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Full Length Research Paper

Social Cognitive Theory and Perspectives of Community Pharmacists about Promotion of Lifestyle Modification in Hypertensive Adults

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Abstract

Hypertension is a global public health problem. Promotion of lifestyle modification (PLM) by health professionals is a key aspect in the management of hypertension. The perspectives of community pharmacists about PLM among adults with hypertension have not been explored in Nigeria though they play an essential role in healthcare in the community. A phenomenological study was conducted to document the perspectives of community pharmacists about PLM using in-depth interviews and social cognitive theory as the guiding framework. The knowledge, experiences, and barriers to the practice of PLM by 12 community pharmacists were explored. From a thematic analysis of transcribed data, 3 categories (perception of roles, perception of practice, pharmacy school curriculum), and an overarching theme evolved to capture the perspectives of community pharmacists about PLM in hypertension. The overarching theme was that the roles and practice of PLM by community pharmacists among hypertensive patients is influenced by cognitive factors, pharmacy school training, agency (self-efficacy and patient factors), and social structure (stakeholders and environmental factors). These findings may aid the design of appropriate interventions that can help community pharmacists to contribute more meaningfully to the management of hypertension through PLM in adults.

Key Words: Promotion of lifestyle modification, community pharmacists, health promotion, hypertension, social cognitive theory.

INTRODUCTION

Hypertension has attained epidemic proportions globally and constitutes a major public health problem. This chronic disease is often preventable and may also be controlled through the adoption and maintenance of healthy lifestyles (Joseph et al., 2016; Linden et al., 2010). Modifiable risk factors for hypertension include physical inactivity, poor nutrition, cigarette smoking, and excessive alcohol consumption (Centers for Disease Control and Prevention, 2017). Health professionals contribute to reducing the incidence and prevalence of noncommunicable diseases (NCDs) by conducting interventions that encourage healthy lifestyles and well-being in populations, individuals, and communities (Bauer et al., 2014; Jepson et al., 2010; Joseph et al., 2016; Laliberté et al., 2012; World Health Organization [WHO], 2015). Pharmacists are trusted health professionals who have a role in promoting lifestyle modifications in order to address the prevalence of hypertension (Adeniyi et al., 2015; Agomo et al., 2018; Brown et al., 2012; Dennis et al., 2012; Laliberté et al., 2012; Um et al., 2013).

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Hypertension is one of the most common causes of morbidity and mortality in Nigeria with increasing prevalence (Falase et al., 2015). The prevalence rose from 22% in 1990 to 28% in 2009, and is projected to rise above 30% by 2030, (Adeloye et al., 2015; Ajayi et al., 2017; Akinlua et al., 2015). The prevalence in an urban slum in Lagos was found to be as high as 38.2% (Daniel et al., 2013). Some studies have reported that mortality rate due to hypertension is as high as 24% in Nigeria (Maiyaki and Garbati, 2014; Ogah et al., 2013). This increasing prevalence has been linked to low level of awareness, treatment, and control of hypertension in Nigeria, and lifestyle issues especially in urban areas (Akinlua et al., 2015; Daniel et al., 2013; Maiyaki and Garbati, 2014). Thus, interventions are needed to increase adherence to life-style changes and life-long medication use in primary healthcare settings (Akinlua et al., 2015). Community pharmacies may act as relevant settings for such interventions.

Lifestyle modification involves a process of adjusting to the demands of an ongoing chronic illness (Ambrosio et al., 2015). Intensive lifestyle modification programs may also contribute to reducing cardiovascular risk including lowering blood pressure (BP) and may also help to reduce the need for antihypertensive medications in obese and overweight persons (Lin et al., 2014; Ohno et al., 2016). Health professionals must therefore be involved in the promotion of healthy lifestyles. The promotion of lifestyle modification (PLM) in patients by health professionals including community pharmacists (CPs) promotes public health and reduces health disparities. CPs are skilled, knowledgeable, and accessible members of the healthcare team who contribute to health promotion through the provision of various services as weight management, nutrition counseling, and blood pressure measurement (Agomo et al., 2018; Um et al., 2013). 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 and Oli, 2013; Agomo et al., 2018; Gelayee et al., 2017). Thus, CPs have a role to play in promoting lifestyle modifications in adults to prevent hypertension and reduce the prevalence of this chronic disease (Bauer et al., 2014; Jepson et al., 2010; Laliberté et al., 2012; WHO, 2015).

