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A mixed methods study of the health promoting behaviours of
Nigeria nurses and implications for their health promotion
practice and patients.

By

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List of Abbreviations

HPB: Health promoting behaviours

BMI: Body mass index

AUDIT-C: Alcohol use disorders identification test consumption

UK: United Kingdom

USA: United States of America

DALYs: Disability-adjusted life years

NCDs: Non-communicable diseases

SEM: Socio-ecological model

IPAQ: International Physical Activity Questionnaire

IPAQ-SF: Short Form of International Physical Activity Questionnaire

UPTH: University of Port Harcourt Teaching Hospital

EBPQ: Eating Behaviour Pattern Questionnaire

MET: Metabolic Equivalent of Task

WHO: World Health Organisation

Declaration

I hereby declare that this research is my original work, and this PhD thesis has been written by me in its entirety. All sources used in this thesis document have been duly acknowledged. This thesis has also not been submitted previously for any degree at this or any other university.

Name: Chinenye Obinuchi Uchendu

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Date: July 2022

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Abstract

Problem/Background: Nurses represent the largest group of healthcare professionals in the healthcare system. Nurses also have huge role to play in contemporary health promotion to tackle the growing prevalence of obesity and chronic diseases. Nevertheless, little is known about the personal health promoting behaviours of Nigeria nurses and whether these nurses are role models for healthy lifestyles they promote to patients and the public. More so, nothing is known about how patients perceive nurses in terms of role modelling health promoting behaviours and its implications for their engagement with nurses health promotion practice.

Aim: The aim of this study is to assess Nigeria nurses' weight status and personal health promoting behaviours as well as the determining factors of their health promoting behaviours and the implications for their health and health promotion practice with patients.

Design/Methodology: This study adopted a mixed method research design consisting of a cross-sectional questionnaire study with nurses and one to one interview with nurses and patients respectively to further explore the topic in context to meet the aim of the study.

Setting and Participants: The study was conducted in a large urban tertiary hospital in Nigeria. Participants were nurses working in the medical department of the hospital and their patients. Questionnaires were delivered to all the nurses with attached expression of interest forms for nurses willing to participate in the interviews to fill and return. The nurses interviewed were sampled from those that indicated interest by filling and returning the forms. Patients were contacted and recruited by their medical team based on the study criteria. In total, there was 191 questionnaires responses and 34 interviews (18 interviews with nurses and 16 interviews with patients).

Results/findings: Nigeria nurses were found to have extremely high overweight and obesity prevalence. More nurses were obese compared to overweight but based on self-reporting, nurses under-reported their body mass index status to be more overweight than obese. Using the eating behaviour patterns questionnaire (EBPQ), unhealthy eating behaviours such as high fat eating, snacking on sweet, haphazard planning and cultural and lifestyle behaviours were also found among nurses. Almost all nurses had low physical activity levels on the international physical activity questionnaire (IPAQ-SF). Smoking and alcohol consumption behaviours were reported to be within healthy levels among the nurses. The socio-ecological model (SEM) was utilised and showed that the barriers to nurses' engagement in health promoting behaviours outweigh the facilitators and a lack of organisational and policy structures and initiatives to promote nurses practice of healthy lifestyles was highlighted.

Study findings show that nurses acknowledge they perceive the existence of role modelling expectations from patients and the public. Nurses also report not perceiving themselves as role models for health in behaviours they do not optimally practice and vice versa. Nurses' belief that they ought to be role models while engaging in unhealthy behaviours that jeopardise their healthy role modelling potentials highlight the existence of cognitive dissonance, a knowledge-practice gap which needs to be urgently bridged.

A novel finding from this research is that patients have perceptions that nurses should be role models for health promoting behaviours, but raise concerns that nurses are majorly not optimal role models due to nurses'

widespread large body sizes. Nurses' body sizes represented an outwardly visible basis for patients' assessment of nurses' compliance to healthy lifestyles. Patients' report that they are more likely to listen and engage with a nurse who seems to be practising what she preaches in terms of healthy lifestyles and vice versa.

Significance/conclusion: This research contributes to new knowledge and provides current information about Nigeria nurses' high overweight and obesity levels, unhealthy eating behaviours, physical inactivity and the determinants of these behaviours. Patients and nurses' perceptions about how nurses ought to be role models for health need not be undermined but given significant consideration because nurses are not currently living up to healthy eating and physical activity recommendations thus diminishing their role modelling potential and credibility for their health promotion practice with patients. This study highlights an urgent call to action and the need to support nurses towards adoption and maintenance of healthy lifestyles in order to make nurses potentially feel more willing and prepared to promote health to patients. Finally, this study recommends multidisciplinary partnerships and advocacy for improvements and changes in health policies at the national and hospital level in Nigeria towards prioritisation and promotion of the health of not just nurses but all healthcare staff in general.

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CHAPTER ONE

1.1 Introduction and Background

Health is a vital resource for daily life and an important aspect of a person's ability to function optimally. The promotion of health for individuals and the public has been ongoing for decades and will continue into the future. The first international health promotion conference by the World Health Organisation (WHO) in Ottawa (World Health Organization, 1986) produced a charter as a result of the highly important role health promotion plays in improving the health of individuals and communities globally.

Proceeding from the charter, WHO (1986) defines health promotion as an enabling process for people to have increased control over their health as well as improvement in health status to reach their best state of physical, social and mental health and wellbeing. Contextually, health promotion is a regular practice embedded in disease prevention, treatment, management plans, interventions and the revision and modification of existing actions to foster global health. The mandate and responsibility for effective incorporation of health promotion into healthcare for improvement of public health rests upon all health professionals (World Health Organisation, 2016b; Whitehead, 2005). Health professionals also utilise teachable moments in their contact with individuals and families to promote health whilst dealing with wide range of health needs requiring preventive, curative or palliative health interventions.

Across health sectors internationally, nurses make up the most numerous groups of direct health professionals and are also the frontline healthcare staff responsible for continual patient care round the clock (World Health Organization, 2016). Given that nurses engage in frequent and prolonged health-related contacts with individuals and their families, nurses have a responsibility to influence health-related behaviours by educating and supporting people to adhere to healthy lifestyle recommendations and public health guidelines (Blaber, 2005; Kurtzman *et al.*, 2010). Nurses also promote healthy lifestyles for patients through implementation of various interventions for physical activity, healthy eating, low-risk alcohol consumption and smoking cessation. These healthy lifestyle interventions are targeted at preventing the onset or complications of non-communicable diseases (NCD) such as hypertension and diabetes which require lifestyle and behaviour modifications (McBride, 2004).

Currently, nurses roles in promoting healthy lifestyles are becoming increasingly expanded and extended in focus as nurses' work contributes tremendously towards global efforts to tackle the increasing burden of chronic diseases and prevailing public health challenges (World Health Organisation, 2010a). As healthcare navigates towards population-based care, nurses as "a force for health" also contribute to the enhancement and provision of equitable, sensitive, accessible, high-quality and efficient health services that emphasise the continuity of care whilst recognising patients' changing needs and their human rights (Whitehead, 2005; Büscher, Sivertsen and White, 2009). Nevertheless, set in the context of the challenging nature of nurses' roles in promoting population health, the global nursing workforce has been challenged to take full responsibility for their personal health and serve as reference points and healthy exemplars for health promoting lifestyles to patients and the public. This challenge was raised by International Council of Nurses (ICN) as a result of concerns about nurses' practice of unhealthy behaviours and the huge current and future impact it has on nurses' personal health, nursing practice and potential for role modelling healthy lifestyles to others. This healthy lifestyle mandate for nurses was outlined in a statement by the International Council of Nurses (2010a):

“If each of the world’s 13 million nurses made a personal commitment to eat healthily, exercise appropriately, and avoid the use of tobacco, this would improve their health and well-being and reduce the likelihood of their developing chronic diseases. If each of these nurses acted as role models, educators and change agents among their families, friends, workplaces and local communities to promote healthier lifestyles, together we could help to halt the tide of chronic diseases.” (ICN 2010: p41)

Dossey (2005) also cites the exhortation by Florence Nightingale for nurses to:

“teach not by preaching, but by example, by being it ourselves.”

1.2 Nurses’ weight status, health promoting behaviours and implications for health promotion practice.

Nurses have been commissioned to maintain healthy lifestyles based on the premise that first, nurses have health literacy and awareness of healthy lifestyle recommendations and guidelines. Second, nurses have professional influence and potential to improve the health of the population. Indeed, evidence suggests that nurses’ maintenance of healthy lifestyles has potential to boost their health, motivation, self-confidence, credibility and likelihood of nurses role modelling healthy behaviours to their patients (Blake and Harrison, 2013; Dossey, 2005). Also, nurses’ personal health promoting behaviours might influence or likely increase the potential for patients’ engagement and adoption of healthier lifestyle choices as well as improve nurses impact on endorsing healthy lifestyle practices for others (Kelly, Wills and Sykes, 2017). On the other hand, nurses’ poor physical health and/or health promoting behaviours may negatively influence patients’ and public confidence in their health promotion advice and present them as hypocritical and less credible to promote public health (Kelly *et al.*, 2017; Rush, Kee and Rice, 2005; Fie, Norman and While, 2013).

High overweight and obesity rates among nurses remain a prevailing concern and one subject matter that is of high visibility in the nurse-patient contact due to body size being outwardly observable. Furthermore, overweight/obese nurses may be less likely to proactively role model healthy lifestyles, address obesity related concerns, inform patients about their overweight or obesity status and offer weight management/obesity counselling and health promotion to patients (Brown and Thompson, 2007; Chigbu *et al.*, 2021; Hicks *et al.*, 2008; Wells, Lever and Austin, 2006; Aranda and McGreevy, 2014). Underestimation of perceived body size, body weight and body mass index (BMI) may also be a concern for overweight/obese nurses and have impact on their weight management and health promotion practice (Chigbu *et al.*, 2021).

Therefore, there is need to study the underpinning issues which may result in nurses not being role models for healthy weight and the determining factors for their engagement in unhealthy lifestyles. This research begins by investigating nurses’ weight status to ascertain the scale of overweight and obesity in nurses as well as their health promoting behaviours with the aim of discovering modifiable factors that, with adequate interventions will enable nurses to meet the mandate to promote health not just by health education but also by role modelling health promoting behaviours. Researching on nurses’ health promoting behaviours will enable understanding of the scale and context of the problem and inform planning of interventions to improve nurses’ health and productivity.

In Nigeria, the code of professional conduct of the Nursing and Midwifery Council of Nigeria (NMCN) highlights that all nurses “must engage in behaviours and activities that uplift the social status and integrity of Nurses” (NMCN, 1979). Literally, this Nigerian nursing standard indicates that nurses being overweight/obese as well as those making unhealthy choices may be argued to jeopardise the social status and integrity of the nursing profession by setting unhealthy examples for others to emulate. According to Rush *et al.*, (2005), nurses themselves actually perceive certain expectations and assumptions holding them to high standards of healthy living and role modelling. Nevertheless, these expectations were reported to be inconsistent with the reality of nurses’ health profile as nurses have been found to demonstrate poor health profiles. Research evidence reports that in terms of weight status, healthy lifestyle practice, role modelling and attitudes towards being role models for health, significant proportion of nurses do not meet recommended standards and expectations (Blake and Harrison, 2013; Blake *et al.*, 2011; Blake *et al.*, 2012a; Blake *et al.*, 2015; Malik, Blake and Batt, 2011; Mo, Blake and Batt, 2011; Zapka *et al.*, 2009; Wong *et al.*, 2010; Miller, Alpert and Cross, 2008; King, Vidourek and Schwiebert, 2009; Lobelo and de Quevedo, 2014; Schneider *et al.*, 2019; Kyle, Neall and Atherton, 2016; Kyle *et al.*, 2017; Heidke, Madsen and Langham, 2020). These findings clearly indicate that nurses’ face significant challenges in the transfer of their healthy lifestyle knowledge into practice in their personal lives. Various personal and work-related barriers have been implicated in the literature as the causes of the above scale of non-adherence. These factors include but are not limited to busy shifts, long shifts, sleep deprivation, staff shortage, lack of scheduled breaks and not feeling valued by employer/organisation (Phiri *et al.*, 2014; Faugier *et al.*, 2001; Persson and Martensson, 2006b; Blake and Harrison, 2013; Malik, Blake and Batt, 2011; Carlson and Warne, 2007; Blaber, 2005; Nahm *et al.*, 2012; Zapka *et al.*, 2009; Nicholls *et al.*, 2017; Heidke, Madsen and Langham, 2020).

1.3 The Nigerian healthcare system and context

The Nigerian healthcare system predominantly consists of three tiers of healthcare: Primary, secondary and tertiary healthcare (Public Health Nigeria, 2022). Primary healthcare addresses essential healthcare throughout the lifespan and is the first point of contact for people to access healthcare. Secondary healthcare involves specialised treatment services and healthcare support usually delivered in hospitals, and clinics and community. Tertiary healthcare covers highly specialised health services and referrals from secondary health facilities. Despite being heralded as ‘the giant of Africa’, Nigeria’s healthcare system is grossly underfunded, underserved and challenged with inadequacies ranging from human resources to material resources especially in rural communities (Innocent, Uche and Uche, 2014). Currently, several reforms are needed to address the wide range of concerns across all levels of the health care system in Nigeria. Ongoing efforts by Nigerian government to bridge the gaps in healthcare particularly in the secondary and primary healthcare system have long lacked the government commitment to ensure sustainability. Primary healthcare in Nigeria is very understaffed, underfunded and non-existent in most rural communities (Nneka *et al.*, 2019). Therefore, access to primary healthcare by the Nigerian population pose challenges which result in overburdening of the secondary and tertiary health facilities in Nigeria. The increased influx of patients to secondary and tertiary health facilities for both essential and specialised healthcare needs mean that healthcare professionals in these sectors are inundated with increased workload on a regular basis. Additionally, compared to developed countries such as

the United Kingdom, the Nigeria healthcare system does not utilise temporary healthcare staff to fill healthcare staff shortages. All healthcare work is carried out by health professionals employed by the respective healthcare facility because there are no provisions for ad-hoc staff to support in the healthcare system. Indeed, the achievement of a functional healthcare system in Nigeria demands huge investments in the nursing workforce (World Health Organization, 2010). Nevertheless, in relation to nursing staff, there are also no nursing assistants/associates and healthcare assistants in the healthcare system. The impact of these inadequacies in the Nigeria healthcare system puts the population health at risk by the scarcity of functional healthcare especially in primary healthcare. Also, increased workload and its consequences remain a concern for healthcare professionals of which nurses constitute the highest proportion and have long established presence throughout the three tiers of healthcare.

