertension and to reducing health disparity and economic burdens due to hypertension in Nigeria, thus leading to social change at individual and national levels.

In this introductory chapter, I will provide a background to the study by summarizing some of the relevant literature to the study and providing a justification for the research. The problem statement, purpose of the study, the research questions, and the undergirding theoretical frameworks are also highlighted. Additionally, the nature of the study, definitions, assumptions, scope, delimitations, limitations, and significance of the study will be discussed. The chapter ends with a summary of the main points.

Background

Hypertension is a global public health issue and its prevalence is increasing in Nigeria. Hypertension is the most common cause of morbidity and mortality from cardiovascular diseases in Nigeria (Falase, Aje, & Ogah, 2015). The prevalence of

hypertension in Nigeria has been projected to get as high as 30.8% by 2030, increasing steadily from 22% in 1990 and 28% in 2009 (Adeloye, Basquill, Aderemi, Thompson, & Obi, 2015; Ajayi et al, 2017; Akinlua et al., 2015). Some studies have reported that mortality rate due to NCDs is as high as 24% in Nigeria (Maiyaki & Garbati, 2014; Ogah et al., 2013). Further, the prevalence of hypertension was found to be as high as 38.2% in an urban slum in Lagos with males having a higher systolic blood pressure (BP) than females and age was positively correlated with increased prevalence in males (Daniel, Adejumo, Adejumo, Owolabi, & Braimoh, 2013). Increasing adoption of unhealthy lifestyles through urbanization is a reason for the increasing prevalence (Daniel et al., 2013), as there is a higher prevalence of hypertension in urban areas (Akinlua, Meakin, Aminu, & Freemantle, 2015). Thus, interventions are needed to increase adherence to life-style changes and life-long medications in primary healthcare settings as community pharmacies (Akinlua et al., 2015).

Hypertension contributes to health disparity in Nigeria and globally. Health disparities refer to unfair disadvantages in the health of populations, which may be in terms of health status, poor access to care, quality of care, poor living conditions that contribute to ill-health, or lack of adequate social policies (Braveman, 2014; Carter-Pokras & Baquet, 2002). For instance, in Nigeria there is a cycle between poverty and hypertension. More than half of the patients in a rural community were found to have spent more than 10% of house hold income on treatment of hypertension (Ilesanmi, Ige & Adebiyi, 2012). To tackle the challenge of health disparity health professionals including CPs have a role to play. Key actions for reducing the global burden of NCDs and

inequalities include accessibility to interventions and care by primary healthcare providers (including CPs) for early detection and prompt treatment to happen (Di Cesare, 2013).

Health professionals must be involved in the promotion of healthy lifestyles. For example, health literacy is important for lifestyle changes in patients (Dennis et al., 2012). Additionally, lifestyle modification involves a process of adjusting to the demands of an ongoing chronic illness (Ambrosio et al., 2015). It is the last stage in a dynamic process involving five dependent attributes: acceptance, coping, self-management, integration, and adjustment (lifestyle modification; Ambrosio et al., 2015). Lifestyle modification programs have been used to contribute to slowing the progression of metabolic syndrome because unhealthy lifestyles are a risk factor for metabolic syndrome, though there have been inconclusive results (Lin, Chiang, Tzeng, & Chiang, 2014; Yamaoka & Tango, 2012). Intensive lifestyle modification programs may also contribute to reducing cardiovascular risk including lowering BP and also help to reduce the need for antihypertensive medications in obese and overweight persons (Lin et al., 2014; Ohno et al., 2016). The PLM in patients by health professionals including CPs promotes public health and reduces health disparities. Based on the roles and contributions of CPs to public health in various countries, they can give individualized care for each patient based on the contexts and the stage of adaptation the patient is at (Ambrosio, Navarta-Sanchez, & Portillo, 2014; Ambrosio et al., 2015).

CPs are skilled, knowledgeable, and accessible members of the healthcare team who can work toward health promotion (Agomo et al., 2018). For example, CPs serve as

primary care providers who can promote the health of populations in the United Kingdom (Brown et al., 2012). Pharmacists have played a role in the promotion of healthy lifestyles in the community through the promotion of weight management services, which can be aided by a model for lifestyle modification (Um et al., 2013). However, barriers and limitations impede the effectiveness of CP in performing health promotion roles, which can be overcome using different strategies including training and appropriate policy formulation (Adeniyi et al., 2015). For example, in a study of 571 CPs in Montreal, there were gaps between actual and ideal roles of pharmacists in health promotion services based on pharmacists' perceptions (Laliberté et al., 2012). Additionally, there are gaps in competency levels and training curricula of health professionals (Dean et al., 2014). To perform their roles of health promotion, health professionals must develop competencies necessary for the promotion of healthy lifestyles.

Gaps in Literature

Healthcare professionals are expected to encourage lifestyle modification in patients and adults suffering from hypertension and other NCDs. However, there is a need for better understanding of actual and ideal roles of CPs in health promotion, as it is important for CPs to be more active in the PLM to improve treatment outcomes in hypertension management (Laliberte et al., 2012; McNamara, Versace, Marriott, & Dunbar, 2014). There is also the need for intervention and strategies to increase adherence to lifestyle changes in people with hypertension (Akinlua et al., 2015). However, it is not clear how effectively CPs, who are the most accessible healthcare

professionals in the community in Lagos, perform the role of promoting lifestyle modification among adults with hypertension. Some researchers have identified the need for the development of practice guidelines for CPs on the PLM in the management of hypertension (Gelayee et al., 2017; Laliberte et al., 2012). There is also the need for the development of standard practice guidelines for health promotion by CPs in Nigeria (Adeniyi et al., 2015).

Additionally, much of the current literature on the intervention of pharmacists in promoting healthy lifestyles in Nigeria have been quantitative studies and did not state any background theoretical frameworks (Adeniyi et al., 2015; Adje & Oparah, 2013; Soyemi & Hunponu-Wusu, 2015). Thus, there is a need for qualitative studies to explore perspectives of CPs on PLM in Nigeria (Akinlua et al., 2015). Other studies have highlighted the need for qualitative studies backed by theoretical frameworks to study the phenomenon of PLM (Adeniyi et al, 2015; Dosea et al., 2015; Glanz & Bishop, 2010; Seutloali et al., 2018).

This research was used to explore the roles of CPs in PLM among adults in Lagos suffering from hypertension from the pharmacists' perspectives. This study can provide understanding of the roles, contributions, and barriers of CPs to the promotion of lifestyle changes in hypertensive patients in an urban area of Lagos using a phenomenological study backed by two theoretical frameworks. From the findings of the study, I developed a protocol that can provide guidance to CPs in promoting lifestyle modification to adults with hypertension. The study may help improve health outcomes in patients with hypertension in Nigeria.

Problem Statement

The growing incidence of NCDs accounts for up to 24% of all deaths in Nigeria (Maiyaki & Garbati, 2014; WHO, 2014a), and the prevalence of hypertension continues to increase, making it a public health issue (Akinlua et al., 2015). NCDs are often preventable through the adoption of healthy lifestyles (Bauer et al., 2014; Dean et al, 2014; Joseph et al., 2016; Linden et al., 2010; Maiyaki & Garbati, 2014; Myneni, Cobb, & Cohen, 2013; WHO, 2015). However, there is low level of awareness, treatment, and control of hypertension in Nigeria, leading to increasing rates of cardiovascular complications (Akinlua et al., 2015). Thus, health care professionals like CPs have an important role in promoting healthy lifestyle interventions, which can help control the increasing incidence of NCDs (Adeniyi et al., 2015; Agomo et al., 2018; Bauer et al., 2014; Brown et al., 2012; Dennis et al., 2012; Jepson et al., 2010; Laliberté et al., 2012; Um et al., 2013; WHO, 2015). The growing problem of health disparity in Nigeria due to the increasing prevalence of hypertension can be addressed with more effective involvement of CPs in the promotion of lifestyle changes (physical activity and healthy nutrition) among adults suffering from hypertension.

Purpose of the Study

The aim of this qualitative study was to understand the scope of CPs' involvement in healthy lifestyle promotion to reduce hypertension, their perceptions of the roles they play in promoting lifestyle changes, perceived barriers to performance, and what they believe they can do to be more effective in this role. The intent was to explore the phenomenon of lifestyle modification among adults living with hypertension from the

perspectives of CPs in an urban local government area (Eti-Osa) of Lagos State, Nigeria, which a qualitative approach allowed me to do. This is with a view toward developing a protocol that can guide pharmacists while conducting interventions aimed at promoting healthy lifestyles in adults suffering from hypertension in Lagos, Nigeria. PLM by CPs entails encouraging skills, functions, and behaviors in individuals that can lead to positive lifestyle changes, which can help individuals come to terms with living with a disease as hypertension and its consequences (Ambrosio et al., 2015). More effective involvement of CPs in the PLM among adults who have hypertension may contribute to addressing health disparities by reducing the burden of NCDs in Nigeria.

The Research Paradigm

The research paradigm used in this study is a qualitative approach. In qualitative research, the researcher uses a constructivist lens as worldview to study social phenomena (Creswell, 2014). Qualitative research involves studying participants (individuals, groups, or phenomena) in their natural environments different from experimental studies where the researcher manipulates variables (Ravitch & Carl, 2016). This is to explore the phenomenon from the perspective of participants. Qualitative research involves an iterative process rather than linear, and the researcher needs to include reflexivity in order to contribute to the rigor of the study. As the researcher, I was the primary instrument of the research exploring the phenomenon of lifestyle modification among adults with hypertension (LM-hypertension) from the perspectives of CPs (Ravitch & Carl, 2016; Rudestam, & Newton, 2015).

Research Questions

The research questions were used to explore this phenomenon of PLM from the perspectives of CPs.

Research Question 1: What is the perspective of community pharmacists about contributing to promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 2: How do community pharmacists perform the role of promoting of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 3: How is practical knowledge and pharmacy practice protocol revealed from the experiences of the community pharmacists?

Theoretical/Conceptual Framework for the Study

This study was guided by constructs from both Pender's health promotion model and the social cognitive theory (SCT). The theoretical constructs guided the interview protocol and the discussion of the research findings. SCT is a theory of interpersonal health behavior developed by Bandura in 1977, with three constructs highlighted that interact through a process of reciprocal determinism (Glanz, Rimer, & Viswanath, 2015). The three constructs of SCT are personal cognitive factors (knowledge, self-efficacy, and collective efficacy); environmental factors (observational learning, normative beliefs, social support, barriers, and opportunities); and supporting behavioral factors (skills, intention, reinforcement, and punishment; Glanz & Bishop, 2010; Glanz et al. 2015). Reciprocal determinism implies that a person can be both a change agent and a responder to change (Glanz & Bishop, 2010). SCT emphasizes reciprocal interaction between

intrapersonal, behavioral, and environmental factors as they influence health behavior (Liebl, Barnason, & Hudson, 2016). SCT is a useful theoretical framework for interventions and researches targeting behavior change and long-term maintenance of behaviors associated with prevention and treatment of chronic disease.

Specific constructs that guided the exploration of lifestyle modification in order to answer the research questions included intention, knowledge, skills, self-efficacy, collective efficacy, perceived benefits, perceived barriers and opportunities, and environmental influences (interpersonal and situational). In this study the construct of SCT that was used to explain Research Question1 was personal cognitive factor (knowledge). For Research Question 2 supporting behavioral factors such as skills, intention and reinforcement; and environmental factors (observational learning) are the constructs of SCT related to this question. Collective efficacy, knowledge and skills of CPs was used to explain Research Question 3.

From a review of 34 articles using theoretical frameworks in behavioral intervention studies, 65% of studies used SCT as framework, and out of these, 68% of studies reported the usefulness of SCT for promoting long-term behavior change with respect to physical activity, weight loss, and smoking cessation (Joseph et al., 2016). For example, SCT was used by Plotnikoff, Costigan, Karunamuni, and Lubans (2013) to frame a meta-analytical review of studies explaining physical activity behavior in adolescents. Liebl et al. (2016) also used SCT as framework to explore the experiences of adults about maintenance of weight loss after bariatric surgery. SCT can enhance understanding of why and how individuals change behavior in relation to their social and

physical environments (Liebl et al., 2016). SCT addresses social and personal determinants of health behavior and so is suitable for this research (Bandura, 1998).

The other part of the framework, Pender's health promotion model, was developed in 1982 (and revised in 1996) based on the constructs of SCT and value expectancy theory (Pender, 2011; Heydari, & Khorashadizadeh, 2014). Pender's theory can be used to explain health-enhancing behaviors and is suitable for guiding researches focusing on encouraging health professionals to improve their roles by providing adequate resources to patients to help them make necessary behavioral changes (Dehdari, Rahimi, Aryaeian, Gohari, & Esfeh, 2014; Heydari & Khorashadizadeh, 2014). The specific constructs are perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences (Pender, 2011). The constructs of health promotion model related to Research Question 1 are perceived benefits of action, perceived barriers to action, and self-efficacy. Situational influences and self-efficacy were relevant for answering Research Question 2. For Research Question 3, relevant health promotion model constructs were interpersonal influences, perceived benefits, and perceived barriers. The constructs of the two guiding theoretical frameworks are discussed in more details in Chapter 2.

Nature of the Study

I used phenomenology as the qualitative research design to understand the phenomenon of healthy lifestyle promotion from the perspectives of CPs attending to adult community members living with hypertension, and constructivism was the theoretical lens (Creswell, 2014; Rudestam, & Newton, 2015). Qualitative research

emphasizes the social nature of reality and the close relationship between the researcher and the phenomenon or participant being studied (Ravitch & Carl, 2016; Rudestam, & Newton, 2015). Researchers also use different strategies in qualitative research for exploring the nature of knowledge. These strategies include ethnography, phenomenology, narration, case study, and grounded theory (Creswell, 2014; Ravitch & Carl, 2016; Rudestam, & Newton, 2015). However, phenomenology, especially with in-depth interviews and focus group discussions, has been used to study health promotion and the perspectives of healthcare professionals like community health workers and primary care providers (Malan, Mash, & Everett-Murphy, 2015; Seutloali, et al., 2018).

Phenomenology was considered as an appropriate research approach for my study because it enabled me to describe how and why CPs perform the role of promoting healthy lifestyle changes and how suitable they think the training they received makes them able to perform this role among adults living with hypertension. Phenomenology is a research design that helps researchers and readers to understand what works in health promotion (Seutloali et al., 2018). Thus, phenomenology was useful as an approach to understand promotion of lifestyle changes by CPs in Lagos and for future interventions to improve the self-efficacy of CPs at performing this health-promoting role.

Phenomenology involves collecting rich, thick descriptions of participants' perspectives about a phenomenon of interest. I selected CPs (the research participants) purposively who have experience in health promotion. Purposive sampling was used to select knowledgeable participants who can help to give rich, thick data about the phenomenon of health promotion by CPs (Rubin & Rubin, 2012; Rudestam & Newton,

2015). Face-to-face, in-depth interviews were used for data collection. Focus group discussions were considered as an alternative data collection method for my study (see Romeike, Abidi, Lechner, de Vries, & Oenema, 2016), but I considered in-depth interviews more appropriate.

An interview protocol was designed and pilot-tested before being used to guide the flow of the interviews (see Romeike et al., 2016; Rudestam & Newton, 2015). The interviews were audio-taped and I also took field notes. A journal was used by me to record happenings, reflections and thoughts about the process, findings, and participant observations. Data were collected from as many participants as required for data saturation up to a point when no new themes would emerge about the phenomenon (Creswell, 2014; Ravitch, & Carl, 2016). I used a dictation software (Transcribe) for transcribing the interviews and manual analysis of data led to generation of codes, themes, and concepts (Ravitch, & Carl, 2016). Trustworthiness was built into every aspect of this research by using different sources for data collection (triangulation) including interviews, field notes, and journaling for reflexivity. Other strategies for ensuring trustworthiness that were used in the study included member checks, reflexive journaling, openness, and the use of rich, thick descriptions.

Definitions

Some of the terms used in this study were defined as follows:

Community pharmacists: Trained health professionals who are experts on drug therapy and operate from registered premises known as community pharmacies from

where they provide pharmaceutical care to patients and individuals in the community, outside of hospital environments.

Health disparities: Differences in health status, burden of illness, disability, and mortality rates within and across populations and countries that create disadvantages for populations. Inequities called health disparities are unfair and usually preventable (Carter-Pokras & Baquet, 2002; Centers for Disease Control and Prevention, 2013).

Health professionals: Include professionals in the health sector that perform roles that contribute to promoting and protecting health, preventing disease, and treating disease, thus contributing to improved health outcomes at individual and population levels. They include public health professionals, pharmacists, nurses, doctors, physiotherapists, dieticians, and others that contribute to clinical management of patients in hospitals and primary care settings.

Health promotion: May be defined as a holistic term applying to all activities by health professionals with the goal of improving and protecting patients, individuals, and communities' state of health, wellbeing, and quality of life including counselling, lifestyle modification interventions, advocacy, disease prevention, and promotion of safe living and working environments (Dean et al., 2014; WHO, 2018b). Fertman and Allensworth (2017) defined *health promotion* as "planned change of health-related lifestyles and life conditions through a variety of individual, interpersonal, and population-level changes" (p. 5).

Hypertension: A health condition in which an individual's BP is elevated, with a systolic BP of 140mm Hg or more or diastolic pressure of 90mm Hg or more (WHO, 2018a).

Research paradigm: Researchers' worldview through which they study to understand the social world or particular phenomenon in the social world (Creswell, 2014; Ravitch, & Carl, 2016).

Physical activity: Includes any continuous activity of moderate to vigorous intensity lasting up to 30minutes (or accumulated in bouts of 10minutes) daily for at least 3 days in the week including brisk walking, jogging, swimming, cycling, or other aerobic activities that lead to increased heart rate while it lasts (Carlson, Fulton, Pratt, Yang, & Adams, 2015; Department of Health and Human Services, 2018).

Self-efficacy: The belief or confidence in the ability to carry out an action such as a change in lifestyle and to persist in the action (Glanz & Bishop, 2010).

Assumptions

Co-constitutionality was assumed for this study. This is an emerging concept in interpretive phenomenology introduced by Heiddeger in 1962, which indicates that interpretation of findings is from a fusion of meanings from both participants and the researcher (Barolia, Clark, & Higginbottom, 2013; Lopez & Willis, 2004; Matua & Van Der Wal, 2015). For the study, I assumed that participants related their own experiences of the phenomenon of lifestyle promotion and did not just relay information from knowledge. I also assumed that the selected participants answered interview questions as honestly as possible without adding any coloration to it.

Basic assumptions of interpretive (hermeneutic) phenomenology were also applied to this study. I assumed that my personal, expert knowledge of the topic was useful as a guide to the inquiry (Lopez & Willis, 2004). Additionally, the lives and perspectives of participants involve complex, subjective and multiple realities influenced by their environments (Barolia et al., 2013). It was assumed that the experiences of the participants were subjective and influenced by their social, cultural, and political environments (Lopez & Willis, 2004).

Scope and Delimitations

Delimitations provide a detailed description of the scope of this study. Delimitations are boundaries set by the researcher to limit the scope of the research so that generated data do not become unwieldy or insufficient to generate relevant data and are therefore under the control of the researcher (Rudestam & Newton, 2015). This study was limited in scope to CPs, registered by the Pharmacists Council of Nigeria and practicing in Eti-Osa of Lagos State, with at least 5 years' experience in community pharmacy practice. CPs performing solely administrative functions and not involved directly with patient counseling were excluded from the study.

The interview questions were limited to PLM in patients/individuals with hypertension and no other NCDs. Data were collected using in-depth interviews from selected CPs by purposive sampling, and the interview was guided by a protocol bearing in mind the three research questions. The study was guided by constructs from SCT and health promotion model, providing a theory-backed study to contribute to a gap in knowledge regarding health promotion by CPs.

Eti-Osa was chosen as the study setting out of all the local government areas in Lagos State because I am familiar with the area, and I know that there are CPs with requisite knowledge and experience who could contribute rich, thick data to the study to answer the research question. Additionally, no such study has been conducted in the area. The interviews with CPs were audiotaped (after obtaining consent from participants) and transcribed. Interpretive phenomenology (hermeneutics) was used to interpret the experiences of participants while taking into consideration that their perspectives may be affected by their sociocultural and political environments. Hermeneutics also allows for discussion of incorporating evidence-based practice (Todd et al., 2016). In addition, hermeneutics recognizes the value of a theoretical framework or conceptual framework as a guide to the inquiry unlike descriptive phenomenology (Lopez & Wills, 2004).

Finally, transferability in qualitative studies pertains to the extent to which a research study can be replicated by another researcher in a different location or at a different time (Liebl et al., 2016). In this study, transferability was assured by collecting rich, thick data from the participants that helped to explain the phenomenon clearly.

Limitations

Limitations are inherent weaknesses in a study and may be beyond the researcher's control (Rudestam & Newton, 2015). A limitation of this study was that there was no predetermined sample size, which is characteristic of qualitative studies (Lowe, Norris, Farris, & Babbage, 2018). Additionally, generalizing findings is not one of the purposes of qualitative research, so the results of this study are not generalizable to other settings even though the findings may be adapted for use in other settings and local

government areas of Lagos State and Nigeria. The study may also have been limited by biases from my knowledge of the phenomenon during interviewing. The influence of researcher bias was curtailed by pilot-testing the interview protocol guide and by member-checking to ensure findings reflect participants' perspectives correctly (Rudestam & Newton, 2015). This is expected to contribute to the credibility of research findings

Significance

Preventable NCDs contribute increasingly to morbidity and mortality rates in Nigeria. A survey of NCDs in Nigeria reported the prevalence of hypertension as 8–12% with a higher prevalence in urban areas (Ogah et al., 2013). Additionally, more than 24% of all deaths in Nigeria can be attributed to NCDs that can be prevented by adopting healthy lifestyles such as increased physical activity, healthy nutrition, and smoking cessation (Maiyaki & Garbati, 2014; Ogah et al., 2013). Pharmacists in the community have a role in promoting lifestyle changes that can contribute to reducing the burden of hypertension (Real, Vásquez, Formica, & Palma, 2014; Soyemi & Hunponu-Wusu, 2015; Um et al., 2014).However, the role of pharmacists in promoting positive lifestyle modifications (increased physical activity and good nutrition) among adults suffering from hypertension in Lagos, Nigeria has not been explored from the pharmacists' perspectives in a qualitative study that is backed by a theoretical framework. Therefore, this research contributes to knowledge by filling this observed gap.

Additionally, theoretical or conceptual frameworks ensure that the research is well designed and that the conclusions are more credible, making it important to include

discussions of the framework/s to support the research (Green, 2014). My study may lead to more research that will help to validate theoretical understanding of how PLMs by pharmacists in adults suffering from hypertension. This study may also contribute to the promotion of public health practice among pharmacists through the design of a protocol to guide interventions for PLM among adults suffering from hypertension in Lagos, Nigeria. This will help to reduce the incidence and prevalence of hypertension, contributing to social change by improving health outcomes among adults living with hypertension in Nigeria. By studying lifestyle promotion and placing it in the wider context of health disparity, the overall health indices of Nigeria may be affected.

The findings of this study can impact the Nigerian population, policy makers, healthcare administrators, pharmacists, and other healthcare professionals who are intended audiences for the findings. A target audience can be made aware of the findings either through advocacy, education or by becoming a voice for the voiceless (WHO, 2014b). I intend to conduct seminars with CPs in Lagos in conjunction with the leaders of the professional association (Association of Community Pharmacists of Nigeria).

Summary

The prevalence of hypertension in Nigeria is a public health concern contributing to health disparities. CPs who are knowledgeable and the most accessible health professionals in the community have a role to play in contributing to reducing this health disparity due to hypertension in adults through PLM (Adeniyi et al., 2015; Agomo et al., 2018). From my literature search, the phenomenon of PLM from the perspectives of CPs has not been explored and documented in Nigeria using a theory-backed qualitative

study, and there has been no documentation of a guiding practice protocol that CPs can use while counseling on lifestyle modification in adults with hypertension. This study was intended to fill these gaps.

In this first chapter, the introduction to the study highlighted a background to the study, the problem statement, study purpose, research questions, theoretical and conceptual frameworks of the study, the research design, and a summary of the methodology. I also defined key terms and stated assumptions, limitations, scope and delimitations of the study. The significance of the study and potential contribution to social change were also discussed. The literature review conducted will be discussed in Chapter 2.

Chapter 2: Literature Review

Introduction

The growing burden of hypertension and other NCDs is a global public health problem requiring attention from health professionals, governments, and other stakeholders. In particular, there is a growing incidence of NCDs such as hypertension and diabetes in developing countries including Nigeria, which has been attributed to lifestyle issues (Maiyaki & Garbati, 2014). Key risk factors for NCDs include a sedentary lifestyle, obesity, poor dietary habits, physical inactivity, tobacco smoking, and excessive alcohol consumption (Bauer et al., 2014). Additionally, there is low level of awareness, treatment, and control of hypertension in Nigeria, leading to increasing rates of cardiovascular complications (Akinlua, Meakin, Aminu, & Freemantle, 2015). NCDs account for two-thirds of all deaths globally (Bauer, Briss, Goodman, & Bowman, 2014; WHO, 2015), and 70% of all deaths in America and 24% of deaths in Nigeria can be attributed to NCDs (Daniel et al., 2013; Joseph et al., 2016). This growing incidence contributes to health disparity and economic burdens in the affected countries (Di Cesare, 2013; Offu, Anetoh, Okonta, & Ekwunife, 2015). However, adoption and maintenance of healthy lifestyles such as increased physical activity and healthy nutrition can help to prevent these chronic diseases (Joseph, Daniel, Thind, Benitez, & Pekmezi, 2016; Linden, Butterworth, & Prochaska, 2010).

Public health professionals including CPs have a role to play in promoting lifestyle modifications in adults to prevent NCDs and reduce the prevalence of these diseases (Bauer, Briss, Goodman, & Bowman, 2014; Jepson, Harris, Platt, & Tannahill,

2010; Laliberté, Perreault, Damestoy, & Lalonde, 2012; WHO, 2015). The role of pharmacists in health promotion to reduce the burden of NCDs has been documented by various researchers (Adeniyi , Nasir, Yakubu, David, & Sariem, 2015; Agomo, Arit-Udoh, Kpokiri, & Osuku-Opio, 2018; Brown, Portlock, & Rutter, 2012; Dennis et al., 2012; Laliberté et al., 2012; Um, Armour, Krass, Gill, & Chaar, 2013). Some studies have shown that pharmacists are accessible and knowledgeable healthcare professionals in the community who have a role in promoting lifestyle changes that can contribute to reducing the burden of hypertension (Real, Vásquez, Formica, & Palma, 2014; Soyemi & Hunponu-Wusu, 2015; Um et al., 2014). For example, Soyemi & Hunponu-Wusu (2015) found that pharmacists are knowledgeable about their public health roles, carrying out health promotion services in Lagos including smoking cessation services, patient medication counseling, alcohol reduction counseling, emergency contraception, and weight management. These services by CPs contribute to improved quality of life and a reduction in the incidence of death, disease, and disability.

Additionally, health professionals contribute to the PLM at individual and community levels using different strategies. For example, motivational interviewing-based health coaching is an effective chronic care management intervention strategy that can be carried out by different health professionals in order to reduce the prevalence of NCDs (Linden et al., 2010). CPs also contribute to improving the management of hypertension through patient education and counseling on lifestyle modification (Cheema, Sutcliffe, & Singer, 2014). However, health professionals need to have some evidence-based competencies to implement these strategies such as interprofessional

collaboration, developing processes for assessment of health conditions, use of outcome evaluation tools for different health behaviors, use of risk factor assessment tools, and knowledge of effective health behavior strategies (Dean et al., 2014). For instance, there is a need for an educational intervention to increase the knowledge base of CPs about carrying out public health services (Offu et al., 2015), which can be done with different strategies including training and appropriate policy formulation (Adeniyi et al., 2015). Overall, a collaborative approach between communities and health professionals can address the rising incidence of NCDs and promote population health (Bauer et al., 2014). Collaborative effort among different health professionals using nonpharmacologic interventions can help prevent NCDs (Dean et al., 2014).

Despite the research showing the positive effect of CPs as healthcare professionals addressing hypertension, their roles in Lagos need to be explored further and encouraged among pharmacists in Nigeria. This research was therefore used to explore the roles of CPs in PLM among adults in Lagos suffering from hypertension. The perspectives of CPs about the subject were explored using phenomenology as the research paradigm and constructivism as a theoretical lens. The results may help in reducing health disparity and economic burdens due to increasing prevalence of NCDs particularly hypertension, which is a risk factor for cardiovascular diseases and is increasing in incidence and prevalence among adults in Lagos, Nigeria.

In this chapter I present a review of current literature related to hypertension in Nigeria, which justifies the relevance of this research. I start the chapter with the search strategies, which is followed by a discussion of the theoretical frameworks: Pender's

health promotion model and the SCT. An elaborate discussion of relevant key variables and concepts was also done. This is with a view to providing adequate justification for the study by shedding light on the current state of knowledge about the phenomenon of health promotion by CPs and identified knowledge gaps that I intend to fill by conducting the study in Eti-Osa local government area of Lagos State, Nigeria. The chapter concludes with a summary of key points.

Literature Search Strategy

The databases used for the search were Academic Search Complete, ProQuest Central, Pubmed, and ScienceDirect. Searches were also conducted via Google scholar, Google, WHO website, Centers for Disease Control and Prevention website, and the Academic Skills Center website of the Walden University. The Walden library was searched for Walden dissertations related to health promotion and qualitative studies. Two previous dissertations from the College of Health Sciences were selected when a search phrase of health promotion and qualitative studies was used to search in the Walden Library for current dissertations between 2014 and 2018 (Foster, 2018; Ugorji, 2014). They were used as references for style and format.

Search phrases and combinations used included *health promotion and pharmacists, lifestyle modification and qualitative studies, hypertension and lifestyle modification, hypertension and health disparity, hypertension and community pharmacists in Nigeria, hypertension and pharmacists, health disparity and health literacy, health promotion and lifestyle modification, health promotion and qualitative studies, health promotion by community pharmacists, health promotion and community*

pharmacists in Nigeria, health promotion and health behavior, phenomenology and health promotion model, health promotion model, health promotion model and lifestyle modification, health promotion model and lifestyle modification in hypertension, phenomenology and hypertension, and *community pharmacists and lifestyle modification.* Other search term combinations used were *health promotion, theoretical frameworks, and qualitative studies, healthcare professionals, qualitative studies, and theoretical framework, phenomenology and community pharmacists, phenomenology and health promotion in Nigeria, social cognitive theory (SCT) and lifestyle modification and qualitative studies, health promotion in Nigeria, community pharmacists, and qualitative studies, SCT, community pharmacists, and hypertension, SCT, community pharmacists, and health promotion*, and *SCT and community pharmacists*.