Different strategies and interventions are used by healthcare professionals in PLM among adults suffering from hypertension (Adeniyi et al., 2015; Agomo et al., 2018; Akinlua et al., 2015; 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). However, it is not clear how effectively CPs, who are the most accessible healthcare professionals in the community in Nigeria, perform this role among adults with hypertension. 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 and Hunponu-Wusu, 2015). We thus considered it needful to conduct a theory-backed qualitative study to explore perspectives of CPs on PLM in Nigeria (Adeniyi et al., 2015; Akinlua et al., 2015; Dosea et al., 2015; Glanz and Bishop, 2010; Seutloali et al., 2018). The aim of this qualitative study was to understand the perceptions of CPs 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. We sought to provide answers to two research questions using the constructs of social cognitive theory to guide the study:

How do CPs perceive their role of PLM? And secondly, what is their perception of the practice of PLM in hypertensive adults?

METHODS

We conducted an interpretive phenomenological study in Eti-Osa Local Government Area (ELGA) of Lagos State, Nigeria. Phenomenology entails using rich, thick descriptions to explain the phenomenon being studied in order to answer the research questions. Eti-Osa is one of the urban local governments in Lagos, the commercial capital of Nigeria. The study population was CPs who own or superintend over community pharmacies in ELGA of Lagos state, Nigeria. These participants were CPs with varying experiences in health promotion through counseling on lifestyle modification for adult patients living with hypertension who visit their community pharmacies. Primary data were collected from two sources: in-depth interviews and field notes by the primary investigator.

Participants were purposively selected from among registered members of the Association of Community Pharmacists of Nigeria in ELGA. They must have had 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. Available and willing male and female participants were included in the research. Pharmacy owners or CPs who were only involved in administration and management, or had fewer than 5 years' experience in community pharmacy practice, or did not practice in ELGA were excluded from the study. The selected participants served as key knowledgeables for the study. A research protocol was developed to guide the conduct of the interviews and to contribute to the reliability of the research. Approval for

the study was obtained from the Institutional Review Board at Walden University (Approval number – 03-14-19-0532338).

A pilot study was conducted with 2 participants (1 male and 1 female) who met the inclusion criteria. This was to assess the appropriateness of the research protocol to answer the research questions and the readiness of the primary author to conduct in-depth interviews. The purpose and scope of the research was explained in writing and verbally to eligible participants who signified their intention and availability to participate in the research. Written informed consent was obtained from the participants thereafter. The interviews were audio-recorded using two recorders (Kaltura media uploader (Walden University, 2018) and a software application, Voice Recorder used as a back-up) by the principal researcher with the permission of each participant, and later transcribed verbatim within a few hours of completing the interview. This helped to contribute to accuracy of reporting the data. Field notes were taken to record impressions and nonverbal cues. The participants were assured of the confidentiality of information provided by them and anonymity of their personal details. At the end of the pilot study, there was no need to modify the interview questions and protocol as they were found appropriate after data analysis to answer the research questions. The data collected from the two participants in the pilot study were however not included in the main study according to the IRB guidelines.

Procedure

The same procedure as followed in the pilot test was also used in the main study. A semi-structured interview protocol was designed based on the constructs of SCT and with the research problem and research questions in consideration. The semi-structured protocol included 12 open-ended questions (Table 1). The interviews were conducted between 23rd March and 12th May, 2020 with the duration ranging from 65 - 130 minutes. Three of the interviews were held in the researcher's office at the request of the participants who were superintendent pharmacists only and not owners, while the others were held in the office of each respective participant. 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 the same procedure as in the pilot study. In this study, data saturation was reached by the eleventh participant as data from the twelfth participant yielded no new themes. Each interview was transcribed verbatim using Transcribe, a dictation application. Validity and reliability were built in through all the aspects of the research using reflexivity, triangulation, and member-checking. The transcripts of collected data were sent to the respective participant by email for validation of accuracy of their views captured (member-checking). Each participant confirmed the accuracy of the transcript.

Data Analysis

The transcribed data were analyzed thematically for emerging codes, themes, and categories using Excel spreadsheets. Different Excel spreadsheets were used for each stage of thematic analysis. 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). Inductive and deductive strategies were used for data analysis in order to add rigor to the study. Word clouds were generated for each of the transcripts to highlight frequently occurring words that may be used as codes or themes. Codes and themes generated were categorized and interpreted recursively to reflect the perspectives of the participants about the phenomenon (Castleberry and Nolen, 2018). Trustworthiness was built into the study by prolonged engagement with the data, triangulation, member checks, reflexive journaling, and use of rich, thick descriptions (Liebl et al., 2016). Intracoder-reliability was used to validate thematic analysis of data in this study (Castleberry and Nolen, 2018).

RESULTS

The demographics of the 12 participants are shown in Table 2. Codes, themes, and categories generated from the thematic data analysis capturing the perspectives of CPs about PLM are presented in Table 3. The connection between the constructs of SCT and the generated theme categories from the analysis are shown in Table 4. The three categories that evolved from the seven themes generated are highlighted as follows.