1.4 Nigeria nurses' health promoting behaviours

Although published studies on nurses' health promoting behaviours and role modelling conducted developed countries in Europe, America and Asia add to the knowledge base on nurses' personal lifestyle practices, no previous study has been carried out to assess the weight status and health promoting behaviours of nurses in Nigeria. Nigeria is the most populous country in the African continent but economic resources are scarce and human resource for health is low according to world bank indexes (The World Bank, 2019; World Bank Group, 2020). Published studies on health promotion in Nigeria primarily focuses on nurses' knowledge and practice of health promotion mainly by health education for patients (Samson-Akpan *et al.*, 2013; Oluwatosin, 2012; Obaji *et al.*, 2013). However, no previous research study has also investigated the facilitators and barriers to Nigeria nurses' personal health promoting behaviours and nurses' perception of themselves as role models for health promotion practice. Therefore, although nurses have the responsibility to motivate and support patients towards taking care and overseeing their health and lifestyle practices, nothing is known about the extent to which nursing staff in Nigeria practice health promoting behaviours in their own personal lives. This is despite health promotion to patients being a regular practice in the daily job roles of most nurses in Nigeria.

Therefore, research is urgently warranted to know whether Nigerian nurses' practice what they preach regarding health promoting behaviours. This knowledge would provide information on the nurses' weight status, their scale of engagement in healthy lifestyles and their personal role modelling perspectives. Differences in geographical, cultural and socio-economic levels between Nigeria as a developing and low-income country and other developed or high-income countries would mean that research findings from research in other countries which are dissimilar in context to Nigeria may not be directly applicable or generalised for Nigeria nurses.

1.5 Patients perception of nurses as role models for health and its implications for health promotion

Importantly, the subject matter of nurses' health promoting behaviours and role modelling will not be comprehensively explored without investigating the perception of the patients whom nurses' directly care for and whose health nurses strive to promote. For nurses to effectively work as part of the global health resources to tackle the obesity and chronic disease pandemic, the perception of their prospective clients must be explored,

known and relayed and relayed back to nurses in order to improve their awareness and foster the needed modification in practice to improve effectiveness in their health promotion practice. Patients are the direct consumers of nursing services and represent the individuals in society whose health nurses are mandated to promote. Indeed, the high rates of overweight, obesity and non-communicable diseases globally also highlight the need for research into the perception of patients regarding nurses who promote health to them. Previous research has shown psychosocial aspects of nurses being overweight and obese to include feeling uncomfortable about promoting weight loss education to clients, lack of patients' trust for nurses health advice and feeling patients perceived them as unhealthy role models (Frost, Jorgensen and Hounsgaard, 2006). On the other hand, evidence show that nurses practicing healthy lifestyles and being at healthy weight was associated with confidence and feeling more comfortable about promoting healthy lifestyle related topics thereby standing a better chance to role model health promoting behaviours to their patients and the public (Dunkley and Ward, 2005; Borchardt, 2000; Connolly *et al.*, 1997; Narayanasamy and Narayanasamy, 2006; Healy and Mc Sharry, 2011). With regards to patients/clients, there was less confidence in overweight nurses ability to promote diet and physical activity (Hicks *et al.*, 2008; Wells, Lever and Austin, 2006).

The phenomenon described above need not be undermined or overlooked because it could potentially sum up to tremendous implications for the success of health promotion at local, national and global levels. For example, if patients are not confident about receiving dietary and physical activity teachings from overweight nurses, the presence and increasing prevalence of overweight and obese nurses will significantly affect patient's success in engaging with healthy lifestyle recommendations promoted by these nurses. Nurses need to understand the expectations and perceptions that patients bring with them to each contact and how the nurse influences or compares with these expectations and the implications for the teaching session, patient engagement and patient health outcome in general (Hicks *et al.*, 2008; Wells, Lever and Austin, 2006). Research with patients on the impact of nurses' body size and lifestyle behaviours on patients' confidence in engaging and accepting lifestyle advice from nurses is scarce. Perhaps information from exploring this subject matter will uncover whether there is need to intervene on nurses' health promoting behaviours in order to promote patients' health as the insight which patient perspectives bring to the subject matter of nurses' health promoting behaviour has remained unknown. Indeed, based on what nurses represent, patients have expectations that nurses would offer them professional advice and health education to promote their health, more so, they may also be expecting nurses to be a role model for them to emulate (Kelly, Wills and Sykes, 2017; Kelly *et al.*, 2017; Pistikou *et al.*, 2014; Heidke, Madsen and Langham, 2020). Nurses on the other hand may have different notions about patients' perceptions of their body size and health promoting behaviours. It is worth noting that patients are the direct recipients of nursing services so their perspectives about nurses' healthy lifestyle practice and nurses as role models for health should not be from assumptions but understood through research. Therefore, research evidence about the patients' own perspectives on this topic is urgently warranted.

1.6 Theoretical framework

As frontline healthcare providers, nurses promote healthy lifestyles to patients and families. However, the determinants of Nigerian nurses' personal health promoting behaviours (HPBs) remain unknown. Utilizing the socio-ecological model (SEM) approach, this study aimed to explore the perceived facilitators and barriers to Nigerian nurses' engagement in HPBs.

There is extreme nursing shortage in Nigeria which represents a huge burden to the Nigerian healthcare system, population health, and nurses' health and wellbeing. International and urban migration of nurses further contributes to acute nursing shortages and inequity in the distribution of nurses countrywide (Fagite, 2018; Adebayo *et al.*, 2016). In recognition of the increasing demand for healthcare and nursing services as a result of an increase in the aging population and continuous increase in Nigeria's population, Nigerian nurses' HPBs is part of the primary focus for this study. Concerns around nurses' lifestyle behaviors are a priority because the structures and processes available in Nigeria's health sector expose nurses to working in an 'unhealthy reality' (Peter Eriki *et al.*, 2015; Aliyu *et al.*, 2014). Unhealthy lifestyles due to poor working conditions may result in adverse health effects among Nigerian nurses, although little is actually known about the health and wellbeing of Nigerian nurses or the reasons for their lifestyle choices, since this has not previously been explored. Currently there is only anecdotal evidence of potentially problematic health profiles and occupational challenges to health and wellbeing. Furthermore, an unhealthy nursing workforce in Nigeria may worsen already existing nursing shortages and retention challenges experienced in this country and limit the availability and quality of healthcare provision nationwide, which is already well below expected standard. Therefore, it is critical to understand the enablers and barriers to nurses' personal practice of HPBs to support a healthy Nigerian public health workforce for the future; these enablers and barriers may align with issues raised in other settings or be specific to the Nigerian context.

Nurses in Nigeria work at the primary, secondary, and tertiary levels of healthcare. In the Nigerian context, nurses mostly deliver primary and secondary healthcare services within the community. However, nurses at the tertiary health services regularly deliver preventive health interventions (such as lifestyle related health education) to patients as part of their roles. In addition, as a result of urbanization, dissatisfaction with primary health services and preference for care delivery by multidisciplinary teams of health professionals, more people utilize tertiary health facilities in Nigeria compared to primary health facilities (Abiodun, 2010). Previous international research studies on facilitators and barriers to nurses' HPBs found that nurses are influenced by both intrinsic and extrinsic factors such as time pressures, lack of motivation, long working hours, heavy workload, and stress (Malik, Blake and Batt, 2011; Zapka *et al.*, 2009; Hakim, Eldin and Mohsen, 2016b; Han *et al.*, 2011; Tsai and Liu, 2012; Sveinsdóttir and Gunnarsdóttir, 2008; Persson and Martensson, 2006b; Phiri *et al.*, 2014; Smith *et al.*, 2013; Power *et al.*, 2017; Fernandes *et al.*, 2013; Nahm *et al.*, 2012). Most published studies have investigated only the barriers to nurses' practice of HPBs, using questionnaire surveys.

This is the first study to utilize qualitative approaches to explore the enablers and barriers to Nigerian nurses' HPBs or organized the determinants in the context of a theoretical model which reflects multiple levels of influence within the socio-ecological environment.

Furthermore, studying both the facilitators and barriers to nurses' HPBs ensures that interventions for improvement and sustenance of healthy habits can be implemented. Since nurses have health promotion as a

core aspect of their role, and there is potential for role modeling of lifestyle behaviors to patients and the public, exploring the determinants of Nigeria nurses' HPBs and the spheres at which these influences occur is timely and worthwhile.

The socio-ecological model (SEM) is a framework that is theory-based and enhances the understanding of the interactions between multifaceted aspects of the individual and the environmental (Sallis, Owen and Fisher, 2015; Golden and Earp, 2012). SEM is underpinned on the idea that one's behaviors influence and are influenced by their social and ecological environment. The SEM also emphasizes five hierarchical levels that are nested within each other (intrapersonal, interpersonal, community, organizational, and public policy). Intrapersonal factors are factors that directly influence individual behaviors such as attitudes, knowledge, and personality. Interpersonal factors include social interactions and its influences on an individual's health behaviors. Organizational factors comprise the influence of structures, practices, policies, and norms within an organization on an individual. Community factors entail influences from within the wider society, which affects individuals, groups and organizations. Public policy factors comprise of national, state, and local laws and policies that influence individual's health actions by regulation or support. These dynamic multilevel interactions are believed to be the determinants of health-related behavior. The SEM also aids in the identification of leverage points at multiple levels within the socio-ecological environment where health promotion interventions may be targeted to achieve effective impact. In our study, the SEM was useful for explaining and gaining an understanding of the determinants of individuals' HPBs. Mapping the facilitators and barriers to nurses' HPBs unto the SEM provided a holistic understanding of the aspect of nurses' socio-ecological environment from which the influence arises. Furthermore, applying the SEM to this study provides information and guidance for development of single-level or multilevel health promotion interventions and programs for nurses in the future. Therefore, our study aimed to explore the perceived facilitators and barriers to engagement in HPBs among Nigeria nurses using the SEM approach. The findings underpinned on the SEM are presented in chapter 5 of this thesis document.

1.7 Statement of problem and rationale for the research study on Nigeria nurses.

Unhealthy behaviours such as obesity, smoking, physical inactivity, poor dietary habits and alcohol misuse are linked to non-communicable diseases such as cancers, heart failure, stroke and coronary heart disease (CHD) (Balluz, Okoro and Mokdad, 2008; Scott *et al.*, 2006). Annually, non-communicable diseases result in 70% global mortality representing death of 40 million people and about one in four of these deaths affect adults between age 30 and 69 (WHO, 2017), an age bracket captured by the working age of Nigeria nurses in clinical practice. More so, 80% of global early mortalities are recorded in low and middle-income countries of which Nigeria is part (WHO, 2017). The probability of premature death from NCDs in Nigeria is almost 30% (WHO, 2016) of which cardiovascular diseases accounts for 11% while other NCDs represent 19%. Indeed, nurses who engage in unhealthy lifestyle choices are at equal risk of these diseases as their patients and the public. More so, WHO emphasises the need to strengthen the capacity of the health workforce to meet these demands which are continually on the increase (Adebayo *et al.*, 2016; World Health Organisation, 2010c; World Health Organization, 2010).

Additionally, in the Nigerian health system like it is globally, nurses are the largest occupational group of health care professionals involved in direct face to face patient care. Nurses constitute over 70% of the total health workforce in Nigeria and as a result of their number, they are in the best position to lead the crusade regarding promoting and improving public health. Yet very little is known about their preventive health behaviours of these group of healthcare professionals. The world health report from WHO also reveals that healthcare manpower shortage in Nigeria is nearly 40,000 which places Nigeria among the African countries experiencing severe shortage of human resources for health (WHO (2006). This shortage is despite Nigeria being Africa's most populous country with an estimated population of over 190 million people. Additionally, the nurse-patient ratios in Nigeria is as low as 1:6 per 1000 people, a statistic that places nurse supply in Nigeria at the bottom of the ranking when compared to countries like United Kingdom, Australia and United states of America (World bank, 2010).

Also, of concern is the obvious extreme shortage in supply of nursing staff in Nigeria and its impacts on nurses' workloads and potential for retention of nursing manpower. This acute nursing shortage further highlights the essence of researching into Nigeria nurses' health promoting behaviours in order to plan supporting interventions for nurses so they can contribute more to promoting public health and bridging their healthy lifestyle cognitive dissonance and knowledge-practice gap to improve their application of their knowledge of healthy living in their personal lives.