Further, the following phrases were used to search in Google Scholar and Google for relevant articles on health disparity in Nigeria: *hypertension, high blood pressure, causes of health disparity, chronic diseases, interventions to improve community pharmacists' involvement in public health activities, community pharmacy practice in Nigeria, phenomenology, constructivism, SCT, health promotion model, health literacy, NCDs, healthy lifestyle promotion, qualitative studies on NCDs in Nigeria, reducing the burden of NCDs in Nigeria, health disparity, theory-backed studies on lifestyle promotion, trends in hypertension prevalence in Nigeria, physical activity, health promotion model for pharmacy practice, theories for health promotion used by pharmacists, phenomenology and perspectives of healthcare practitioners about hypertension, sedentary lifestyle*, and *healthy diet*.

For the purpose of comprehensiveness of search, the searches in databases and the search engines were supplemented with manual searches of references from retrieved articles to capture as many articles as possible. Boolean phrases “and”/”or” were used in the search to either narrow or expand the search using the different terms. Limiters used were full-text and peer reviewed, and the dates were restricted to between 2014 and 2018 in most cases (except in cases where the search did not yield any relevant articles or for articles judged as classical articles providing historical reference to the phenomenon being studies). The literature review process is iterative and as the research progressed more terms were added.

Theoretical Foundation

Role of Theory in Health Behavior Research

Behavioral theories contribute to the success of health promotion research and interventions. Theory provides a framework that guides all aspects of the research including the problem statement, methodology, analysis, interpretation of findings and conclusion (Creswell, 2014; Glanz & Bishop, 2010; Glanz, Rimer, & Viswanath, 2015). Additionally, the findings of a study that are not backed by theory are limited in usefulness (Grant & Osanloo, 2014). Interventions that are rigorously designed and use theoretical or conceptual frameworks are likely to be more successful in the promotion and maintenance of healthy behaviors and lifestyles (Joseph et al., 2016). Theory-based research is useful for studying interventions to change the behavior of healthcare professionals regarding their roles in health promotion such as seeking to understand why and how individuals adopt or fail to adopt a health-promoting behavior (Godin, Belander-

Gravel, Eccles, & Grimshaw, 2008). However, there are not many studies on the behavior of healthcare professionals in the performance of their roles using behavioral theories (Godin et al., 2008; Murphy et al., 2016). From my search of literature, there are no qualitative studies in Nigeria backed by theories exploring the behavior of CPs in health promotion; therefore, this study addressed this gap.

Despite the usefulness of theory, there are inconsistencies in showing the advantage of theories in assessing health interventions. For example, Prestwich et al. (2014) highlighted that there was little or no advantage of using theories to frame behavior change interventions. Other researchers confirm that the application of theory to public health practice and research contributes to improving the health of individuals, communities, and populations (Barry & Honore, 2009). Behavioral theories are important for guiding interventions aimed at lifestyle modifications, which can contribute to the effectiveness of interventions in community pharmacies (Steed et al., 2014). The observed inconsistencies may be due to a lack of standard protocol for evaluating the application and effectiveness of theories in behavior change interventions. For instance, Michie and Prestwich (2010) developed a coding scheme to assess the extent to which theories have been applied in interventions as a strategy for overcoming the challenge of inconsistencies in the assessment of interventions backed by theories.

In view of the inconsistencies in the meaning and use of frameworks (theoretical or conceptual) in research, the framework should be an important aspect of any dissertation or research publication because theoretical or conceptual frameworks help to ensure that the research is coherently designed, implemented, and concluded (Green,

2014). Theories need to be chosen based on their usefulness (internal consistency), relevance, or plausibility (Glanz et al., 2015). Based on the perspectives of CPs from my research, a protocol for performing the expanded role of health promotion in adults living with hypertension was generated.

In qualitative studies researchers either use theories overtly or inductively as in grounded theory (Creswell, 2014; Green, 2014). In research using theory overtly, the theories are used to frame the research design including the interview questions or to explain the study outcomes (Green, 2014). In this study, constructs from two theories were used to frame the interview questions and to explain the outcomes of the research (see Green, 2014). I considered using different theories for this research including health promotion model, SCT, and the socioecological model. However, there is a lack of interventions applying socioecological model because of associated costs and time needed to make modifications (Joseph et al., 2016), so I did not use this theory. For this research Pender's health promotion model and SCT were selected for their relevance to the phenomenon of health promotion, problem of health disparity, purpose, units of practice and the research approach (Glanz, Rimer, & Viswanath, 2015). The two theories guided the design of the interview protocol and interpretation of findings.

Health Promotion Model

The health promotion model was developed by Pender in 1982 (and revised in 1996) from her personal observation of health professionals, especially nurses (Pender, Murdaugh, & Parsons, 2011). The health promotion model is based on the constructs of SCT and value expectancy theory (Pender, 2011; Heydari, & Khorashadizadeh, 2014).

The health promotion model can be used to explain that health behavior is influenced by individual characteristics (past behaviors and traditions), cognitive actions and affect pertaining to behavior, socioenvironmental factors, and behavioral outcomes (Pender, 2011; Pender et al., 2011; Heydari & Khorashadizadeh, 2014). The specific constructs are perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences (Pender, 2011). Pender's model emphasizes positive motivational methods as incentives for behavior change (Pender et al., 2011).

The health promotion model has been used by researchers to design studies directed at improving healthy lifestyles and detecting barriers to adopting healthy lifestyles (Heydari & Khorashadizadeh, 2014). The model has been used in other studies to predict health-promoting behavior, and it can help healthcare professionals to understand and address challenges people have in committing to health-promoting behavior (Heydari & Khorashadizadeh, 2014). In this study, the health promotion model was used to guide the design of the interview guidelines with CPs with specific constructs of health promotion model being aligned with Research Question 1 (perceived benefits of action, perceived barriers to action, and self-efficacy) and Research Question 3 (perceived benefits, perceived barriers, and interpersonal influences).

Pender's theory is suitable for guiding research focused on encouraging health professionals to improve their roles by providing adequate resources to patients to help them make necessary behavioral changes (Pender, 2011). For example, Fidanci, Akbayrak, and Arslan (2017) collected qualitative data in a mixed methods research

framed by health promotion model to explore lived experiences of participants about obesity, suggesting that the model helps health professionals to understand the factors and the relationships that promote healthy lifestyle behaviors as well as guide interventions. Interventions and research backed by health promotion model can help health professionals to address issues pertaining to adoption of modifiable lifestyles and offer guidance on health promotion and social support to their clients and patients (Heydari & Khorashadizadeh, 2014). It was therefore suitable for this research exploring the perspectives of CPs about the phenomenon of lifestyle modification in patients having hypertension.

Social Cognitive Theory

SCT is a theory of interpersonal health behavior developed by Bandura in 1977, with three constructs that interact through a process of reciprocal determinism: personal cognitive factors (knowledge, self-efficacy, and collective efficacy); environmental factors (observational learning, normative beliefs, social support, barriers, and opportunities); and supporting behavioral factors (skills, intention, reinforcement, and punishment; Glanz & Bishop, 2010; Glanz et al. 2015). According to Liebl, Barnason, and Hudson (2016) SCT emphasizes reciprocal interaction between intrapersonal, behavioral, and environmental factors as they influence health behavior. SCT is a useful theoretical framework for interventions and researches targeting behavior change and long-term maintenance of behaviors associated with prevention and treatment of chronic disease.

From a review of 34 articles using theoretical frameworks in behavioral intervention studies, 65% of studies reviewed used SCT as framework, and out of these 68% of studies reported the usefulness of SCT for promoting long-term behavior change with respect to physical activity, weight loss, and smoking cessation (Joseph et al., 2016). They concluded that SCT offers great potential for providing a framework guiding interventions to promote long-term behavior change. SCT was used by Plotnikoff, Costigan, Karunamuni, and Lubans (2013) to frame a meta-analytical review of studies explaining physical activity behavior in adolescents. In a qualitative phenomenological study, Liebl et al. (2016) used SCT as framework for the semi-structured interview they conducted to explore the experiences of adults about maintenance of weight loss after bariatric surgery. According to Liebl et al. (2016) SCT can enhance understanding of why and how individuals change behavior in relation to their social and physical environments. Researchers use SCT to address social and personal determinants of health behavior and so is suitable for this research (Bandura, 1998). Specific constructs that guided the exploration of PLM in order to answer the research questions include intention, knowledge, skills, self-efficacy, perceived benefits, perceived barriers and opportunities, and environmental influences (interpersonal and situational).

Key Variables and Concepts

Hypertension

The global burden of hypertension is high, and it is of public health importance. Hypertension is a condition in which the pressure of blood in the arteries is persistently high causing the heart to work harder against this pressure, to pump blood out of the heart

to all parts of the body (WHO, 2018a). Hypertension is the most common NCD in sub-Saharan Africa (Daniel, Adejumo, Adejumo, Owolabi, & Braimoh, 2013; Ogah et al., 2016). Social determinants of hypertension include income level, education, globalization, urbanization, housing and ageing (WHO, 2013). Behavioral risk factors for hypertension include unhealthy diet, lack of physical activity, tobacco use, and excessive alcohol consumption (WHO, 2013). Metabolic factors including obesity, high lipid levels, diabetes, and kidney disease may also predispose individuals to high BP (WHO, 2013).

Hypertension is a risk factor for other NCDs including diabetes, stroke, ischaemic heart disease, heart failure and kidney disease (Ogah et al., 2016). It affects more than one billion people in the world, and is a leading cause of death globally (Akinlua, Meakin, Aminu, & Freemantle, 2015; Sarki, Nduka, Stranges, Kandala, & Uthman, 2015; WHO, 2018a). Hypertension is a factor responsible for absenteeism and lost person-hours and productivity, resulting in increased healthcare costs and huge economic burdens on individuals and nations (Linden, Butterworth, & Prochaska, 2010; Myneni, Cobb, & Cohen, 2013; Murthy et al., 2013; WHO, 2015). For instance, a study in South West Nigeria revealed that the monthly cost of drug treatment for hypertension per person was up to 10 US dollars (Ilesanmi, Ige, & Adebiyi, 2012). This is high for a country where many people live below one US dollar per day (Ilesanmi et al., 2012). This also points to the fact that hypertension contributes to health disparity in Nigeria because of the vicious circle involving poverty and hypertension.

According to the WHO (2013) hypertension is defined as a systolic BP of 140mmHg and above and a diastolic pressure of 90mmHg and above. In 2008 the global prevalence of hypertension in adults 25 years and above was 40%, and accounted for 9.4million deaths worldwide (WHO, 2013). Hypertension may also account for up to 4.5% of the global disease burden (Ogah et al., 2016). In the US in 2002, 38% of all deaths were due to cardiovascular diseases including hypertension, and total number of deaths due to NCDs was 2.12 million people (WHO, 2018). More than 50million Americans are reported to have high BP and the prevalence of hypertension is 28% and 44% in North America and Europe respectively (Ogah et al., 2016). The prevalence of hypertension is estimated at 14% in West Africa (Ogah et al., 2016). In Nigeria the prevalence is as high as 30% (Mezue, 2014). Hypertension is the most common NCD and the commonest risk factor for cardiovascular diseases (heart attack, stroke, and kidney failure) in Nigeria (Akinlua et al., 2015; Ogah et al., 2016).

Various factors affect the prevalence of hypertension in Nigeria. These factors include age, gender, ethnicity, and geographical location (rural/urban). A systematic review conducted by Adeloye, Basquill, Aderemi, Thompson, & Obi, (2015) estimated the crude prevalence of hypertension in Nigeria at 28.9% in 2010 with variations between genders and across rural/urban divide. Akinlua et al. (2015) conducted another systematic review of literature (from PubMed, EMBase, and WHO cardiovascular InfoBase) documenting the prevalence of hypertension in Nigeria. The review conducted by Akinlua et al. (2015) built on earlier reviews of hypertension prevalence in Nigeria by also reviewing studies that focused on children and on different healthcare settings in

order to give a more comprehensive result of hypertension prevalence in Nigeria. The review showed that the overall crude prevalence of hypertension in Nigeria among adults ranged from 2.1% - 47.2% with age, sex, and rural/urban differences noted, while among children (less than 18 years) the prevalence ranged from 0.1% - 17.5% (Akinlua et al., 2015).

The prevalence of high BP in Benin, a mid-Western city in Nigeria was reported by Ogah et al. (2016) to be 10% and 14% among females and males respectively; and 33.5% and 30.5% in Abia State (Southeast Nigeria) among males and females respectively. Ogah et al. (2016) also noted age and sex variations in hypertension among adults 18 years and above in Abia State, Nigeria, but found no significant rural/urban variations. The prevalence of hypertension in Abia State was reported to be 31% and also varied by ethnic groups and geopolitical zones (Ogah et al., 2016). Blood pressure tends to increase with age as from the middle age and so necessary care to prevent/control hypertension in adults should be taken by individuals and health professionals (Akinlua et al., 2015). Adeloye et al. (2015) used mathematical modeling to predict an increase in the number of adult Nigerians (20 years and above) living with hypertension from 20.8 million in 2010 to 39.1 million by 2030, and a rise in prevalence from 28.9% to 30.8%, with men (32.6%) having a higher prevalence than women (29%). The rising trend in the prevalence of hypertension in Nigeria contributes to increased disparity in health which must be reduced to assure the health of the Nigerian population.

Health Disparity

Hypertension and other NCDs contribute to health disparities globally (Healthy People.gov, 2018; Lawanson & Fadare, 2015; Prescott et al., 2017; Thornton et al., 2016). According to the Kaiser Family Foundation health care disparities may be described as "differences between groups in health insurance coverage, access to and use of care, quality of care, as well as some of the structural problems within the health care delivery system" (Logan, 2017). They are unfair socioeconomic inequalities that make some people disadvantaged with regards to their health and access to healthcare. Health disparities may be regarded as differences in health that are unfair, unjust, and unnecessary (Braveman, 2014; Carter-Pokras, & Baquet, 2002). Health disparities may be indicated by the variations in life expectancy, disadvantage in terms of access to care, health status, environment, or quality of care, and other key health outcomes according to race, sex, socioeconomic status, and geographic location in different populations (Carter-Pokras, & Baquet, 2002, Centers for Disease Control and Prevention, 2013; Healthy People.gov, 2018; Prescott et al., 2017). The National Institutes of Health defines health disparities as the "difference in the incidence, prevalence, mortality, and burden of disease and other adverse health conditions that exist among specific population groups in the United States" (Logan, 2017, p. 64).

Carter-Pokras and Baquet (2002) explained health disparity as involving inequity of opportunity, treatment, or status among people or populations. Health disparities adversely affect groups of people who may be disadvantaged based on their age, race or ethnicity, gender, religion, mental health, socioeconomic status, sexual orientation,

geographic location, physical disability, discrimination or exclusion (Healthy People.gov, 2018). Health disparity conveys a connotation of social injustice. Braveman (2014) clarified that health disparities refer to worse health among socially- and economically disadvantaged persons in different races and ethnic groups, and that not all differences in health can be classified as health disparities. Braveman (2014) explained that worse health among the elderly than in young adults may not be classified as a health disparity because it is to be expected. Social and economic disadvantages have been linked with suffering premature death, disability, and avoidable sicknesses (Braveman, 2014). A number of factors are thought to contribute to health disparity.

Factors contributing to health disparity in Nigeria. Determinants of disparity are many including natural or biologic variations, health-damaging behaviors due to poor choices such as smoking, and exposure to unhealthy living or working conditions (Carter-Pokras & Baquet, 2002). Other determinants include natural selection involving the tendency for sick people to move down the social scale, temporary health advantage of one group over another when one group is the first to adopt a health-promoting behavior, and poor access to essential health services and medicines (Carter-Pokras & Baquet, 2002). Low socioeconomic status and individual lifestyle factors have been linked to health disparity (Lawanson & Fadare, 2015; Prescott et al., 2017). Other factors that have been linked to health disparity include cultural factors, health and social policies, and stage of economic development of countries (DiCesare et al., 2013). Attention needs to be given to these determinants by public health professionals and other stakeholders in health including policy makers in order to be able to plan appropriate interventions that

can lead to a reduction in health disparities in nations. Interventions that focus on determinants of health can help to reduce or eliminate health disparities (Thornton et al., 2016). Such interventions may occur at the individual level and target improving health and lifestyle behaviors (Thornton et al., 2016). The intervention of CPs involving promotion of lifestyle changes in people living with hypertension usually occurs at the individual level.

There are observed ethnic disparities in hypertension prevalence with a higher prevalence observed among blacks than in Caucasians living in the same area (Murthy et al., 2013). Reasons for this ethnic disparity are not very clear but may be associated with genetic makeup, socioeconomic status, and environmental factors (Murthy et al., 2013). In the US, hypertension awareness, treatment, and control has been found to be lower among Mexican-Americans than in Hispanic Americans and African Americans (Hargraves, Bonollo, Person & Ferguson, 2018). Hypertension contributes to health disparity globally and especially in low- and medium-income countries because of the disproportionately weak health systems in these countries (WHO, 2013).

Health disparity due to hypertension is a problem in low- and middle-income countries (Sarki, Nduka, Stranges, Kandala, & Uthman, 2015). Socioeconomic inequalities contribute to the prevalence of hypertension in these countries (Sarki, et al., 2015). Hypertension was found to be inversely proportional to educational attainment, leading to a downward socioeconomic gradient for hypertension (Sarki et al., 2015). Increasing age may also contribute to disparity due to hypertension. Adults older than 65years were found to have a higher prevalence than younger ones (Sarki et al., 2015).

Sarki et al. (2015) however found a higher prevalence of hypertension in nonsmokers and non-alcoholic drinkers. A possible reason given for the observed trend was that these categories of individuals may also be engaging in some other unhealthy behaviors that could predispose to hypertension. Unhealthy eating habits and food choices also contributes to health disparity due to hypertension (Mezue, 2014). Population-wide cost-effective strategies as campaigns promoting reduction in dietary salt intake from processed foods and home-made foods are recommended in order to tackle the problem of health disparity due to hypertension (Mezue, 2014; Sarki et al., 2015). Urbanization has been reported to contribute to health disparity in hypertension. Studies have reported higher prevalence of hypertension in urban areas than rural (Murthy et al., 2013; Sarki et al., 2015). Sarki et al. (2015) reported a higher prevalence of hypertension in urban (32.7%) than in rural (25.2%) settings. Reasons attributed to this trend include sedentary lifestyle, stress, obesity, and increased consumption of salty processed foods (Murthy et al., 2013). Health disparity due to hypertension requires urgent, concerted intervention because of the rapid urbanization of the Nigerian populace, which may lead to an increase in hypertension prevalence if not tackled adequately.

Non-communicable diseases as hypertension contribute to health disparities in Nigeria and other countries. Gender disparity in BP levels has been reported among health workers in Nigeria (Adeoye et al., 2015). Men had a prevalence rate of 38.4% for hypertension and 33.0% for women. A study by Murthy et al. (2013) revealed the prevalence of hypertension in females to be 46.8%. This may be an indication for interventions to be tailored according to sex as women were also reported to be more

likely to seek treatment for hypertension than men but no significant difference in BP control (Adeoye et al., 2015). Age disparity in hypertension prevalence was found in a population wide study across Nigeria, varying from 32.1% in 40–49 year olds to 58.2% in those aged 80 years and older (Murthy et al., 2013). A wide disparity was observed across different ethnic groups and geographic regions of Nigeria ranging from 34.2% in the South-South region to 60.5% in the NorthEast region. Urban dwelling (51.6%), illiteracy, obesity, and low income contributed to higher prevalence of hypertension across the country (Murthy et al., 2013). A study among urban slum dwellers in an area of Lagos, Nigeria revealed that religion and marital status are additional factors contributing to disparity in hypertension prevalence (Daniel et al., 2013). One identified challenge of public health in Nigeria is the inadequacy of the health workforce to tackle the problem of health disparity (Offu et al., 2015). Murthy et al. (2013) highlighted that additional resources and intervention strategies are needed to tackle the burden of increasing hypertension prevalence in Nigeria. CPs may have a role to play in such interventions because they are easily accessible and knowledgeable healthcare professionals in the community.

In order to reduce the burden of chronic diseases, there needs to be a holistic, collaborative, and multidisciplinary approach to reduce health disparities in nations (Bauer, Briss, Goodman, & Bowman, 2014). The burden of health disparity may be tackled at both the individual and population levels through policy and environmental interventions that target the risk factors for chronic diseases (Bauer et al., 2014). Three factors have been identified as contributing to health disparities in the US. These include

increased life expectancy leading to an ageing population that suffers from chronic diseases as arthritis, social and environmental factors that promote or adversely influence health, and the prevalence of risk factors that are modifiable through promotion of healthy behaviors and lifestyle (Bauer et al., 2014). One of the strategies used by the Centers for Disease Control and Prevention (2013) to reduce the burden of NCDs is to use available resources within a community that are linked to clinical services. These resources include health professionals such as CPs whose services are easily accessible to community members. Community health workers have been used in the US to reduce disparity due to hypertension management amongst disadvantaged ethnic minorities (Hargraves, Bonollo, Person & Ferguson, 2018).

Surveillance and data systems as the Behavioral and Risk Factors Surveillance System are used by countries and states to monitor the prevalence of risky behaviors and health disparities. In Nigeria surveillance systems are weak and often not up to date (Arikpo, Mboto, Okoro, & Meremikwu, 2017; Isere, Fatiregun, & Ajayi, 2015). The Health and Demographic Surveillance Systems is a global data collection system recommended for low- and medium-income countries for collecting longitudinal data about health and demographics pertaining to health (Arikpo et al., 2017). Even though Nigeria adopted the WHO recommended Integrated Disease Surveillance and Response as the strategy for disease control since 1998, surveillance data collection systems in Nigeria commonly monitor infectious diseases and other notifiable diseases as malaria, and these systems are not as efficient as they ought to be (Isere et al., 2015). There is the need for public health systems in Nigeria to actively monitor the prevalence of NCDs and

behavioral risk factors for effective planning of appropriate interventions to reduce the burden of NCDs.

Health disparities lead to a disproportionate burden of disease, disability, injury, and death, and require all stakeholders in health to join hands to reduce this burden on populations. Health disparities may be considered a signpost indicating that all is not well with the health of populations or communities (Carter-Pokras, & Baquet, 2002). Reduction in health disparity promotes health equity, which is the right of all individuals (Braveman, 2014). In order to tackle the burden of hypertension in low- and medium-income countries effectively it is important to target the social determinants of health influencing hypertension prevalence for health- promoting interventions. Health literacy is one of such determinants that needs to be addressed in Nigeria and other low- and medium-income countries in order to reduce the burden of health disparity due to hypertension.

Health literacy. The Calgary Charter in 2012 defined health literacy as involving the use of various skills (including reading, writing, numeracy, speaking, listening, analytical, and interaction skills) by the public and health personnel to find, understand, evaluate, and use information that will help them or others to live healthier lives (Logan, 2017). Health literacy has also been explained as the degree to which an individual has the ability to retrieve, process, and understand basic health information and services needed to make appropriate decisions about their health (Adekoya- Cole, Akinmokun, Enweluzo, Badmus, Alabi, 2015; Oladunjoye, Adebiyi, Cadmus, Ige, & Oladunjoye, 2013). It is one of the benchmarks of the health status of a country.

Health literacy is considered an intermediate determinant of individual and population health that affects the utilization of health care services, adherence to therapy, and health outcomes (Logan, 2017; Mackey, Doody, Werner, & Fullen, 2016). It is reported that almost nine out of 10 Americans have difficulty understanding health information obtained from various sources including patient information leaflets, adverts, and the news media (Logan, 2017). Poor health literacy has socioeconomic implications for any country. People with low health literacy are more likely to have chronic diseases, less likely to seek treatment, and twice as likely to be hospitalized. Low health literacy increases health costs by 3-5% (up to $238 billion) of the health budget in the U.S. (Logan, 2017; Mackey et al., 2016). Health literacy affects an individual's ability to understand medical terms and instructions, read medication labels, and can lead to increased hospitalizations, and more use of emergency care (Koh, Baur, Brach, C Harris, & Rowden, 2013; Koh et al., 2012). Health illiteracy contributes to poor outcomes for self-management of chronic diseases as hypertension and increased mortality (Fincham, 2013; Johnson, Moser, & Garwood, 2013).

An individual's level of health literacy determines his/her level of awareness about their health conditions. Low health literacy cuts across socioeconomic classes. In the US only 12% of people are reported to be proficient in health literacy (Logan, 2017). Johnson et al. (2013) in their review stated that more than a third of Americans have low health literacy and cannot understand basic health information, nor are they able to understand medication use instructions or make the right decisions about their health. The level is lower in Nigeria. A study in an urban slum in Lagos revealed that more than 90%

of those found to be hypertensive were not aware of their condition and this contributes to health disparity and increased prevalence of hypertension (Daniel et al., 2013).

One of the factors responsible for this lack of awareness is lack of access to health information or poor health literacy (Daniel et al., 2013). Other reasons adduced were poverty, poor access to healthcare services, low level of education, and ignorance. Factors influencing health literacy in Nigeria include illiteracy, low socioeconomic status, ineffective communication, and cultural beliefs (Adekoya-Cole et al., 2015). However one study on tuberculosis patients in a rural area of Northern Nigeria reported high functional health literacy level about tuberculosis despite the poor educational background of the patients (Oladunjoye et al., 2013). The reported high health literacy level was attributed to the concerted efforts of the National Tuberculosis Control Program in Nigeria to raise awareness about tuberculosis, and possibly due to the small number of research participants (74). Low health literacy is associated with poorer self-management behaviors in chronic disease management, poorer health outcomes, frequent hospital visits, lack of understanding of the use of preventive services, and poorer health status (Adekoya-Cole et al., 2015; Mackey et al., 2016).

Interventions to improve health literacy by health professionals including CPs can lead to a reduction in health disparity in Nigeria. Such interventions may contribute to reducing morbidity and mortality, improving patient adherence to therapy instructions, improved self-efficacy in chronic disease management, and improved patient safety (Logan, 2017). Among healthcare professionals, pharmacists provide the last interface for patients and the public to get clarification on appropriate medication use. For this reason

pharmacists need to assess the health literacy skills of their patients and communicate instructions clearly in order to counsel patients effectively, so that patients can use drugs correctly for optimal outcomes (Johnson et al., 2013).

Such interventions also lead to more use of preventive services, improved self-efficacy in patient-self management of chronic diseases, more utilization of healthcare services, and a reduction in hospitalization and healthcare costs from re-hospitalization (Logan, 2017). Improving self- efficacy increases self confidence in making lifestyle changes by patients (Mackey et al., 2016). Illiteracy and poor health literacy can contribute to non-adherence to antihypertensive therapy (Daniel et al., 2013). Interventions to improve health literacy particularly among slum dwellers would contribute to reducing prevalence of hypertension in Lagos, and CPs can serve as useful resources for these interventions. CPs therefore need to be health literate in order to provide health promoting information to patients and clients in a way that is easy to understand and use for improvement in their health (Koh et al, 2013). Strategies and interventions to promote health literacy in patients can be utilized by pharmacists to ensure better understanding of medication instructions and health-promoting counsel (Johnson et al., 2013).

Health Promotion

Health promotion is one of the determinants of health that influences health outcomes. This concept is recognized as a strategy for improving health using a holistic approach involving medical, social, economic, and psychological approaches. According to WHO health promotion is a process that enables people (at individual and population

level) to take control over their health and to improve their health (WHO, 2018b). Determinants of health are conditions in which people, live, work, or play (Prescott et al., 2017). Health promotion includes a range of activities and interventions aimed at helping people to take better control of their health at the individual, community, or population levels (Naidoo & Wills, 2016). It entails health education and environmental action (Fertman & Allensworth, 2017). Health promotion is aimed at empowering individuals and groups to address their own health needs through acquisition of health-improving skills, engendering community participation, collaboration with health professionals and other stakeholders, advocacy for policy changes and development of better strategies (Naidoo & Wills, 2016).

Health promotion is carried out to foster the adoption of healthy lifestyles by individuals and entire populations. It is used to encourage better and easier access to health services, and involvement in health decisions by the individuals concerned, promote a friendly environment where it is easier to make an appropriate health choice, and to provide health education (Naidoo & Wills, 2016). Health promotion may be viewed as a concept involving planned positive change in health-related lifestyles and conditions, with the changes occurring either at the individual, interpersonal, or population levels (Fertman & Allensworth, 2017). Health promotion involving behavioral and lifestyle changes has been identified as one of the strategies for reducing the burden of hypertension in Nigeria and other African countries (Mezue, 2014). One of the ways this can be done is through promoting the strategy of reducing daily salt intake on an individual or population-wide basis. Mezue (2014) recommended that this strategy can be

achieved using social marketing techniques, the educational sector, and the healthcare system with the focus on the primary healthcare system which includes CPs.

Health promotion is recognized as an aspect of community pharmacy practice worldwide and it contributes to improvement in health of people (Gelayee et al., 2017). It is recognized as one of the components of good pharmacy practice by WHO and the International pharmaceutical Federation (Gelayee et al., 2017). In a qualitative study exploring the experiences of CPs in mental illness and addictions care, Murphy et al. (2016) stated that qualitative studies provide depth in understanding the experiences of health professionals including their challenges and opportunities. This understanding will further aid in the design of more effective interventions on behavior change. Some highlighted challenges to the performance of health promotion by CPs included pharmacist-specific factors as knowledge, skills, and competencies; practice environment including staffing, poor work flow, lack of time, and remuneration; and patient factors as fear of stigmatization (Gelayee et al., 2017; Murphy et al., 2016).