Perception of Role in PLM

All the participants were in agreement that CPs play beneficial roles in PLM being the usual first-port of call on health issues in the community in Nigeria. Some other perspectives of their roles included health education and encouraging healthy lifestyle in the community. To perform this role well according to participants, CPs must have a good knowledge of HTN and PLM. One common view about hypertension (especially in the prehypertensive stage) was that it can be prevented by lifestyle modification such as avoiding sedentariness and eating balanced diets rich in fruits and vegetables. CPs contribute to improving the health of the community by offering free BP checks.

Table 1. Relating Interview Questions with Research Questions.

RQ 1: *How do community pharmacists perceive their role of PLM?*
Interview Questions:
1.What is your understanding of hypertension, its complications, prevention and treatment?
2.What is your perspective about the involvement of community pharmacists in healthy lifestyle promotion? How is this practiced in your pharmacy?
3.What are the possible barriers to effective performance of your role in PLM?
4. What is your understanding about strategies used in health promotion including lifestyle coaching, motivational interviewing, self-care management, and concordance?
5.How confident are you about teaching a colleague on promotion of healthy lifestyle choices? How would you go about doing this?
6.What part (if any) do environmental factors play in the performance of your role in PLM? What factors are implicated?
7.What kind of documentation do you make while performing your role of PLM?
RQ 2: What is the perception of community pharmacists about the practice of PLM in hypertensive adults?
Interview Questions:
1.What is your understanding of health promotion?
2.What does promotion of lifestyle modification (PLM) mean to you as a community pharmacist?
3.How can you be more effective?
4.What skills do you think are required to perform this role effectively?
5.What do you think needs to be done to make the curriculum in pharmacy schools in Nigeria to be more relevant for this task?

Note.PLM =Promotion of lifestyle modification.

From the views of participants, PLM involves creating awareness about the impact of unhealthy lifestyle choices, and that CPs must be available to support the patient through the gradual process of change. One interesting view 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).

Some participants highlighted that CPs must have up-to-date knowledge of hypertension and PLM in order to be effective and have the trust of their patients. Some required skills for effective performance mentioned were good communication skills including empathy, persuasive, and listening skills, information technology (IT) skills, improved cognitive skills, interpersonal relationship skills, and ability 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).

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. The perspectives of CPs about the practice of PLM entailed having an understanding of health promotion, activities involved in PLM, as well as the role of other stakeholders in PLM. Such activities and actions include one-on-one counseling, health talks, patient education, BP screening, outreaches in collaboration with professional bodies, churches and nongovernment organizations, use of printed leaflets, flyers, information through media adverts, jingles, and social media. 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 (Participant #11).

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. Views captured include 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, needed skills, and more relevant pharmacy school training. 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). Another participant mentioned that lifestyle modification is a gradual process and can be used to prevent hypertension, and

Table 2. 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

Table 3. 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	Perception of role in PLM	When we counsel on positive behavioral lifestyle changes, we tend to slow progression towards hypertension and other chronic diseases (Participant #10).
	Knowledge of hypertension		
	Knowledge of PLM		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.

Table 4. 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)
		Cognitive ability (knowledge of hypertension and PLM) (RQ 2)
	Self-efficacy	Self-efficacy (RQ 1, RQ 2)
Environmental factors	Normative beliefs; Opportunities	Relevance of Pharmacy school curriculum (RQ 2)
	Observational learning; barriers; social support	Contextual factors (practice environment) – RQ 1 Practice of PLM (RQ 1)
Supporting behavioral factors	Skills; Intention;	Role of CPs in PLM (RQ 2)
	Reinforcement	Practice of PLM (RQ 1)

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

other chronic diseases. 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)

A summary of the specific counsel given to patients with hypertension by CPs 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. Participants mentioned improved clinical outcomes, reduced healthcare costs and morbidity due to hypertension as perceived benefits of lifestyle modification

The role of other stakeholders was highlighted. For instance, Participant #10 suggested that organizations and regulatory bodies should provide incentives to CPs for PLM as this would promote professionalism. Other stakeholders mentioned by participants include the government, other healthcare team members, 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.

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. The curriculum should be upgraded through interaction with professionals on the field. CPs 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 Doctor of pharmacy (PharmD) program. 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)

DISCUSSION

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 will contribute 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. The interpretation of findings in this research are a blend of the participants' and the researcher's views of the concept and placed within the context of existing evidence from literature and the theoretical framework (SCT) used (Pietkiewicz & Smith, 2014). An interpretation of the findings is presented in relation to the research questions.

Perception of practice of PLM

The participants considered health promotion and PLM as major roles 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 for optimum health. Another perspective was about empowerment to improve patients' quality of life through health education. This may involve campaigns about the dangers of uncontrolled blood pressure and other risk factors for HTN so people can make informed choices.-

These perspectives are in line with previous research on health promotion. Naidoo and Wills (2016) suggested earlier 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 (Naidoo and Wills, 2016; Fertman and Allensworth, 2017).