Poor health status of nurses results in huge costs to health system as a result of sickness absence and presenteeism among nursing staff as well as the widespread consequence of these (Trinkoff, Storr and Lipscomb, 2001). Given that hospitals in Nigeria do not make use of ad-hoc or agency nurses to make up for nurse shortages, nurses poor health may have negative implications for the quality of care provided as well as the health of their colleagues who are made to take up increased workload in addition to an already busy schedule to cover up for nurse shortages. The shortage of nursing staff in Nigeria is worsened by retention issues as more nurses continually leave nursing practice for various reasons whereas employing organisations do not employ new staff accordingly to fill these roles. Study findings by Perry *et al.*, (2016) highlights that health is an important determinant of nurses' intention to leave the nursing profession. Consequently, these health system factors in addition to other biological, socio-economic and cultural factors to which nurses are exposed may have implications for nurses' personal health behaviours as some may resort to unhealthy eating, physical inactivity, alcohol consumption or smoking. Additionally, despite the increased prevalence of obesity in nurses as seen in previous studies and the risk of obesity and associated disorders in nurses, there is paucity of research on nurses' personal body size and health promoting behaviours in Nigeria therefore the lifestyle behaviours in this population are yet to be investigated.

At a time when countries round the globe are faced with a challenge to enhance the effectiveness and efficiency of healthcare systems, it is justified to be concerned about the health of our nurses and how it affects their work and their patients. This is because nurses' health and health-related behaviours influence their health service delivery and the health system in general (Trinkoff, Storr and Lipscomb, 2001). As a result, there is need to develop interventions to support them to be high performance health care professionals because studies conducted elsewhere in the world have suggested that good health is essential to health care workers' performance and productivity especially in terms of quality of care and patient safety and satisfaction (Van Lerberghe *et al.*, 2002).

This study focuses specifically on Nigeria nurses because no previous study has investigated the overweight and obesity prevalence among nurses in Nigeria. A study by Ogunjimi et al., (2010) investigated the obesity prevalence among female nurses in Nigeria and found prevalence of 62.2% among them. Their study did not investigate prevalence of overweight nurses' or include male nurses. Eating behaviours among Nigeria nurses was also reported to be significantly related to levels of obesity in their study but no information on the nurses' eating behaviour was presented throughout the research. High overweight and obese prevalence have been found in previous studies of healthcare professionals in Nigeria (Iwuala et al., 2015a; Gyang et al., 2017; Adaja and Idemudia, 2018a; Dankyau et al., 2016b; Iwuala et al., 2015b) and they were also found to be very likely to underestimate their weight based on their self-perception compared to their calculated BMI (Gyang et al., 2017). Healthcare workers in Nigeria have also been found to have worryingly low levels of physical activity performance (Iwuala et al., 2015a; Owoeye, Tomori and Akinbo, 2016) and this may be related to their increased prevalence of overweight and obesity. This also highlights a concern for health-related behaviours of nurses in Nigeria considering that health promotion is a key aspect of their training and role in the Nigerian healthcare system. To date, Nigeria nurses' overweight/obesity prevalence and lifestyle behaviours are currently not comprehensively known.

1.8 Significance of the study

As explained above, nurses are a unique subgroup in the healthcare system because of the non-stop care they render to patients, their large number and the looming nursing shortage. Therefore, the health behaviours of nurses is an important subject that cannot be underestimated given that it has both direct and indirect influence on the health of both nurses and their patients (in terms of healthy lifestyle engagement, health outcomes, nurse absenteeism, presenteeism, productivity, nurse-led health promotion interventions and quality of care) (Blake and Harrison, 2013; Carlson and Warne, 2007). Investigating Nigerian nurses' health related behaviour is in accordance with the vision of the World Health Organisation's (WHO) project aimed at preparing the healthcare workforce to tackle chronic conditions in the 21st century (World Health Organisation, 2002). One key way of achieving this target is by nurses taking advantage of 'teachable moments' on contact with patients for positive promotion of change in behaviour towards healthy lifestyle adoption (Lawson and Flocke, 2009).

This study also seeks to explore the facilitators and barriers to nurses' engagement in health promoting behaviours. Particularly, exploring the self-reported lifestyles of nurses in Nigeria could form the baseline information for development of interventions to reduce, ameliorate, or eliminate nurses perceived barriers found thereby potentially improving the health of nursing workforce. Healthy nurses may be more apt to discuss and emphasise preventive behaviours with patients and make recommendations such as healthy eating, increased physical activity, smoking cessation and alcohol moderation (Esposito and Fitzpatrick, 2011; Phiri et al., 2014; Blake and Harrison, 2013). Also, they may be more productive and mentally alert at work thus preventing workplace injuries, accidents and fatigue-related errors (Geiger-Brown et al., 2012). Therefore, improving the health and health promoting lifestyles of nurses may ultimately improve patient care and public health. Groene & Jorgensen (2005) pointed out that when patients are experiencing illness, they may be exceptionally more receptive to health advice and counselling. Additionally, McBride (2004) emphasised the increasing awareness of health promotion in hospitals internationally as well as the rising interest among adult patients towards

receiving health promotion advice. Thus, patients' perception of nurses' lifestyle behaviours and role modelling will significantly add to the body of knowledge about how nurses' health impact their health promotion practice. Nevertheless, considering the paucity of research on this subject area, this thesis attempts to contribute to bridging the gap in the literature as well as provide data for making comparisons with related studies across various other countries.

1.9 Study aim

The aim of this study is to assess Nigeria nurses' weight status and personal health promoting behaviours as well as the determining factors of their health promoting behaviours and the implications for their health and health promotion practice with patients.

1.9.1 Research objectives

Four research objectives were developed for this research study as follows:

1. To examine the health profile of Nigerian nurses in relation to body mass index (BMI) and health promoting behaviours (dietary, physical activity, alcohol and smoking behaviours).
2. To investigate the determinants of Nigerian nurses' engagement in health promoting behaviours.
3. To explore the perceptions of Nigeria nurses about being role models for health.
4. To explore the perceptions of patients about nurses as role models for health and the implications for patients' engagement with nurses' health promotion.

1.9.2 Research questions

1. To what extent do Nigeria nurses practice health promoting behaviours?

Sub-questions under this question are as follows:

- a) What percentage of Nigeria nurses are either overweight or obese based on their body mass index classification?
 - b) How are the eating behaviours of Nigerian nurses?
 - c) What is the prevalence of physical activity and physical inactivity among Nigeria nurses?
 - d) What percentage of Nigerian nurses engage in low risk and risky alcohol consumption respectively?
 - e) What percentage of Nigerian nurses are current smokers?
2. What are the perceived facilitators and barriers to the practice of health promoting behaviours among Nigeria nurses?
 3. What are Nigeria nurses' perceptions of themselves as role models for health promoting behaviours and its implication for their health promotion practice?
 4. What are patients' perceptions of nurses as role models for health and the implications for their health and engagements with nurses?

1.10 Definition of terms

For purposes of clarity and understanding, the following terms have been operationally defined below to indicate their meanings as used within the context of this thesis document.

Nurse: “A person who has received authorized education, acquired specialized skills and attitudes and is registered and licensed by a regulatory body, to provide health promotive, preventive, restorative and rehabilitative care to individuals, families and communities independently and in collaboration with other members of the health team” (NMCN, 1979).

Health: In this thesis, health is defined according to the definition from WHO constitution in 1948 as “a state of complete physical, social, and mental well-being, and not merely the absence of disease or infirmity” (World Health Organization, 1948).

Healthy Diet: A diet that contains a variety of different foods in the right proportions, to help us get the wide range of nutrients that our bodies need (British Nutrition Society, 2016).

Health Promotion: Health promotion is the process of enabling people to increase control over, and to improve, their health. It moves beyond a focus on individual behaviour towards a wide range of social and environmental interventions (World Health Organization, 1986).

Health promoting behaviours: Any behaviour or activity undertaken by an individual for the purpose of promoting, protecting or maintaining health (Nutbeam, 1998). This thesis focuses on four major health promoting behaviours for health promotion and non-communicable disease prevention as follows: dietary behaviours, physical activity, alcohol consumption and smoking behaviours (World Health Organization, 1999). In this study, health-related behaviours, healthy lifestyles and health promoting behaviours are used interchangeably to mean the behaviour defined herein.

Physical Activity: Physical activity is any bodily movement produced by skeletal muscles that requires energy expenditure – including activities undertaken while working, playing, carrying out household chores, travelling, and engaging in recreational pursuits (World Health Organisation, 2010b).

Role Model: A person who serves as a model in a particular behavioural or social role for another person to emulate (Houghton, 2008).

Body Mass Index: BMI is an indicator of nutritional status through an individual's body size or body fatness. It is calculated as a person's weight in kilograms divided by the square of the person's height in metres (kg/m^2). BMI is an inexpensive and easy screening method for weight category—underweight, healthy weight, overweight, and obesity (Center for Disease Prevention and Control, 2017).

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter focuses on relevant research evidence that sets this research study into context regarding nurses' health promoting behaviours, role modelling and the implications for nurses' practice and patients. Firstly, explanations are given about the literature search strategy and processes utilized for this literature review. Previously published literature on the prevalence of overweight and obesity among nurses is explored and compared with studies on the general adult population of the countries in the specific studies. Bearing in mind that nurses have a responsibility to care, mentor and promote public health, this review also considers the personal health promoting behaviours (dietary behaviours, physical activity behaviours, and alcohol and smoking behaviours) of nurses from previously published research. In line with this discourse, the research evidence around the perceived facilitators and barriers to nurses' engagement in health promoting behaviours is also reviewed herein. Furthermore, this chapter presents a comprehensive review of research evidence concerning the concept of nurses as role models for health and perceptions around the subject matter. This includes the perceptions of nurses about being role models for health, the perceptions of patients as consumers of nursing care about nurses as role models for health as well as the implication of nurses' role modelling healthy lifestyles on nursing practice and patients' health. Research evidence reviewed in this chapter focuses mainly on published studies with registered nurses though reference may be made to studies with student nurses and other healthcare professionals where necessary. Finally, this literature review identified the gap in research that this study seeks to bridge, and which led to the formulation of the aim, objectives and research questions for this current study.

2.2 Literature Search strategy

A traditional-narrative typology for literature review was followed to examine the current state of knowledge around nurses' health promoting lifestyles and role modelling. Traditional-narrative literature review affords a comprehensive synthesis and understanding from coherent interpretation of included studies that highlights trends, salient issues, controversies and complexities in the literature as well as potential directions for future research and issues that require further exploration (Ferrari, 2015). Traditional-narrative reviews are critiqued for their proneness to bias due to lack of a systematic process or acknowledged guidelines (Jesson, Matheson and Lacey, 2011). Therefore, the quality of this narrative review was strengthened by adoption of a framework with systematic process for narrative reviews (Figure 2.1) (Ferrari, 2015). This methodical process is aimed at reducing bias in review articles selection and application of an effective and reproducible bibliographic search strategy (Ferrari, 2015). During the initial stages of this research study, there were large number of studies found though most of these studies contained information that were either irrelevant to the subject area or heterogeneous in relation to the information required for this research study. Therefore, conducting the literature review with a systematic approach proved to be the most vital methodological approach to explore the literature around the subject area of nurses' health promoting behaviour, the determinants of nurses' health promoting

behaviour and perceptions of nurses and patients about nurses as role models for health. All published primary studies and review articles were included as this significantly increased the number of studies found and gave a broader picture of the subject area under study. The search strategy was wide enough to allow for the identification and inclusion of studies on nurses from different countries and published at different years. This approach provided variety in terms of comparison of nurses from different regions and also promoted a better analysis of the literature. The fact that there were different studies, carried out in different countries, at different times, in different settings with mixed results adds value and insight to the literature review process.

Several databases were searched in order to access previously published research related to the subject area. Online Databases searched include CINAHL, PUBMED, MEDLINE, PsychINFO, SCOPUS and EMBASE. Keywords include nurse, adult, nursing, overweight, obesity, obese nurse, overweight nurse, health promotion, health promoting behaviour, healthy lifestyles, exercise, physical activity, weight management, diet, nutrition, eating, alcohol consumption, drinking, cigarette smoking, role model, patient education, patients. Due to insufficient funding, the researcher could not afford the services of professional interpreters, therefore database search was restricted to studies in English language. Age limit was set at 18 years and above and time limit was set to include studies from 2000 to 2019. Literature search also included hand-search, references search and reviews.

Regarding the Nigerian context, there is little known about nurses' overweight, obesity and the health promoting behaviours under investigation in this study because published literature of the subject matter in the Nigerian context is scarce. Nevertheless, general literature shows that there is high overweight and obesity rate among Nigerian adults especially among the female gender which constitute the higher proportion among nurses. Dietary behaviours and physical activity behaviours are also reported to be generally less than recommended guidelines. Smoking and alcohol behaviours seem to not be increasing exponentially but still prevalent within the Nigerian population. Very little or nothing is known about nurses role modelling health promoting behaviours, nurses' perception of themselves as role models for health and determinants of nurses' engagement in health promoting behaviours. Regarding patients perception of nurses as role models for health, there is nothing known about the subject matter. Therefore, the literature review was exploratory in nature and explored what is known about the subject matter in a global context as well as in Nigeria and among Nigerian nurses.