In Nigeria CPs are involved in various health promotion activities that contribute to improving and maintaining the health of the public. Adje and Oli (2013) highlighted from a study they conducted in Warri that CPs engage in health promoting activities as hypertension screening, blood sugar measurement, determination of body-mass index, and patient education. These activities contribute to improving health outcomes in the population. In Ethiopia CPs are involved in health promotion in various aspects including family planning services, diabetes, drug misuse, asthma, and cardiovascular diseases (Gelayee et al., 2017). The need for additional training to improve competencies of

Nigerian CPs in health promotion was highlighted by Adje and Oparah (2013) in an interventional study they conducted. Lack of training was also recognized as a barrier to CPs performing health promotion activities effectively in Ethiopia (Gelayee et al., 2017). In Nigeria CPSs contribute to health promotion in different ways including encouraging folic acid supplementation among women of child-bearing age, conducting BP monitoring, screening for diabetes, smoking cessation activities, immunization services, weight management, and assessment of risk for osteoporosis, and that further training helped to improve the performances of these roles by the pharmacists (Adje & Oparah, 2013).

The community pharmacy which is usually the first port of call for healthcare for most Nigerians may be an important avenue where awareness and information about self-management of hypertension leading to behavior change can be provided (Adeniyi et al., 2015). CPs as accessible and knowledgeable health professionals in the community are well positioned to contribute to public health by carrying out disease-prevention roles and activities that would lead to improvement in health of the public (Agomo, Arit-Udoh, Kpokiri, & Osuku-Opio, 2018; Gelayee et al., 2017). Self-management in chronic disease is related to the ability of an individual to make lifestyle changes in conjunction with healthcare professionals and others who can give support including family members (Mackey et al., 2016). Managing chronic diseases as hypertension requires the affected individual to voluntarily choose healthier behaviors and deploy self-management skills developed through the support and counseling from healthcare professionals and information received from different sources (Mackey et al., 2016). CPs therefore have a

role to play in helping patients develop self-management skills including lifestyle modification in hypertension and other chronic diseases.

Lifestyle Modification

Promotion of lifestyle modification is one of the skills primary healthcare providers should possess. Lifestyle modification is important to successful disease management in populations (Linden et al., 2010). The clinical triangle associated with disease causation and prevention involves a consideration of genotype, phenotype, and lifestyle behaviors of individuals (Logan, 2017). Some factors that can facilitate lifestyle modification border on enhancing awareness, behavior change, and supportive environment conditions including policy (Heydari & Khorashadizadeh, 2014). According to WHO (2018a) 80% of deaths due to NCDs can be averted through lifestyle modification.

The key risk factors for NCDs include physical inactivity, obesity, high BP, high body-mass index, diets low in fruits and vegetables but high in saturated fats and sodium, tobacco smoking, exposure to second-hand smoke, and excessive alcohol consumption (Daniel et al., 2013). All these factors are amenable to lifestyle modification (WHO, 2018a). Lifestyle modification has been shown to have a positive effect on hypertension (Crittenden, Seibenhener, & Hamilton, 2017) The burden of NCDs points to the need for policy and environmental interventions that promote healthy eating, increased physical activity by people, smoking cessation, and moderate alcohol consumption (Bauer et al., 2014; Daniel et al., 2013). Health professionals need to understand the concept of living

with chronic illness in adults in order to conduct meaningful interventions to promote the health of people living with such illnesses.

In order to reduce morbidity, mortality and health disparity due to NCDs, CPs contribute to PLM using different strategies and innovations. They are involved in glycemic control in diabetes care, BP control, asthma control, and smoking cessation (Adje & Oli, 2013; Adje & Oparah, 2013; Alotaibi, Shivanandappa, & Nagarethinam, 2015; Noble et al., 2016; Okada et al., 2016). A randomized control trial in Japan showed that CPs in Japan used lifestyle coaching to improve treatment outcomes in patients with type 2 diabetes (Okada et al, 2016). Lifestyle coaching involves supplying treatment information from brochures and giving continuous support at every visit (Okada et al, 2016). Community pharmacists have used an innovative digital system to provide individualized recommendations to patients with hypertension for lifestyle modification based on device-recorded lifestyle patterns of patients (Noble et al., 2016). This device helps CPs to provide evidence-based recommendations for lifestyle modifications to patients with hypertension in order to achieve positive health outcomes. Noble et al. (2016) conducted an assessment of one evidence-based system using an innovative digital health feedback system. The digital health feedback system helps primary care providers including pharmacists to tailor medication adjustments and lifestyle change recommendations to fit individual needs (Noble et al., 2016).

Direct support from CPs is one of the ways for facilitating patient self-care in the management of chronic diseases. Collaborations between CPs and patients (leading to concordance), as well as between CPs and physicians lead to better outcomes in

management of hypertension (Mc Namara et al., 2014). Living with chronic illness may be considered a complex process involving five stages highlighted as acceptance, coping, self-management, integration, and adjustment (Ambrosio et al., 2015). The stage of adjustment is the same as lifestyle modification necessitating adapting to the illness and the accompanying positive changes in lifestyle required to cope with the illness and achieve positive outcomes (Ambrosio et al., 2015). There is the need for CPs to be more active in giving lifestyle counseling in order to bridge the gap in poor treatment outcomes in hypertension management (McNamara et al., 2014). CPs perceive that they could perform these roles more optimally with more training, remuneration for the value-added service, and better staffing so that they can have more time for pharmaceutical care counseling on lifestyle modification (Noble et al., 2016).

Role of Community Pharmacists in Health Promotion and Lifestyle Modification

CPs are professionals that provide pharmaceutical care (provision of drug therapy in a responsible manner in order to achieve definite health outcomes) to patients outside the hospital setting in community pharmacies. CPs all over the world have a role to play in public health activities including health promotion and modification of lifestyles in order to enhance the health and well-being of the public. CPs contribute to the health of nations, and in some developing countries up to 80% of total healthcare provided for the citizens are obtained from community pharmacies (Faduyile et al., 2012). The traditional role of CPs as drug dispensers has undergone a paradigm shift to an expanded role involving the provision of pharmaceutical care and public health services including health promotion and disease prevention (Mossialos et al., 2015; Offu et al., 2015).

Several studies have posited that pharmacists, as knowledgeable, accessible, and trusted health professionals, have a role in promoting lifestyle modifications in a bid to control the growing epidemic of NCD (Agomo et al., 2018; Brown et al., 2012; Dennis et al., 2012; Faduyile, Oparah, & Oreagba, 2012; Laliberté et al., 2012; Offu et al., 2015; McNamara et al., 2014; Mossialos et al., 2015; Um et al., 2013).

CPs are involved in a wide array of health care services in Nigeria including provision of health information, education, and counseling about prevailing health issues and drug therapy, provision of essential drugs, pharmaceutical care, prevention and control of endemic and epidemic diseases, prevention and reporting of adverse drug effects, family planning, and immunization services (Faduyile et al., 2012). Some of the identified public health roles for CPs include immunization services, weight management, screening for hypertension and diabetes, smoking cessation, family planning services, HIV/AIDS counselling, healthy nutrition counselling, and baby friendly (breastfeeding) education (Adje & Opara, 2013; Offu et al., 2015). CPs need to ensure efficient dissemination of disease-related knowledge in order to promote patient empowerment and adherence to self-management strategies (Mackey et al., 2016). CPs also conduct health promotion and health education campaigns as part of their public health roles. These activities have been judged effective and as being able to contribute to improved health outcomes (Agomo et al., 2018). Mossialos et al. (2015) highlighted that awareness, availability, and attitude of CPs contribute to their success in performing health promotion roles. A study of the perspectives of CPs on lifestyle modification among adults with hypertension in Nigeria will contribute to evidence of how well CPs

perform this role in Nigeria based on their level of awareness and other structural factors. Even though CPs are involved in health promotion and lifestyle modification roles, barriers exist to the performance of these roles by CPs.

Some barriers to the effective performance of these roles by CPS have been highlighted in some studies. These barriers include lack of adequate training, lack of remuneration for public health services rendered, and excessive workload (Agomo et al., 2018). In addition Adje and Oparah (2013) stated lack of time, lack of support and enabling environment by non-pharmacist owners of community pharmacies as barriers to the effective performance of health promotion by CPs in Nigeria. A qualitative study by Dosea et al. (2015) explored the perceptions of CPs in Brazil about implementing clinical services in community pharmacies using three focus group discussions, but the study was not backed by any theory. They concluded that from the perceptions of pharmacists, promoters and barriers of the expanded roles of CPs can be understood. In Nigeria, greater integration of CPs into the public healthcare system would contribute to improved population health status and reduction in health disparity (Adje & Oparah, 2013; Faduyile et al., 2012). Another barrier identified is the absence of standard practice guidelines on health promotion for pharmacists (Adeniyi et al., 2015; Gelayee et al., 2017; Laliberte et al., 2012). My study has attempted to bridge this observed gap by developing a protocol for PLM in hypertension for CPs.

Constructivism

Constructivism is an approach to research that depicts the worldview of the researcher. The proponents of constructivism argue that the only way to understand

reality is to view it as a social construction by human efforts and sense-making jointly by social actors and that it involves an interpretive process (Barolia et al., 2013; Creswell, 2014). Constructivists argue that the interpretation of social phenomena determine the outcomes (Barolia et al., 2013). The concept of constructivism highlights that it is not possible to separate the researcher from the phenomenon being studied and that theory cannot be separated from practice (Barolia et al., 2013). A researcher is not considered to be objective or neutral by this worldview as her/his interpretation of the phenomenon is influenced by her/his social, cultural, or historical background Creswell, 2014). Constructivism helps a researcher to adduce meanings to people's stories and to understand why some people's stories are given priority over that of others. Constructivists interpret social phenomena by constructing meaning in order to understand what shapes outcomes (Barolia et al., 2013). Thus using this worldview I attempted to construct the concept of PLM in hypertensive adults from the perspective of CPs using phenomenology as the methodology.

Phenomenology

Phenomenology helps to provide understanding or give meaning to phenomena (McWilliam, 2010; Theoretical Frameworks in Qualitative Research, 2006). This research approach allows health practitioners and researchers to gain insights about their practice, and a better understanding of the patients and the people they serve (McWilliam, 2010). Phenomenology has the potential to promote individual and public health, improve health care services, enhance professional practice, and serve to advance the theoretical foundations and practice of health disciplines in a way to promote positive

social change (McWilliam, 2010). McWilliam categorized phenomenology into three classes, descriptive (transcendental), interpretive (hermeneutic), or social. Edmund Husserl (1859–1938) is regarded as the father of descriptive phenomenology and he stated that reality is subjective and based on the conscious experience of the individual (Lopez& Willis, 2004; McWilliam, 2010). Martin Heidegger (1889–1976) is referred to as the father of interpretive phenomenology (Hermeneutics) that focused on studying the nature of phenomena. Hermeneutics acknowledges that the presence of the researcher influences what is being studied. A researcher through phenomenology seeks to access first-hand understanding of people's behavior through their perspectives (Creswell, 2014; Lopez& Willis, 2004; McWilliam, 2010; Rudestam & Newton, 2015). Alfred Schutz (1899–1959) may be described as the father of social phenomenology, and his work was expanded on by Merleau-Ponty's (McWilliam, 2010).

Phenomenology involves studying individuals and the meaning they give to issues and their interactions with others and the environment (Lopez & Willis, 2004; Ravitch & Carl, 2016; Rubin & Rubin, 2012). My research will go beyond mere description of core concepts and similarities to looking for common meanings involved in positive lifestyle promotion by CPs (Horrigan-Kelly, Millar, & Dowling, 2016; Lopez & Willis, 2004). In a research study Tan, Hassali, Neoh, and Saleem (2017) used phenomenology to explore an understanding about the view of patients on medication and hypertension management in three focus group discussions. From the study they highlighted the need for healthcare professionals to carry out health promotion activities to improve positive outcomes at the community level (Tan et al., 2017). Todd et al. (2016) used hermeneutic phenomenology

to explore the views of healthcare professionals about use of medicines by patients in palliative care. They explained that hermeneutics involves interpreting people's experiences within the context of the environment in which the experience occurs, and it allows for discussions incorporating evidence-based practice (Todd et al, 2016). Turpin, McWilliam, and Ward-Griffin (2016) used interpretive phenomenology in a qualitative study to explain positive client-nurse relationship. They found that the meaning of this relationship to seniors living with chronic diseases meant having comfort and being connected to the nurse (Turpin et al., 2016). I used hermeneutics as a research design in this study to explore the phenomenon of PLM from the perspectives of CPs in Lagos, Nigeria. The interpretation of findings from participants' perspectives took into consideration the community pharmacy practice environment.

Summary and Conclusions

There is evidence from literature to show that CPs all over the world have a role to play in public health activities including health promotion and modification of lifestyles in order to improve health outcomes and contribute to improving patients' quality of life. In this chapter I have highlighted justification for this research from literature, stated the problem statement and research purpose. The role of behavioral theory in health promotion research has been discussed and other key variables were discussed in the light of the proposed research questions. The literature search strategies used were also discussed. Literature evidences point to the need for more researches and interventions to document how to improve the efficiencies of CPs and how they are performing health promotion activities. There are fewer qualitative studies than

quantitative that have assessed the roles of CPs in health promotion and lifestyle modification in chronic diseases. Many of the qualitative studies did not state any theoretical or conceptual frameworks used (Dosea et al., 2015). In Nigeria there is a paucity of qualitative studies exploring the perspectives of CPs on health promotion activities as lifestyle modification.

Qualitative studies help researchers to understand a phenomenon from the perspectives of the participants, and this can be useful for designing more relevant and effective interventions about the phenomenon of interest. From my search of literature, there is no qualitative study exploring the perceptions of CPs of their roles in lifestyle modification in chronic diseases in Nigeria that is backed by behavioral theories. This research has been used to fill this gap by using phenomenology to explore how CPs in Lagos understand and carry out activities related to PLM in adults with hypertension, and this understanding has led to the generation of a protocol to follow while performing the role of PLM in community pharmacy practice. The study was guided by constructs from the health promotion model and SCT. The methodology used for the study would be explained in more details in the next chapter.

Chapter 3: Research Method

Introduction

The purpose of this phenomenological study was to explore PLM among adults living with hypertension from the perspectives of CPs in an urban local government area (LGA) of Lagos State, Nigeria. This study may contribute to understanding the role of CPs in the promotion of healthy lifestyles among adults who have hypertension in Lagos, Nigeria, as greater involvement of CPs, who are usually the first provider of healthcare for many patients in Nigeria, can help reduce the burden of NCDs in Nigeria (Adeniyi et al., 2015; Adje & Oparah, 2013; Agomo et al., 2018). From the results of this study, I generated a protocol that can serve as a framework for CPs to enhance their effectiveness while conducting interventions and counseling patients with hypertension on healthy lifestyle changes to improve patients' wellness and quality of life. This would bring about social change in the community by improving the health outcomes of hypertensive patients.

In this chapter, I highlight the rationale for choosing phenomenology as the research design and qualitative method as the research tradition in addition to presenting the research questions, a definition of the phenomenon of lifestyle modification, and the role of the researcher. The methodology is also described to aid in replication and contribute to validity and trustworthiness of the findings. This includes the study population, justifying the sampling strategy and specific procedures for identifying and recruiting participants, data collection instruments, interview protocol, data analysis plan,

issues of trustworthiness, and ethical procedures. The chapter will end with a summary of the main aspects of the chapter.

Research Design and Rationale

This study was carried out to gain a better understanding of the knowledge, attitude, and practice of CPs in Eti-Osa local government area of Lagos State Nigeria, from their perspectives about promoting lifestyle modification among adults living with hypertension. The intent was to design a protocol that can guide these health professionals in this health-promoting role. Three research questions were used to guide the study in order to understand how CPs perform this role and to explore their expectations, barriers and the challenges CPs face in the conduct of promoting lifestyle changes: .

Research Question 1: What is the perspective of community pharmacists about contributing to promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 2: How do community pharmacists perform the role of promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 3: How is practical knowledge and pharmacy practice protocol revealed from the experiences of the community pharmacists?

Key Phenomenon/Concepts in the Study

Hypertension and PLM are the central concepts in this study. For the purpose of this study, hypertension was defined as elevated BP with a systolic pressure of 140mmHg or higher and or a diastolic BP of 90mmHg or higher (WHO, 2018a). PLM is a necessary

role for all health professionals including CPs, which entails encouraging a progressive and positive change in habits that can promote well-being, improve health outcomes, or prevent disease. This may involve an individual adopting a new normal self-identity (Ambrosio et al., 2015). In this study, I focused on increased physical activity and healthy nutrition as aspects of lifestyle modification. For the purpose of this study, physical activity was defined as any continuous physical activity of moderate to vigorous intensity for at least 30 minutes (or in three 10-minute bouts) daily for a minimum of 3 days in a week (Carlson, Fulton, Pratt, Yang, & Adams, 2015). Healthy nutrition is a well-balanced diet that is rich in fruits and vegetables (at least five helpings of daily intake of fruits and vegetables; WHO, 2018c). According to the WHO (2018c), healthy diets should be consumed throughout life to prevent NCDs and malnutrition. In this study, a qualitative research approach was used to explore the perspectives of CPs on the phenomenon, PLM among adults living with hypertension.

Research Tradition and Rationale for its Selection

The research paradigm used in this study was a qualitative approach. In qualitative research, the researcher uses a constructivist lens to study social phenomena (Creswell, 2014). Qualitative research involves studying participants (individuals, groups, or phenomena) in their natural environments rather than in experimental studies where the researcher manipulates variables (Ravitch & Carl, 2016). Additionally, the researcher is the instrument for data collection in qualitative studies, using an iterative process (Creswell, 2014; Ravitch & Carl, 2016). In this study, data involved participants' perspectives on PLM. Data were collected from multiple sources including reflexive

notes, to elicit rich data about PLM. A qualitative approach was appropriate for this study because it allowed me to explore the phenomenon of PLM from the professional practice experiences of CPs.

The specific qualitative research design used in this study was interpretive phenomenology (Hermeneutics as described by Heidegger, 1927/2011), with constructivism as a theoretical lens. Phenomenology is a research design that helps researchers and readers to understand what works in health promotion (Seutloali et al., 2018). For this study hermeneutics was used to explain the phenomenon of lifestyle modification in hypertensive patients from the perspectives of CPs in Lagos, Nigeria. Phenomenology was used to describe and interpret the experiences of participants as they occur in everyday life (Ravitch & Carl, 2016). Phenomenology was useful for designing a study to understand promotion of lifestyle changes by CPs in Lagos and may be useful also for future interventions to improve the self-efficacy of CPs in performing this health-promoting role.

Interpretive phenomenology involves a process of making clear what is not easily known from people's experiences and human relations (Lopez & Willis, 2004). Interpretive phenomenology is used by researchers to examine how individuals make meaning of their own experiences and phenomena, and this is then paired with the researcher's interpretation of it (Pietkiewicz & Smith, 2014). It entails looking for meanings in common life practices and not just describing the core concepts. The focus is on the implications on the narratives from participants about their daily experiences (Lopez & Willis, 2004; Sorsa, Kiikkala, & Åstedt-Kurki, 2015). Phenomenology was an

appropriate research approach for my study because I aimed to describe how and why CPs perform the role of promoting healthy lifestyle changes and how suitable they think the training they received makes them able to perform this role among patients living with hypertension. This design helped to answer the research questions using a process of in-depth interviewing of participants with reflexivity to interpret the perspectives of CPs about the phenomenon.

Role of the Researcher

As the researcher, I was the primary instrument, exploring the phenomenon of lifestyle modification among adults with hypertension from the perspectives of CPs (Ravitch & Carl, 2016; Rudestam, & Newton, 2015). In qualitative studies, researchers may reveal different identities including personal, professional, or political identities, making it important to not project an identity on the research, but work to achieve a balance between being neutral, nonjudgmental, and culturally and professionally appropriate during interviews (Kim, 2011). In this study I served as an observer-participant in the research study and used open-ended questions to elicit rich descriptions of the phenomenon from the participants who are registered CPs in Eti-Osa local government area, Lagos, Nigeria. I was the instrument for collecting, organizing, and analyzing data collected from participants.

I used bracketing to avoid bias in the research. Bracketing involves a process of separating the researcher's biases, presuppositions, theories, and previous experiences from the experiences of participants (Ravitch & Carl, 2016). Bracketing is an important strategy to use for validating findings from qualitative studies, as the researcher's

background can influence all aspects of the research including data collection, analysis, and interpretation of findings (Sorsa et al., 2015). Bracketing is used differently in both descriptive and interpretive phenomenology (hermeneutics; Sorsa et al., 2015). Previous knowledge is used by the researcher in hermeneutics intentionally to create new knowledge by interpretation, whereas in descriptive phenomenology the researcher sets aside previous knowledge and acts non-judgmentally while listening to and describing viewpoints from participants (Sorsa et al., 2015). In this study my knowledge of health promotion helped me to understand what study participants said about PLM; therefore, I was an intermediary between the participants and the academic community to translate the lived experiences of CPs to enhance understanding and generate knowledge about the phenomenon of PLM for the research community using a researcher's language (Kim, 2011).

Reflexivity was also used to minimize the influence of previous knowledge on the current study (Sorsa et al., 2015). Reflexivity involves self-reflection about biases, theoretical preferences, research beliefs, and steps taken in the research process (Rudestam & Newton, 2015). It also involves a consideration of the researcher's positionality (role in relation to the context and settings of the research), and social location or social identity (Ravitch, & Carl, 2016). I used a personal journal to log my thoughts, feelings, ideas, and reflections as the interviews progressed (Kim, 2011; Ravitch & Carl, 2016). A reflexive journal log helps to establish credibility, dependability, and confirmability in qualitative research (Kim, 2011; McInnes, Peters, Bonney, & Halcomb, 2017). Member-checking was also employed to ensure that

participants' views were correctly recorded and interpreted (Creswell, 2014; McInnes et al., 2017; Ravitch & Carl, 2016). The interviews were audio-recorded and transcribed verbatim, and I used reflexivity to ensure rigor.

Before interviewing each enrolled participant, I thoroughly explained the purpose and scope of the research to the participants, that they were not under any obligation to participate in the study and that they could decline to participate at any point during the study. Then I obtained written informed consent from the participants using the informed consent form. My membership of the same professional association (Association of Community Pharmacists of Nigeria) did not constitute an ethical issue in this study because I do not have any supervisory role over the participants. I obtained approval for the study from Walden University Institutional Review Board. As the main research instrument, I was careful not to impose my perspectives but to allow participants to reflect their own experiences and perspectives of PLM in hypertensive adults. I did not offer any incentives to participants during the study. The research methodology is described in greater detail in the next section.

Methodology

The research method provides a clear description of steps to follow in research for other researchers to be able to replicate the study. The methodology must be well aligned with the research problem and research questions and suitable for answering the research questions (Creswell, 2014; Rudestam & Newton, 2015). I used a qualitative approach to explore the perspectives of my participants about promotion of lifestyle changes with phenomenology as the research design. Phenomenology entails using rich, thick

descriptions to explain the phenomenon being studied in order to answer the research questions. I gathered data through in-depth interviews from participants who met eligibility criteria. The interviews were audio-recorded with the permission of each participant by me and later transcribed verbatim within a few hours of completing the interview. This helped to contribute to accuracy of reporting the data. I also took down notes to record impressions and nonverbal cues. I maintained reflexivity as the researcher throughout the data collection stage (Ravitch & Carl, 2016). The following subsections detail the participants, methods of data collection, sampling techniques with inclusion and exclusion criteria, the instruments used for data collection, and data analysis techniques.

Participant Selection Logic

The study population was CPs who own or superintend over community pharmacies in Eti-Osa local government area of Lagos state, Nigeria. These participants were CPs with varying experiences in health promotion through counseling on lifestyle modification for patients living with hypertension who visit their community pharmacies. I collected primary data from two sources: in-depth interviews and field notes. Participants were purposively selected from among members of the Association of Community Pharmacists of Nigeria who are practicing community pharmacy in the location of the study. Purposeful sampling can include strategies such as looking for group characteristics, key informants, key knowledgeables, and reputational sampling (Patton, 2015; Ravitch & Carl, 2016). Key knowledgeables sampling was applied in this study. I identified participants and approached them with a letter of intention explaining

the purpose and scope of the study. This purposive sampling strategy ensured that the selected pharmacists would be able to give rich, thick descriptions about how they are carrying out their roles of promoting lifestyle changes in adults living with hypertension and barriers to performing this role (Creswell, 2014; Rudestam & Newton, 2015). This helped address the purpose of the study and contributes to the credibility of the findings.

The inclusion criteria included that the CPs must be registered with the Pharmacists Council of Nigeria, must be practicing community pharmacy in Eti-Osa local government area, must have at least 5 years' experience in community pharmacy to assure that they are knowledgeable and experienced about the phenomenon, and must be actively involved in patient counseling of hypertensive patients. Male and female participants who were willing to participate, and available for the research were included. Pharmacy owners or CPs who are only involved in administration and management, or have fewer than 5 years' experience in community pharmacy practice, or do not practice in Eti-Osa local government area were excluded from the study. To establish how participants were known to meet the stated criteria, membership of the association were checked from the Association of Community Pharmacists of Nigeria zonal secretariat, practice licenses were checked for registration with the Pharmacists Council of Nigeria and year of qualification, and participants self-acknowledged number of years of practice in community pharmacy and involvement in pharmaceutical care was also noted. A general notice stating the purpose of the intended research was given at one of the general meetings of Association of Community Pharmacists of Nigeria, Eti-Osa zone. Community pharmacies were identified by the pharmacy logo in front of their

pharmacies, and the pharmacist was approached. Letters stating the intention and purpose of the research were sent to the identified pharmacists and their informed consent was sought in writing. These participants served as key knowledgeables for the study (Ravitch & Carl, 2016). A phenomenological study usually involves participants who are knowledgeable about the phenomenon or issue being studied or have experienced it (Rudestam & Newton, 2015). They were assured of the confidentiality of information provided by them and anonymity of their personal details. The collected information was used only for the purpose of this doctoral study and has been locked up in a cabinet in my home library and will be kept for 5 years after the study, after which both the hard copies and soft copies of participants' data will be destroyed or deleted from the computer respectively.

The unit of analysis and sample size are important to participant selection. For my study the unit of analysis was perspectives of individual CPs. Sample size in qualitative analysis depends on various considerations including what is to be known, study purpose, credibility, and available resources including time and money (Ravitch & Carl, 2016). I conducted in-depth interviews using 12 participants to achieve the purpose of exploring the perspectives of CPs of the phenomenon of PLM among adults living with hypertension. Researchers differ in the number of participants required to reach saturation in a phenomenological study. Rudestam and Newton(2015) put it at between five to 10 while Alase (2017) stated between two and 25 can give a rich description of a phenomenon (Alase, 2017). The interviews were conducted with different participants until no new themes were being generated indicating saturation (Creswell, 2014;

Rudestam & Newton, 2015). Sample size is a term usually used for number of data samples to be collected in quantitative studies, while in qualitative studies sample size is usually not predetermined, but data are collected until no new themes are found, and the data are then said to be saturated and can provide a good understanding of the phenomenon (Creswell, 2014; Rudestam & Newton, 2015).

Instrumentation

The data collection instruments used in this study were an interview protocol (see Appendix), a journal for taking down notes and reflections, and an audio-tape recorder. The interview protocol was designed by me bearing in mind the research problem identified and research questions. This protocol was used to guide the conduct of the interview and was based on known constructs of the two guiding theoretical frameworks (health promotion model and SCT) and other relevant concepts from literature (Bandura, 1998; Brown, Portlock, & Rutter, 2012; Ghiga & Lundborg, 2016; Heydari, & Khorashadizadeh, 2014; Liebl, Barnason, & Hudson, 2016; Um, Armour, Krass, Gill, & Chaar, 2013). I designed a semistructured interview guide with open-ended questions as part of the protocol. The interview questions (see Appendix) were designed by me to be broad enough to elicit responses deep enough to answer the research questions and were open-ended to allow participants to fully express their own perspectives and experiences of the phenomenon (Creswell, 2014; McInnes et al., 2017; Ravitch & Carl, 2016).

The semistructured protocol was used to seek clarifications from CPs about their perspectives of their roles in promoting lifestyle changes among adult patients with hypertension, and the barriers and limitations hindering such roles. The protocol was

designed based on concepts identified during literature review and included 13 open-ended questions and 5 sub-questions (Ghiga & Lundborg, 2016; Laliberté et al., 2012; Noble et al., 2016). Probing and follow-up questions were asked from the participants in order to ensure that thick and rich details about the phenomenon of health promotion are obtained. The interviews were audio-recorded using Kaltura media uploader (Walden University, 2018), and transcribed using Transcribe, a dictation application after obtaining consent from each participant based on full disclosure of the purpose of the study. Each interview was transcribed verbatim and then analyzed manually for emerging codes, themes, and categories using excel spreadsheets. Wordclouds were generated for each of the transcripts to highlight frequently occurring words that may be used as codes or themes.

Validity and reliability were built in through all the aspects of the research. Some measures to ascertain validity of the findings that I used include triangulation, member checking, and the use of rich, thick descriptions (Creswell, 2014). In order to ascertain the appropriateness of the interview protocol, it was pretested in a pilot study. A pilot study may be used to assess how acceptable an interview or observation protocol is to research participants; and to enhance the credibility of a qualitative study (Kim, 2011).

Procedures for Pilot Testing

An interview protocol was designed by me based on gleaning of relevant concepts from literature and the constructs of SCT and health promotion model (Bandura, 1998; Brown, Portlock, & Rutter, 2012; Ghiga & Lundborg, 2016; Heydari, & Khorashadizadeh, 2014; Liebl et al., 2016; Um et al., 2013). The protocol was pilot-

tested before being used to guide the flow of the interviews (Rudestam & Newton, 2015). The essence of the pilot study was to ascertain the suitability of the interview questions for answering the research questions and to evaluate if any revisions are necessary (Kim, 2011). According to Kim (2011) the essence of a pilot study is to help researchers to make adjustment to their plans, methods or instruments where necessary in the main study. A pilot study is a small-scale test used to assess the feasibility of a proposed research study, instrument, or to evaluate the implementation of a novel intervention (Leon, Davis, & Kraemer, 2011). A pilot test may also be used to evaluate whether a particular instrument or method would achieve the intended purpose for which it was designed (Kim, 2011). The purpose of my pilot study was to evaluate the feasibility and acceptability of the interview protocol and to assess my readiness and capability as a qualitative researcher. The pilot study may also help to unearth any ethical issues that may arise from the use of the research instrument.