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). Our study confirms 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. From the research, the primary researcher found that not all the participants were familiar with the term DASH diet. This provided an opportunity for an educational intervention.

Other stakeholders must also be involved in PLM and health promotion including policy makers, agricultural, and education sectors. 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 (Arena et al., 2015). All these stakeholders have specific but interconnected roles in health promotion. It is therefore important for multiple categories of stakeholders to be involved in PLM, including CPs who must play a pivotal role.

Relevance of Pharmacy School Curriculum

The performance of the roles of CPs in PLM is influenced by an understanding of the concept and knowledge obtained during training in pharmacy schools. 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 many suggestions for making the curriculum more relevant to practice including continuous pharmacy education and internship for pharmacy students in community or hospital 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 et al., 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). Educational curriculum should be based on recommendations from current literature and professional guidelines incorporating motivational and behavioral strategies that are culturally appropriate for patients (Earl and Henstenburg, 2012).

Pharmacy education in Nigeria has evolved over the decades due to changing societal and patient needs (Ikhile and Chijioke-Nwauche, 2016). The need for a revision of the pharmacy school curriculum in Nigeria is imperative, even though participants who graduated between 5 and 15 years ago mentioned that the curriculum is evolving already. Participants also mentioned that the minimum entry qualification into pharmacy practice should be a PharmD. 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 patient-care responsibilities effectively. This implies that they must be lifelong learners. Health care professionals should pursue new knowledge continuously and maintain relevant competencies and skills throughout their careers (Driesen et al., 2007). The participants expressed that they acquired knowledge about PLM from practice and so highlighted the need for continuing education. This means that CPs need to hone their skills through constant update and acquisition of new knowledge and skills (including communication and counseling skills). This would enable them to contribute more meaningfully to PLM, improvement in patients' quality of life, and better health outcomes in the community.

Perception of Role in PLM

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.

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 and Oli, 2013; Adje and Oparah, 2013; Noble et al., 2016; Okada et al., 2016). PLM through counseling by CPs and educational interventions have been found to contribute to weight loss, increased physical activity, reduction in salt and alcohol intake, and an ultimate decrease in BP (Lamb et al., 2018; Okada et al., 2016). Thus, health education campaigns and health promotion activities by CPs have been effective and can contribute to improved health outcomes (Agomo et al., 2018). This highlights that CPs must be comfortable with counseling patients on PLM (Pogge, 2013).

Interpretation of Findings Within the Context of Social Cognitive Theory

Behavioral theories may be used to explain research findings (Green, 2014). 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 and Bishop, 2010; Glanz et al., 2015). Bandura (1998) affirmed that SCT can be used to address social and personal determinants of health behavior. 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 explain how and why individuals 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).

From our literature search, there is a paucity of published studies investigating the behaviors of pharmacists in relation to SCT. Some other researchers reported this earlier (Joseph et al., 2017). Using SCT, Bandura explained that knowledge is a precondition for changing negative health habits (Bandura, 1998). For our study, the links between the themes and the constructs of SCT are shown in Table 4. Understanding of health promotion, knowledge of both hypertension

and PLM are the three themes pertaining to knowledge from the study (Table 4). The knowledge 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.

Other factors contributing to how CPs perceive and perform their role of PLM are self-efficacy and collective efficacy (Bandura, 1998). Intentions and self-efficacy are two factors commonly used to predict professional behaviors of healthcare practitioners (Joseph et al., 2017). There is an association between intention and professional behaviors and practice of PLM by CPs (Godin et al., 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 explanation tallies with an earlier view that for intention to translate to behavior, there must be self-efficacy and past behavior or habit (Joseph et al., 2017).

CONCLUSION

The constructs of SCT (knowledge, self-efficacy, normative beliefs, barriers, and skills) have been used to explain the perspectives of CPs about PLM in adults living with hypertension. CPs perceived PLM as a major aspect of their practice in the management of hypertension. PLM entails activities targeted at desirable health goals including health education, information sharing, and encouragement of attitudinal changes in individuals, groups or communities in order to control blood pressure and promote health. The role of other stakeholders in PLM, the need for patient follow-up, and continuing education for pharmacists were also highlighted. An overarching theme that summarises these perspectives is that, the roles and practice of PLM by CPs in ELGA among hypertensive patients is influenced by cognitive factors, pharmacy school training, agency (self-efficacy and patient factors), and social structure (stakeholders and environmental factors).

Study Limitations

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. Intercoder variability was not assessed in this study but the principal investigator ensured that all the steps taken during coding were specifically and comprehensively captured.

Conflict of Interest: The authors declare that they have no conflict of interest and no grant was received for this study.

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