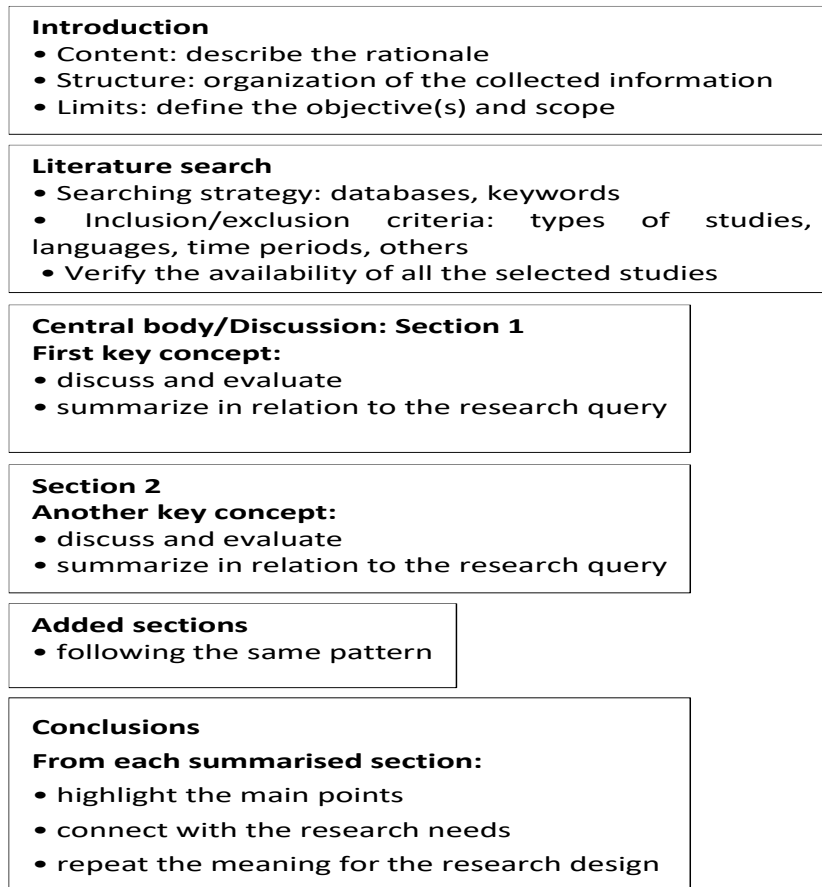


Figure 2.1: General framework for narrative reviews (Ferrari, 2015)

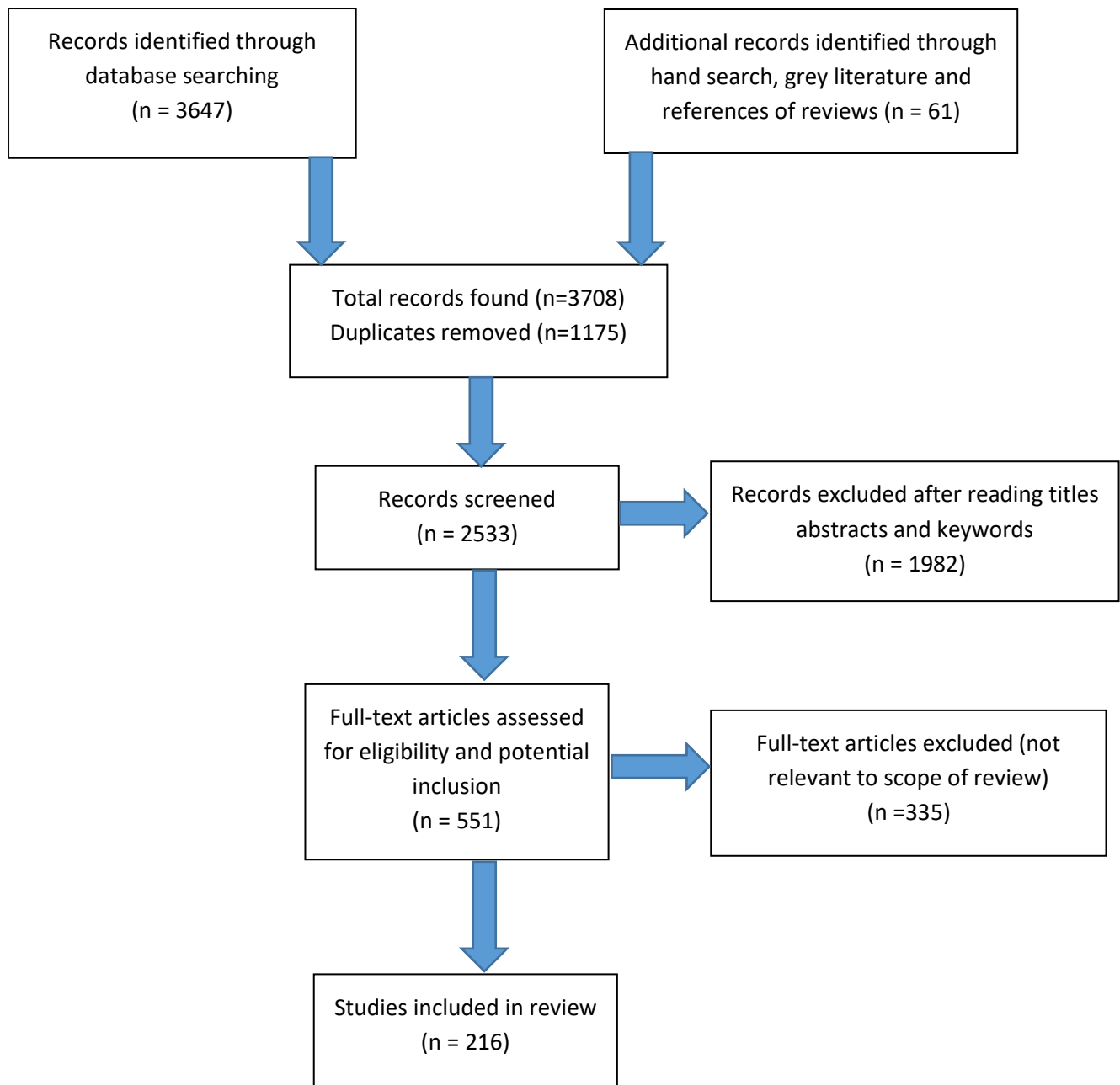


Figure 2.2: Flow diagram for literature search

2.2.1 Literature review questions

1. What is aetiology, prevalence and impact of overweight and obesity in adults?
2. What is the prevalence of overweight and obesity in nurses?
3. What are Nurses' roles in health promotion?
4. How are nurses' health promoting behaviours?

5. What are the facilitators and barriers to nurses' engagement in health promoting behaviours?
6. Are nurses role models for health?
7. What are patients' perceptions of nurses regarding role modelling health promoting behaviours?

2.3 What is aetiology, prevalence and impact of overweight and obesity in adults?

According to World Health Organization (2017), overweight and obesity are defined as abnormal or excessive fat accumulation that presents a risk to health. Overweight and obesity in a person is commonly determined by the measurement of body mass index (BMI), a crude population measure of body fatness calculated by body weight in kilograms divided by the square of height in metres. Based on WHO classifications for BMI, overweight is BMI ≥ 25 while obesity is generally considered to be BMI of ≥ 30 .

2.3.1 Aetiology and risk factors for overweight and obesity

The aetiology of overweight and obesity are complex and multifactorial because of the interaction of factors arising from genetics, social, behavioural and economic influences in the development of obesity. Although obesity may be associated with genetically determined susceptibility, hormonal imbalance and medication use, the main cause of overweight and obesity is weight gain from the positive energy balance that results between calorie intake and energy expenditure (Abdelaal, le Roux and Docherty, 2017).

Globally, there is increase in the intake of energy dense foods and beverages which are highly processed, nutrient poor and high in fat and sugar. These excess calories consumed are then converted to triglycerides and deposited in the adipose tissues causing expansion. Increasing body fat deposition and body weight increase worsened by increasing physical inactivity result in higher health risk (Abdelaal, le Roux and Docherty, 2017; Williams *et al.*, 2015).

Additionally, the trend of calorie dense food consumption and physical inactivity behaviours of individuals globally is also associated with urbanisation and modernisation of both lifestyles and modes of transportation (González, Fuentes and Márquez, 2017). The changes within the environment and society are usually initiated without implementation of policies to support and promote healthy eating and physical activity in various sectors of the society such as in the transport, health, education, environmental, urban planning, food industry (marketing, processing and distribution) (Poveda *et al.*, 2016).

2.3.2 The global situation of obesity in adults:

Overweight and obesity are currently major global health challenges with prevalence rates rising to epidemic proportions globally. The global prevalence of overweight and obesity have markedly increased over the last four decades with obesity prevalence rate rising in 2016 to almost triple its rate in 1975. Specifically, overweight and obesity prevalence rates have increased from 4.5% (3% in men and 6% in women) for obesity and almost 22% for overweight (20% in men and almost 23% in women) as at 1975 to much higher rates in 2016 (World health Organisation, 2020). In 2016, among adults aged 18 years and above, almost 2 billion were overweight

while over 650 million were obese compared to about 100 million obese adults recorded back in 1975 (Abarca-Gómez *et al.*, 2017; WHO, 2018). These figures represented by overweight and obesity indicate that overall, 39% of the world's adult population aged 18 years and above (40% of women and 39% of men) were found to be overweight while 13% of the population of adults globally (11% men and 15% women) were obese (WHO, 2018). The increasing prevalence of overweight and obesity call for serious concern considering that overweight and obesity increases the risk of morbidity and premature mortality (Kinlen, Cody and O'Shea, 2018). Globally, more people are overweight and obese than underweight, with at least 2.8 million annual mortality from diseases whose risk are increased by overweight or obesity (World Health Organisation, 2017). Obesity is currently a global concern because it has moved from being mainly associated with high-income countries to exist in highly prevalent rates in low- and middle-income countries. Additionally, although the increase in obesity prevalence among adults in developed countries have slowed down since 2006 (Ng *et al.*, 2014b), obesity prevalence has increased globally despite age, gender, geographical location, ethnicity, socioeconomic or marital status (Chooi, Ding and Magkos, 2019). Specifically, women and older persons were found to have higher prevalence of overweight and obesity, a trend that was observed to be similar in various regions and countries even though the exact prevalence of overweight and obesity vary widely from country to country. Several countries around the globe have recorded very high rates of overweight and obesity yet, in very few countries (Ethiopia, North Korea and Timor-Leste), the prevalence rate of overweight and obesity are below 10% of adult population (Ng *et al.*, 2014b).

In 2013, Ng *et al.* (2014a) systematically examined studies measuring BMI with the aim of estimating the prevalence of overweight and obesity in 188 countries across 21 global burden of disease (GBD) regions. Their findings show that in developed countries, men were more overweight and obese compared to women while in developing countries women were more overweight and obese than men, a trend that has persisted over time. None of the countries under their study recorded any significant reduction in the prevalence of overweight and obesity over the last three decades. Indeed, there is need to be concerned and raise questions about whether sooner or later most countries would be on the verge of reaching high overweight and obesity prevalence rates.

2.3.3 Overweight and obesity prevalence for adults in developed countries

A high prevalence of obesity was found in the United States of America (USA) such that in 2013, obesity was recorded respectively in about one-third of the men (31.6%) and women (33.9%) while overweight and obesity affected about two-thirds of (66.4%) of adults. The USA was among the top 15 countries in terms of increase in obesity for both men and women from 1980 to 2013 with prevalence of overweight and obesity at 70.9% in men and 61.9% in women as of 2013 (Ng *et al.*, 2014b). Another study reported the prevalence of obesity among adults in the USA to be 39.8% with higher values found among middle aged adults (42.8%) than for younger adults (35.7%); and more non-Hispanic black and Hispanic adults being obese than non-Hispanic white and Hispanic Asian adults. Nevertheless, the change in adult obesity prevalence in American adults between 2013-2014 and 2015-2016 was not significant (Hales *et al.*, 2017). In developed countries, the prevalence of obesity was found to be similar in adults irrespective of gender and age though obesity prevalence was significantly higher in people considered to be disadvantaged (Swinburn *et al.*, 2011).

The Health Survey for England (Conolly and Davies, 2018) which surveyed a representative sample of adults 16 years and over showed that 64% of adults population are either overweight or obese. Over one-third (35.5%) of United Kingdom (UK) adults are overweight and about one-third of UK adults are obese (29%). Men were more overweight than women while women were more obese than men and result estimates surpass that of research carried out in previous year (Conolly *et al.*, 2017) indicating that the society may be becoming more obesogenic. Indeed, there has been obvious increase in the prevalence of obesity in England from 15% in 1993 to 26.2% in 2016 while obesity or overweight rates have increased from 53% to 61% (66.6% in men and 57.2% in women) within the same time period (Ng *et al.*, 2014a). Adult overweight and obesity rate in the UK increased with age irrespective of gender so increase was highest in older adults (Moody and Neave, 2016; Ng *et al.*, 2014a; Conolly *et al.*, 2017).

Additionally, the UK was one of the European countries with the highest prevalence of obesity from another population based epidemiological study by Marques and colleagues, (2017) because UK ranks third highest in the western European countries only superseded by Malta and Iceland (Ng *et al.*, 2014a). Implementation of measures and interventions to curb this obesity pandemic are warranted as these figures seem to be in line towards fulfilling the predictions that by the year 2050, 60% of males and 50% of females would be affected by obesity (Butland *et al.*, 2007). Furthermore, in Scotland, 64.3% (60.4% of women and 68.2% of men) are classified as overweight or obese (Scottish Health survey, 2012).

2.3.4 Overweight and Obesity among adults in developing countries

Almost two-thirds of obese people globally reside in developing countries and the observed increase in the prevalence of overweight and obesity is likely to be continuously increasing in developing countries (Ng *et al.*, 2014b). A survey carried out by Adebamowo *et al.*, (2016) comprising of four countries (Nigeria, South Africa, Tanzania and Uganda) with significant burden of chronic diseases investigated the prevalence of overweight and obesity using the BMI index.