The pilot study was conducted on two CPs in Eti-Osa Local Government who met the eligibility criteria. This pilot test helped to establish if the interview questions could elicit answers to the research questions from the participants (Ravitch & Carl, 2016). Letters of intention were sent to purposefully selected, eligible participants in Eti-Osa Local Government explaining the purpose of the pilot study and that their participation should be voluntary and for research purposes only. They were assured of their confidentiality and the anonymity of data provided by them. Two participants were selected from among the volunteering CPs with rich experiences in PLM among adults with hypertension. Written informed consent were obtained from the two participants and

their demographic data before the commencement of the pilot study. The interview protocol was followed during each interview session and lasted for 75 minutes each. Open-ended questions were used to elicit rich, thick data from the participants about the phenomenon. Probing questions were asked to clarify responses when necessary. The interviews were audio-taped with the permission of the participants, transcribed verbatim by me, and analyzed manually using Excel spreadsheets.

Codes and themes generated were categorized and interpreted to reflect the perspectives of the participants about the phenomenon. Each interview session was commenced with an ice breaker question and ended by thanking the participant for the time spent. Participants were further assured again that collected data would be kept confidential and only used for research purposes. The pilot study may reveal the need for modification of interview questions and protocol as a result of feedbacks received from participants through member-checking, in a bid to improve the appropriateness and feasibility of the protocol (Leon et al., 2011). After this pilot study there was no need to amend the protocol as it was found suitable to elicit deep answers to the research questions. These participants were excluded from the main study even though there was no need for modification of the interview guide according to Walden University IRB guidelines.

Procedures for Recruitment, Participation, and Data Collection

Data for the in-depth interviews were collected by me, the researcher from purposively selected CPs who volunteered to participate in the study and met the eligibility criteria. Data were collected from different participants until data saturation

occurred. Data were collected from 12 participants in all. Data were obtained from participants using face to face interviews guided by a semistructured interview protocol (see Appendix), field notes, reflexive journals, and a bio-data form for demographics (designed as Part B on the informed consent form). Informed consent was obtained from the participants (using a predesigned form) after full disclosure of the research purpose and process to the participants. The participants were assured of the confidentiality of information provided by them and that there would be no personal identifiers in the collected interview data. The interviews were conducted in the community pharmacies supervised by the participants or in the researcher's office as suggested by each participant and at convenient times when there would be no interruptions. The locations were comfortable and allowed for privacy, for the interview to be conducted without interruptions. In-depth, face to face interviews of participants were the data collection method. Phenomenology allows for rich data to be collected through in-depth interviews from research participants who have experienced a particular phenomenon.

The interviews were audio-taped with the consent of participants. The interview was started with an ice-breaker question. A journal was used by me to record happenings, reflections and thoughts about the process, and findings. The end point of data collection was determined when there was saturation and no new themes emerged from the data collection process. The tested interview protocol was used to guide the interviews (Ravitch & Carl, 2016). I wrote memos to express my reflections in the course of the study, and these memos also served as data sources for analysis (Ravitch & Carl, 2016). To signify the end of an interview I thanked the participant for volunteering to share

her/his perspectives of the phenomenon of PLM and reiterated that the information would be used for research purposes only and would be kept securely from others not connected with the study. I also informed them that I may contact them again for clarification of data provided if the need arose and to validate analyzed data through member checking. Member-checking is a process of qualitative research that entails re-presenting collected data back to participants for their confirmation (Harvey, 2015). The transcripts of collected data were sent to the respective participant for validation of accuracy. This contributed to rigor in the research study and validity of the content. It may also be explained as an attempt to ensure accuracy of interpreted data from the participant that provided the data (Harvey, 2015). The collected data were later analyzed, synthesized, compared, and collated with data from other participants.

Data Analysis Plan

Data analysis is a recursive process that begins as soon as data is collected and requires that the researcher familiarizes herself/himself with the data in order to organize data into meaningful themes after a coding process. Data analysis involves a process of data transformation which may lead to a description or an interpretation of collected data (Vaismoradi, Turunen, & Bondas, 2013). It involves breaking text down to smaller units in order to give meaning to them (Vaismoradi et al., 2013). Data analysis in phenomenological research involves conceptualization of meanings of experiences and perspectives reported by knowledgeable participants during the interviews by a researcher (Rennie, 2012). In this study the collected data were transcribed verbatim and typed by dictation using Transcribe application software. The transcripts were corrected

and saved in Microsoft office Word files. The transcripts were analyzed manually using Microsoft Excel spreadsheets and analytic memos (Ravitch & Carl, 2016). The unit of analysis for this study was the transcribed data from participants. Analysis took place on two levels, the general and specific. Usually qualitative general analysis procedure takes place in many stages including data preparation, reflection about the data, coding, formation of categories and themes, interrelating themes in a detailed discussion, and interpretation of findings (Castleberry & Nolen, 2018; Creswell, 2014; Vaismoradi et al., 2013). The ultimate aim of a researcher should be to use a suitable data analysis technique in order to answer research questions. A code was assigned to each interview question as a label for each column in the spreadsheet. Meaningful data from each participant were noted in cells in the relevant columns. These were analyzed into themes and subthemes using different spreadsheets for each stage of analysis. Relevant data from my reflexive notes were also noted and analyzed with the data. Relevant catchy quotes to reflect meanings and explanation of themes were noted and highlighted in red. The transcripts and analysis spreadsheets were backed up on an external hard drive.

Analysis of data from the interview questions were used to answer the following research questions:

Research Question 1. What is the perspective of community pharmacists about contributing to promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 2. How do community pharmacists perform the role of promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 3. How is practical knowledge and pharmacy practice protocol revealed from the experiences of the community pharmacists?

Data generated from Interview Questions 2,3a,4b,5,7 were used to answer Research Question 1; data from Interview Questions 1,3b,4a,,6,8,9,11 were used to answer Research Question 2; and Interview Questions 1,8,10,11,12,13 were used to explain Research Question 3.

There are different approaches to qualitative data analysis. The collected data in this study were analyzed using thematic analysis to generate codes, themes, and categories. Thematic analysis involves searching for and identifying commonalities in the data and interpreting such commonalities and participant experiences so as to give a nuanced account of data collected from participants (Vaismoradi et al., 2013). Although similar to content analysis, a major difference is that in addition to descriptions of coded data, content analysis may also take cognizance of quantifying the frequency of occurrence of similar data, while thematic analysis focuses more on interpretation of the various aspects of the phenomenon (Vaismoradi et al., 2013). Castleberry and Nolen (2018) in their study highlighted steps in thematic analysis as compiling, disassembling, reassembling, interpreting, and concluding. Following the recommendation of Rennie (2012), the six steps involved in thematic analysis that I followed in this study are: reading and rereading texts (transcribed data) and noting initial ideas; coding relevant ideas; collating related codes into themes; reviewing themes and generation of a thematic map; analysis of themes and generation of categories from common themes, (category formation involves giving clear definitions or labeling of related codes); and report

generation of the final analysis as data relate to research questions and concepts from literature in the field.

The first step for thematic analysis in this study was to organize the data by reading and rereading transcripts and field notes. This was the compilation stage that entailed transcribing the data verbatim. I transcribed the data manually as it afforded me the opportunity to immerse myself in the data in order to become more familiar with it. The transcribed data were read by me severally and it helped to organize data meaningfully (Castleberry & Nolen, 2018; Ravitch & Carl, 2016). The next stage involved coding during which the data was broken down into smaller units and grouped as related themes, concepts, or ideas (Castleberry & Nolen, 2018). Similarities and differences in the data were identified during coding. Ravitch & Carl (2016) explained coding as a way of organizing and tagging data through identification of common patterns in the data. Coding helps a researcher to transform raw data into usable form. I used emergent codes to categorize similar data which were then used to examine the entire data set (Castleberry & Nolen, 2018). Definitions for each code were examined as coding progressed to ensure that same criteria are applied throughout the coding process. Word cloud was generated for each of the transcripts and words that stood out were compared with codes and themes generated from the transcripts generated from Transcribe software. This process lent rigor and credibility to the analysis.

I used both inductive and deductive strategies for analysis in order to add rigor to the study and ensure application of codes and themes that best capture the collected information (Ravitch & Carl, 2016). Inductive analysis is used when codes are derived

directly from the collected data without any recourse to previous studies or meanings (emergent from the data), while other codes were deduced from the interview questions and used as code labels in the first stage of coding (Castleberry & Nolen, 2018; Vaismoradi et al., 2013). This implies using a combination of an emergent strategy for coding and *a priori* strategy. Descriptive and *in vivo* coding methods were used. Codes are used to represent complete thoughts which may be from a sentence, phrase, or paragraph; and to categorize and identify similar data for analysis across a data set (Castleberry & Nolen, 2018). An emergent coding strategy involves forming codes as coding proceeds, while a priori coding involves using a coding scheme previously used in a similar study (Castleberry & Nolen, 2018). Descriptive codes are used to describe identifiable actions, processes, roles, places, or things from collected data. In vivo coding uses words or phrases taken verbatim from participants' responses (Castleberry & Nolen, 2018). Meanings elicited from collected data and judged to be relevant to the phenomenon of PLM were represented by phrases or sentences in categories and themes in the reassembling stage (Castleberry & Nolen, 2018; Rennie, 2012). Related codes were combined into themes to paint a bigger picture of the data in relation to each research question.

The next step was to reassemble similar codes into themes and subthemes or categories. Themes show patterns in related codes, and may be grouped into subthemes using hierarchies or matrices (Castleberry & Nolen, 2018). Hierarchies and matrices are tools used by researchers to give structure to qualitative data, and to show the relationships among concepts, constructs, and codes in relation to the research questions.

I used a matrix to show a visual representation of collected data. I was careful during this phase to represent data from the participants as accurately as possible and not lean towards my own ideas of the phenomenon in order to avoid bias and to lend credibility to the findings (Castleberry & Nolen, 2018). The importance of themes in thematic analysis is to capture an essence of the phenomenon in relation to the study purpose and or research questions. I captured the essence of the phenomenon of PLM in hypertensive adults in Lagos from the perspectives of CPs using thematic analysis. The unfolding picture about the phenomenon was interpreted in the next phase of analysis. It should be noted that interpretation in thematic analysis is not a linear process, but recursive and would go on all through the analysis (Castleberry & Nolen, 2018). The interpretation was tailored to answering research questions, and would not be a restatement of the generated codes and themes. It included discussions about the relationships between themes and other general findings. Further conclusions were drawn from the interpretations in order to answer the research questions comprehensively.

The use of a combination of manual analysis and Word Cloud helped to achieve a rigorous analysis. Manual data analysis helps the researcher to be familiar with the data, thus contributing to dialogic engagement which is an important aspect of qualitative data analysis (Ravitch & Carl, 2016). There were no discrepant views from data collected. It is important to note that the data analysis technique was aligned to the study purpose and the research questions. This contributed to the relevance and credibility of the study. The necessary procedures to ensure trustworthiness of the study results were followed and will be discussed in the next section.

Issues of Trustworthiness

Trustworthiness in qualitative research pertains to the extent to which other researchers and readers have confidence in study findings. It is about quality and validity of the research process and findings (Rubin & Rubin, 2012). The trustworthiness of findings from qualitative research is assessed by criteria such as credibility, dependability, confirmability, and transferability (Liebl et al., 2016; Lincoln & Guba, 1985). The credibility of qualitative research is similar to its internal validity, and this pertains to how well a researcher's interpretations match the experiences and perceptions of the participants and whether all the complexities that are revealed in the study are taken account of by the researcher (Ravitch & Carl, 2016; Rudestam & Newton, 2015). Transferability pertains to external validity and it refers to the extent to which a research study may be replicated in another setting or at another time. Dependability is used to assess the reliability of the research methods. This relates to how consistently the data collection and research methods are suited to answering the research questions (Ravitch & Carl, 2016). Confirmability is the fourth characteristic used to assess trustworthiness and it refers to objectivity of the researcher throughout the research process. I was as neutral as possible and open about any potential biases I may have about the phenomenon of PLM.

In order to ensure credibility in my research I employed prolonged engagement with the data through reading and rereading the transcripts many times, triangulation, member checks, and the use of a reflexive journal to note down my thoughts, ideas, and biases during data collection and throughout the research process (Liebl et al., 2016). The

use of rich, thick descriptions in the results added to credibility of my research. Triangulation involved collecting data from different sources (transcripts, field notes, reflexive journals, and memos). It also entailed synthesizing information from different sources to form themes and categories that would enrich findings (Ravitch & Carl, 2016). Member checking pertains to cross checking transcripts and interpretation of findings with the participants to ensure that their perspectives are accurately and completely captured by the researcher (Castleberry & Nolen, 2018; Ravitch & Carl, 2016).

Transferability of my research was assured by using rich, thick descriptions of the data, methods, and the contexts of the topic (Ravitch & Carl, 2016). Dependability was assured by triangulation and proper articulation of the rationale for the use of the data collection method. The use of reflexive journaling also contributed to dependability of the method. The rationale for using the research method was stated and its appropriateness to answer my research questions. Intracoder- reliability was used to validate thematic analysis of data in this study. Intracoder- reliability involves re-coding the same data few days after the first coding to assure consistency (Castleberry & Nolen, 2018). Intercoder-reliability was not assessed as I am the only researcher involved in the study. In order to ensure confirmability I was open about my thoughts and ideas about the phenomenon and any possibility of these influencing my interpretation of findings. These thoughts and ideas were captured in my reflexive journal. The interpretation of data analysis by me was open, complete, verifiable, accurate, and representative of all data. This has contributed to understanding of the phenomenon as well as to ensure that respect

for research participants is maintained using appropriate ethical principles (Castleberry & Nolen, 2018).

Ethical Procedures

A consideration of ethical issues helps a researcher to think of any potential harmful effects of the research on participants including emotional and physical harm (Rudestam & Newton, 2015). While conducting my doctoral research I bore in mind the principles of respect for persons, beneficence, and social justice as outlined by the National Institute of Health (2015). The five C's of research ethics principles were observed (Rudestam & Newton, 2015). These are confidentiality of the identity of research participants; coercion was avoided; consent to participate was obtained after full disclosure of the research purpose and process; care about the concerns of research participants; and communication of research findings to participants.

Written informed consent was obtained from participants who volunteered to take part in the study and respect for the participants was maintained throughout the duration of the study. There was no coercion of the potential participants by me. Participants were made to realize that participation in the study should be entirely voluntary after they had understood the purpose and scope of the study (Castleberry & Nolen, 2018; Rudestam & Newton, 2015). Participants were made to realize that they were free to leave the study at any point during the study if they no longer felt comfortable to participate. I obtained approval for the study from the Institutional Review Board at Walden (Approval number – 03-14-19-0532338). This was to ensure that there

would be no potential harm to the participants during the study. I did not recruit or collect any data from participants until I had obtained IRB approval.

In order to ensure the research is beneficial to the participants, I plan to share the findings from the research with them in writing and during a scheduled seminar at one of the meetings of the Association of Community Pharmacists of Nigeria in Eti-Osa local government area, and this should help to improve their professional practice. Fairness or social justice was assured by capturing their perspectives as accurately as possible. Member checking was used to validate this (Creswell, 2014; Castleberry & Nolen, 2018; Rudestam & Newton, 2015). The participants were assured of their anonymity by using numbers to represent each participant; and of the confidentiality of data provided by them. There were no personal identifiers in the transcripts and collected data have been kept away from unauthorized persons by locking in a safe cabinet in my home that I am the only person with access to it. My computer is password protected and nobody else has access to information stored on it concerning the research. These data would be kept for five years and would be destroyed thereafter. The soft copies would be permanently deleted from my computer and any other storage devices used.

There were no ethical issues with collecting data from professional colleagues belonging to the same association of CPs because I do not have any supervisory role over any of them, and participants were recruited from among CPs running independent or chain pharmacies. No incentives were promised or given to the participants. There were no risks to the participants to the best of my knowledge, as the entire study was conducted ethically and this added to the credibility of the research and its findings.

Summary

The methods section is a very important aspect of a research study and it must be correctly and comprehensively detailed in order to lend credibility to the study. The methodology must be detailed enough for any reader or other researcher to be able to replicate in another setting or at another time. The methodology was aligned to the purpose of the research and the three research questions. Therefore in this chapter on research methods, the rationale and justification for the selection of qualitative study as the research paradigm and phenomenology as the research design has been discussed. The central concepts in the study were identified as hypertension, PLM, physical activity, and healthy nutrition. These concepts were defined appropriately within the context of their usage in this study. Interpretive phenomenology was discussed as the specific research design that was most suitable for answering the research questions in a way that was more than just describing participants' experiences to interpreting how these experiences influenced the phenomenon and was used to design a guiding protocol in community pharmacy practice.

The researcher plays a key role in any qualitative research and as such my role as the researcher in this study as an observer-participant was discussed. In order to take a neutral and non-judgmental stance during the study, bracketing was used to separate my biases from the experiences of the participants being interpreted. The instruments of data collection in the study were interview transcripts, reflexive journals, field notes, and demographic data form. The data collection method was in-depth, face to face interviews using semi-structured, open-ended questions to generate rich and nuanced data needed to

answer the research questions. An interview protocol was designed to guide the interview based on a consideration of the constructs of SCT and health promotion model as the guiding theoretical frameworks, and concepts of PLM gleaned from literature.

The participant selection logic was highlighted with the inclusion and exclusion criteria stated. The strategy used was key knowledgeables selected by purposive sampling technique, and data collection went on till data saturation. The need and procedure for pilot testing was also discussed. To ensure rigor and trustworthiness of research findings, all interviews were transcribed verbatim both manually and by dictation using Transcribe, an online transcription and dictation software. Ethical principles were followed in the conduct of the research including obtaining informed consent from all participants, assuring voluntary participation, IRB approval, and respect for persons.

Thematic analysis was used to generate meanings (codes, themes, and categories) from collected data and it was suitable for this study because it allowed the researcher to use rich and nuanced descriptions to identify, transform, and present patterns or themes within collected qualitative data (Vaismoradi et al., 2013). In summary data analysis must conform to the following characteristics of being credible (using transparent and clear verifiable methodology), dependable (have consistency leading to repeatability), transferable (the researcher must provide adequate details of the methods), and confirmable with results interpreted from the data and not from the researcher's biases (Castleberry & Nolen, 2018). These characteristics were built into the study using appropriate methods as triangulation, thick descriptions, member-checking, and reflexive journaling to assure internal and external validity, reliability, and objectivity in the

research and ensuing results. The results obtained from thematic data analysis are presented and discussed in the next chapter.

Chapter 4: Results

Introduction

The purpose of this phenomenological study was to explore the perspectives of CPs practicing in Eti-Osa local Government area of Lagos, Nigeria about the phenomenon of PLM in adults living with hypertension. This can contribute to understanding the scope of involvement, perceived barriers, and how CPs perform the role of healthy lifestyle promotion among hypertensive adults. Additionally, this is with a view towards developing a protocol that can guide pharmacists in conducting interventions aimed at promoting healthy lifestyles in adults suffering from hypertension in Lagos, Nigeria. Using phenomenology as my research design enabled me to put my perspectives aside through bracketing (epoche) in order to provide meaning to the experiences of participants and to provide insight to overlooked aspect of a phenomenon(Wirihana et al, 2018).

It is important for CPs to be more involved in promoting lifestyle changes among those living with hypertension and other chronic diseases. An understanding of the role of CPs in promotion of lifestyle changes may contribute to the knowledge base in research and to the conduct of appropriate interventions aimed at improving their performance of this role, which in turn may likely contribute to reducing the burden of hypertension in Nigeria. It is hoped that the study will contribute positively to social change by helping to improve the health outcomes of hypertensive patients in Lagos, Nigeria, and ultimately toreducing health disparity and economic burdens due to increasing prevalence of NCDs like hypertension. In order to get the perspectives of CPs on the phenomenon of PLM, I

had three research questions that data collected from the participants would help to answer:

Research Question 1: What is the perspective of community pharmacists about contributing to promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 2: How do community pharmacists perform the role of promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria?

Research Question 3: How is practical knowledge and pharmacy practice protocol revealed from the experiences of the community pharmacists?

In the remaining sections of this chapter I detail the conduct of the pilot study, the settings for the collected data, participant demographics, the process of data collection, steps used in data analysis, evidence of how trustworthiness was built into the study. A presentation of results for each of the research questions is also included. I conclude with a summary for the chapter.

Pilot Study

I conducted a pilot study to assess the feasibility of the interview questions to answer the research questions, the acceptability of the research protocol by the participants, and to assess my readiness to conduct the study. Two participants (one of whom was a pharmacy owner and the other was a superintendent pharmacist) were used in the pilot study. These participants helped address my purpose in conducting the pilot study.

Letters of intention explaining the purpose of the pilot study and voluntary nature of participation were sent to purposefully selected, eligible participants who are CPs in Eti-Osa local government. The first two participants who agreed to participate were selected for the pilot study and interviewed in-depth one-on-one by me. Prior to the actual interview, a written informed consent was obtained from each participant after explaining the interview protocol and the purpose of the research to them. The participants were also assured of the confidentiality of data collected from them and their anonymity would be guaranteed as there would be no personal identifiers in the transcripts. An interview protocol with 13 semistructured questions was used to guide the flow of the in-depth interview. Probing questions were also asked to clarify answers from the participants and to elicit rich and detailed information. The interviews lasted for 75 and 76 minutes respectively for the two participants in the pilot study. The first interview was conducted in the participant's office, and the second was conducted in the home of the participant according to their preferences.

The interviews were audio-taped with the permission of the participants using two recorders (Kaltura media recorder and a free downloadable Voice Recorder application as back-up). Each interview session started with an ice-breaker question to make the participant to be at ease and set an interesting tone for the interview. At the end of each interview, I thanked the participants and reassured them that their anonymity would be respected and confidentiality of data maintained. The recorded interviews were transcribed verbatim by me and typed with the aid of Transcribe dictation software. The transcripts were sent back to the two participants to check for consistency with their

views by member checking. I analyzed the transcripts manually while engaging with the data through reading and rereading many times. The data were precoded and coded using an emergent method. The codes were formed into categories from which themes were generated about the phenomenon to reflect the perspectives of the two CPs. The themes were also interpreted to provide an understanding of the phenomenon of PLM.

Impact of the Pilot Study

At the end of the interviews, the interview protocol was found to be suitable for the study and there was no need to modify the questions. From the data generated, it was possible to answer the research questions. There were no ethical issues that arose during the conduct of the pilot study. The feedback obtained from the participants was that the protocol was feasible for assessing their perspectives of the phenomenon. Data from the pilot study were not used in the main study, as this was one of the guidelines from the institutional review board. The pilot study validated the interview protocol and questions. From the pilot study I realized that it would be more feasible for me to conduct only a manual data analysis using an excel spreadsheet instead of combining manual analysis with the use of NVivo data analysis software.

Setting

The research involved data collection from 12 CPs using in-depth interviews, which took place at different locations and times that were agreed on with each participant. Nine of the interviews were held in the offices of each participant, and the remaining three were held in my office at the request of the three participants. The purpose of the research and the protocol were explained to each of the participants, and a

written informed consent was obtained from them before each interview. To the best of my knowledge there were no personal or organizational conditions that influenced participants or their experiences at the time the study took place that could have affected the interpretation of the research findings.

Demographics

In-depth interviews were conducted with 12 CPs who met the inclusion criteria (registered CPs, male or female with at least 5 years' experience in community pharmacy practice and practicing in Eti-Osa Local Government area of Lagos State, Nigeria) and were willing to participate in the study. The demographics of the participants are shown in Table 1.

Table 1

Participant Demographics

Participant ID	Gender	Age Bracket	Length of Community Pharmacy Experience	Length of Practice in Eti-Osa LGA	Number of years as a Pharmacist	Highest Qualification
A1	Female	40-49	15years	2years	15years	B. Pharm
A2	Female	30-39	8years	7.5years	9years	MSc
A3	Male	40-49	18years	8years	18years	B. Pharm
A4	Female	40-49	10years	8years	22years	MSc
A5	Male	50-59	20years	16years	26years	MBA
A6	Female	50-59	25 years	10years	31years	MBA
A7	Male	40-49	8years	8years	19years	MBA
A8	Male	40-49	11years	2years	13years	MPH
A9	Male	30-39	12years	4years	14years	B. Pharm
A10	Male	40-49	18years	10years	22years	B. Pharm
A11	Female	40-49	11years	8years	14years	FPCPharm
A12	Female	50-59	8years	8years	33years	B. Pharm

Data Collection

The data collection method in this phenomenological study was in-depth interviews conducted face-to-face with 12 participants who were CPs that met the inclusion criteria set for the study. The strategy for sampling was by purposeful selection of key knowledgeables who could provide rich data about the phenomenon. By the 12th participant, data saturation was reached as there were no new themes emerging from the data (Lowe et al., 2018). Each interview was conducted at a venue and time suggested by each participant. Nine interviews were held in the offices of the participants, and three were held in the my office at the request of the participants to avoid distractions from their normal work schedules. The interviews lasted between 65minutes and 130 minutes (see Table 2). Field notes were also taken during the interview with the permission of each participant.

Table 2

Interview Details

Participant ID	Interview Date	Location	Length of Interview (min)	Position in Organization
A1	4/8/19	Office	78	PO
A2	4/14/19	Office	66	PO
A3	4/15/19	Office	76	PO
A4	4/16/19	Office	65	PO
A5	4/16/19	Office	72	PO
A6	4/17/19	Office	100	PO
A7	4/18/19	Office	90	PO
A8	4/25/14	RO	87	SP
A9	4/25/14	RO	130	SP
A10	4/27/19	Office	105	PO
A11	5/7/19	RO	110	SP
A12	5/12/19	Office	86	PO

Note. RO = Researcher's office, SP = superintendent pharmacist, PO = pharmacy owner

Each interview was audio-recorded by me after obtaining the consent of each participant. I used Kaltura media recorder as the main recorder and free Voice Recorder downloaded from the internet was used as a back-up recorder. There was no variation in the data collection plan described in Chapter 3. For three of the interviews, we had short interruptions during which I had to pause the interview temporarily, and it was resumed after the participant attended to their staff. However, these interruptions did not affect the quality or flow of data collected. From the in-depth interviews rich, thick, and nuanced data were collected about the phenomenon of PLM by CPs. The recorded interviews were transcribed verbatim by me and then sent to each participant by e-mail for confirmation that their views were accurately captured. The transcribed data were then analyzed by me manually.

Data Analysis

I conducted manual data analysis of the transcribed data from the 12 research participants. The data analysis method used was thematic analysis, which involves a process of looking for patterns in the data and describing them (Bree & Gallagher, 2016). This involved detailed engagement with the data by reading and rereading the transcripts. The steps followed for this qualitative data analysis entailed reading and rereading texts (transcribed data) and noting initial ideas, coding relevant ideas, collating related codes into themes, reviewing themes and generation of a thematic map, analysis of themes, and generation of categories from common themes. A report of the final analysis was compiled in relation of the data to research questions and concepts from literature in the field.

I used an Excel spread sheet for the manual analysis. Descriptive and inferential labels were used inductively from the data generated and deductively from the interview questions. Coding labels were obtained from each of the 13 main interview questions and six subquestions (a priori). From the responses of the participants, major initial ideas about the phenomenon were noted in columns under appropriate labels and coded. The first level coding generated several codes from the meaningful statements obtained from the participants using the interview questions. After rereading the data, 112 second level codes were generated (in vivo) by categorizing related codes together. These codes focused on phrases that stood out in relation to the a priori codes used as labels from the research questions. These codes were then analyzed further by me for commonalities and differences, leading to the generation of themes and subthemes. Related codes were combined into 14 themes to give a bigger picture of the data. These themes were further categorized in relation to the three research questions into 10 overarching themes (see Castleberry & Nolen, 2018; Vaismoradi, Turunen, & Bondas, 2013). At each stage of data reassembling, data were removed to a new spreadsheet. This was to allow for the original data to be revisited and allow readers and other researchers to follow the analysis process for validation (Bree, & Gallagher, 2016). Subthemes were also identified from the data and quotes were linked to the themes.

I also used Word Cloud software to generate frequently used words and compared with themes and categories generated from manual analysis to lend more rigor to the study. The final step of the analysis was the interpretation of the themes and categories to give meaningful explanation of PLM pieced from the perspectives of the CPs in Eti-Osa

local government area of Lagos State, Nigeria. This is in line with evidence that data analysis in phenomenological research entails conceptualizing meanings of experiences and perspectives reported by knowledgeable participants during the interviews by a researcher (Rennie, 2012). I will give a brief summary of the generated themes in the following sections and elaborate in detail under the Results section.

Brief Description of Specific Themes and Categories Generated from the Data

From thematic data analysis conducted manually, 15 themes stood out to describe the perspectives of CPs in Eti-Osa local government area of Lagos State about PLM in adults having hypertension. These were later reassembled to 10 themes on further analysis to answer the three research questions.

Understanding of health promotion. Coded data from this theme included perspectives of CPs about what health promotion is as well as the activities and actions involved including one-on-one counseling and outreaches, avenues for conducting health promotion as health talks, use of printed leaflets, flyers, social media, and media jingles and announcements. One of the participants stated that, "health promotion entails a compendium of activities targeted at desirable health goals" (Participant #1).

Role of community pharmacists. All the participants expressed what they perceived the role of CPs in health promotion and in PLM to be. These roles include to educate people by providing vital health information, encourage healthy lifestyle in the community, and to enlighten people on what they need to do to stay healthy. A general perspective was that CPs must be at the center of PLM for various beneficial reasons to the patient and society. This is depicted in the quote, "When we counsel on positive

behavioral lifestyle changes, we tend to slow progression towards hypertension and other chronic diseases" (Participant #9).

Perception of practice. This theme captures the essence of the understanding of CPs about how to promote lifestyle changes and how they practice this in their pharmacies. Under this theme I captured the need for specific counsel tailored toward positive lifestyle changes that will encourage increased physical activity and adequate nutrition (dietary approach to stop hypertension [DASH]), the need to improve effectiveness at promoting lifestyle changes in hypertensive patients, skills required for effective performance of the role, and the need to make the training of pharmacists in pharmacy schools to be more relevant to practice. One of the quotes linked to this theme is "CPs are to counsel patients on the need to exercise, change eating patterns, appropriate drug use and have regular blood pressure checks" (Participant #5).

Role of other stakeholders. This theme is used to highlight that there are other stakeholders involved in the PLM in addition to CPs and to contribute to the effectiveness of CPs in performing their role. These include the government, other members of the healthcare team, pharmaceutical companies, manufacturers and suppliers of medical and health-promoting gadgets, professional associations of pharmacists in Nigeria including the Pharmaceutical Society of Nigeria and the Association of Community Pharmacists of Nigeria, religious organizations, nongovernment organizations, pharmacy school curriculum planners, and regulatory bodies on health in Nigeria including the Pharmacists' Council of Nigeria. Perspectives expressed in support of this theme include that CPs can partner with churches and social groups to create awareness about risk

factors for hypertension and collaboration with colleagues and other stakeholders to organize outreaches in schools and communities.