The survey results showed that the prevalence of overweight and obesity was 68% in Nigeria, 47% in Uganda, 75% in Tanzania and 85% in South Africa while obesity prevalence was 31% in Nigeria, 12% in Uganda, 40% in Tanzania and 54% in South Africa. Similar but slightly lesser rates of 64% overweight and obesity (74% women and 57% men) was found among Nigerian adults in an earlier epidemiological survey carried out specifically on urban workers in Nigeria (Akarolo-Anthony *et al.*, 2014). These rates compare to the rates in developed countries reviewed above and indicates that overweight and obesity are not problems of high-income countries but represents a global concern and a ticking time bomb.

Ng *et al.*, 2014 found black women to be at higher risk of obesity and continually display higher prevalence rate for obesity than black men. Akpan & Ekpenyong (2013) reported also that obesity was found to be more common in women of low socio-economic class who live in the urban areas than women of high socioeconomic status living in urban towns and cities. Furthermore, Swinburn *et al.*, (2011) reported that in developing nations, obesity mostly occurs among adults (particularly women) in their middle ages living in wealthy and urban environments. Also, in almost all the studies reviewed above; older age, female gender and marital status were found to be associated with being overweight while male gender, parity, marital status and high socioeconomic status were

associated with obesity. Despite the risk of under-reporting self-report data on BMI parameters, overweight and obesity prevalence across several countries globally were still reported to be high and this highlights the need for urgent interventions because actual prevalence may be even higher than reported.

The growing burden of overweight and obesity in the general population warrants questioning health care professionals as obesity prevention health promoters about their contribution and actions in the drive towards reducing this burden.

2.3.5 Health and economic impact of overweight and obesity

Obesity is a complex condition that affects almost all physical, physiological, psychological and mental health functioning. The increased risk of co-morbidities also poses significant threat to the life of the individual as well as to public health in general. Obesity increases the likelihood and risk of developing several disease conditions such as cardiovascular diseases, type 2 diabetes, obstructive sleep apnoea, several musculoskeletal disorders, various types of cancers and mental health disorders (Haslam *et al.*, 2005). The diseases which occur as a consequence of overweight and obesity negatively affects an individual's quality of life and life expectancy (Arroyo-Johnson and Mincey, 2016). Nonetheless, the risk of these consequences continually increases with increasing body mass index (BMI). Research evidence from pooled analyses of large prospective cohorts (Lu *et al.*, 2014) and prospective studies (Whitlock *et al.*, 2009; The Emerging Risk Factors Collaboration, 2011) highlight the presence of consistently increasing risk of poorer health as an individual's BMI exceeds the healthy BMI limit of 24.99kg/m².

Overweight/Obesity related healthcare costs are increasing in countries all over the world and constitute huge sums in terms of finances and resources because obesity causes more spending on resultant co-morbidities as well as losses from sickness absences, early retirement, disability and low productivity (Shekar and Popkin, 2020). The estimated cost of overweight and obesity in developing countries takes significant proportion of the national health care budget. Also, WHO has estimated that between 2% and 7% of healthcare spending in developed economies can be attributed to obesity (Dobbs *et al.*, 2014). Obesity cost for the UK National Health Service (NHS) was reported to be about £6 billion and estimated to increase to between £10 billion and £12 billion by 2030 (Dobbs *et al.*, 2014). From a public health and finance perspective, promoting weight management and obesity prevention makes sense and governments need to prioritise efforts to tackle the current and impending challenges of overweight and obesity.

2.4 What is the prevalence of overweight and obesity in nurses?

Overweight and obesity have been implicated as factors that lead to several workplace consequences such as economic loss, increased physical and psychological morbidity, absenteeism, presenteeism and low performance/productivity, (GBD Obesity Collaborators 2017, Gregg and Shaw 2017). Therefore, occupational groups are recently becoming the focus of research around overweight and obesity due to the increasing number of waking hours workers spend at the workplace.

According to Luckhaupt et al., (2014), health care employment is significantly associated with increased prevalence of obesity. More so, as a result of the roles nurses play within the healthcare system, nurses as an occupational group have been investigated in previous research to ascertain their levels of overweight and obesity. Therefore, this section of the literature review explores previously published research evidence on the prevalence of overweight and obesity among nursing workforce in different countries and work settings with comparisons made where necessary with the obesity rates in the general population.

Published research evidence across different countries that have investigated nurses' weight and BMI have found that overweight and obesity rates are either similar, higher or lesser for nurses when compared to the general adult population.

International published studies on nurses' body weight classification according to BMI have reported that the prevalence of overweight among nurses' range between 18% and 53% (Kivimaki et al. 2001, Tucker et al. 2010, Blake et al. 2011, Han et al. 2011, Kim et al. 2013) while the prevalence of obesity among nurses' range between 7.4% and 28% (Miller et al. 2008, Zapka et al. 2009, Ogunjimi et al. 2010, Tucker et al. 2010, Blake et al. 2011, Huth et al. 2013, Kim et al. 2013). Overall, overweight and obesity prevalence in nurses was reported to be about 50% or more in majority of the countries studied.

2.4.1 Prevalence of overweight and obesity among nurses in developed countries.

2.4.1a United States of America (USA)

There have been mixed results from studies on the prevalence of overweight and obesity among nurses. Nevertheless, nurses in the USA have generally been found to have high prevalence of overweight and obesity ranging between 48.7% and 72%. In studies carried out in the USA, the prevalence rates of overweight and obesity in nurses when compared to the general population have been lesser, similar or higher although in much earlier studies lesser prevalence were reported.

Over a decade ago Miller et al., (2008) carried out a cross sectional survey on 4980 registered nurses. The nurses were recruited from one state in each of the six geographical regions of USA. They report that 760 nurses completed their survey yielding a low response rate of 15.5% of which most were female (92%) and of older ages (45-50 years). Their study found that over half (54.5%) of the nurses were overweight and obese, a rate 10% below the prevalence of 65% in the general adult population reported. Specifically, the nurses' prevalence of overweight was over 30%, while 23.9% were obese. This is similar to the overweight and obesity prevalence of 52.1% found from an earlier study of American nurses (Allison, 2005). At the time of the study by Alison et al., (2005), overweight and obesity prevalence in the general adult population in USA was 49% meaning that nurses were perhaps more overweight and obese than the public that they care for and educate on healthy lifestyles.

Miller et al., (2008) pointed out that the nurses who responded that their professional roles specifically included either of health promotion, healthy diet counselling, obesity prevention and weight reduction counselling had overweight prevalence between 31% - 35% and obesity prevalence between 18 – 22%. However, these obese nurses were not found to be less able to identify the consequences of obesity than the nurses who had normal

weight by BMI. This raises questions about how these nurses can effectively offer weight related services to their patients when their body size seems to counteract their health promotion teachings and may possibly affect their credibility for health promotion. This subject matter about nurses as role models will be extensively discussed in subsequent sessions of this chapter.

Holman et al., (2009) conducted a smaller cross sectional comparative health study of 79 nurses in Alabama and found 72% were either overweight or obese. Although they had a small sample size which perhaps influenced their results and is not large enough to support any conclusions, this rate far exceeds obesity and overweight prevalence in the general USA population and raises much concern regarding the potential health challenges and increased risk of morbidity associated with increasing BMI for nurses. In the same year, Zapka et al., (2009) studied 194 nurses from six USA based hospitals using anthropometric measurements and self-administered surveys. With a response rate of over 50%, their study reported that 65.4% of USA nurses were either overweight (37%) or obese (28%). Their result on the prevalence of overweight and obesity among nurses was almost similar to the prevalence rate of 66.3% reported for the general USA adult population around the period their study was conducted (Ogden *et al.*, 2006). Furthermore, in Tucker et al., (2010) study of five multi-state hospital based nurses in USA, although the nurses reported overall good health, mild stress levels and positive work environment, 53% of the nurses were either overweight (30%) or obese (23%). Similarly, in another cross sectional descriptive survey by Ziktus et al., (2011), 57% of nurses were either overweight (30%) or obese (27%). Nevertheless, another USA based study by Esposito and Fitzpatrick (2011), examined a sample of 112 nurses and found that just about half (49%) of the nurses were either overweight or obese (30.6% overweight and 18.4% obese). Male nurses had higher prevalence (57.1%) of obesity than female nurses (16.6%), an observation which deviates from what is usually the norm of women being more obese than men. However, this may be due to the small number of male nurses (n=7) therefore such results may not be generalizable to the general male nurses' population. In the same year, a secondary data analysis study of 2103 female nurses in USA also found a comparable prevalence of about 55% overweight and obesity rate among the nurses (Han *et al.*, 2011). Following on through the years, these studies of American nurses do not show any trend towards reduction in the rates of overweight and obesity with time.

In another study carried out in USA by Nahm et al., (2012) on registered nurses recruited from an urban community teaching hospital, about one in six nurses (58%) were either overweight or obese with more nurses being obese (31.4%) than overweight (26.6%). The mean BMI for older nurses over 40 years was found to be 32.8 kg/m² which lies in the obese category and may further suggest an association between older age and overweight and obesity within this population of nurses. High obesity prevalence rates of 27.5% was also reported among 378 paediatric nurses in a study by Huth et al., (2013). Although information about overweight nurses were not reported as the study focus was majorly on obesity among nurses, the obesity rate raises concern even though it is less than 33.8% obesity prevalence in general US adult population.

Chin et al., (2016) examined a sample of registered nurses weight in California USA and reported that almost half (48.7%) of the nurses were overweight (31.1%) or obese (17.6%). The studies reviewed above show that both overweight and obesity prevails among nurses at levels comparative to the general adult population in the USA.

2.4.1b Australia and New Zealand

In Australia, prior studies have been carried out on nurses' overweight / obesity prevalence and varying results have been obtained when compared with the general Australian adult population. Nevertheless, similar to nurses in the USA, nurses in Australia have also showed high levels of overweight and obesity.

In a cross-sectional study of 2494 female Australian nurses and midwives by Zhao et al., (2011), 58.7% of participants were either overweight (31.8%) or obese (26.9%) while a similar cross-sectional study by Zhao et al., (2012) examined the weight of 2086 female nurses and midwives in Australia and found that almost 60% were overweight or obese (31.7% overweight; 27.1% obese). A prospective cohort study of 17,065 women reported obesity risk for women and that obese women have 79% lower odds of healthy survival to at least 70 years (Sun et al., 2009). Despite this, nurses are continually being plagued by poor weight management leading to weight gain and subsequently to overweight and obesity.

An international cross-sectional survey study by Bogossian et al., (2012) on 4996 registered nurses ((Australia (n=3144), New Zealand (n=778) and United Kingdom (n=1074)) found that in their overall sample, over 60% of participants were above the healthy weight category (BMI >24.99). Particularly, the prevalence of overweight and obesity among the nurses in their study were 61.3% for Australian nurses and 61.8% for New Zealand nurses. Also, the prevalence of overweight and obesity exceeded the rates in the general adult population by 3.74% for Australia and 1.73% for New Zealand. Their study highlighted that the nurses may not be more able to achieve weight management compared to their gender and age-related cohorts within the population.

Australian nurses participated in a paper-based cross-sectional descriptive survey of 381 nurses from two Sydney metropolitan hospitals and 44% of the nurses were reported to be overweight / obese (43.8% for females and 44.2% for males) (Perry, Gallagher and Duffield, 2015). Despite their high overweight and obesity prevalence rate and 42.8% reporting the presence of existing chronic illnesses, majority (94%) of the nurses rated their health to be good, very good or excellent by self-report data. This implies that overweight and obesity constituted early 'warning signs' about the health status of the nurses despite their reported perception of current good health.

More recently, an electronic cross-sectional survey study of Australian nursing workforce by Perry et al., (2018) investigated nurses BMI and pointed out over 61% were either overweight (31.3%) or obese (29.7%). Among these nurses, more males were overweight compared to females (46.1% vs. 29.6%, $p < 0.001$) while more females were obese compared to males (30.2% vs. 25.1%, $p < 0.001$). Increasing age was associated with increased likelihood of being obese or overweight. Additionally, male nurses were found to have 64% more likelihood of being overweight or obese compared to female nurses. In comparison to the general population, overweight/obese among nurses was slightly lesser. Nevertheless, nurses were more affected by overweight/obesity than the general adult population in about a third of the age/gender comparisons albeit with a small difference of about 3.1%.

2.4.1c United Kingdom

In the United Kingdom, previous studies examining nurses' weight revealed that the prevalence of overweight and obesity among UK nurses have also been found to be similar, higher or lower than the general population. Estimates from the department of health suggest that about 700,000 of the 1.2 million UK NHS staff of which

nurses constitute the largest occupational group are either overweight or obese (Department of Health, 2009a). From research evidence, unhealthy behaviours are still prevalent among UK nurses, and these are implicated in the increased prevalence of overweight and obesity.

Malik et al., (2011) studied 876 participants constituting 62.9% registered nurses and 37.1% pre-registration nurses in the UK and found that 26.9% were overweight and 11.5% were obese. Specifically, 44.7% of the registered nurses were overweight or obese representing about four in ten nurses. UK nurses in Bogossian et al.(2012) international study of nurses in Australia, New Zealand and UK found overweight and obesity rate of 59.1% for UK nurses Also, the prevalence of overweight and obesity in UK nurses exceeded the rates in the general adult population by 2.24%.