Knowledge of hypertension. All participants expressed adequate knowledge about hypertension as they discussed about the definition, classification, causes, symptoms, possible complications, prevention, and management of the disease. One commonality from the views of participants was that hypertension (especially in the prehypertensive stage) can be prevented by lifestyle modification, especially with respect to avoiding sedentariness and eating diets with reduced carbohydrates and saturated fats and increasing intake of fruits and vegetables. This theme is important, as it underlies the phenomenon being studied for CP to be able to promote lifestyle changes in patients with hypertension.

Knowledge of promotion of lifestyle modification. This theme was used to describe the central theme of the research, as an explanation of it spanned through every aspect of the interview with the participants. The process of conducting PLM, specific counsel involved, and benefits of lifestyle modification to patients were captured. This theme also included knowledge of the skills required by pharmacists to perform the role and the barriers that may hinder them from performing effectively. A summary of the theme is that PLM is about creating awareness of the impact of unhealthy lifestyle choices, and that CP must be available to support the patient through the gradual process of change

Application of health promotion strategies in practice. This theme emanated from the perspectives shared by CPs in response to Interview Questions 6 and 10.

Strategies highlighted by CPs for PLM included walk-in customer involvement (one-on-one counseling), patient education and information using flyers, audio visuals, and providing information through the internet via pharmacy Facebook sites and websites. The need to have requisite counseling and other skills, training models for pharmacists and other staff members, and a structured process and procedures for PLM were also highlighted. The conduct of outreaches in collaboration with churches and other nongovernment organizations, formation of support groups, and partnerships with pharmaceutical organizations or nutritionists were also mentioned as strategies. The need to have adequate follow-up and review mechanisms was mentioned by some participants. One participant mentioned wearing of badges with catchy inscriptions as "know your numbers" or "healthy heart checks" as a strategy for health promotion (Participant #11).

Table 3

Knowledge of Health Promotion Strategies

Participant ID	Lifestyle Coaching	Motivational Interviewing	Self-Care Management	Concordance
A1	No idea	Some idea	Knowledgeable	Knowledgeable
A2	No idea	No Idea	Some idea	Some idea
A3	Knowledgeable	Knowledgeable	Some idea	No idea
A4	No idea	No idea	No idea	No idea
A5	Some Idea	Some Idea	Knowledgeable	Inadequate
A6	Knowledgeable	Knowledgeable	Knowledgeable	Knowledgeable
A7	Inadequate	Knowledgeable	No idea	Knowledgeable
A8	Knowledgeable	Knowledgeable	Knowledgeable	Inadequate
A9	Not sure	Knowledgeable	Knowledgeable	Not sure
A10	Inadequate	Knowledgeable	Knowledgeable	Inadequate
A11	Knowledgeable	Knowledgeable	Knowledgeable	Not sure
A12	Inadequate	Inadequate	Some idea	No idea

Some of the CPs were not familiar with the terms lifestyle coaching, motivational interviewing, self-care management and concordance, which are four of the health promotion strategies used in literature (Linden, 2010; see Table 3).

Self-efficacy. This theme describes the confidence of CPs in their own ability to perform the role of PLM. All the CPs interviewed expressed being confident to pass across necessary counsel points to their colleagues and patients. One of the participants stated that he encourages colleagues while counseling patients to, "share from your experience and do not just teach head knowledge" (Participant #8). Ability to document all patient encounters and customer retention rates were also mentioned as points to note while assessing self-efficacy. The benefit of having a training module in community pharmacies as a contributory factor to self-efficacy was highlighted.

> There is a dedicated pharmacy service department that ensures steps and standards are adhered to. To ensure all these steps are well done, we have modules on patient-centered care, responding to minor ailments and hypertension. It is the responsibility of the senior pharmacist to teach interns and new recruits. (Participant #11)

Barriers to effectiveness in promotion of lifestyle modification. The barriers highlighted by the CPs can be categorized as pertaining to patient factors, organizational factors, social factors as busy daily schedules for patients resulting in failure to show up for follow-up visits; social infrastructure especially erratic electric power supply and absence of a good road network; lack of interprofessional cooperation, and other factors pertaining to the pharmacist. One of the participants stated that, "the CP needs to have the

right knowledge and communicate it effectively to the patient" (Participant #9). Community pharmacists need to find solutions to overcome these barriers in order to perform their roles effectively.

Overcoming barriers. This theme describes the solutions the pharmacists prescribed for overcoming the hindrances to the effective performance of their roles as promoters of positive lifestyle changes in hypertensive patients. These factors include improved practice relationship between doctors and CPs, better patient follow-up, more training, improved knowledge of integrative pharmacy, and the need to have dedicated staff for specific roles as PLM. Better social infrastructures should also be provided by the government including availability of constant power supply.

Practice of promotion of lifestyle modification by community pharmacists. This theme describes the specific ways and steps that CPs take while promoting lifestyle changes in hypertensive adults. The practice focuses more on counseling on regular BP and health checks, and specific counseling on increased physical activity, DASH diet, smoking cessation, and reduction in alcohol intake. All these steps are overarched by adequate follow-up and proper documentation.

Strategies for promotion of lifestyle modification. The theme captures all the strategies put forward by CPs as being useful in the performance of the role of PLM. Some of the strategies include verbal counseling, concordance, motivational interviewing, awareness creation about the roles of the CP as a member of the healthcare team, development of a guiding protocol for PLM, patient education, leveraging on technology, and the use of social media to pass out information and reminders to clients.

Enhancing effectiveness for promotion of lifestyle modification. This theme was used to capture the factors highlighted by CPs as enablers of their effectiveness. They include the need to dedicate more time to counseling by CPs, keeping abreast of current practices, adequate documentation, partnerships with hospitals, constant internet access, presence of a wellness consultant in community pharmacies, adequate staff strength in pharmacies, appropriate documentation, leveraging more on technology and information technology and the use of practice guidelines for PLM by CPs. This supported by a quote from Participant #9, "Guidelines on PLM with respect to hypertension will help knowledge and professionalism (Participant #9). Another participant suggested that, "government should promote the community pharmacy as a recognized center for promoting lifestyle modification and public health services (Participant #11). Community pharmacists should also be better incentivized in order to perform this role more effectively.

Leveraging on technology and the use of social media. This theme reflects one of the major enhancers of the effectiveness of CPs in the performance of their role in PLM. The theme cut across all the participants as they shared their perspectives during the interview. From the views of the participants technology has a place in documentation (both of the process and patient details), measuring compliance with the aid of some gadgets, monitoring trends in BP and BMI, for communicating with patients, motivating patients through visual aids, and through the use of digital reminders. Wearable devices as step counters are also useful aids that can aid lifestyle modification. The role of technology was summed up by one of the participants thus, "technology is part of our

daily lives now; we are in an IT [information technology] age, almost everybody has a smartphone" (Participant #5). Useful health information can be retrieved from the internet through smart phones and useful lifestyle modification counsel and reminders may be passed across to patients through text messages, emails, websites or via voice calls.

Social media platforms are used to follow patients up. "We send reminders via WhatsApp from time to time. We find information and push to customers via WhatsApp" (Participant #12). Some CPs send out health tips using Facebook, Instagram and twitter to pass out tips online. For example they may send catchy tips like, "Eat healthy to stay healthy" (Participant #2).

Community pharmacy protocol for promotion of lifestyle modification. This theme provides evidence for the agreement voiced out by some of the participants in support of one of one of the aims of the researcher for this study – the development of a practice protocol for PLM tailored to CPs. As one of the strategies for PLM, "we need to have standard practice protocol that would be implemented uniformly across pharmacists just like we have standard treatment protocols and ensure that all pharmacists run with it through monitoring and evaluation" (Participant #1). The theme also captures specific steps that are to be outlined in the protocol including obtaining patient information, history and contact details; risk assessment for hypertension, specific counsel against unhealthy habits to change and healthy ones to adopt categorized according to the need, with emphasis on regular BP checks, follow-up, and documentation of the action plan.

Discrepant Cases

There were no discrepant cases among the participants as there were no unusual conditions obvious to me that could have influenced their views unduly at the time of data collection; and there were no nonconforming data generated. However I wish to state that the ice-breaker question asked at the start of each interview generated some interesting views worthy of documenting. The question was, *Pharmacy is an interesting and rewarding profession: What is your view of this statement*?

The CPs expressed their views by describing pharmacy as a unique profession because "other healthcare professionals cannot adequately step into the pharmacists' shoes" (Participant #11), interesting, rewarding, satisfying, fulfilling, being result-oriented, and provides opportunity for impacting lives, adding value, and optimizing care for patients. One negative aspect pointed out about the practice in Nigeria by one participant was that pharmacy "is bastardized in Nigeria since anybody who can trade thinks they can run a pharmacy in Nigeria; however dedicated CPs are doing their best to keep the flag flying" (Participant #10). Pharmacy is about providing service as the CP aims to add value to the patient beyond what s/he is selling or profit making.

Evidence of Trustworthiness

Trustworthiness is an iterative process in qualitative research and it was built into every aspect of this study. The evidence of trustworthiness in this study was assured by four criteria, credibility, dependability, confirmability, and transferability according to Lincoln and Guba's (1985) criteria (Wirihana et al, 2018). In order to build credibility into this study, I engaged deeply with the data collected through reading and rereading of

the transcripts in order to become very familiar with the views of the participants and to be able to interpret the findings appropriately without introducing any personal bias into it. Data for the study were collected from field notes taken during the interviews, transcripts and from reflexive journals. Thus triangulation helped to contribute to the credibility of research by collecting data from different sources. Information synthesis from these different data sources into themes and categories has contributed to the richness and credibility of the findings (Liebl, Barnason, & Hudson, 2016). I also employed member-checking by sending the transcripts back to each participant to check for consistency with their views. All the participants confirmed that their views were accurately captured in the transcripts. There was no change in proposed plans in chapter 3 to ensuring credibility for this research.

Transferability pertains to the external validity of the study. I assured the transferability of this study by using rich, thick descriptions of the data, methods, and the contexts of the topic. The data collection strategy, sampling strategy, participant selection logic and rationale, interview protocol, rationale for selection of research design, methods and process of data analysis were described in detail. This is to make it possible for another researcher to replicate in another setting or at another time. These strategies were consistent with what was stated in the methodology chapter.

Dependability is a measure of the reliability of the research methods. I have stated the suitability of the data collection and research methods to answering the research questions. The use of different sources of data collection (triangulation) and capturing my reflections about the phenomenon and accurate documentation of the research process

have also contributed to the dependability of the findings. I assured intra-coder reliability in this study by recoding the data five days after the first coding. I came up with similar codes the second time. There was no need to assess inter-coder variability as I was the only one who collected and analyzed collected data. This is consistent with my plan stated in Chapter 3.

For confirmability, I have tried to be as neutral and open as possible about my thoughts, and set aside any biases or knowledge I have about the phenomenon through bracketing, in order to capture the perspectives of the participants accurately. The interpretation of data analysis by me was complete and representative of all data collected. My background knowledge of the phenomenon also aided my interpretation of the data analysis.

There were no ethical breaches arising from this study as all the participants volunteered freely and gave written informed consent for their participation. The confidentiality of the information collected from participants was assured by locking up hardcopies safely in a cabinet in my home that I am the only one with access to it and softcopies are stored in a password coded computer. Their anonymity was guaranteed by the absence of personal identifiers in the transcripts in keeping with the principle of maintaining confidentiality of the identity of research participants

Results

This section would be organized according to each of the three research questions. There were no non-conforming data from the interviews. Data generated from Interview Questions 2, 3a, 4b, 5, 7 were used to answer Research Question 1 (Table 4). With

Table 4

Perspectives of Community Pharmacists About Health Promotion and Lifestyle Modification

Code Labels	Themes	Theme Clusters	Sample Quotes
Perspectives of health promotion	Understanding of health promotion		HP entails a compendium of activities targeted at desirable health goals (Participant #8)
	Perception of practice	Perception of Practice	HP includes a set of activities carried out to pass on knowledge, skills, or attitudinal changes to people, individuals, or communities in order to promote their health (Participant #10)
	Role of other stakeholders		HP is the work of all stakeholders in the healthcare delivery system
School curriculum and practice	The evolving curriculum should incorporate LM counseling and relevant skills	Relevance of pharmacy school curriculum	It would help to put more emphasis on the knowledge and training on LM in schools (Participant #9).
			Curriculum to include internship in community practice. With community pharmacy exposure, their confidence level rises, and they have a better knowledge of pharmaceutical care (Participant #3)
Perceptions of community pharmacists about their roles in PLM	Role of community pharmacists in PLM	Role of community pharmacists in PLM	When we counsel on positive behavioral lifestyle changes, we tend to slow progression towards hypertension and other chronic diseases (Participant #10).
			Activities that a CP has to engage in with a patient to make the patient understand the need to adjust his/her lifestyle (Participant #9).

Note. PLM =Promotion of lifestyle modification, LM = Lifestyle modification, HP = health promotion

Research Question 1, I sought to explore the perspectives of CPs about contributing to promotion of lifestyle changes among adults living with hypertension in Lagos Nigeria. Three categories of themes stood out from the analysis of the data collected from the participants.

Perception of Practice

From the analysis of data three themes stood out to highlight the perspectives of CPs about PLM. These perspectives captured their understanding of health promotion, perception of the practice of health promotion and PLM as well as the role of other stakeholders in PLM. Participant #11 alluded to the axiom that prevention is better than cure and that promoting health and well-being involves preventive healthcare rather than curative. The aim of health promotion is to promote a healthy society and healthy individuals through preventive health and this should start from the home, to the schools and then the entire community. Both the formal and informal sectors should be involved in health promotion. Health promotion is also about sensitizing people on things they need to do to prevent hypertension.

PLM is a very important aspect of health promotion involving counseling people on lifestyle issues. According to the CPs, PLM helps patients to see the need to modify their health. One participant mentioned that lifestyle modification is a gradual process and can be used to prevent hypertension, diabetes, hyperlipidemia, kidney and liver diseases. The CPs interviewed perceived counseling on increased physical activity and adequate nutrition as part of what the practice of PLM entails. One participant stated that

PLM is about encouraging patients to change from sedentary lifestyle while I quote another as stating that,

> With respect to hypertension, PLM is about non-drug options that the patient should embrace in order for good health and well-being. Find out details about: Day to day food habits and time of eating, daily habits pertaining to sedentary life or otherwise, sleep patterns, rest and relaxation, hydration and timing of drinking. (Participant #11)

From the research I found that not all the participants were familiar with the term DASH diet. This afforded me an opportunity to educate them about what it means and what it is about. Activities carried out by CPs to promote lifestyle changes include health talks, patient education, BP screening, information through media adverts and jingles, outreaches in collaboration with professional bodies, churches and nongovernment organizations.

Some perceived benefits of lifestyle modification were also mentioned including helping to improve clinical outcomes in hypertension and contributing to reduced healthcare costs due to reduction in morbidity from hypertension. A summary of the specific counsel given to patients with hypertension on PLM includes increasing physical activity (exercise), eating a healthy diet with increased intake of fruits and vegetables, reduction in salt intake and cutting down on alcohol. Others are to reduce caffeine intake, encourage smokers to give up smoking, have adequate sleep, reduce stress, have regular BP checks, and the CP should demonstrate the proper way of checking BP to the patient. Other stakeholders including the government, religious organizations, nongovernment

organizations, pharmaceutical companies, and organizations marketing or producing health gadgets were also mentioned as having roles to play in PLM in addition to the CPs. For instance, Participant #10 suggested that organizations and regulatory bodies to provide incentives to CPs for PLM as this would promote professionalism.

Role of Community Pharmacists in Promotion of Lifestyle Modification

All the participants were in agreement that CPSs have an important role to play in PLM being the usual first-port of call on health issues in the community. CPs must be involved in enlightenment campaigns for disease prevention and control as well as provide education through the media. The role of CPs also involves partnering with their colleagues and other stakeholders. We partner with some corporate organizations during their Health and Safety week to give health talks, sometimes with some pharmaceutical companies that market health products and they give out information leaflets (Participant #9). Another highlighted role of CPs is to lend advice and professional support to the patient to encourage lifestyle modification so that there would be optimal patient outcomes with respect to BP control.

CPs are meeting a need in the community by providing free BP checks and contribute to improving the health of the community. One interesting meaningful statement that came from one of the participants was that PLM serves as a strategy for customer retention and CPs should pay attention to it in order to increase their customer base. Patient follow-up is another important role of the CP in PLM. “We contact patients via phone calls for follow-up. We find out how they are doing when we do not see regular customers for some time” (Participant #12). CPs also have a responsibility to

update their knowledge of hypertension and PLM in order to render adequate service to the community and for patients/clients to develop trust in them. The participants also highlighted that in order to perform this role adequately, CPs need to have good communication skills including empathy, persuasive, and listening skills, information technology (IT) skills, improved cognitive skills, interpersonal relationship skills, and be able to use smart gadgets. Smart gadgets can be used to promote lifestyle modification and should be used appropriately because they may have both positive and negative effects. For example, even though the mobile phone has made life easier by enhancing communication between CPs and clients/patients, the UV rays from the mobile phone can damage health (Participant #8).

Relevance of Pharmacy School Curriculum

Only two out of the twelve participants said that the pharmacy school curriculum was adequate for the role of PLM being performed by CPs. The common perspective was that the pharmacy school training provided a good basis, but the onus lies with each pharmacist to build up adequate knowledge for effective performance of the role of PLM. One of the participants mentioned that most of the knowledge and strategies he discussed were picked up from practice and experience. Another mentioned that his knowledge and practice of PLM was due to personal interest.

The CPs studied proffered various solutions on how the training in pharmacy schools in Nigeria could be made more suitable for providing good knowledge base for practice. A common view was that the training should be made more relevant to practice with students spending more time with patients either in the CP or the hospital setting.

The curriculum should be upgraded through interaction with professionals on the field. CP should be involved to give lectures about realities on ground with community pharmacy practice (Participant #12). Another view was that the curriculum should be made more relevant to the culture of the people. The pharmacy curriculum was noted to be evolving, but planners should incorporate lifestyle modification counseling and relevant skills into it. Many of the participants affirmed that all schools of pharmacy in Nigeria should adopt the PharmD program, and that the Doctor of pharmacy degree should be the minimum entry point into the profession.

> One novel perspective came from Participant #11. She said about nutrition, Before I left the pharmacy school, I realized that something should be added to the curriculum. Ortho-molecular nutrition should be added to the training. The individual is not only considered in terms of the disease but the lifestyle. So I had to go and seek training in ortho-molecular nutrition. (Participant #11)

Research Question 2: How do Community Pharmacists Perform the Role of Promotion of Lifestyle Changes Among Adults Living with Hypertension in Lagos Nigeria?

In order to answer my second research question, I sought answers from the analysis of data collected using Interview Questions 1, 3b, 4, 6, 8, 9. I identified eight themes which on further analysis were categorized into 4 theme clusters: Cognitive ability, practice of PLM by CPs, contextual factors, and strategies (see Table 5).

Table 5

Codes, Themes, and Categories for Research Question 2

Code Labels	Themes	Theme Clusters	Quotes
Definition of hypertension Symptoms Prevention Management Complications	Knowledge of hypertension	Cognitive ability	Hypertension is persistently high BP greater than 130/80mmHg; determined after three readings within a month (Participant #2) Often referred to as the "silent killer" (Participant #7)
Community Pharmacists and PLM	Knowledge of PLM		Hypertension is preventable through LM and having regular BP checks. LM entails regular exercise, dietary control, reducing stressors, smoking cessation and reducing alcohol intake. (Participant #8).Highlighting and creating awareness about a patient's role and the changes a patient needs to make to his daily life in order to have a positive impact on his BP and health (Participant #2).
Knowledge	Practice of PLM by community pharmacists	Practice of PLM by community pharmacists	It entails asking smokers to quit, people eating healthy meals; eating at the right time; eating balanced breakfast and lunch; eat only fruits for dinner; reduce fatty foods; reduce alcohol intake and encouraging patients to change from a sedentary lifestyle (Participant #12)
Benefits of LM			The benefit of PLM is that we have fewer numbers of people coming down with hypertension and can help to delay onset of hypertension in patients with a family history of hypertension (Participant #12).
Involvement of Community Pharmacists in PLM			In our pharmacy, we counsel one-on-one on LM and the benefits of adopting healthy lifestyles. We measure BP and record it. Counsel on regular medication use. Other specific counseling points include Exercise up to three to four times in a week for 30-40 minutes at a time. Reduce salt intake; Smokers to quit smoking; Go off alcohol completely; Cut down consumption of fatty foods Stop red meat; Stop coffee, tea and Kola nut; Increase fruit and vegetable intake. Anyone that is obese, to work towards weight loss (Participant #5).

(table continues)

Code Labels	Themes	Theme Clusters	Quotes
Necessary Skills	Enablers	Contextual factors	Effective communication skills; use IT to document LM activities and counseling. Leverage on technology to improve communication with patients using phone calls and SMS (Participant #4).
			Free BP checks offered in our pharmacy encourages repeat visits by customers.
			We compare trends in BP.
Follow-Up			We phone to remind them. Some come on their own to discuss health issues and their medications. We discuss LM when patients come back for repeat visits (Participant #5).
Documentation			Better documentation (Participant #10).Patients are sometimes in a hurry, they want to dash in and out because of the hustle and bustle in
Barriers	Barriers to effectiveness Overcoming Barriers		the city (Participant #4).
Environmental factors	Practice environment		Cultural/religious undertones play out. In parts of Northern Nigeria, a male healthcare professional may not be able to get too close to a female patient (Participant #9).
	Social Infrastructure		High vehicular traffic in Lagos contributes to stress (Participant #4)
Strategies	One-on-one counseling, Integrative Pharmacy, Use of practice guidelines for PLM, LM counseling, MI, Lifestyle Coaching, Self-care management, Concordance	Strategies	Two common approaches to PLM are by encouraging exercises and dietary control (Participant #5). The CP should be able to use smart devices that aid LM (Participant #4).

Note. PLM =Promotion of lifestyle modification, LM = lifestyle modification, MI = motivational interviewing

Cognitive Ability

The participants highlighted various issues about hypertension including symptoms, causes, prevention, management and complications. The majority of the CPs mentioned that hypertension is often termed "the silent killer" because it often presents with no symptoms. All the participants mentioned that hypertension can be prevented or poor prognosis may be halted by PLM. Hypertension may affect persons from any strata of the society and prevalence is on the increase as according to Participant #10, he records an increase in sales of antihypertensives in his community pharmacy. In order to prevent complications, pharmacists have a big role to play in highlighting challenges and dangers posed by uncontrolled hypertension. Such complications may include retinopathies, nephropathies, neuropathies, target organ damage, stroke, myocardial infarction and diabetes. Prevention is the best solution to hypertension. People should modify their lifestyles to enable them live healthy without succumbing to hypertension (Participant #10).

The responses of the participants on how they practice PLM in their pharmacies generally highlighted the following: Two common approaches to PLM are by encouraging exercises and dietary control. They encourage DASH diet which entails reduction in salt intake to a barest minimum and processed food high in calories and saturated fats. Counseling to eat more fruits and vegetables and discouraging people from smoking, taking alcohol, sodas, juices and flour products is done. Clients are also counseled about their emotional lifestyles. They should: manage well their family relationships; interpersonal relationships in business; professional relations, and learn

anger and stress management. Individuals need to know they should avoid extreme emotions which can contribute to hypertension. The need to follow patients up on lifestyle modification journey is important as highlighted by the participants. The themes, categories and examples of codes are shown in Table 5.

Practice of Promotion of Lifestyle Modification by Community Pharmacists

There were various aspects of the practice of PLM highlighted by CPs interviewed in this study. One participant expressed that PLM should be a continuous process for everyone whether healthy or not. Routine health screening is conducted in many pharmacies during which free BP checks for walk-in patients are done. According to Participant #9 "we detect those who are unaware of their hypertension status during such programs; I have come across people from all age groups who did not know they were hypertensive and we screen for high BP on World Heart Day. He also mentioned screening for obesity and pointing out risk where there is a family history of hypertension. According to Participant #9 lifestyle modification can help to delay onset of hypertension in patients with a family history of hypertension. The practice involves counseling on healthy weight, exercise, and healthy lifestyle. They also highlight long-term consequences of uncontrolled hypertension including how it can lead to other chronic ailments and complications. To mitigate or prevent these complications Participant #9 enthused that "we counsel the patient to do something to make the numbers change" (Participant #9). He further said that another way that CPs practice PLM is by giving advice and professional support to the patient to encourage lifestyle modification so that there would be optimal patient outcome with respect to BP control.

One-on-one counseling is one common practice mentioned by all the participants for PLM. They encourage gradual change to healthier habits. Some of the specific counsels given include telling patients to increase physical activity (exercise), eat healthy diet rich in fruits and vegetables, to reduce salt intake and cut down on alcohol. They also encourage smokers to give up smoking, reduce caffeine intake, reduce stress, and ensure that they get adequate sleep and have regular BP checks. The CP guides the patient on the lifestyle modification journey and designs the action plan while tailoring it to suit each person. CPs also counsel their hypertensive patients on the need to adhere to their medication regimen in addition to lifestyle modification counseling. One participant voiced that he says to patients that if they do not modify their lifestyle, there is an extent to which the drug would work (Participant #9). The emanating themes from this category are depicted on Table 5 with supporting quotes and coding labels.

Contextual Factors

From the responses of the participants about how PLM is practiced by them, some other factors aiding or hindering their practices were identified as themes and categorized as contextual factors. These themes are enablers, barriers, practice environment, and social infrastructure (Table 5).

Enablers. From this study, enabling factors were identified as skills, follow-up, and documentation. The CPs identified a number of skills needed by them in order to perform the role of PLM effectively. Many of these skills are also necessary for the general practice of their profession. The common skills highlighted by all the participants were effective communication, persuasive skills, empathy, appropriate use of IT

(information technology), and cognitive skills. Others include listening, counseling and presentation skills. The CP should speak the language the patient understands and be able to switch between dialects or from English to Pidgin English, and communicate effectively even with illiterates using signs and symbols (Participant #6). The need for the pharmacist to sound professional was pointed out by Participant #8, saying this would make patients to trust him or her the more.

On cognitive skills, Participant #2 said a CP has to be versed in the aspect of PLM for patients/clients to believe him/her. She also said IT skills are very important, that instead of gathering people together or making flyers, you can easily send a health tip within 30 seconds online. IT is very useful through every aspect of pharmacy practice including PLM. It is useful for documenting and monitoring BP trends (Participant #7). Another quote about IT skills was from Participant #4, "use IT to document lifestyle modification activities, counseling, and to enhance role of promoting lifestyle modification. The CP should also be able to leverage on technology to improve communication with patients using phone calls and SMS (Participant #4). Two skills stood out that were only mentioned by one participant – problem-solving skills and superior customer-service skill in order to give the patient a wow experience (Good in-store experience) (Participant #11). Participant #8 was the only one that mentioned being able to track the impact one is making as a necessary skill.

Follow-up is another enabler of the practice of PLM by CPs. One participant said, we follow up more on those that show commitment to wanting to change their lifestyles. For overweight persons, we encourage to register in a gym and help to plan their meals if

they so desire (Participant #9). Follow-up is usually done over the phone according to most of the study participants. They ask questions like, do you have any problems? Have you been taking your meds? What is your BP? Have you been keeping to counsel given? Community pharmacists commonly give reminders to hypertensive patients about medication use, regular BP checks, or about the need to go for follow-up visits. One participant reported that some patients visit on their own to discuss health issues and their medications and that he discusses lifestyle modification when patients come back for repeat visits. One pharmacist who works in a chain pharmacy mentioned that some of their patients book appointments for follow-up visits and during such visits he encourages regular health checks, medication use as appropriate and for the patients to have and use personal BP monitors. Another participant mentioned that she sometimes follows clients up via WhatsApp. Participant #2 added that follow-up is enhanced by building up a good relationship with her clients who are mostly neighbors in her community.

Ten out of the 12 study participants expressed that they experience some form of resistance usually or sometimes when they want to counsel patients. Participant #8 mentioned that he hardly experienced resistance to counseling 95 – 98% of the time in his practice. He explained this by saying that people pay more attention when they know the CP is experienced. Another participant however gave his own experience of resistance as poor interaction level with patients because some patients do not like disclosing information as some say it is their personal problem and don't want to share (Participant #9). Reasons for the resistance experienced was attributed to time pressures on the part of patients, ignorance, their belief systems or preference for counsel from doctors over what

the pharmacist says. Many of the CPs agreed that there was a need to improve in this role. One of the participants rated the extent of patient follow-up in his practice as 3.5 - 4 out of 10 and saw the need for improvement. All the pharmacists expressed the importance of documentation to effective promotion of lifestyle changes. They also observed the need for improvement in this area. Documentation is mostly done manually or in conjunction with electronic records. One participant mentioned the benefit of using cloud-based software as epos for documentation.

Barriers. The CPs highlighted various factors that may be posing as barriers to effective performance of the role of PLM. These include patient factors, religious factors, lack of interprofessional cooperation, patient's mindset, social factors, time constraints, organizational structure/factors, financial constraints for patients, and factors pertaining to the pharmacist. Inadequate staffing was one key organizational factor mentioned as a barrier to practice by most of the CPs. Lack of a dedicated area for counseling in some pharmacies and poor knowledge base of some CPs were also pointed out as barriers. These barriers need to be overcome in order for CPs to perform this role of PLM more effectively.

The CPs also proffered a number of solutions to overcome some of these barriers. The use of an appointment system for seeing a CP for PLM counseling should be introduced as a new structure for pharmacy practice as suggested by Participant #11. The need to have adequate space in the pharmacy with a dedicated area for counseling was also suggested. Better leverage on technology was suggested as a means of overcoming the cognitive barrier on the part of the pharmacist. Better follow-up of patients may help

to overcome some of the patient factors. Improved knowledge of CPs about integrative would help to overcome the cognitive barrier. According to Participant #2,"If I believe in it, I am aware of it, then I can convince someone to use it"

The practice environment. This was highlighted by many of the CPs as a factor influencing their practice of PLM. The lack of cooperation between CPs and physicians is a factor highlighted by a number of the study participants, one of who said that some doctors discredit what the pharmacist has said to the patient or even some CPs do the same to their colleagues. The need to bridge this gap was noted by Participant #10. From the experiences of CPs, poor social infrastructures and particularly the erratic power supply, chaotic traffic situation peculiar to Lagos, and poor road networks are factors that affect the performance of the role of PLM by CPs. The physical environment and insecurity may hinder people from taking walks in an area. Another expressed view is that professional collaboration should be optimized.

Strategies

The appropriate deployment of effective strategies is a factor to be considered seriously in the discharge of the roles of the CPs with regards to hypertensive patients. The strategies used by CPs are shown in Table 5. One-on-one counseling was the commonest strategy being used by CPs in PLM among hypertensive patients. This was described by Participant #11 as walk-in customer involvement. Online visibility using websites and Facebook was another strategy mentioned by Participant #11. Integrative pharmacy as a strategy was only mentioned by two participants. Adequate patient education using flyers, audiovisuals and other print materials was also highlighted by

some participants. The need to have a structured process and procedure for lifestyle modification in place in each pharmacy was stated by one of the study participants. I found out from the data analysis that the participants had little or no knowledge about commonly used strategies including motivational interviewing, lifestyle coaching, self-care management, concordance, and the five A's of behavior counseling. I therefore used the opportunity to enlighten the participants about these strategies. After my explanations, I found that some of the strategies were being used by the pharmacists but they were unfamiliar with the terms. Two participants highlighted the use of standard practice protocols as strategy for conducting PLM effectively. The specifics of this strategy would be considered with the third research question.

Research Question 3: How is Practical Knowledge and Pharmacy Practice Protocol Revealed From the Experiences of the Community Pharmacists?

From the analysis of data conducted by me, the data generated from interview questions 1, 8, 10, 11, 12, 13 as shown in Table 6 will be used to explain Research Question 3. I sought to find out how the practice of the studied CPs revealed their knowledge of PLM such that it could lead to the development of a practice protocol by the researcher. I generated seven themes from the manual analysis and this were further reassembled into three cluster themes: self-efficacy, enhancing effectiveness and reach for PLM, and community pharmacy protocol for PLM.

Table 6

Practical Knowledge of Promotion of Lifestyle Modification and Development of a Practice Protocol

Code Labels	Themes	Theme Clusters	Quotes
Confidence in teaching PLM	Self-efficacy	Self-efficacy	Absolutely confident. We have a training manual developed for new recruits. I tend to make them see the importance of gaining the client's interest (Participant #11)
Avenues for conducting health promotion and PLM	Media for conducting PLM: health talks, printed materials –flyers and bookmarkers, radio and TV jingles,	Enhancing effectiveness and reach for PLM	Promotional materials are given out on the World Health Days (Participant #3).
	Social media		We use social media to promote the campaigns, and the social media is a rich source of health information (Participant #3).
	Innovation and Value-adding service		For younger patients, we have a loyalty scheme and they get reminders via email or SMS about time for refills (Participant #2).
Importance of Technology in PLM	Leveraging on technology		Technology is very useful for obtaining health information and makes documentation more effective (Participant #8 and #9)
Specific steps involved in PLM	Essence of a practice protocol	Community pharmacy protocol for PLM	Develop guiding framework or protocol. There should be uniform implementation of a standard practice protocol for pharmacies (Participant #1).
	Development of a practice protocol for PLM		

Note. PLM =promotion of lifestyle modification

Self-efficacy. Self-efficacy of the CP was assessed by the expressed confidence or otherwise of the pharmacist in their own ability to teach a colleague about PLM and the specific teaching steps they take. Contributory factors to their self-efficacy were highlighted as training and knowledge. Some of the participants' views were about maximizing knowledge, keeping abreast of current practice of PLM, and attending relevant conferences and training. One participant alluded to the fact that information is power, and once you are informed, you are confident (Participant #3). They used phrases like absolutely confident and confident to a large extent to describe their self-efficacy. One participant however admitted that he needed more insight and knowledge about PLM. Documentation was also highlighted here as a sub-theme. Another specific counseling point expressed by Participant #11 was about encouraging new recruits to value patient confidentiality and measure BP where there is less distraction.

Enhancing effectiveness and reach for promotion of lifestyle modification. The use of the social media was expressed by most of the CPs as means of enhancing effectiveness and increasing the reach of the CP. According to Participant #11 her organization creates online awareness through their website or social media, and a pharmacist reviews the content from time to time so that patients do not find it boring and can get useful tips from there. Technology was highlighted as being an important tool for optimizing effectiveness. One participant mentioned that technology is very useful for obtaining health information and makes documentation more effective. Technology can also be used to assess patient compliance by keeping track of trends in health parameters including BP. Smart wearable devices like step counters may also be used for measuring

health parameters (Participant #7). Technology can be used to motivate patients to action through visual images. Technological gadgets may be used to send digital reminders to patients. For instance, if a patient's plan of schedule is on his electronic device, it is easier to be reminded than when on paper (Participant #11).

Innovation and value-adding services. This theme reflects the provision of value-adding services by CPs as expressed in the collected data and the innovativeness they have introduced into the practice of PLM in hypertensive adults. One statement alluding to value addition is to "Preach wellness beyond prescription" (Participant #4). In other words, the CP may just give counsel and not sell any products if it is not necessary. Participant #9 suggested that CPs should have a reward system in place to motivate people and get them committed to lifestyle modification. Another value-adding service carried out by Participant #10 is organizing quarterly free screening in the community. The use of audit booklet in one of the chain pharmacies is an innovative idea. We document patient details and encounters in our pharmacy services audit booklet. We need to scale this up to be done across all our branches (Participant #11). A perspective shared by Participant #12 is to compile a digest of common ailments and what to do to prevent them periodically, and this would heighten the expectation of patients. But the CP needs to do this consistently. Some pharmacies have a loyalty scheme for rewarding their regular customers and some like Participant #2 visit elderly patients in their homes to check their BP and follow-up on lifestyle modification counsels and address their concerns about their medications.

Community pharmacy protocol for promotion of lifestyle modification. From the perspectives and practice of PLM in hypertensive adult patients discussed by CPs, I was able to develop a practice protocol that can be followed by CPs in Eti-Osa local government area of Lagos State, Nigeria. This is depicted in Figure 1. One of the meaningful statements from a participant was that we need to have a standard practice protocol that would be implemented uniformly across all CPs in the zone (Participant #1). Another participant also suggested patenting protocols developed in her establishment into applications that can aid lifestyle modification (Participant #11).

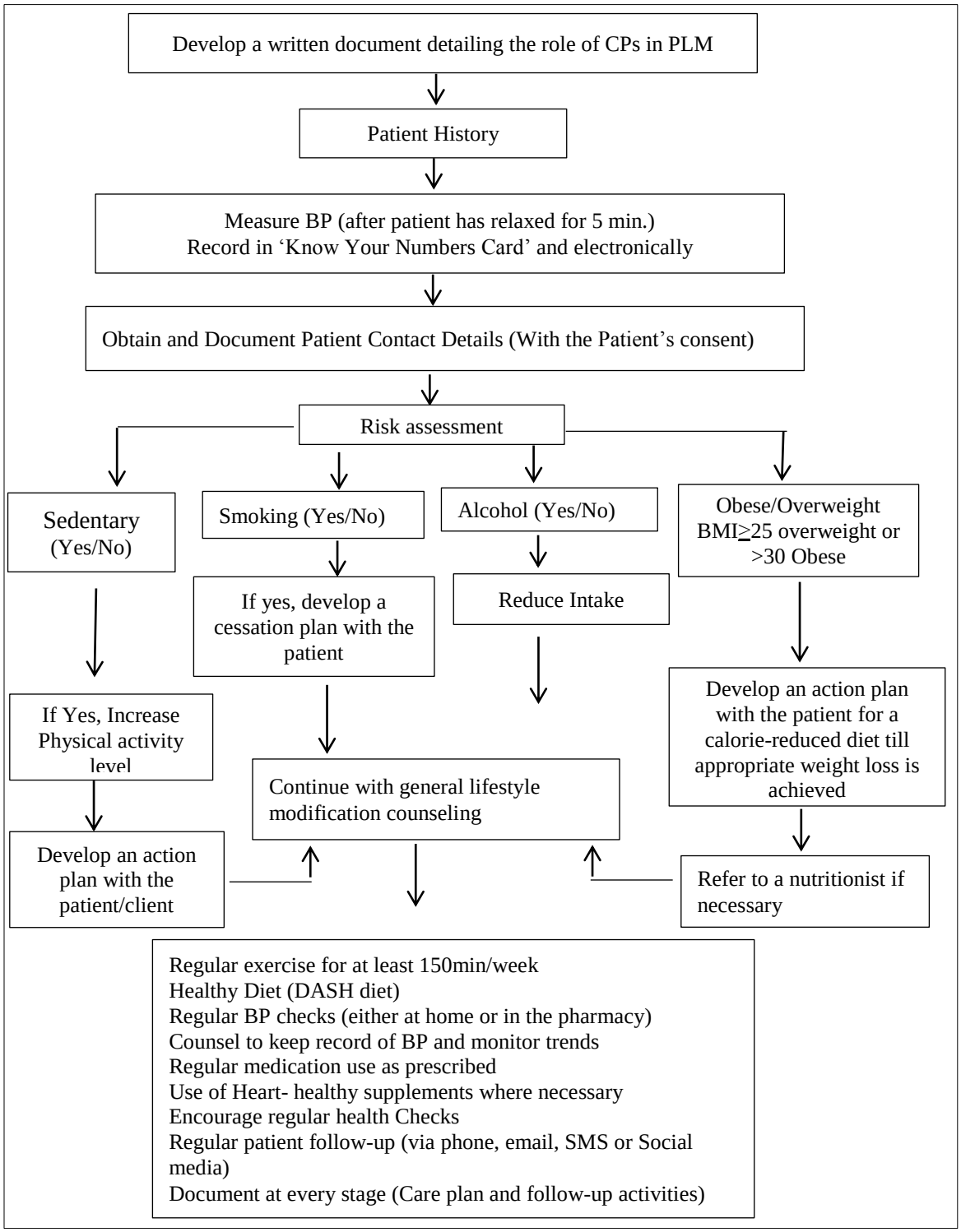

Figure 1. Standard practice protocol for promotion of lifestyle modification by community pharmacists in hypertensive adults.

Summary

The data collected from participants provided answers to the first research question asking about the perspectives of CPs about contributing to PLM. It was highlighted that CPs play a vital role in PLM as knowledgeable healthcare professionals that are often the first port of call for health issues in Nigeria. From the analysis of data, five themes stood out and these were categorized further into three focusing on the perspectives about health promotion and PLM, the relevance of the pharmacy school curriculum and the role of CPs.

For Research Question 2, from the manual data analysis I came up with 8 themes further clustered into four categories to highlight how CPs perform the role of promoting lifestyle changes among adults living with hypertension in Eti-Osa local government area of Lagos State, Nigeria. These themes are cognitive ability, practice of PLM by CPs, contextual factors, and strategies.

With Research Question 3, I sought to find out how practical knowledge bordering on self-efficacy was revealed from the practice of PLM by the participants and to develop a standard practice protocol for PLM that can be used by CPs in the studied setting. From the data, seven themes emerged and they were further categorized into three as self-efficacy, enhancing effectiveness and reach for PLM, and community pharmacy practice protocol. I was able to develop the protocol in a chart as shown in Figure 1 and a summary of the perspectives of CPs about the phenomenon is summarized using a thematic diagram (Figure 2). A more detailed discussion of the research findings

in relation to available evidence in literature and the undergirding theoretical frameworks will be done in Chapter 5.

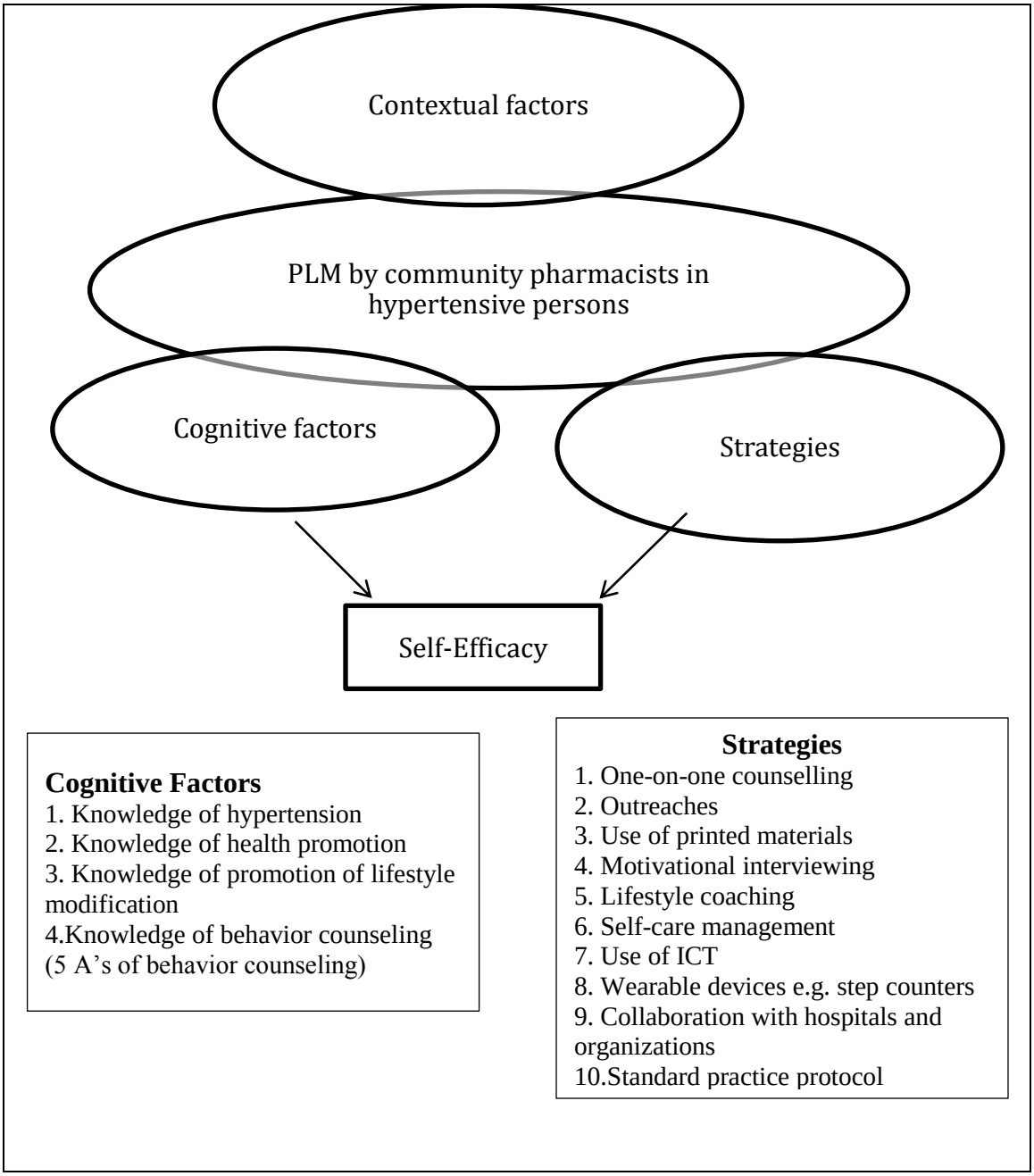

Figure 2. Factors involved in promotion of lifestyle modification in hypertensive people from the perspectives of community pharmacists.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This qualitative phenomenological study was conducted to explore the perspectives of CPs about PLM in adults with hypertension in Eti-Osa local government area of Lagos State, Nigeria. Through this study I have contributed to the understanding of the scope of involvement, perceived roles and barriers, and how CPs perform the role of healthy lifestyle promotion among hypertensive adults by providing answers from the perspectives of CPs to three research questions. I also sought to fill a gap in knowledge by developing a practice protocol that can be used to standardize the PLM by CPs in Eti-Osa local government area, as some researchers have highlighted the need for standard practice guidelines for health promotion by CPs in Nigeria (Adeniyi, Nasir, Yakubu, David, & Sariem, 2015; Dosea et al., 2015). I conducted in-depth, face-to-face interviews with CPs to ascertain their views and practice of PLM. I used interpretive phenomenology to explain the perspectives of CPs on how and why they perform the role of promoting healthy lifestyle changes, the barriers they face, and how suitable they think the training they received makes them able to perform this role among adults living with hypertension.

In this chapter I present the interpretation of the experiences of CPs of the phenomenon and place within the context of the practice environment and relate them to some theoretical constructs and available evidence in literature. I also summarize the key findings from data analysis. The chapter ends with a discussion of recommendations from the study, potential implications, and a conclusion.

Summary of Key Findings

In this research, I used thematic analysis to examine findings from the collected data through a process involving data compilation, disassembling, reassembling, interpretation, and conclusion (Castleberry & Nolen, 2018; Wirihana, 2018). The perspectives of CPs about contributing to promotion of lifestyle changes among adults living with hypertension in Lagos, Nigeria was captured under three major themes: Perception of Practice, relevance of pharmacy school curriculum, and role of CPs in PLM. The CPs expressed their views that PLM is one of the key roles of a CP and that a good understanding of health promotion, PLM, and hypertension are necessary for a CP to adequately promote lifestyle changes in adults with hypertension. The participants all indicated that the pharmacy school curriculum in Nigeria should be made more relevant to practice and should include a mandatory period of internship either in community or hospital practice. They also highlighted that other stakeholders including the government, other healthcare professionals, churches, and nongovernment organizations had a role to play in PLM.

With the second research question, I explored how CPs perform PLM in their pharmacies, and from the data four major themes emerged: Cognitive ability, practice of PLM by CPs, contextual factors, and strategies (see Table 5). Participants explained their knowledge of hypertension and PLM and that hypertension may be preventable through lifestyle modification and CPs should be in the vanguard of PLM. From the experiences of the participants and analysis of data, the practice of PLM by CPs includes cognitive factors, appropriate use of health promotion and behavior change strategies, and

contextual factors as the social and cultural environments. The first two factors contribute to the self-efficacy of the CP, which is the confidence in one's ability to perform the role of PLM (see Figure 2).

From data analysis conducted to answer Research Question 3, a step-by-step practice protocol for PLM was developed by me (see Figure 1), and three major themes emerged from the responses of the participants to the relevant interview questions: self-efficacy, enhancing effectiveness and reach for PLM, and community pharmacy protocol for PLM. All the participants expressed that they were self-confident about teaching their colleagues about PLM and counseling their patients on necessary lifestyle changes to prevent complications and keep their BP well controlled, even though they recognized the need for more training. The views of the CPs also focused on the various media they use for PLM including flyers, health talks, and media jingles; the benefits of social media and technology in extending the reach of health promotion counsel and tips; and the essence of a practice protocol in order to standardize the practice of PLM and to provide necessary guidelines to the CPs for the benefit of the patients.

Interpretation of Findings

With interpretive phenomenology, a researcher can interpret the findings from data analysis to provide a concise picture of the phenomenon studied. Interpretation involves making meaning of all the data collected and analyzed to provide a concise explanation of the emergent themes (Castleberry & Nolen, 2018). Interpretation must be accurate, complete, representative of raw data, credible, and not from the imagination of the researcher (Castleberry & Nolen, 2018). It should add value to understanding of the

topic or phenomenon. My understanding of the subject as a CP came into play in the interpretation of findings, which is allowed in hermeneutics (Matua, & Van Der Wal, 2015). The interpretation of findings in this research are a blend of the participants' and my views of the concept and placed within the context of existing evidence from literature and the theoretical frameworks used.

Interpretation of Findings within the Context of Existing Literature Evidence

The essence of a study is to generate findings that can add to the body of existing or new knowledge in literature or to offer solutions to a problem. Interpretation of research findings is an important step aimed at providing understanding about the researched topic and answers to research questions that could broaden the understanding of readers and other researchers either by confirming, disproving, or extending the frontiers of new knowledge. In this section, I interpret the results presented in Chapter 4 to answer each of my three research questions.

Research Question 1

The three major themes to interpret the perspectives of CPs about contributing to PLM among adults with hypertension in Lagos are perception of practice of PLM, relevance of pharmacy school curriculum, and the role of CPs in PLM.

Perception of practice of promotion of lifestyle modification. The participants considered health promotion and PLM as a major role of CPs. Their understanding of health promotion included promoting awareness about general well-being, counseling on lifestyle issues, preventing disease, and awareness creation about steps to take to optimum health. Other perspectives about were that it involves actions engaged in to

educate the populace/community on how to promote and protect their health to improve their quality of life. These actions may involve campaigns to inform people about disease conditions and helping people to make informed choices, so they do not succumb to diseases.

These perspectives are in line with previous research on health promotion. For example, Naidoo and Wills (2016) suggested that health promotion involves activities aimed at helping people to take better control of their health at the individual, community, or population levels. Health promotion entails health education and actions that seek to empower individuals and communities to take control of their own health using necessary health-promoting skills and in collaboration with health professionals and other stakeholders (Fertman & Allensworth, 2017; Naidoo & Wills, 2016).

Additionally, health promotion is recognized as an aspect of community pharmacy practice worldwide that contributes to improvement in health of people using different strategies (Gelayee et al., 2017). These strategies include counseling on behavioral and lifestyle changes, which is a measure to reduce the growing prevalence of hypertension in Nigeria and other countries (Mezue, 2014).Findings from my study also confirm this. According to one of the participants,

> The CP should be at the forefront of HP [health promotion] as the first port of call on health care matters in the community. The CP should educate and promote health. The CP should have a broad mind and should be able to advise the customer and see beyond what the customer is saying. (Participant #11)

Another perspective of participants in this study is that PLM is about making people to understand that lifestyle has to do with health and the CP needs to help a patient to understand the need to enjoy better health through lifestyle changes like eating a balanced diet rich in fruits and vegetables and increasing physical activity.

Other stakeholders must also be involved in PLM and health promotion including the government, nongovernment organizations, faith-based organizations, policy makers, agricultural, and education sectors. For example, Arena et al. (2015) highlighted stakeholders in healthy lifestyle initiatives as including professional organizations, governments, educational systems health care organizations, insurance industry, nonprofit and community organizations, food industry, health and fitness industry, individuals and families, mobile health and technology companies, media outlets, and employers. All these stakeholders have specific but interconnected roles in health promotion. It is therefore important for multiple categories of stakeholders to be involved for PLM, including CPs who must play a pivotal role. The performance of the roles of CPs in PLM is influenced by their knowledge and understanding of what the concept entails. The foundation for this knowledge is obtained during training in pharmacy schools.

Relevance of pharmacy school curriculum. The general perspective of the CPs was that the pharmacy school curriculum is inadequate for the future role of PLM, and it should be made more relevant to PLM and pharmacy practice. They had a many suggestions for making the curriculum more relevant to practice including continuous pharmacy education and internship for pharmacy students in community or hospital

practice settings. CPs as trusted, accessible, and knowledgeable healthcare professionals must be equipped with the right knowledge and skills for promoting health and disease prevention through PLM (Lenz, Petersen, & Monaghan, 2008; Pogge, 2013). For example, The National Association of Boards of Pharmacy in North America requires pharmacists to develop competencies in wellness, nutrition, lifestyle modification, and other nondrug measures that can promote health and prevent disease to qualify for licensure, which requires schools to incorporate appropriate courses (Pogge, 2013). Furthermore, Earl and Hensdenburg (2012) reiterated that educational curriculum should be based on recommendations from current literature and professional guidelines incorporating motivational and behavioral strategies that are culturally appropriate for patients.

Pharmacy education in Nigeria has undergone a lot of changes over the decades owing to changes in the society and patient needs (Ikhile & Chijioke-Nwauche, 2016). From my study, even though some of the participants who graduated between 5 and 15 years ago mentioned that the curriculum is evolving in Nigeria, the need for a revision of the pharmacy school curriculum in Nigeria is imperative. Participants also mentioned that the minimum entry qualification into pharmacy practice should be a Doctor of Pharmacy. This is a policy on paper in Nigeria, so the Pharmacists' Council of Nigeria and the National Universities Commission should ensure its implementation across all pharmacy schools in Nigeria. This would make graduating students to be more versed in preventive healthcare concepts as PLM.

Healthcare professionals including CPs must be up-to-date in their professions in order to perform their responsibilities in patient care effectively. This implies that they must be lifelong learners. Health care professionals should pursue new knowledge continuously and maintain relevant competencies throughout their careers (Driesen, Verbeke, Simoens, & Laekeman, 2007). For instance, the International Pharmaceutical Federation adopted continuing professional development in 2002 and declared that individual pharmacists have a responsibility for the development, maintenance, and broadening of their knowledge, skills, and attitudes to ensure competence as professionals throughout their careers (Driesen et al., 2007). The participants in this study also mentioned the need for continuing education and that the bulk of what they know about PLM was learned during practice. This means that CPs need to hone their skills through constant update and acquisition of new knowledge and skills (including communication and counseling skills) that would enable them to promote lifestyle modification among adults with hypertension to improve the quality of life of the patients and contribute to better health outcomes in the community.

Role of community pharmacists in promotion of lifestyle modification. CPs have an important role to play in the management of hypertension because they are accessible and trusted healthcare professionals in the community. Some of the roles identified by participants in this study include provision of health education, PLM through one-on-one counseling, patient follow-up, documentation, interprofessional collaboration, promotion of the use of smart gadgets as step and calorie counters, and provision of value-adding services such as free BP checks and the use of “know your

numbers" cards for monitoring patient BP trends. One participant also explained that the role of CPs in PLM includes encouraging patients to change from sedentary lifestyle to being more physically active, eating healthy meals rich in fruits and vegetables at the right time, quitting smoking, and reducing salt and alcohol intake. Another participant stated that lifestyle modification can improve clinical outcomes in hypertension and can help to delay onset in patients with a family history of hypertension.

These responses are supported by research indicating that healthcare professionals must be comfortable with counseling patients on PLM (Pogge, 2013). Previous research has also suggested that managing hypertension entails counseling and education about engaging in physical activity; adopting DASH, which involves eating a diet rich in fruits and vegetables, reduced salt intake, and reduction in fatty foods; smoking cessation; and reduction in alcohol intake (Adje & Oli, 2013; Adje & Oparah, 2013; Alotaibi, Shivanandappa, & Nagarethinam, 2015; Noble et al., 2016; Okada et al., 2016; Tibebu, Mengistu, & Negesa, 2017). The PLM counseling by CPs contributes to weight loss, physical activity, reduction in salt and alcohol intake, and an ultimate decrease in BP (Okada et al., 2016). Further, a study in Canada showed that educational interventions by pharmacists have led to a reduction in systolic and diastolic BP (Lamb et al., 2018). Thus, health education campaigns and health promotion activities by CPs have been effective and can contribute to improved health outcomes (Agomo et al., 2018).

From the views of CPs studied, some of the activities they engage in for PLM include health screening campaigns, free BP checks, health talks, provision of health information and education. Patient health education is a strategic intervention that CPs

carry out to promote lifestyle changes in patients with hypertension (Siang, Hassali, & Fen, 2019). Because CPs are known to contribute to positive health outcomes and improvement in quality of life of patients with hypertension through various activities and interventions, it would be appropriate to interpret findings about the actual practice of PLM by CPs in Eti-Osa local government area and place the findings within the context of existing literature.

Research Question 2

Four main themes emerged from the analysis of data to explain how CPs in Eti-Osa local government area perform their role of PLM: cognitive ability; practice of PLM by CPs; strategies; contextual factors including enablers, barriers, practice environment; and social infrastructure. The interplay of these themes that may be interpreted as factors involved in PLM by CPs is shown in the thematic map in Figure 2 in Chapter 4.

Cognitive ability. To perform the role of PLM effectively in patients with hypertension, CPs must have a good understanding of hypertension and the concept of PLM. During the interviews all the participants demonstrated a good understanding of the subject being discussed. Most were familiar with the current definition of high BP by the American Heart Association and the Joint National Committee (JNC7) of >130/80mmHg (Bakris, G. & Sorrentino, 2018). Others used the former definition of BP greater than or equal to 140/90mmHg for hypertension. According to the JNC 7, the treatment for stage 1 hypertension (BP $\geq$ 130/80mmHg) is still lifestyle modification. CPs stated that hypertension is often without any symptoms, but a common symptom could be headache. Most of the participants mentioned that hypertension is termed a "silent killer." They all

expressed their views and knowledge about possible complications, risk factors, prevention, and treatment of hypertension. Their knowledge supported findings from a study that reported an understanding of risk factors of hypertension by nurses to include stress, lack of physical activity, poor dietary choice (including increased salt and fat intake, low consumption of fruits and vegetables, and heredity (Akinlua, Meakin, Fadahunsi, & Freemantle, 2015).

Practice of promotion of lifestyle modification by community pharmacists. Drug and nondrug options are indicated for the management of hypertension and reducing cardiovascular morbidity and mortality. PLM is majorly a nondrug strategy for managing hypertension. It is a holistic concept and process, and a useful strategy for reducing health disparity due to hypertension and for bringing down the economic burden due to hypertension in Nigeria. The approach of CPs towards PLM in hypertensive patients in this phenomenological study focused essentially on individual patient counseling on regular BP and health checks, and patient-specific counseling on increased physical activity, DASH diet, smoking cessation, and reduction in alcohol intake. This is in line with the seventh report of the Joint National Committee on prevention, detection, evaluation, and treatment of high BP (JNC 7) that recommended the following lifestyle modifications in the management of hypertension – increasing exercise, adopting DASH eating plan, weight loss, reducing dietary sodium intake, and moderating alcohol intake (Earl & Hensdensburg, 2012).