According to Blake et al., (2012a) who carried out a study of UK NHS employees consisting more of nurses (38%), 43% of the NHS staff were either overweight or obese (30.0% and 12.9% respectively). From their findings, obesity prevalence was lower than the general population although overweight rates were reported to be similar to the general population. Although Blake et al., (2012a) study did not focus solely on nurses, given that nurses made up most of the participants may warrant an inference that if nurses were to be studied specifically, the result obtained may be higher and similar to results from previous studies on nurses in countries described above. A cross-sectional questionnaire survey was carried out in a large London university by Zhu et al., (2013a) involving 409 registered nurses and 355 student nurses with a response rate of 70%. Based on self-reported height and weight, almost 40% of the nurses were either overweight (25.5%) or obese (14.3%). This was compared to percentages of those who perceived themselves to be either overweight or obese (30.3% for overweight and 3.4% for obesity) meaning that a proportion of nurses underestimated their weight status especially relating to obesity. Nevertheless, this figure was comparably less than the UK population average which was 59.2% in 2007.

According to Zhu et al., (2013a), misperceiving weight status was found to be significantly associated with the participants' perceived weight status, ethnicity, gender, BMI status and age. More specifically, nurses who misperceived their weight status were mostly men, BMI>25kg/m², nurses of black ethnicity / mixed black ethnicity and nurses with obesity-related family histories.

In Bakhshi et al.,(2015), 44% of UK nurses were overweight/obese and 73% acknowledged their desire to be of healthy weight implying that most nurses had positive attitudes towards healthy body weight-size. In the same vein, Blake and Patterson (2015b) found from their study that even though nurses had positive attitudes towards nurses as role models, their weight status were incongruent with their attitudes and opinions. Their study of 67 paediatric nurses' health behaviours and attitudes towards being role models for health found about 45% overweight or obese nurses (overweight=31%; obese=13%).

Furthermore, Kyle et al., (2017) reported 64.1% prevalence of overweight (35.6%) and obesity (25.8%) in UK nurses. Despite the overweight prevalence being similar to other healthcare professionals in the study, nurses had significantly higher obesity prevalence compared to 15.53% obtained for other healthcare professionals. In comparison to non-health workers, nurses recorded lesser levels of overweight but similar obesity rates. A cross-sectional Scottish health survey was carried out by Kyle et al.,(2016) to determine the prevalence of overweight and obesity among nurses in Scotland and compare the results with that of other qualified / unqualified healthcare professionals and non-healthcare workers. Their results showed almost 70% Scottish nurses were overweight or obese representing about 7 in 10 nurses. Specifically, 40% of Scottish nurses were

found to be overweight while about 30% of them were obese. These nurses exhibited higher prevalence of overweight and obesity in comparison to prevalence for other healthcare staff (51.3%), unregistered healthcare staff (68.5%) and those in occupations that are non-health related (68.9%). Also, Scottish nurses were found to have higher odds of becoming overweight or obese than other healthcare staff and non-healthcare staff.

The findings from Kyle et al.,(2016) indicates that the prevalence rate for overweight and obesity are higher for Scotland nurses than for nurses in UK (Malik, Blake and Batt, 2011; Zhu, Norman and While, 2013a; Bogossian et al., 2012), USA (Chin, Nam and Lee, 2016; Huth et al., 2013; Nahm et al., 2012), and Australia and New Zealand (Bogossian et al., 2012). Their findings are also congruent with previous international research regarding the prevalence of overweight and obesity among nurses being higher than obtainable in the general population and other healthcare professionals (Bogossian et al., 2012; Holman, Thomas and Brown, 2009). Overall, research evidence has shown that the prevalence of overweight and obesity is also at significantly high levels among UK nurses.

2.4.2 Prevalence of overweight and obesity among nurses in developing countries

2.4.2a Asia and Latin America

Nurses in some developing countries have been previously researched and findings are mixed when compared to other developed countries reviewed above. Fernandes et al., (2013) reported Brazilian nurses overweight and obesity prevalence of about 60.5% and men recorded higher prevalence of overweight and obesity of 70.2% compared to women at 50.9%. Women were about five times more than men in the study thus estimates for men should be interpreted with caution due to small sample size. Another study in Brazil by Hidalgo et al., (2016) investigated the health promoting and personal lifestyle behaviours of health professionals comprising of physicians, nurses and community health workers. Out of 798 health professionals involving 347 nurses, approximately 40% of the nursing population were overweight/obese. Mexico nurses were also found to have 55% of overweight and obesity according to a study by Mendez Sanchez et al., (2008) although in their study overweight status was set at ≥ 27 kg/m² compared to WHO classification of ≥ 25.99 indicating that their estimates might have been more.

In India, Hegde et al., (2015) reported nurses prevalence of overweight and obesity to be 12.9% and 3.2% respectively. These figures significantly differed and were lesser when compared to 36.5% and 15.1% respectively for doctors. The doctors in their study were significantly older than the nurses age-wise indicating an association between age and obesity. Indian nurses have also reported very high prevalence rates in more recent studies. This trend is congruent with Gupta et al.,(2017) who based on the adjusted BMI scale for Asians due to their increased risk for non-communicable diseases found that about 70% of Indian nurses were either overweight or obese.

More recent study by Aslam et al., (2018) investigated Indian nurses weight and found a very high prevalence of obesity among the nurses compared to controls. Obesity affected four in five Indian nurses in their study compared to three in five age matched women in the control group. This result is higher than the prevalence reported for nurses in other studies presented above and even after data analysis excluding nurses with family

history of diabetes, the overweight and obesity prevalence remained unchanged though significantly higher among women in the control group. Nevertheless, when compared to findings from hedge et al (2015) from the same country, it may be perhaps implied that nurses' individual health behaviours have deteriorated with time and the obesity situation within the nursing population will likely worsen if interventions are not implemented to support nurses to lead healthier lifestyles and better manage their weight.

In Iran, nurses were found to have 55.4% prevalence of overweight and obesity (39.96% and 15.45% respectively) when examined by Kazemi et al., (2015) which is similar to findings from Almajwal (2016) who found that out of 395 nurses in Saudi Arabia, 50.6% were either overweight or obese (37.7% and 12.9% respectively). These studies presented reveal high rates of overweight and obesity among nurses in Asia and Latin American countries as presented above.

2.4.2b Sub-Saharan Africa

In Sub-Saharan Africa, studies on nurses' health and lifestyle are very scarce and only few studies have been carried out on overweight and obesity among nurses. In South Africa, Skaal and Pengpid (2011a) carried out a questionnaire study on 200 healthcare workers generally and found overweight and obesity prevalence of 73.5%. Gender and age were found to affect body weight among this healthcare workers as overweight and obesity was also more prevalent among females (76.5%) than males (60.5%) as well as among those aged 40 and over (79%) compared to younger healthcare staff (63%). Satisfaction with current weight was reported by 56% of these health professionals despite showing high overweight/obesity rates. Underestimation of body weight was reported to be grossly evident in almost 100% of the obese group of health professionals when personal body weight perceptions were compared to BMI. Despite the difference in educational level and profession, no difference in obesity prevalence was reported between medical and nonmedical staff members. The BMI of black nurses practicing in South Africa was studied in a cross-sectional survey that included 153 nurses in Goon et al., (2013). Over 80% of black nurses were either overweight or obese. This prevalence was found to increase with age and comparable to the prevalence obtainable for the general adult population in South Africa. Similar results of high obesity prevalence among nurses in South Africa reaching up to 90% was recorded in a recent study by Monakali et al., (2018). Nurses' age, gender and duration of practice were found to be correlates of obesity (Monakali *et al.*, 2018). Another south African study reported that black female healthcare workers also reported about 95% overweight/obesity prevalence rate (Puoane *et al.*, 2005).

In Ghana, overweight and obesity prevalence among nurses was at 43.3% (23.4% and 16.9% respectively) as seen in a study by Aryee et al., (2013). This relates to obesity prevalence of 29.4% gotten in a study on obesity among nurses in Ghana by Obirikorang et al., (2016). In both studies from Ghana, age, gender, marital status, nursing rank and years of experience were found to influence the level of obesity among nurses.

Regarding the Nigerian context, there was no study that looks at the prevalence of both overweight and obesity in nurses. Iwuala et al., (2015b) investigated the prevalence of obesity amongst 300 healthcare providers in Nigeria of which nurses constituted 43.3% and found overweight and obesity prevalence to be high at 72% (27.3% obese; 44.7% overweight). In a similar cross-sectional study of 320 healthcare workers in Nigeria by Dankyau et al.,(2016b), 63.4% were either overweight or obese (23.2% obese, 31.4% overweight). Obesity was associated with age, gender, marital status, higher monthly income and number of years of experience as a health professional.

Concerning nurses specifically, a study of obesity prevalence among 500 female nurses in Nigeria carried out about a decade ago revealed that female nurses had obesity prevalence of 62.6% compared to adult female obesity rate of 34.8% in the same state as reported by the Nigerian demographic health survey data (Ogunjimi et al., 2010). This figure does not include overweight nurses as only obesity data was recorded in their study and measured in line with WHO classification of $\geq 30\text{kg/m}^2$. Eating behaviour and marital status were also found to be directly related to obesity among the nurses in their study. Ogunjimi et al., (2010) also reported that from the results of their study, most of the Nigerian nurses do not perceive themselves adequately in relation to their body weight, rather the nurses in their study perceived their increased body weight as evidence of beauty and affluent living.

On a broader scope, it was reported that body fatness is perceived in Africa as a sign of beauty and fullness for women, compared to being slim which is generally perceived as related to low socioeconomic status. This phenomenon is associated with the rapid rise of obesity among women in developing countries. Research studies report how some cultures perceive obesity as the norm especially for women. In these cultures, obesity is much admired, appreciated, accepted and viewed as a mark of femininity or manliness such that certain cultures in Nigeria and neighbouring countries perform ceremonies and rituals to promote “fattening” (Enang, 2009; Akpan and Ekpenyong, 2013; Benkeser, Biritwum and Hill, 2012). Therefore, women take pride in having large body size as they are frequently celebrated as being beautiful and feminine. This widespread social and cultural acceptability may also explain the gross obesity among female nurses in Ogunjimi et al., (2010) study and the nurses’ reported feeling of being mostly comfortable with their body sizes. Reports by Streigel-Moore et al. (2003) reveal that black women when compared to white women experience less social pressure about their body size and weight in relation to weight management.

Student nurses in Nigeria were also found to have markedly lower overweight and obesity prevalence of 18.3% (Emmanuel *et al.*, 2015) when compared to those for registered nurses. Despite statistical factors that may have affected the results from this research on student nurses in Nigeria, other factors like marital status and increasing age found to be significantly associated with overweight and obesity in the previous studies of nurses were not applicable to these set of young undergraduate nurses. Vast majority of them were single and below 25 years of age and this may perhaps explain the low overweight and obesity prevalence. Perhaps before registering as nurses, nurses may not have already developed overweight and obesity, but the challenges of the nursing profession may take its toll on the nurses’ individual health behaviours and ultimately result in increasing body weight.

The absence of research studies on the weight status of nurses in Nigeria warrants immediate attention. This is because Nigeria is the most populous country in Africa with over 200 million people, teeming aging population, increasing healthcare needs, an alarming nurse-manpower emigration and nursing shortage ratio of 1.6/1000. Thus, this research sets out to investigate the prevalence of overweight and obesity among nurses in Nigeria.

2.4 What are Nurses’ roles in health promotion?

WHO (2003) highlighted that integration of strategies for disease prevention and health promotion into healthcare has increased in focus over the last decade and nurses have very important roles to play. This viewpoint of health promotion as a key nursing role is also supported by nursing literature (Borchardt, 2000;

Callaghan, 1999; Callaghan, Fun and Yee, 1997; Carlson and Warne, 2007; Casey, 2007; Clarke, 1991; Connolly *et al.*, 1997; Dunkley and Ward, 2005; Piper, 2008). Increasing emphasis has also been made in research, professional nursing regulators documents, media and government policy documents about the importance of health promotion. Health promotion represented the subject matter in the United Kingdom health policy (Department of Health, 2000), the Nursing and Midwifery Council (Nursing and Midwifery Council, 2004a; 2004b; 2005), the Ottawa Charter for Health Promotion and the Health for All both initiated by WHO. Furthermore, the 'Health Promoting Hospitals' initiative by WHO also demonstrates the need for strategies for health promotion to focus on health professionals as well as their work environment and patient care (Ziglio, Simpson and Tsouros, 2011; World Health Organization, 1986). For nurses as healthcare professionals, health promotion represents a holistic concept that results in empowerment and creation of a balanced relationship between one's self, others, and the environment with the aim of improving wellness (Carlson and Warne, 2007). Engagement in relationships such as described above requires nurses to optimally commit to health promotion practices at both personal and organisational levels. Notwithstanding, according to Pender *et al* (2002), in spite of considerable evidence to support healthy lifestyle practices, most nurses still find themselves not keeping up with recommended health and lifestyle practices.

Sequel to the introduction of 'Health for All by the year 2000' initiative by WHO, nurses had been repeatedly called to be the leaders in health promotion, to facilitate and enable people and communities into healthy actions (Kemppainen, Tossavainen and Turunen, 2013). This implies that nurses play important roles in the promotion of healthy lifestyle behaviours to their patients and public.

Health promotion has been integral to nursing practice though its focus used to be majorly on health education for disease management and behaviour change amongst individuals, families and communities (Kemppainen, Tossavainen and Turunen, 2013; Rush, Kee and Rice, 2005). More recently, the scope of health promotion has expanded to focus more on preventive health. However, research evidence suggests that although nurses identified their roles in health promotion for prevention of illness and maintenance of healthy lifestyle, most nurses still majorly utilise traditional health education approaches (Whitehead, 2001; Whitehead, 2007; Tones, Robinson and Tilford, 2013).