Patient counseling is a major duty of CPs. While exploring the effects of lifestyle advice on patients with hypertension, Okada et al. (2017) found the intervention effective

resulting in decreased patient weight, dietary sodium and alcohol intake, and better BP control. According to Earl and Hensdensburg (2012) the role of CPs in the management of hypertension includes lifestyle counseling, patient education on hypertension, and engaging patients in self-care behaviors as home BP monitoring. The participants in this study also encouraged patients to have their personal BP monitors so they can monitor and record trends in their BP at home. They counseled those who could not afford to buy personal monitors to come to the pharmacy regularly to check their BP as this was a free service in most CPs. CPs however need to go the extra mile to check the patient techniques for measuring BP to be sure it is appropriate and to demonstrate appropriately where necessary. They also need to counsel patients on the need for annual validation of their BP monitors to ensure accuracy of readings

The DASH diet is a proven strategy for reducing BP in patients with hypertension. It is based primarily on eating foods in their natural and unprocessed forms as much as possible (Earl & Hensdensburg, 2012). The foods should be rich in potassium, calcium, and magnesium but should be low in sodium as there is a cause and effect relationship between high sodium intake and increased BP (Earl & Hensdensburg, 2012). Such foods include fruits, vegetables, whole grains, nuts, seeds, legumes, and low-fat dairy products. They recommended that CPs can help patients plan their meals based on a consideration of age, weight, height, gender and physical activity level (Earl & Hensdensburg, 2012). In this study I found that many of the CPs were not familiar with the term DASH diet even though they counseled patients on the aspects of this strategy. I used the opportunity to provide education about DASH diet to them. CPs need to be

trained on how to educate patients about DASH diet and factors influencing healthy food choices (Earl & Hensdensburg, 2012). They further recommended that CPs should incorporate lifestyle interventions that involve reducing dietary sodium intake as part of a comprehensive strategy to improve health outcomes in patients with hypertension. CPs also need to reinforce counsel repeatedly to patients who have a poor attitude towards necessary behavioral change in order for the patients to make healthy food choices and reduce processed foods that are high in sodium content (Earl & Hensdensburg, 2012).

The CPs in this study counseled patients to exercise for at least 30 minutes three or four times in a week in order to maintain their heart health. These physical activities may be brisk walking, jogging, cycling, swimming, or skipping and should be fitted into the individual's daily routine. Physical inactivity has been linked to 10% of all premature deaths and an estimated $117 billion in annual healthcare costs in the US (Giroir & Wright, 2018). Physical activity is one of the most effective strategies for preventing NCDs including hypertension. According to the Physical Activity Guidelines, sufficient physical activity is that involving at least 150min of moderate to intense aerobic physical activity and two days per week of muscle strengthening activity for adults US (Giroir & Wright, 2018). Keeping to this requirement can translate to improved quality of life and savings in healthcare costs. Involvement of health professionals in counseling on the benefits of physical activity is one of the strategies to get people to be more physically active US (Giroir & Wright, 2018). Therefore the involvement of CPs in PLM would likely contribute to getting adults to be more physically active to the intent that their BP would be lowered and general well-being improved.

Helpful conditions for the practice of PLM stated by CPs include the need for a designated area and that key stakeholders (CPs) should be trained on communication skills as well as about the disease (hypertension). The need for a software or a way of documenting PLM activities in the pharmacy in order to track progress was brought to the fore. Findings from a qualitative study in Australia revealed that patients confirmed positively that CPs have a role to play in hypertension management especially with BP measurement and encouraging medication adherence (Bajorek et al., 2017). They attributed the satisfaction derived from services provided by the CP as due to the good rapport and long standing relationship with their CP (Bajorek et al., 2017). This shows that in order to contribute positively to patient health outcomes with hypertension, CPs need to communicate effectively and have a good rapport with patients.

In this study CPs talked about the benefits of lifestyle modification including contributing to reduction in morbidity and mortality due to hypertension, improvement in clinical outcomes, helping to delay the onset of hypertension in those with a positive family history for hypertension, and that lifestyle modification is the backbone of hypertension prevention. Lifestyle modification is the first step in the management of hypertension (Akbarpour et al., 2018; Dean et al., 2014). In a study Crittenden, Seibenhener, and Hamilton (2017) highlighted that lifestyle modification has a positive effect on hypertension and healthcare professionals should be involved in PLM in order to reduce the burden of hypertension. Continued and effective involvement of CPs in PLM will serve to build greater trust in the CP as a health care professional and a member of the healthcare team and it can also serve as a strategy for customer retention.

CPs are involved in PLM using different strategies and their performance may be influenced by contextual factors.

Contextual factors. Contextual factors found to be involved in PLM by CPs in this study were categorized as enablers, barriers to effectiveness and how to overcome them, practice environment, and social infrastructure. Skills, follow-up, and documentation are enablers that can enhance the practice of PLM by CPs.

Enablers. Pharmacists need to have improved cognitive skills, communication skills, IT skills and use of smart gadgets, and interpersonal relationship skills. CPs must have a good understanding of the disease process and the concept of lifestyle modification in order to promote lifestyle modification among those having hypertension. Heydari and Khorashadizadeh (2014) posited that factors that facilitate lifestyle modification border on enhancing awareness, behavior change, and supportive environmental factors including policy. All the CPs in the study indicated the essence of knowledge and demonstrated good knowledge of the disease process and what PLM entails. Most of the participants however admitted that they required more training on PLM in order to be more effective. A study by Offu et al. (2015) to assess the level of knowledge of CPs in Southeast Nigeria found that many of the pharmacists had less than satisfactory knowledge and they recommended educational interventions to improve the knowledge base and practice of CPs for adequate public health service provision. In order to perform their roles well, pharmacists must be able to communicate adequately with their clients and patients. All the CPs in this study recognized communication as a necessary skill for PLM. Communication is a broad concept involving aspects as

listening, showing empathy, persuasive skills, and counseling skills. Communication must take note of the cultural sensitivities of clients so as not to be offensive. There is the need for continuous training on communication skills for pharmacists to be able to effectively promote lifestyle modification. Effective communication by CPs is a necessary skill for good customer service. Pharmacists also need to have problem-solving skills if they are to perform their roles effectively. In their review of pharmacy education, Toklu and Hussain (2013) pointed out that pharmacy education should provide students the ability to improve on critical thinking and problem-solving skills in the performance of their roles. According to Earl and Henstenburg (2012) additional skill sets that can help CPs in educating patients with hypertension include counseling, goal setting, and questioning skills. CPs should acquire and harness all these necessary skills in order to perform the role of PLM among hypertensive patients effectively.

Smart wearable devices that can interact with social media have been reported to enhance involvement in PA by patients (Giroir & Wright, 2018). They further highlighted that wearable devices and apps can help to monitor the number of steps taken, number of calories burned while exercising, and can facilitate self-monitoring of PA and goal setting (Giroir & Wright, 2018). The use of smartphones with advanced functionalities is gaining ground among older adults as support for self-management of chronic diseases (Kim & Lee, 2017). CPs in Eti-Osa need to be aware of this trend and be knowledgeable about how these smart gadgets work so they can teach patients how to use them when necessary to monitor their lifestyle modification activities and record BP, thus helping to contribute to improved patient outcomes.

Patient follow-up is an essential step in the management of hypertension. Participants used different methods to follow-patients up to monitor and ensure adherence to lifestyle modification counseling including face to face interactions, through telephone calls, by sending text messages, emails, personal visits, and sending reminders via the social media as WhatsApp. The most common follow-up activity was to give reminders about regular BP monitoring either in patients' homes or in the pharmacy. At other times, CPs followed up on lifestyle modification activities by patients. One of the participants reported that sometimes patients book follow-up appointments with the pharmacist. This is however not a common occurrence across various pharmacies in Eti-Osa local government area.

The same participant also highlighted that he follows up patients that show commitment to wanting to change their lifestyles. According to Earl and Henstenburg (2012) the professional should identify the stage of change of the patient in order to be able to promote health behavior changes. This brings to the fore the need for CPs to understand theories of health behavior and their constructs in order to tailor their health interventions to specific needs of the patient. One of such relevant behavior theories is the tans theoretical stages of change model. The theoretical stages of change model may help CPs to assess the motivational readiness of the patient to change his/her behavior. The constructs of theoretical stages of change model are precontemplation, contemplation, preparation, action, and maintenance (Glanz, Rimer, & Viswanath, 2015). Counseling given by the CPs may target those in the contemplation and preparation stages to motivate patients towards next stage of behavior change (Glanz et al., 2015).

Many of the CPs expressed the need to improve their patient follow-up practices in this regard. Follow-up of hypertensive patients by health professionals has been noted to be challenging (Dzau & Balatbat, 2019). Suggested solutions to overcome these challenges include regular monitoring of BP at home and the use of transformational strategies including digital innovations (Dzau & Balatbat, 2019).

Follow-up may also be a strategy for customer retention. Participant #2 mentioned that follow-up helps to build a personal relationship with the patient. She visits elderly patients in their homes on request to check their BP, and she also has a loyalty scheme for younger patients where they get reminders via email or sms about time for medication refills. Good rapport between the pharmacist and patient engenders trust in the ability of the CP to effectively monitor the condition of patients (Barjorek et al., 2017). This is a strategy that is mutually beneficial to both the CP and the patient. It is important for CPs to note that some individuals may need support for a long time and they need to persistently encourage such patients/clients to maintain healthy lifestyle behaviors until the behavior change becomes permanent and positive health outcomes are achieved (Piepoli & Villani, 2017). CPs need to see what works best in their environment and for individual patients and use such strategies to help improve patient health outcomes. In turn, this may translate to patients having more trust in their CP and may also likely lead to customer retention.

Documentation: All the participants reported that they document patient phone numbers and BP readings either electronically or written down on paper. Other patient details noted by the CPs include demographics, email addresses, weight, and BMI. At

least two participants use “know your numbers” cards to record patient BP in order to monitor trends over time. One participant mentioned using pharmacy services audit booklet for recording patient details and encounters. Most of the participants did not mention that they documented the patient encounter process for lifestyle modification counseling. Effective documentation is key to rendering quality pharmaceutical care (Maes, Studer, Berger, Hersberger, & Lampert, 2017). It is important for CPs to document every aspect of patient encounters for lifestyle modification counseling either at initial visits or during follow-up visits. Documentation helps to know baseline values of patient health parameters and for monitoring trends over time, and to determine adherence to counseling advice. One participant mentioned the advantage of using cloud-based software for documentation because of its permanence and ease of retrieval from any part of the world as long as you are connected to the internet. When documentation is not done there can be no basis for comparison in order to see if there is improvement in BP and other health parameters. Every aspect of the patient care process should be documented by CPs. Documentation of interventions enhances counseling skills of pharmacists and it is an evidence of practice (Maes et al., 2017).

Barriers. Most of the participants reported encountering resistance from patients when they attempt to counsel on lifestyle modification for various reasons ranging from patient factors as time pressures due to work load or hectic daily schedules, financial constraints; patient attitude as mindset, ignorance, nonadherence to counsel, secretive behavior, to belief systems. Other barriers pertain to organizational factors or factors pertaining to the pharmacist (approach of the pharmacist or time constraints due to work

load). Some other researchers identified patient attitude and the fear of stigmatization as possible barriers to PLM by pharmacists (Gelayee, Mekonnen, & Atnafe, 2017; Murphy et al., 2016). Practice-related factors serving as barriers were highlighted as staffing, poor workflow, lack of time, and remuneration; while knowledge, skills, and competencies are pharmacist-specific factors implicated as challenges being faced by CPs in performing their role of PLM (Gelayee et al., 2017). Barriers identified by Chimeddamba et al. (2015) from their study were lack of time by the healthcare practitioner, long patient waiting times, increased work load, patient preferences and beliefs.

A systematic review by Alonso-Perales et al. (2017) highlighted lack of time as the major barrier to cardiovascular health promotion in community pharmacies, with others being patient-related factors, pharmacist-related factors, financial factors**,** practice-site factors, and legal factors. One solution proffered by one of the CPs interviewed was to use an appointment system for patients to book a time with the CP for counseling. This would mean having at least one pharmacist dedicated to lifestyle counseling in each pharmacy and this would probably ensure that the pharmacist devotes enough time to counsel each patient and such a patient would not be in a hurry to leave as s/he requested for the time.

A study conducted in Eastern Nigeria identified barriers pertaining to implementing pharmaceutical care by pharmacists as lack of space, lack of adequate time, lack of enough personnel in the pharmacy to handle routine tasks (Okonta, Okonta & Ofoegbu, 2012). All these factors were also identified in this phenomenological study as barriers to performing PLM effectively by CPs in Eti-Osa LG. Okonta et al. (2012) also

raised nonpayment for services rendered by CPs as a barrier. The need to pay for services rendered by CPs has been raised by various researchers (Marfo & Owusu-Daaku, 2017; Okonta et al. (2012). Marfo & Owusu-Daaku (2017) recommended that CPs be offered some remuneration for additional pharmaceutical care services rendered by them in their pharmacies to hypertensive patients including lifestyle modification counseling. This tallies with the view of Participant #10 that monetary incentives should be given to CPs in order to motivate them to perform PLM. Another participant in this study also suggested that when patients book appointments with the CP for wellness counseling, they should pay for the service (Participant #6). CPs should continue to render the service of PLM effectively to the populace and eventually remuneration may follow once the public accepts and values the services being rendered by CPs.

In relation to factors pertaining to the pharmacist, Chang et al. (2019) highlighted negative attitude of healthcare practitioners as a theme in their qualitative study defining challenges in hypertension care. One of the nurse participants in the study mentioned that the way healthcare practitioners handle patients can affect if the patient would go back to the hospital or not (Chang et al., 2019). A good rapport between a patient and the CP would also contribute to whether a patient goes back for follow-up appointments or not (Bajorek et al., 2017). CPs should therefore ensure that they are approachable and friendly, and also to communicate effectively with patients so that trust can be built in the relationship so that the patient would see the need to continue with the professional/patient relationship and be encouraged to adhere to counsel given.

CPs should find ways to overcome these and other barriers in order to improve effectiveness of their roles in PLM. Some strategies suggested by CPs in this study to overcome the barriers include improved practice relationship between doctors and CPs, better patient follow-up, more training, improved knowledge of integrative pharmacy, and the need to have dedicated staff for specific roles as PLM. In order to overcome the barrier of lack of time Alonso-Perales et al. (2017) proffered that roles should be assigned to different categories of staff within the pharmacy, and with the pharmacist being more involved in patient-centered roles than administrative duties. One of the study participants actually suggested the need to have CPs dedicated to lifestyle modification counseling alone who should be freed from other roles within the pharmacy. Pharmacists should also be adequately trained and continue to be retrained on issues and concepts pertaining to PLM (Adje & Oparah, 2013; Agomo, Arit Udoh, Kpokiri, & Osuku-Opio, 2018; Gelayee et al., 2017). CPs should also leverage on technology that can prompt them during the dispensing process to incorporate counseling patients on cardiovascular health and lifestyle modification (Alonso-Perales et al., 2017).

Social infrastructure and practice environment. From the perspectives of participants in this study, the ambience of the pharmacy and availability of space for counseling are helpful conditions for the effective practice of PLM by the CP as these factors may encourage the patient to want to listen to the pharmacist. This is in agreement with findings from a study by Bajorek et al. (2017) that the relaxed atmosphere of the community pharmacy contributed to the positive experiences that patients had during an intervention study on the management of hypertension in a community pharmacy setting.

Le and Braumack-Maye (2019) recommended an enclosed or screened area for consultation in the community pharmacy in order to ensure privacy for the patient. From the perspectives of patients, it was mentioned that a good relationship and rapport with the CP contributed to the positive experiences that patients had during the intervention (Bajorek et al., 2017). CPs should ensure that the ambience of their pharmacies is beautiful and conducive for private counseling, and that they develop a good rapport with their patients in order for their performance of PLM to be conducted effectively and appreciated by patients.

One of the highlighted environmental factors involved in the practice of PLM by CPs in Eti-Osa LG is the lack of interprofessional cooperation between pharmacists and physicians. This pertains to an unfavorable practice environment. One of the study participants said that some doctors discredit what the pharmacist has said to the patient and think that the pharmacist is only interested in selling products to the patient. In another study poor perception of other health professionals about the competencies of pharmacists was identified as a barrier to the utilization of public health services available in community pharmacies (Saramunee et al., 2014). They advocated for better networking among health professionals in an area in order to enhance service utilization and delivery (Saramunee et al., 2014). Interprofessional collaboration in the health sector would be in the best interest of the patient as it would engender better health outcomes. I suggest that the leaders of the association of CPs and the Nigerian Medical Association in Eti-Osa should work together and encourage better collaboration and cooperation among

members of the two associations so that patients and the public can get the benefit in terms of optimal healthcare.

Lack of two major infrastructures in Lagos from the perspectives of the participants kept recurring during the interviews and so social infrastructure was included as a theme pertaining to the influence of environmental factors in the performance of PLM by CPs. Lack of constant power supply and absence of a network of good, motorable roads are environmental factors that can affect the performance of CPs. A lack of constant power supply may make a CP unsuitable for patient interactions due to the discomfort of heat where there is no alternative power source. The cost of providing alternative power sources in a pharmacy would increase the cost overheads in the pharmacy and this may be passed on to patients as increased medication cost or it may lead to a reduction in profitability of the pharmacy and this may be a disincentive to the pharmacist. The lack of a network of good roads contributes to stress being felt by patients in Lagos owing to endless traffic jams. This situation may be peculiar to Lagos more than any other city in Nigeria and it is sometimes a reason for patients failing to turn up for follow-up appointments or for being in a hurry to leave the pharmacy without allowing enough time to listen to lifestyle modification counseling by the pharmacist. According to Chi, Bulage, Urdal, & Sundby (2015), lack off social infrastructures hamper the utilization of health services. One implication of this is that CPs and all other stakeholders in health should step up advocacy to governments in Nigeria at the state and federal levels to provide adequate infrastructures for the citizens so as to contribute to improvement in quality of life of the people. Healthcare professionals should take the

lead in promoting healthy lifestyle changes that can improve longevity and quality of life (Giroir & Wright, 2018).

Strategies. Walk-in customer involvement or one-on-one counseling is one strategy commonly employed by all CPs in this study as they promote lifestyle modification in adults with hypertension. This involves provision of relevant health information and education to the patient in order to encourage behavioral change. The CP during counseling focuses on improving patient well-being through provision of pharmaceutical care, screening for high BP, creating awareness about hypertension, and explaining the implications of the patient's actions and inactions. It is important for CP to contribute to health and wellness of individuals and communities, and they are able to do this through lifestyle counseling (Naro et al., 2017). During counseling the CPs also give out health tips which are sometimes printed out on small handy cards, flyers, handbills, or on other printed materials, and on company websites. One of the participants reported that in her pharmacy, "know your numbers" are used to record the BP of patients, and on the reverse side, health tips are written as a reminder for the patients. She further stated that there is nothing as helpful as putting out information for the patient in black and white (Participant #11).

Two of the most important counseling points for patients with hypertension are on increasing physical activity and consuming healthy diet using the DASH. Patients are counseled and encouraged to be involved in moderate to vigorous-intensity aerobic exercises for at least 30minutes, for at least three to four days in a week, totaling at least 150 minutes per week (Hidalgo et al., 2016). Physical activity is one of the most effective

strategies for preventing NCDs. Keeping to the physical activity guideline may help to reduce the risk of premature deaths by 33% (Giroir & Wright, 2018). Strategies to help people to be more physically active include involvement of health professionals in counseling on the benefits of physical activity (Giroir & Wright, 2018). The messages should be tailored to suit the patient's lifestyle; health needs, and socioeconomic limitations. Other strategies for increasing physical activity include the use of wearable devices, workplace initiatives, and sports. Wearable devices may be used to count steps, number of calories burnt during exercise and heart rate. Some of them also facilitate feedback, goal setting, and self- monitoring (Giroir & Wright, 2018). DASH diet entails eating a diet rich in fruits and vegetables, reduced intake of saturated fats and processed foods, cutting down on sugar intake, and eating foods more in their natural, unprocessed states, and a reduction in dietary salt intake. CPs should recommend DASH diet to patients and clients as a means of reducing dietary sodium intake in order to prevent or treat hypertension (Earl & Henstenburg, 2012; Iyalomhe & Iyalomhe, 2015).

CPs are accessible to patients and are in a position as healthcare professionals to provide adequate lifestyle counseling to both hypertensive and nonhypertensive adults in the community. In an intervention study, lifestyle modification counseling by CPs was found to be effective in decreasing participants' weight, dietary sodium intake, alcohol intake, and it also promoted physical activity, leading to better BP control in the patients (Okada et al., 2017). Fontil, Gupta, and Bibbins-Domingo (2015) further asserted that lifestyle counseling interventions for diet and physical activity require contact between the patient and healthcare provider that should last for at least 30minutes and with at least

five meetings in a 9-month period. This lengthy contact is often not feasible in a physician's office especially in a developing country like Nigeria due to patient load and time constraints. This makes the CP a more suitable alternative for lifestyle counseling, since s/he can devote more time to patient counseling (Fontil et al., 2015). In order to be effective, lifestyle modification counseling should empower the patient for self-care (including goal setting) and giving feedback on performance (Fontil et al., 2015). CPs in Lagos should therefore prepare and position themselves to render effective lifestyle counseling to patients with a view to contributing their quota towards reducing health disparity due to hypertension in Nigeria.

CPs also need to be aware of counseling techniques and approaches that would enhance their practice of PLM. The five As of behavior counseling is a new model of behavior counseling useful for PLM in cases requiring dietary change, weight loss, smoking cessation, or decrease in alcohol consumption (Sherson, Jimenez, & Katalanos, 2014). The five steps involve asking, assessing, advising, assisting, and arranging for follow-up visits, referral, or any other necessary support. During the conduct of this study, I found that the CPs were not familiar with this model of counseling and it provided an opportunity for me to educate them about the approach to counseling using the five steps so that they can perform lifestyle modification counseling more effectively to get positive results. The CPs were all interested in knowing more about this counseling model, and I expect that they would read up more about it so that they can develop self-efficacy as they counsel patients. This gap also highlights the need for CPs to keep

abreast of current trends in PLM in order to be more effective and to contribute more to positive patient outcomes in the management of hypertension.

Interprofessional collaboration is another strategy that can enhance lifestyle modification interventions in hypertension. According to Ajayi et al. (2017) multisectoral interventions involving lifestyle counseling are indicated in the management and control of hypertension. Collaborations between CPs and physicians have been shown to lead to successful outcomes in optimizing the management of hypertension (Earl & Henstenburg, 2012). From a review of team-based care intervention on BP control involving CPs, nurses and physicians in a primary care setting in Switzerland, the researchers concluded that team-based care provides an opportunity for patient-centered in the management of hypertension (Carter, Bosworth, & Green, 2012). Collaboration among different members of the healthcare team helps to give care that is personalized, timely, empowers patients, and also frees up time for physicians to manage more complex and urgent issues as they arise (Carter et al., 2012). A study by Isetts et al. (2016) revealed that interprofessional collaboration between pharmacists and physicians resulted in better patient outcomes and BP control in the management of hypertension and also led to reduced healthcare costs. It is important for CPs and other members of the healthcare team in Lagos to collaborate in the management of hypertension for the best interest of the patient. Another strategy used by at least two of the CPs is integrative pharmacy practice. One participant described this practice as “preaching wellness beyond prescription” and the use of appropriate supplements to promote cellular function in the individual (Participant #11). Integrative pharmacy practice is holistic and is focused on

the whole individual using a broad view of health and disease prevention, it involves using conventional as well as complementary and alternative medicine (Kligler et al., 2015).

Some commonly used health promotion strategies include motivational interviewing (MI), self-care management, lifestyle coaching, and concordance (Marfo & Owusu-Daaku, 2017; Okada et al., 2017). During my interactions with the CPs, I also found that many of them were not knowledgeable or had scanty knowledge about these commonly used health promotion strategies. In a number of cases, the CPs were already using the strategies but they were not familiar with the terms. I also enlightened them about these strategies. MI is a technique of lifestyle coaching that enables participants to establish and attain health-promoting goals so as to change their lifestyles positively (Linden et al., 2010). The intent is to enhance self-management of chronic conditions, reduce health risks, and increase health-related quality of life. It is a patient-centered strategy aimed at encouraging behavior change by helping the patients to look inwards and resolve issues or feelings that make them to resist change (Earl & Hendensburg, 2012). MI entails using different approaches including being empathic, actively listening to the patient, taking the cultural sensitivity of the patient into consideration, health risk assessment, targeted communication, assessment of self-efficacy to manage hypertension, and an assessment of the patient's readiness to change (Earl & Hendensburg, 2012; Linden et al., 2010). This technique has been used in different interventions and found to be useful. A study by Okada et al. (2017) confirmed that an intervention involving MI by CPs resulted in lower BP.

Self-care management of chronic diseases as hypertension results in improved health outcomes (Mackey, Doody, Werner, & Fullen, 2016). Self-management has been defined as ‘‘the ability of an individual, in conjunction with family, community, and healthcare professionals, to manage symptoms, treatment, and lifestyle changes” (Mackey et al., 2016). Self-monitoring of BP at home by patients is a major aspect of self-care in the management of hypertension (Earl & Hendensburg, 2012). Health literacy has also been found to be positively correlated with self-care management of chronic diseases (Mackey et al., 2016). In other words people with low health literacy are likely to demonstrate poor self-efficacy at in self-care management of hypertension. CPs need to be able to identify the literacy levels of patients and offer counseling suitable for the literacy level of each patient. In order to manage their chronic health conditions, individuals must be able to choose healthier behaviors out of their own volition after obtaining necessary information and education from healthcare practitioners (Mackey et al., 2016). Volition may be influenced by an individual’s literacy level. CPs have a role to play in encouraging health-promoting self-care behaviors including the appropriate use of health monitoring gadgets. Technological devices and applications can help patients in complying with self-care activities. For instance Noble et al. (2016) from their study concluded that a digital health feedback system can be used by patients and CP collaboratively to determine if patients adhere to lifestyle modification recommendations.

Concordance involves a lateral interaction between the health care provider and the patient during which they both set health goals together aimed at definite outcomes that can be measured with the agreement of the patient. This has been proven to be a

useful and effective strategy in PLM. The CP should also assess the patient's stage of change during such encounters in order to set appropriate goals. In an intervention, Marfo and Owusu-Daaku (2017) employed concordance as a strategy for health education by considering the views and suggestions of the patients before taking decisions on lifestyle changes to be made by the patient. Many pharmacists in this current study claimed that they use a combination of these strategies while PLM in adults with hypertension in Eti-Osa local government area of Lagos State.

Pharmacists should combine behavioral and motivational strategies to provide culturally-sensitive health education to individuals with poor health literacy (Earl, & Henstenburg, 2012). The emphasis of DASH diet is on reduction in dietary salt intake as a strategy for preventing and controlling hypertension (Earl, & Henstenburg, 2012). The recommended daily salt intake is less than 1.5g for patients with hypertension, chronic kidney disease, or diabetes and less than 2.3g in other healthy individuals. Pharmacists should be knowledgeable about and recommend DASH diet to patients with hypertension.

Research Question 3

In order to answer the question about how practical knowledge and PLM practice protocol is revealed from the experiences of the CPs, three theme categories will be discussed overarching seven subthemes. The main themes are self-efficacy, enhancing effectiveness and reach for PLM, and community pharmacy protocol for PLM. The participants expressed confidence in their ability to teach or train other colleagues about

PLM. They demonstrated this by discussing specific steps they take in discussing PLM with their colleagues and patients.

Self-efficacy. Self-efficacy is an indication of practical knowledge from the views of the participants. Self-efficacy can be explained as confidence in one's ability to perform a health-promoting behavior. In a phenomenological study in Mongolia, healthcare professionals said they believed in their own capacity and professional competencies to perform their roles (Chimeddamba et al., 2015). In this study, all the CPs interviewed affirmed that they are confident in their ability to teach their colleagues about PLM. Collaboration with other professionals and colleagues also enhances performance. Chimeddamba et al. (2015) also confirmed that teamwork was a significant factor contributing to increased effectiveness of the healthcare professionals in the performance of their roles.

The CPs highlighted that they build self-efficacy in different ways including keeping abreast of current practice of PLM, maximizing knowledge, training interns and other colleagues, and attending relevant conferences and training. The CPs interviewed demonstrated their self-efficacy by highlighting the steps they take while promoting lifestyle modification and the specific counsels they would advise their colleagues to give to an adult patient with hypertension. Participant #11 highlighted the following steps she used in counseling her colleagues:

> First of all ensure the patient rests for 5 to 10 minutes before BP check; Train the colleague how to measure BP appropriately, ensure that he's not tightening the cuff too much; If the BP is elevated, ask the patient about his diet - salt intake,

> hydration level, exercise regime, sleep and relaxation; Introduce the colleague to the pharmacy service audit forms to ensure that he understands the need for documentation and follow-up; For invasive tests like blood sugar tests, we use consent forms to get patient consent; Encourage patients to see the caregiver if BP is high. Most of them are walk- in customers; Teach how to use referral note; For repeat walk-in customers: Check BP appropriately; Document in patient card and pharmacy audit form and encourage patient to go with the card; Encourage follow-up periodically; Recommend supplements that would be helpful for holistic well-being; I also encourage new recruits to value patient confidentiality and measure BP where there is less distraction. (Participant #11)

The practice of healthy behaviors by healthcare professionals may influence self-efficacy for patient counseling of PLM. A study by Hidalgo et al. (2016) in Brazil showed that up to 40% of health professionals (physicians, nurses and community health workers) demonstrated less than adequate level of self-efficacy in counseling patients about physical activity. They counseled patients incorrectly to engage in at least 90 minutes of moderate-vigorous intensity physical activity per week rather than 150 minutes per week recommended by WHO. One reason adduced for the lack of self-efficacy is due to their failure to practice healthy lifestyle choices as increased physical activity themselves and eating at least five portions of fruits and vegetables daily. In another study, Parker, Steyn, Levitt, & Lombard (2011) while evaluating the knowledge and practices of healthcare practitioners about lifestyle modification counseling, found that the healthcare professionals counseled patients from a knowledge of theoretical concepts but could not

often share from practical experience. They recommended continuous knowledge update on PLM to boost self-efficacy in the professionals. In order to enhance their self-efficacy at counseling patients on PLM, CPs should live by example by practicing what they preach.

Enhancing effectiveness and reach for promotion of lifestyle modification.

Media for conducting PLM. Community pharmacists use various media to pass across health education and information to patients including flyers, book markers, health talks, seminars on World Health Days, radio and TV jingles, free community screening every quarter, and periodic awareness creation about hypertension. Other avenues for PLM from the perspectives of CPs studied include starting a fitness group in the community, creating a support group, church outreaches, social groups e.g. women and men's groups in churches, Lions Club, town meetings, Inner Wheel Club - giving health talks at these meetings, community outreaches, and partnerships with other organizations or healthcare team professionals.

Social media. The social media is a very useful tool for extending coverage for lifestyle modification counseling and follow-up. Social media channels have been used for successful health promotion interventions (Gabarron et al., 2018). Social media provide avenues for efficient, user-friendly, and ubiquitous dissemination of health-promoting information and behavior change communication. All the CPs in the study claimed they use at least one social media platform to disseminate health information to patients while promoting lifestyle modification. The most common platform used by CPs in this study is WhatsApp. The use of social media channels is a cost-effective means of

health promotion and it helps to free up time for healthcare practitioners to be able to attend to more patients. As at the end of 2016, it was estimated that there were 2.34 billion users of social media (Gabarron et al., 2018). This implies that the reach of PLM can be extended through the social media because of its wide coverage.