Irrespective of the approach and scenario of health promotion, nurses have a duty of care to promote health to individuals, families and communities as part of their established and expanding public health roles (Whitehead, 2005; Büscher, Sivertsen and White, 2009). Indeed, increasing awareness of nurses' roles within the broad concept of health promotion is in line with the emergence of innovations and concepts in nursing and healthcare in general. This also emphasises a shift in nurses care focus from a disease/illness-centred care towards a more wellness-centred care where nurses have to disseminate several forms of healthy lifestyle advice.

Accordingly, contemporary health promotion in nursing practice has extended and expanded nurses' roles to that of case manager, advocate, consultant, mediator, partner, supporter and social activist (Whitehead, 2001; 2007; 2009). Also, these roles have broadened in scope to become integrated into and linked to nurses' personal lifestyles and outlook as well as other health actions related to prevention of diseases and promotion of healthy lifestyle choices for both their clients and the general public (Brown and Thompson, 2007; Hicks *et al.*, 2008). In addition, since nurses experience a high frequency of direct patient contact in the course of their jobs, they have multiple opportunities to serve as a reference point for healthy habits that patients can imitate (Blaber, 2005). Although little is known from the patients themselves as the centre of the debate about how this

impact on them, nurses' roles in health promotion are particularly important in the management of chronic diseases particularly where management is lifelong, hugely depends on self-management and primarily requires significant lifestyle modifications.

Indeed, nurses' complex roles as health promoters is made effective by their multi-disciplinary knowledge, range of expertise, experience and competencies of health promotion (Kemppainen, Tossavainen and Turunen, 2013). Nevertheless, despite the common duty of a commitment to health promotion, the issue of nurses' credibility to deliver health advice to clients and their families remains generally debatable especially in circumstances where nurses themselves do not engage in healthy lifestyles or their physical appearance gives them off as unhealthy role models. Arguments exist around for example, a nurse who is obese or physically inactive not having the self-confidence or feeling of sufficient credibility in their role to approach clients and promote health in the aspect of weight loss and physical activity. This indicates that most nurses acknowledge their roles in health promotion and the benefits that accrue when they promote health overtly or inadvertently irrespective of their actual health behaviours (Blake and Patterson, 2015b). Therefore, in addition to nurses roles in healthcare, nurses are also suggested to integrate healthy living as part of their lives in order to strengthen the impact of their roles as health promoters and increase the likelihood of patients and families engaging with their health promotion advice (Blake and Harrison, 2013; Blake *et al.*, 2015; Borchardt, 2000; Hicks *et al.*, 2008; Rush, Kee and Rice, 2005). Current discussions around nurses' roles in health promotion have presented nurses as champion in the public health promotion initiative. This implies that nurse's ought to first heed to their own healthy lifestyle advice and follow the recommendations for healthy behaviours in themselves both within and outside the workplace as they engage in various interventions to promote population health.

2.5 How are nurses' health promoting behaviours?

Nurses have been championed as frontline healthcare professionals who possess potentials for impactful patient centred health and wellbeing services and health promotion. As a result, there is need to examine their personal health promoting behaviours given that research evidence highlighted high levels of health risk behaviours in nurses compared to the general population (Tucker *et al.*, 2010; Van Dam *et al.*, 2008; Schluter *et al.*, 2011). Furthermore, the knowledge of nurses' health promoting behaviours enable healthcare organisations to gain insight about the health of their nursing workforce as they strive to maintain a healthier workforce for health.

Indeed, nurses are not any less exposed than the general adult population to the same factors that tempt the public to engage in unhealthy lifestyles and they are also not excluded from the estimation of the total burden of non-communicable diseases globally even though as health custodians, nurses may be held to a higher standard of healthy behaviours (Nahm *et al.*, 2012; Borchardt, 2000). Nurses' health promoting behaviours may also portray their readiness to act as role models for health and their readiness health-wise to function optimally and deliver healthy lifestyle support and advice in this era of preventive healthcare and health promotion.

As stated previously, the health promoting behaviours discussed in this research study includes dietary behaviours, physical activity behaviours, alcohol consumption and smoking behaviours. This is because non-

compliance to these behaviours constitutes the major risk for non-communicable diseases (World Health Organisation, 2002; World Health Organization, 2011; World Health Organisation, 2010b).

Research evidence from previous research on nurses' health promoting behaviours revealed that nurses' health behaviours are far from exemplary and fail to meet with either government recommendations or the ICN statement that nurses should possess healthy lifestyles to be healthy role models. Internationally, previous research on nurses' health promoting behaviours have produced mixed findings with nurses majorly reporting unhealthy lifestyle behaviours, in addition to high overweight and obesity profile discussed previously (Malik, Blake and Batt, 2011; Blake and Patterson, 2015b; Skaal and Pengpid, 2011a). Significant proportion of nurses are overweight or obese, do not comply with the consumption of five servings of fruits and vegetables daily, engage in regular consumption of sugary and high fat foods, are physically inactive (perform less than 150 minutes of moderate physical activity weekly), have high levels of smoking and alcohol consumption (Malik, Blake and Batt, 2011; Department of Health, 2009b; Blake *et al.*, 2012a; Zapka *et al.*, 2009; Blake *et al.*, 2011; Miller, Alpert and Cross, 2008). Research evidence has also linked nurses unhealthy lifestyles to development of stress, fatigue, burnout, chronic diseases, high sickness absence and presenteeism (McElligott *et al.*, 2009; Blaber, 2005). Poor weight management, unbalanced diet and physical inactivity can result in overweight and obesity. Although certain condition can confound the development of overweight and obesity, its major cause as stated earlier is excess calorie consumption and lesser energy expenditure. Unhealthy behaviours inevitably constitute increased risk of poorer physical and mental health for nurses in the same way as members of the public. This may likely result in significant implications for the roles of nurses as busy health professionals not only in terms of the nurses personal health but also contributes to negating nurses potential for healthy behaviour role modelling, reduces nurses productivity, quality of care patients receive and their overall health outcome and quality of life (Perry *et al.*, 2017).

Malik *et al.* (2011), emphasised the criticality of sickness absence in the workplace and its economic and budgetary implications because nurses unhealthy behaviours ultimately increase the likelihood of nurses calling in sick and taking sickness related time-offs. Nurses taking sick-offs and sick leaves then causes nursing staff shortage in the healthcare system and increased risk for error and breakdown in health for the remaining overworked nurses. The consequence of this phenomenon is an acute crisis in the healthcare system (Thompson, 2007; McElligott *et al.*, 2009). A systematic review by Priano *et al.*, (2018) found that only less than 5% of nurses in America engage in all five healthy lifestyle behaviours investigated which include healthy diet, physical activity, not smoking tobacco, low alcohol consumption and weight management.

Indeed, considering the busy nature of nurses' daily roles, there is much to benefit from maintaining healthy lifestyles. Although epidemiological and longitudinal research studies on nurses are sparse, research evidence from the nurses' health study of over 75,000 female nurses in their middle ages who were followed up for 24 years also revealed a strong association between adherence to healthy lifestyle guidelines and lower mortality rate (e.g., avoiding smoking, following a healthy diet, engaging in regular physical activity, and maintaining a healthy weight) (Van Dam *et al.*, 2008). Improvement in nurse's health promoting behaviours represents a significant initial step in the promotion of healthy lifestyle choices in the general public thereby contributing to strategies to improve public health at local, national and international levels.

The following sub-sections will explore previously published research studies on nurses' dietary habits, physical activity behaviours, alcohol consumption behaviours and smoking behaviours.

2.5.1 Dietary behaviours of nurses

The value of healthy dietary behaviour and maintenance of a healthy weight for good health (World Health Organisation, 2010b) are known to nurses as a result of their health related knowledge. Nevertheless, according to Tsai and Liu (2012), in comparison to other healthcare staff, nurses were reported to have lesser quality of nutrition. Albert et al., (2014) also reported that only about 17% of the nurses in their study had healthy diet while most of the nurses had either unhealthy or moderately healthy diet. For these nurses, healthy diet consumption was neither associated with nurses' age nor marital status. There is a growing body of research depicting nurses' non-adherence to healthy eating recommendations and practices. Previous research studies on nurses' dietary behaviours have found unhealthy dietary habits among nurses such as regular consumption of high fat and high sugar foods, snacking on sweets, irregular meal schedules, skipping meals, comfort eating and overeating.

2.5.1a Unhealthy Snacking and overeating

Consumption of snacks in between meals in addition to standard meals adds extra calories to the body especially intake of nutrient poor snacks. Healthy snacking on vegetables and fruits is beneficial to health but sweets and sugary snacks results in increased weight gain over time. Among nurses, there may be reduced meal frequency and increased snacking of high energy snacks during shifts. Snacking on sweets in between meals have been reported by research on nurses' dietary behaviours. For example, nurses in Cheung (2003) consumed more chocolates while at work and one common reason given was 'being at work' and regularly given 'chocolate gifts' from patients and families to appreciate nurses for their work. Snacking on sweet treats had somewhat become the norm for nurses in Cheung (2003) because three-quarters of the nurses did not believe that presenting them with healthier alternatives would be better compared to one-quarter who did. About one-third felt that chocolate was detrimental to their health and well-being compared to two-thirds that did not. This may indicate that unhealthy dietary beliefs and attitudes persist among the nurses and affects their dietary behaviours. According to Persson and Martensson (2006a), nurses generally regard sweets and junk food as convenient meal options in comparison to healthier meals as a means to deal with cravings and tiredness during shifts especially night shifts. Irrespective of the shift worked, unhealthy snacking on high fat/sugar diets and overeating were behaviours that nurses exhibited to recover energy expended in busy long shift and to keep them awake (Faugier *et al.*, 2001; Sahu and Dey, 2011; Beebe *et al.*, 2017; Hassan, Hamilton and Morris, 2018; Tucker *et al.*, 2010). However, night shift working nurses in some studies were found to snack more than day shift nurses (Han, Choi-Kwon and Kim, 2016; Waterhouse *et al.*, 2003). Indeed, despite the poor nutritional quality of processed foods, they may represent choice foods for nurses because they are in ready-to eat state which saves time-pressed nurses the hassle of meal planning and preparation. Increased snacking on fast foods reduces the likelihood of eating healthy meals and consequently affects nurses' health (Almajwal, 2016; Wong *et al.*, 2010; Reeves, 2004). Terada et al., (2019) found that majority of Canadian nurses' overall snacks consumption (70%) were unhealthy snacks such as chips and chocolates. The frequency of unhealthy snacking among these nurses was also associated with body fat increase and subsequent obesity compared to nurses who consumed healthy snacks. On the other hand, a study by Gupta et al., (2017) found that Indian nurses ate mostly healthy fruit as snacks often while on shift.

2.5.1b High fat and sugar consumption

Previous research studies have found that nurses consume high fat and high sugar diets on a regular basis. Malik et al., (2011) found from their study of UK nurses' lifestyles that over one in four nurses (42.5%) ate high fat and high sugar foods daily. Similarly, nurses in Blake and Harrison (2013) also reported consumption of high fat and sugar foods daily (22.4% and 22.8% respectively). Even among hospital employees, unhealthy dietary behaviours persist as Blake et al., (2012a) found that more than one-third of the employees reportedly ate high fat and sugary foods once daily at least (30.4% for once a day and 7.0% for 2-3 times a day).

Consumption of fatty foods may predispose nurses to poor health. In Zapka et al., (2009), high cholesterol was found in 20% of USA nurses and this was reported to be related to unhealthy eating behaviours. This also indicates that some nurses' dietary habit may not only be below recommended dietary guidelines but predominantly consists of fatty foods. Gender and marital status were associated with increased fatty food intake. Female nurses consumed higher percentage of calories from fat than their male colleagues while married nurses consumed more fatty foods than unmarried nurses (Zapka et al., 2009). In Tucker et al., (2010), just over 60% of USA nurses reported eating fast food while in Fernandes et al., (2013), about 60% of nurses had moderate or excessive consumption of fried foods though their definitions of moderate and excessive were not explicitly described. Han et al., (2016) reported that up to 57% of nurses acknowledged their engagement in consumption of fried foods, starchy foods and fatty foods daily. Nurses in Hakim et al., (2016a), were reported to eat fast foods two or more times per week and their study highlighted that unhealthy eaters were inactive and likely to be more obese and vice versa. This perhaps indicates an interrelationship between healthy eating and exercise in weight management.

On the other hand, most Australian nurses in Happell et al., (2014) consumed more low fat milk and more fruit than fruit juices because the latter typically has less nutritional value. Perry et al., (2015) also found that most of the Australian nurses in their study consumed low fat milk (67.2%) compared to 25.1% of nurses and 45.6% of general population consuming full fat milk. In addition, consumption of fatty spreads and bread of white or wholemeal types were prevalent in many of the nurses irrespective of gender. Low fat consumption was also reported for Australian nurses in Perry et al., (2018) especially among female nurses. Most nurses in Perry et al., (2018) also reported lesser frequency of consumption of fast food and sugary foods. Nevertheless, Gupta et al., (2017) found that eating out and fast-food consumption was low among Indian nurses though rotating shift nurses recorded higher frequency of fast-food consumption.