Commonly used platforms are Facebook, WhatsApp, Twitter, and Instagram. The cultural contexts of patients and community members should be borne in mind by health professionals when developing health promotion content for the SM. The views of health and cultural identities of the target audience should be put into consideration while developing content on the social media that is expected to be acceptable to the patient and to bring about behavior change (Hefler, Kerrigan, Henryks, Freeman, & Thomas, 2019). According to Gabarron et al. (2018), user-friendly social media platforms encourage participation, engagement, and action in health promotion activities including lifestyle modification. The use of social media to promote lifestyle modification can therefore contribute to improving people's quality of life and CPs in Eti-Osa should use the social media more to reach a wider audience with counsel and information on PLM among hypertensive adults.

Innovation and value-adding service. For CPs to enhance their performance, they need to be innovative and provide value-adding services to the patients. An innovation in the practice of PLM revealed from the research findings is the use of "know your numbers cards" for recording patient BP and monitoring trends in BP. Other innovations highlighted by study participants include the use of pharmacy services audit booklet, loyalty scheme for rewarding their regular customers, and the compilation of a health

digest highlighting common ailments and what to do to prevent them. Noble et al. (2016) highlighted the use of an innovative digital feedback system to tailor medication adjustments and lifestyle change recommendations to fit individual needs. CPs used this innovative digital system to provide individualized recommendations to patients with hypertension for lifestyle modification based on device-recorded lifestyle patterns of patients and this led to achievement of positive health outcomes in the patients (Noble et al., 2016). CPs in this study described the value-added services they render to patients with hypertension variously as loyalty scheme, giving counsel without selling any products where applicable, addressing patient concerns about hypertension, home visits for the elderly, having a personal relationship with patients, contributing to reduced healthcare cost and better health for the community, encouraging regular health checks, and lending advice and professional support to the patient to encourage lifestyle modification.

Value-added services in the community pharmacy are additional activities undertaken by a pharmacist apart from the usual pharmaceutical care activities and drug provision (Amado, Amaral, & Bruna, 2018). They added further that value-added services must be planned, standardized, and be provided for a fee in order to be classed as a value-added service in the pharmacy (Amado et al., 2018). One of the participants in this study suggested that patients should be made to pay for consultations with the CP on wellness counseling. According to Amado et al. (2018) value-added services should be focused on prevention, and or screening for diseases of public health importance as hypertension and must involve individual consultation for each patient. Wellness and

lifestyle modification counseling by CPs falls within this definition and so CPs may begin to advocate for remuneration for carrying out this value-added service. In the study conducted by Amado et al., many of the patients were willing to pay a minimal fee for BP monitoring in the CP. All these services are done with a view to contribute to optimal patient outcomes with respect to BP control and improved quality of life. In order to build a successful community pharmacy practice, CPs must build and maintain lasting relationships with patients through the provision of quality value-added services.

Leveraging on technology. Technology is a very useful tool that CPs can leverage on in order to enhance their performance and practice of PLM. Many of the study participants acknowledged this. A number of the participants acknowledged that the use of IT software aid documentation and information retrieval. All the participants mentioned that they use phones to contact patients for follow-up and to give reminders. Participant #3 mentioned that he uses cloud-based software to keep abreast of documentation and inventory in all his branches from any place and at any time. Patient details can also be stored in the software. The use of mobile devices for monitoring health parameters as BP and blood glucose (e.g. bluetooth-enabled BP and blood glucose monitors) permit sharing of parameters self-managed by patients with healthcare providers in real time (Burke et al., 2015). Healthcare providers may also send feedback to the patients using mHealth devices in order to guide patients where necessary mHealth and eHealth are two approaches to health by professionals leveraging on technology. According to Burke et al. (2018) eHealth involves the use of digital communications and information technologies to improve health and healthcare usually

via the internet. mHealth on the other hand, involves the use of mobile communication or computing technologies as mobile phones and wearable devices to provide health information and services. Mobile devices allow researchers to assess different health behaviors in various contexts in order to promote behavior change and develop appropriate interventions (Burke et al., 2015). Schroeder et al. (2019) used an interactive voice response and text messaging system in an intervention to control BP. to send reminders for appointments to patients in New Mexico. They also used automated short message service (SMS) to reschedule missed appointments and send weekly motivational messages to encourage self-care (Schroeder et al., 2019). Mobile devices aid self-management of chronic diseases and health promotion, and they facilitate exchange of health information between patients and healthcare providers. Therefore the use of telephones and mobile applications by CPs in Eti-Osa local government area to send reminders and health tips to patients is an evidence-based approach to healthcare and should be encouraged as it can help to improve health outcomes through collaborative management between the patient and healthcare provider.

Technological systems can aid CPs in the discharge of health promotion roles such as lifestyle modification and encouraging medication adherence. Noble et al. (2016) used an innovative digital feedback system to monitor adherence to lifestyle modification goals and adherence to antihypertensive therapy. The digital system incorporated a sensor into an inert ingestible tablet that will give a feedback about whether the root cause of persistent hypertension is due to medication non-adherence and an external patch to give a feedback about exercise pattern (Noble et al., 2016). This digital health feedback

system can help CPs to tailor lifestyle modification recommendations according to individual needs based on BP goals. The system provides an objective means of assessing lifestyle modification adherence to medication therapy (Noble et al., 2016). The feedback thus received can then be used to guide lifestyle modification counseling to be given by the CP. Dzau and Balatbat (2019) highlighted the need for digital health interventions that promote healthy behaviors as healthy nutrition and increased physical activity. They recommended the use of digital home BP monitors with remote data transmission to healthcare providers (Dzau & Balatbat, 2019).

Participant #11 suggested that an IT software may be designed for the practice protocol to make it a standardized application that can be used across all pharmacies. Technology makes health information retrieval easier with the click of a button, makes documentation more effective and easy to use, provides gadgets as step counters that aid lifestyle modification and help to track behavior changes in patients. Smart wristwatches that can measure ambulatory BP are now available but research should be ongoing to make them more accurate and reliable (Dzau & Balatbat, 2019). All health professionals including CPs must be familiar with the use and operations of relevant technology that can aid their performance in PLM and other health-promoting roles so that patients get optimal care and benefits from the care. In order to enhance their effectiveness to promote lifestyle modification, two of the CPs recommended the development and use of standardized guidelines for PLM. Participant #9 recommended that guidelines on PLM with respect to hypertension will help knowledge and professionalism.

Community pharmacy protocol for promotion of lifestyle modification. The development and deployment of a practice protocol for PLM in hypertensive adults would serve to standardize the practice for CPs by providing a step by step guideline to follow in the performance of this important role. Marfo and Owusu-Daaku (2017) affirmed that guidelines and policies help to streamline services provided for hypertensive patients by CPs in developing countries like Ghana and Nigeria. The development of a uniform standard practice protocol for PLM in hypertension was mentioned by participants as a strategy for promoting lifestyle modification. One participant opined that there should be monitoring and evaluation of the protocol usage to ensure that it is being used across board. Participant #9 recommended that there should be a workflow/process for lifestyle modification segmented according to need. For instance, segment protocol according to whether a smoker versus nonsmoker; hypertensive/non hypertensive; smoker + diabetes, and have different workflows for each category of patients (Participant #9). The protocol developed by me in this study was categorized according to four risk factors for hypertension – sedentariness, overweight/obese, smoking, or alcohol consumption (Figure . The social change desired by developing this protocol is that the practice of PLM by CPs in Eti-Osa will be more effective, comprehensive and impactful leading to definite positive outcomes in the patient to bring about controlled BP and improved wellness and quality of life.

Interpretation of Findings within the Context of Behavioral Theories

Health interventions that are backed by behavioral theories are more beneficial than those that are atheoretical in ensuring and maintaining behavior change (Joseph et

al., 2016; Linden, Butterworth, & Prochaska, 2010). According to Linden et al. (2010) the traditional method of health professionals just giving out health advice and information to patients has been found not to be sufficient for ensuring behavior change. Theory-backed interventions focus on concepts as motivation, cues to action, perceptions of benefit, severity of disease, barriers, environmental influences, self-efficacy, expectations, and interpersonal influences. According to Green (2014) theories may be used to explain research findings. I would be analyzing the research findings within the contexts of the two theories (SCT and health promotion model) that framed the study.

Findings Within the Context of Social Cognitive Theory

Researchers have used the SCT to explain the reciprocal interaction between intrapersonal, behavioral, and environmental factors involved in health promotion (Liebl, Barnason, & Hudson, 2016). SCT is a theory of interpersonal health behavior with three major constructs, personal cognitive factors (knowledge, self-efficacy, and collective efficacy); environmental factors (observational learning, normative beliefs, social support, barriers, and opportunities); and supporting behavioral factors (skills, intention, reinforcement, and punishment). (Glanz & Bishop, 2010; Glanz et al., 2015). The environment (social and physical) can shape the behaviors of individuals, but the individual through interactions with the environment can alter his/her environment in order to regulate her/his behavior (Bandura, 1998; Liebl et al., 2016). Therefore, using SCT researchers can understand how and why individuals can adopt a healthy behavior and how they influence their social and physical environment to change (Liebl et al., 2016). SCT is useful for researches targeting behavioral change in the treatment of

chronic diseases and can guide interventions aimed at promoting long-term behavior change (Joseph et al., 2016). Bandura (1998) affirmed that SCT can be used to address social and personal determinants of health behavior.

From my search of literature, there is a paucity of published studies investigating the behaviors of pharmacists in relation to SCT. This view was confirmed by Joseph, Ainsworth, Mathis, Hooker, & Keller (2017). Using SCT, Bandura (1998) explained that knowledge is a precondition for changing negative health habits. Three of the generated theme clusters pertain to knowledge from the study (Table 7). These are perception of practice, role of CPs in PLM, and cognitive ability (knowledge of hypertension and PLM). The knowledge of CPs gained during training and by experience of the practice of PLM has an influence on their perceptions of the practice of PLM, how they play their roles, and the application of their cognitive ability.

Table 7

Relationship Among Constructs of Social Cognitive Theory and Theme Categories

SCT Construct	Specific construct	Theme Category
Personal cognitive factors	Knowledge	Perception of practice (RQ 1)
		Role of CPs in PLM (RQ 1)
	Self-efficacy; Collective efficacy	Cognitive ability (knowledge of hypertension and PLM) (RQ 2)
		Self-efficacy (RQ 3)
Environmental factors	Normative beliefs; Opportunities	Relevance of Pharmacy school curriculum (RQ 1)
		Enhancing effectiveness and reach of PLM (leveraging on technology, innovation and value-adding services, social media) – RQ 3
	Observational; learning, barriers; social support	Contextual factors (practice environment) – RQ 2 Practice of PLM (RQ 2)
Supporting behavioral factors	Skills; Intention; Reinforcement	Role of CPs in PLM (RQ 1)
		Practice of PLM (RQ 2) Strategies (RQ 2) Community pharmacy protocol for PLM (RQ 3)

Note. PLM =promotion of lifestyle modification, RQ = research question

Other factors contributing to how CPs perceive and perform their role of PLM are self-efficacy and collective efficacy (Bandura, 1998). According to Joseph et al. (2017) intentions and self-efficacy are two factors commonly used to predict professional behaviors of healthcare practitioners. There is an association between intention and professional behaviors and practice of PLM by CPs (Godin, Belanger-Gravel, Eccles, & Grimshaw, 2008; Joseph et al., 2017). Habit may also be taken as a predictor of behavior (Joseph et al., 2017). Self-efficacy regulates motivation to carry out a healthy behavior and affects whether people will make good or poor use of their skills (Bandura, 1998). Since all the CPs interviewed believed in their own ability to perform PLM and train others to do it, they are likely to actually promote lifestyle modification in adult hypertensive patients that visit their pharmacies. Previous experiences and observational learning from superiors and colleagues would also contribute to the self-efficacy of the pharmacists. This is in agreement with view of Joseph et al. (2017) that for intention to translate to behavior, there must be self-efficacy and past behavior or habit.

Normative beliefs passed down to CPs about the profession and expected roles during their training in pharmacy school also contributed to the perspectives and practice of PLM by the pharmacists (Table 7). The availability and use of technological aids and gadgets, social media, ability to design innovations, and provide value-adding services also provided opportunities for the CPs to enhance their effectiveness. Social support from colleagues and other members of the healthcare team are environmental factors that could affect the practice of PLM by the CPs. When behaviors are reinforced by colleagues and superiors, it may lead to improvement in skills (Bandura, 1998; Gadaire,

Marshall, & Brissett, 2017). The intention to perform the necessary role of PLM by CPs and their basic skills acquired on the job or learnt in school contributed to how they practiced PLM and the strategies used. The need to standardize the practice of PLM by CPs was supported by recommendation by two of the study participants for a practice protocol for PLM by CPs in hypertensive patients. SCT has been found to be very useful in explaining some of the perspectives of PLM shared by CPs in this study.

Findings Within the Context of the Health Promotion Model

The health promotion model is a theory of interpersonal behavior that can be used to explain the professional behaviors of health professionals including CPs (Pender, Murdaugh, & Parsons, 2011). Using health promotion model, Pender (2011) explained that there is a relationship between individual characteristics, behavior-specific knowledge, experiences, and behavioral outcomes. The assumptions of this model include that people will be consistent in adopting healthy behavior if they perceive they will derive benefit from such behavior change, and that behavior is also influenced by perceived barriers, cognitive ability, perceived efficacy, and emotions (Pender et al., 2011). The specific constructs of health promotion model are perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences (Pender, 2011).

The health promotion model can help can help health professionals to understand the factors that promote healthy lifestyle behaviors and to understand and address specific issues involved in promotion and adoption of healthy lifestyles (Fidancı, Akbayrak, & Arslan, 2017; Heydari & Khorashadizadeh, 2014). I therefore found it suitable to use the

constructs of health promotion model to design the interview protocol and for interpreting the findings. The relevant constructs related to the perceptions of CPs about PLM are perceived benefits of action, perceived barriers to action, and self-efficacy (Research Question 1)

All the six constructs are relevant for explaining how CPs perform PLM (Research Question 2). Interpersonal and situational influences pertain to the category, contextual factors. All these factors interrelate to cause the CP to adopt particular attitudes towards PLM. Emotions come into play in the conduct of professional duties by healthcare professionals. One of the research participants mentioned that when there is good rapport between the CP and a patient, the patient is more likely to open up to the pharmacist, and also to adopt the healthy behavior being promoted (Bajorek et al., 2017). Related to Research Question 3 are the constructs perceived benefits, barriers, and interpersonal influences. Benefits in the case of health professionals are directed at the patients/clients such that interventions of the professionals result in positive patient outcomes. (Joseph et al., 2017). The expected change in the case of PLM with hypertensive patients include self-care management, BP control, adoption of healthy behaviors as increased physical activity and adoption of DASH diet (Fontil et al., 2015).

Study Limitations

The views of participants sampled in the study were taken as the general views of CPs practicing in Eti-Osa local government area of Lagos State, since they were selected as key knowledgeables about the phenomenon of PLM, and because data collection continued until no new themes emerged from participants. The findings from this study

may only be applicable to CPs in the study setting until the study is replicated in other local government areas in Lagos and other states of Nigeria before they can be taken as the general perspectives of all CPs in Nigeria. The views of the participants about how they practice PLM were taken as the actual practice in their various pharmacies but they were not observed during any activity while conducting PLM. Intercoder variability was not assessed in this study as I was the only researcher, but I ensured that all the steps taken during coding were specifically and comprehensively captured. The concept of data or thematic saturation in qualitative studies may be regarded as subjective and non-transparent as it is being determined by the researcher without any standardized quantification method (Lowe et al, 2018). Although bracketing was used to reduce researcher bias to a barest minimum, it may still have come in during the interpretation of findings. This limitation was however overcome by member-checking to ensure that the views of participants were adequately captured.

Recommendations

Recommendations for Practice

CPs should ensure that they update their knowledge about current trends in hypertension, PLM, and integrative pharmacy in order to stay on the cutting edge of practice so that they can contribute optimally to well-being and quality of life of hypertensive patients by giving adequate counseling and using the right strategies. CPs have a duty to educate and motivate patients to adopt healthy lifestyles in order to prevent and control hypertension. They should be involved in assessing the diet and lifestyles of

patients with a view to recommending necessary and patient-specific lifestyle and dietary modifications (Earl & Henstenburg, 2012).

They also need to be familiar with and use behavior change counseling techniques and health promotion strategies as motivational interviewing, lifestyle coaching, concordance, and self-care management.

Community pharmacists should ensure that their premises always have a CP available during their hours of operation and that every patient with hypertension is counseled on the need for lifestyle modification. I recommend that there should be at least one pharmacist in every CP dedicated to providing the service of PLM and other value-adding service to promote the health of adult hypertensive patients in Lagos. This is in line with the view of two of the study participants. This will contribute to earning greater trust from the community members and regard for CPs as knowledgeable, caring, and reliable members of the healthcare team who are contributing to individual and community health.

In order for the practice protocol to become a standard document across community pharmacy practices in Lagos and Nigeria, I recommend that other researchers should replicate this study in all the local government areas of Lagos State, and across randomly selected states in Nigeria. This will help to improve the practice of PLM by CPs and help to standardize the practice as highlighted from this practice and previous studies (Adeniyi et al., 2015; Marfo & Owusu-Daaku, 2017).

I recommend that leaders of Association of Community Pharmacists of Nigeria at the zonal, state, and national levels should step up advocacy to policy makers and

healthcare administrators so that PLM is made mandatory for CP in the conduct of their roles towards patients with hypertension as part of their contract with patients.

Recommendations for Future Research

Quantitative research to assess the knowledge of PLM of CPs in all the states of Nigeria should be conducted by other researchers in order to generalize findings to the whole country. Soyemi and Hunpunu-Wusu (2015) had earlier conducted a quantitative study to assess the knowledge, attitudes, and participation of CPs in Lagos State, Nigeria towards primary health care. They highlighted the positive impact being made by CPs on the health of the community through the provision of cost-effective health promotion services including patient medication counseling,, smoking cessation, and weight management interventions (Soyemi & Hunpunu-Wusu, 2015). This also points to the need for such studies to be replicated in other parts of Nigeria. Further research should not be limited to community pharmacy practice alone but should be extended to pharmacists practicing in the hospital setting as well. The researches should include both quantitative and qualitative research designs.

I also recommend educational interventions to enhance the knowledge of CPs about PLM, so they can develop self-efficacy and improve their performances so that patients with hypertension can have better health outcomes when they are adequately counseled by CPs on lifestyle modification. Faduyile, Oparah, and Oreagba (2012) in their research highlighted the need to evaluate the knowledge of CPs after training them on counseling techniques and the quality of counseling in maternal and child healthcare services. This research further points to the need for adequate training to enhance

performance of CPs in the discharge of their counseling roles. Intervention studies to train CPs on how to educate patients about the dietary approach to control hypertension should be conducted. Such studies may focus on training about DASH diet, factors influencing healthy food choices, recognizing hidden salt in foods, interpreting food labels, and when to refer patients to a dietitian (Earl & Henstenburg, 2012). CPs have a duty to educate and motivate patients to adopt healthy lifestyles in order to prevent and control hypertension. They should be involved in assessing the diet and lifestyles of patients with a view to recommending necessary and patient-specific lifestyle and dietary modifications (Earl & Henstenburg, 2012).

Further qualitative studies backed by theoretical frameworks to explore barriers to the performance of the roles of CPs in PLM across Nigeria should be conducted. Malan, Mash, and Everett-Murphy (2015) in their findings from a phenomenological study also raised the need for more research on how primary care providers perform behavior change counseling and how barriers can be overcome. Laliberte et al. (2012) in a study highlighted the need for further research to better understand barriers and facilitators to involvement of pharmacists in healthy lifestyle promotion. Such researches would also focus on how to overcome the barriers so that CPs can contribute more effectively to improving quality of life of patients.

Recommendations for Policy Makers and Administrators of Pharmacy Schools

Curriculum planners including the pharmacy school administrators and the Pharmacists' Council of Nigeria should involve CPs in curriculum planning and incorporate modules on PLM into the training curriculum of pharmacy students as well as

practice experience in patient care settings as community pharmacies and hospitals. This will ensure that pharmacists-in-training get requisite experience on promoting lifestyle changes in hypertensive patients and develop self-efficacy. In addition, the Pharmacists Council of Nigeria, and the National Universities Commission should ensure the speedy compliance with the directive that all schools of pharmacy in Nigeria should commence the doctor of pharmacy program and take PharmD as the minimum entry training qualification for pharmacists wishing to practice in Nigeria

The government should improve on social infrastructure especially good road networks in Lagos and provision of constant power supply in order to mitigate these two key barriers identified by CPs as hindering the effective performance of their role of PLM. This is to help ensure that the health of Nigerian people who have hypertension is safeguarded through effective performance of necessary roles including PLM by CPs. The government should help to promote the CP as a primary care facility where patients can go to for health-promoting services as PLM as this would contribute to reducing morbidity, mortality, and healthcare costs due to hypertension. Leaders should show more commitment and seriousness to health promotion in Nigeria. There is the need for a better structure for health promotion involving all Nigerians but steered by the government.

Implications

For research to be meaningful and beneficial to the intended audience and stakeholders, it must have social change implications. These implications may have an impact on individuals, families, communities, professional practice, organizations, and or

on policies governing the concept. A major social change implication of this study is that the practice protocol developed from the analysis of data collected from CPs would provide a standard guideline that all CPs in Eti-Osa local government area can work with that will enable them to perform the role of PLM better. This guideline may be further adopted by all CPs in Lagos and Nigeria after similar studies are conducted in these settings. When CPs are fully involved in PLM in patients with hypertension and other adults who do not have hypertension, this would likely lead to a reduction in the incidence and prevalence of hypertension in Lagos. This may also contribute to reducing the economic burdens on individuals, families, and communities; and to reduced healthcare costs in Lagos state and Nigeria. Ultimately these benefits would contribute to reducing health disparity in Nigeria.

This study also had an educational aspect to it as I explained the five As of behavior counseling and some key health promotion strategies (motivational interviewing, lifestyle coaching, self-care management, and concordance) that the CPs were not familiar with to them. This enlightenment I believe would spur the participants to seek more knowledge about the strategies in particular and PLM in general. More knowledge would most likely stimulate their self-efficacy and they could become more confident to use the strategies to promote the health of patients with hypertension and other chronic diseases. This may also contribute to reducing health disparity due to hypertension in Lagos State and Nigeria in general over time.

The management of hypertension and other chronic diseases requires collaborative action by all stakeholders including individuals, policy makers, healthcare

administrators, educational sector, health sector, pharmacists and other healthcare professionals. It is also expected that the findings of this research study would impact all the stakeholders because the research findings would be shared in an academic journal and at a seminar with CPs in conjunction with Association of Community Pharmacists of Nigeria, Eti-Osa Zone. I expect that better involvement of CPs in PLM would lead to better health outcomes in patients with hypertension and the community as a whole through preventive care by lifestyle modification (Tan, Hassali, Neoh, & Saleem, 2017).

Another implication arising from this study is that I expect that it would spur other researchers to replicate the research in other settings (other local government areas in Lagos State and Nigeria; and among hospital pharmacists), so that practice-specific protocols may be designed. It is expected that CPs would rise to the challenge of conducting practice research in order to boost the profession and contribute more to the health of the populace through the provision of this value-adding and health-promoting service. This study may also lead to some other researchers conducting a study to validate the findings quantitatively.

The use of theoretical frameworks in this study has added to the credibility of the findings. I am advocating that all practice-based research in pharmacy and public health in Nigeria should be backed by appropriate theoretical and or conceptual frameworks, so that the constructs would be used to guide the study and the interpretation of findings. This will provide more credibility for the evidence-base to be added to pharmacy and public health research practice in Nigeria since many of the studies thus far are usually not backed by theoretical frameworks (Joseph et al., 2016; Murphy et al., 2016). This is

in line with the recommendation of Green (2014) that researchers should use and discuss about theoretical and conceptual frameworks more openly in their writings and publications to demystify the use of these frameworks.

Conclusion

PLM has been portrayed as the mainstay of preventive care in hypertension management and CPs must be actively and fully involved in it. Findings from the interpretive phenomenology study conducted revealed that there is the need for constant knowledge update by CPs in order to improve effectiveness and self-efficacy while performing this important public health role (PLM). These findings agree with those of Faduyile et al. (2012), Lamb et al. (2018), Malan et al. (2015), and Marfo and Owusu-Daaku (2017) that there is urgent need to intensify lifestyle modification education and counseling to both hypertensive patients and the public, particularly in Nigeria.

New knowledge was generated to fill the observed gaps in literature about how CPs contribute to PLM in patients having hypertension. From the perspectives of CPs studied, PLM was revealed as a holistic concept involving not just physical aspects of mitigating hypertension, but also including spiritual, environmental, social, emotional, and intellectual factors that need to be addressed. From the views of CPs studied, the practice of PLM involves cognitive ability, self-efficacy, appropriate use of relevant strategies, leveraging on technology to improve performance and a consideration of various contextual factors such as skills, barriers to effectiveness, patient follow- up, documentation, social infrastructure, and the practice environment. The analysis of findings from this study revealed 10 categories of themes as being involved in the

concept of PLM. The categories are perception of practice, relevance of pharmacy school curriculum, role of CPs in PLM, cognitive ability, practice of PLM by CPs, contextual factors, strategies, self - efficacy, enhancing effectiveness and reach for PLM, and community pharmacy protocol for PLM. In a qualitative study exploring the perspectives of midwives about health promotion in Ghana, using thematic analysis the researchers came up with some similar themes namely health promotion as education, client participation, the value of health promotion, health promotion activities, and midwives' barriers to promoting health (Owusu-Addo, 2015).

The need to have a standard practice protocol has been filled by this research leading to the design of a practice protocol for PLM among adults with hypertension by CPs. Using the data collected from knowledgeable CPs, I was able to put together a holistic picture of the concept of PLM using a thematic diagram. Qualitative research allows a researcher to construct a holistic picture of a complex phenomenon from the perspective of participants who have experienced the phenomenon (Castleberry & Nolen, 2018). This holistic picture was also represented by a practice protocol for PLM (Figure 1) and I expect that this will help the audience including key stakeholders to understand the concept of PLM by CPs better, and CPs in Eti-Osa local government area also have a protocol to guide them in their practice of PLM.

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Appendix: Interview Protocol

Interviewee Details:

Participant's Code Name/Number_____

Interview Date and Time_____

Location _____

Age _____

Gender _____

Number of years in community pharmacy practice _____

Number of years of practice in Eti-Osa LGA _____

Position (Tick appropriately): Owner Pharmacist_____
Superintendent Pharmacist_____
Pharmacist_____
Locum pharmacist_____

Qualifications: _____

Year of qualification as a pharmacist _____

PCN Reg. No. _____

Any Additional Relevant Training _____

Preliminary Actions

1. Explain the purpose and process of the research study

This research will be conducted by me in partial fulfillment of my doctoral study in public health from Walden University, USA. The purpose is to gain an understanding of the role of community pharmacists (CPs) in health promotion by exploring the perspectives of CPs on the phenomenon of lifestyle modification among adults living

with hypertension in Eti-Osa Local Government of Lagos State. This study would use a qualitative research approach using face to face interviews as the data collection method. The participant would be required to sign an informed consent form indicating his/her willingness to participate voluntarily in the research. An interview protocol would be used to guide the interview and demographic data would be collected from each participant. I would be the primary instrument of the research, serving as an observer-participant through interaction with the participants during the interviews. Each interview may last between 60 and 90 minutes and open-ended questions would be used to guide the interview. The interviews will be audio-recorded with the permission of each participant by me as the interviewer and later transcribed verbatim within a few hours of completing the interview.

2. Explain the rights of participants

Following full disclosure of the purpose and process of this qualitative research study to you, your participation in this study should be entirely voluntary based on understanding, and you would be at liberty to withhold your participation at any point during the interview if you find it uncomfortable for you. Your right to confidentiality of information provided and anonymity would be respected. Approval for this study has been obtained from the institutional review Board of Walden University. Walden University's approval number for this study is **03-14-19-0532338** and it expires on **March 13, 2020.** There would be minimal or no risk to you by participating in this study other than possible inconvenience to you based on the demand on your time.

3. Obtain written informed consent from the participant.

After going over the details in the consent form with you, the participant, a confirmation of your agreement to participate voluntarily in the study is made by appending your signature at the bottom of the form.

Ice Breaker Question

Pharmacy is an interesting and rewarding profession: What is your view of this statement?

Interview Questions

1. What is your understanding of hypertension, its complications, prevention and treatment?
2. What is your understanding of health promotion?

2b. What is the place of community pharmacists in health promotion?

3. What does promotion of lifestyle modification (PLM) mean to you as a community pharmacist?

3b. What is your perspective about the involvement of community pharmacists in healthy lifestyle promotion? How is this practiced in your pharmacy?

4. What are the possible barriers to effective performance of your role in PLM?

4b. How can you be more effective?

5. What skills do you think are required to perform this role effectively?
6. What is your understanding about strategies used in health promotion including lifestyle coaching, motivational interviewing, self-care management, and concordance?

6b. In the light of the above strategies, do you consider the training received in the pharmacy school adequate for performing PLM?

7. What do you think needs to be done to make the curriculum in pharmacy schools in Nigeria to be more relevant for this task?
8. How confident are you about teaching a colleague on promotion of healthy lifestyle choices? How would you go about doing this?
9. What part (if any) do environmental factors play in the performance of your role in PLM? What factors are implicated?
10. What strategies do you use or suggest to be used by CPs in PLM in adults having hypertension?

10b. What are the 5 A's of behavior counseling?

11. What kind of documentation do you make while performing your role of PLM?
12. What is the place of technology in PLM?
13. What specific steps do you think should be involved in PLM among adults with hypertension by community pharmacists?

Closing Statement

I wish to thank you for taking out some time to participate in this study. Be assured that the information provided by you would be used only for research purposes and would be held in strict confidence. There would be no personal identifiers in the write-up of the research or on the field notes. I would send the transcript back to you to check for consistency with your views. The data collected from you would be analyzed together with those that would be collected from other participants in order to come up with comprehensive and credible findings. Once again thank you for your time.