2.5.1c Meal skipping and meal irregularities

Meal skipping and meal irregularity were also found to be part of nurses' unhealthy dietary habits especially skipping breakfast. Nurses reported meal skipping due mostly to irregular work schedules and time constraints from busy workload. The importance of breakfast for optimal cognitive functioning was reported in a study by Chaplin and Smith (2011) to examine the effect of breakfast on cognition. Breakfast consumption was associated with reduced levels of stress, less cognitive failures, fewer injuries and accidents at work compared to snacking on sweets and junk food which were associated with higher levels of stress, cognitive failures and more injuries outside the workplace (Chaplin and Smith, 2011). A systematic review by Priano et al., (2018),

found that nurses were at increasingly high risk for poor dietary habits and meal irregularity was a significant concern for most nurses. Abnormal timing of meals indeed has adverse effects on the regulation of body metabolism and is even worsened by the disrupted circadian rhythm (Scheer *et al.*, 2009; Tada *et al.*, 2014; Yoshizaki *et al.*, 2013). Research evidence show that rotational shift nurses engaged in unhealthy eating behaviours such as irregular eating patterns and meal skipping, which was worsened by night shift duties (Han, Choi-Kwon and Kim, 2016; Sahu and Dey, 2011; Hakim, Eldin and Mohsen, 2016a). Irregular work schedule was the main reason for meal skipping in a qualitative study of UK nurses by Aranda and McGreevy (2014), in about 40% of Korean nurses in Kim *et al.*, (2013), and over half of the nurses in Nahm *et al.*, (2012). More so, Nahm and colleagues found significant inverse relationship between BMI and having a regular dietary pattern (Nahm *et al.*, 2012). It is unclear from research whether meal skipping, and meal timing irregularities are associated with increasing BMI among nurses as research into this issue is scarce and beyond the scope of this study. On the other hand, most of the nurses in Gupta *et al.*, (2017) were reported to have appreciable dietary behaviours by following regular meal patterns daily and not skipping meals. Meal skipping and meal irregularities especially skipping breakfast results in impulse snacking behaviours among nurses (Terada *et al.*, 2019; Yoshizaki *et al.*, 2010). Also, frequent snacking leads to meal skipping and reduces the likelihood of eating a proper and healthy meal especially given the convenience of fast and processed foods.

2.5.1d Fruit, vegetable and water consumption

Consumption of fruits and vegetables are vital for healthy dietary behaviours and if sufficiently consumed could aid in weight management and reduced risk of NCDs. Globally, low fruit and vegetable consumption contributes to disability adjusted life years and estimated deaths rates. The recommendation for fruit and vegetable consumption for adults according to WHO and Food and Agriculture organisation of the United Nations reports is at least five servings of fruits and vegetables daily (this excludes starchy vegetables) for improvement of overall health and NCDs risk reduction (World Health Organisation, 2010b). Similar to the general population, there also exists a gap between fruit and vegetable recommendation and consumption among nurses despite their presumed knowledge of healthy dietary requirements. In Malik *et al.*, (2011), Blake and Harrison (2013), Blake *et al.*, (2012a) and Blake and Patterson (2015b), majority of the UK nurses (64.8%, 72.8%, 56.5% and 79% respectively) reported non-consumption of their five-a-day of fruit and vegetables recommendation. Similarly, Zapka *et al.*, (2009) also found low fruit and vegetable consumption among American nurses. In Zapka *et al.*, (2009) women consumed significantly less servings of fruit and vegetables daily compared to men while nurses who perceived they were overweight ate fewer servings of fruits and vegetables than nurses who reported their body weight to be normal or underweight. Nurses who reported higher stress also ate more fruits and vegetables than nurses who reported less stress. American nurses fruit and vegetable consumption was investigated by Tucker *et al.*, (2010) but there was no report about nurses meeting recommendations, about 90% of nurses were reported to consume fruit and vegetables more than two times a week.

Australian nurses seemed to be meeting the recommendation in their fruit consumption in Happell *et al.*, (2014). The Australian nurses met the recommendation for fruits but not vegetables consumption. However, their study measures were based on the recommended guidelines for Australian adults (two servings of fruit and five servings of vegetables) and makes direct comparison unclear. According to Perry *et al.*, (2015) in another Australian nurses study, inadequate fruit and vegetable intake was found to be the most common risk factors

for chronic diseases. Less than one-fifth (18.1%) of the nurses consumed fruits in line with recommended guidelines and males did not differ much from females in their fruit consumption. Their study reported that nurses of all age groups and genders were majorly consuming fruits at less healthy rates than the general adult population. Vegetable consumption among these nurses was even lesser at 9.4% consuming five or more servings of vegetables daily irrespective of their gender. Perry et al., (2015) also found that no nurses from the youngest age group of up to 24 years and no female nurse 55 years of age and above met the recommendations for vegetable consumption. Overall, only 6.6% of the nurses in Perry et al., (2015) met the recommendation for both fruit and vegetable intake making nurses less healthy consumers than their age and sex matched population groups.

Perry et al., (2018) also investigated Australian nurses' lifestyles and reported that only 8% of nurses met fruit and vegetable recommendations. Older nurses and females in their study complied more with healthy eating than younger nurses and males even though older nurses were more likely to be overweight or obese. Research studies show that increasing age, female gender, climacteric and menopausal symptoms are associated with weight gain (Al-Safi and Polotsky, 2015; Kapoor, Collazo-Clavell and Faubion, 2017). The nurses in Perry et al., (2018) were slightly more healthy eaters than the general population though nurses' general lifestyle behaviours were not markedly better than that of lay people thus putting them at same or even higher risk of NCDs than the population that they care for.

In addition, Brazilian nurses in Hidalgo et al., (2016) reported similar trend of inadequate intake of fruits and vegetables. Consumption of less than 5 portions daily was prevalent among 71.2% of the nurses. This indicates that nurses majorly consumed less than the recommended amount of fruit and vegetables daily despite adequate fruit and vegetable intake being reported to reduce the risk of development of chronic diseases (Boeing *et al.*, 2012). Despite non-description of portions consumed in line with recommendations, low fruit and vegetable consumption was reported in about four in ten Brazilian nurses in Fernandes et al., (2013) while just over half of the nurses consumed adequate fruits and vegetables. Appropriate consumption was reported as 1-7 times/week while low consumption was measured as never/up to 3 times/month making comparison unclear. Similarly, about one in six South Korean nurses in Han et al., (2016) reported consumption of fruits and vegetables respectively though their consumption in comparison to healthy recommendations were not reported. Gupta et al., (2017) also found that Indian nurses ate mostly healthy fruit as snacks often while on shift but reference to portions and frequencies were not reported in their study.

Water consumption and hydration among nurses has been reported in very few studies. In Malik et al., (2011), only one in five nurses reported intake of recommended eight glasses of water a day while in Blake et al., (2012a), one in five nurses consumed less than recommended daily water intake according to the UK food standards agency guidelines. Despite the benefits of adequate hydration for performance, health and wellbeing while working, approximately two in ten (22%) nurses reported drinking eight glasses of water daily.

2.5.2 Physical activity behaviours of nurses

Appropriate regular physical activity is a requirement for the maintenance of health because it is beneficial for optimum functioning of physical and mental health as well as prevention of NCDs (Warburton, Nicol and Bredin, 2006). WHO (2010b) published the global recommendations on physical activity which requires that adults should engage in at least 150 minutes of moderate-intensity aerobic physical activity weekly or at least 75

minutes of vigorous-intensity aerobic physical activity throughout the week or an equivalent combination of moderate- and vigorous-intensity activities. Strong correlations exist between physical inactivity and poor health outcomes and physically active people are more likely to be of healthy weight and body mass index (Lee and Ellingson, 2018; González, Fuentes and Márquez, 2017; Malhotra, Noakes and Phinney, 2015). The impact of physical inactivity on human health is widely known to be detrimental such that WHO (2010) identified physical inactivity as the fourth highest risk factor for global mortality while physical inactivity related complications constituted an estimated 3.2 million deaths globally. Unfortunately, despite these findings, there has been increasing global concerns about high levels of sedentary lifestyles and physical inactivity worldwide (Hallal *et al.*, 2012; van der Ploeg and Hillsdon, 2017; Kohl 3rd *et al.*, 2012). According to WHO (2018) global data on physical inactivity, more than one in four adults are physically inactive though in some countries, this rate may be as low as one in three adults. Women were found to be less active than men (23% for women and 32% for men) while high income countries have higher physical inactivity levels (37%) than low (16%) and middle (26%) income countries.

2.5.2a Studies reporting higher physical activity levels for nurses.

Research evidence has revealed that healthcare professionals who promote healthy living and are perceived as statutory advocates of health promoting behaviours such as engagement in physical activity are also exposed to predisposing factors for NCDs such as sedentary lifestyles and working conditions that promote physical inactivity (Skaal and Pengpid, 2011b; Siqueira *et al.*, 2009). Indeed, nurses as key stakeholders in health promotion and public health have a duty to promote physical activity to the public. Therefore, nurses may be expected to be physically active in their personal lives because it may have huge potential impact on their personal health, quality of life, job performance and credibility for their physical activity related health promotion practice.

Higher levels for physical activity were reported in Zhu *et al.*, (2014) as about seven in ten (70%) nurses reported either performing moderate or active physical activity (21.5% and 49.0% respectively) and also in Stanton *et al.*, (2015) as 74% of nurses engaged in either moderate or high levels of physical activity. In Happell *et al.*, (2014), almost two-thirds (65%) of the nurses in Australia complied with the recommended levels of moderate and vigorous physical activity in the past seven days while over one-quarter (29%) were physically inactive and 6% were sedentary. About half of polish nurses (50.6%) in Biernat *et al.*, (2012) were physically active at moderate and high levels than their gender matched physicians and other medical personnel. Australian nurses physical activity participation rates were at a high level as majority (82 %) met the recommendations for physical activity (Perry, Gallagher and Duffield, 2015). Males and females had similar levels of participation in physical activity (81.7 % for females, 85.2 % for males). Nurses' physical activity levels substantially exceeded that of the general population by about 20% across both genders and most age groups. Also, nurses with healthy weight did not differ significantly from overweight or obese nurses in the total hours spent doing moderate to vigorous activity in the past week. A later study on nurses in Australia (Perry *et al.*, 2018) found that about half of the nurses met physical activity recommendations though females complied at a lesser rate than males (46.0% for females and 51.5% for males). Participation in recommended physical activity was not statistically different across the nurses' age groups though male nurses were found to be more likely to meet recommended activity levels than female nurses. Beebe *et al.*, (2017) also found that just over 80% of the nurses engaged in

regular physical activity with most nurses undertaking physical activity between once and four times weekly. The nurses who engaged in physical activity in their study had better diet quality and lower BMI than nurses that were physically inactive. The nurses in Bakhshi et al.,(2015) majorly reported being physically active (75%) although about three in ten of the nurses (28%) did not meet up with WHO physical activity recommendations. Personal factors such as gender, perceived health status and level of education had significant associations with nurses' physical activity performance levels.

2.5.2b Studies reporting higher physical inactivity among nurses.

In a systematic review by Priano et al.,(2018) between 60% and 74% of nurses were found to be at risk for poor health outcome due to inadequate physical activity participation and nurses' health related quality of life was found to improve with adequate physical activity performance. Understanding the physical activity profile of nurses is not just timely and relevant to aid identification of areas for intervention and future research but also vital for the implementation of public health interventions at regional, national and international levels.

International research evidence suggest that nurses physical activity levels are low and many nurses are not active as per the recommendation of at least 30 minutes of activity on at least five days a week (World Health Organisation, 2010b). Significant proportion of nurses are considered to be physically inactive, sedentary or exhibit lower physical activity (PA) levels than recommended (Kumbrija et al., 2007; Howe et al., 2010; Nursing Times, 2008; Esposito and Fitzpatrick, 2011; Zapka et al., 2009). Research evidence on physical activity performance and attitudes reveal a relationship between nurses' weight (BMI), personal physical activity lifestyles and their potential to promote physical activity to their patients. The implication of this may be that the nurses who do not meet government's recommendations for physical activity may feel less confident about promoting physical activity lifestyles (McDowell, McKenna and Naylor, 1997; Zhu, Norman and While, 2011a; Zhu, Norman and While, 2011b; Esposito and Fitzpatrick, 2011; Lobelo and de Quevedo, 2014; Fie, Norman and While, 2013). Nevertheless, contrary view was found in Stanton et al.,(2015) where mental health nurses physical activity levels were not associated with their health promotion practice.

Furthermore, research evidence by Blake et al., (2012a) and Malik et al., (2011) also stated that around half of their samples (45.2% and 48.6% respectively) reported non-engagement in physical activity at levels that meet public health physical activity recommendations for health benefit. The cross sectional questionnaire study by Malik et al., (2011) on 876 participants of which 62.9% were nurses found that even though the knowledge score for physical activity was relatively high indicating the participants in their study were generally knowledgeable about health and physical activity, almost half (48.6%) of the participants did not meet up with public health recommendations for physical activity because they did not engage in the recommended physical activity for at least 30 minutes on most days of the week. Also, the participants had low mean scores for self-efficacy for physical activity and social support for physical activity which indicates that despite their knowledge, most of the participants did not reckon they possessed the ability for engagement in regular physical activity and also perceived that they had insufficient support from their family and friends to enable them to engage with regular physical activity. Blake et al., (2012) study expressed the notion that health behaviours tend to cluster together such that people who are more physically active are more likely to engage in other health behaviours and vice versa. Also, physical inactivity was still highly prevalent among this group of healthcare staff as almost

30% of employees engaged in sedentary lifestyles but despite that, physical activity rates were better than that of the general population. Also, compared to active staff, inactive staff were more likely to report more barriers to engaging in physical activity, eat unhealthy food, eat less than five portions of fruit and vegetables a day, have lesser levels of self-efficacy and social support for physical activity, report lesser scores in general health perception, more likely to smoke, have low mood as well as being overweight or obese.

Similarly, in Jinks et al., (2003), 23% of hospital staff were sedentary while 21% engaged in recommended physical activity daily. About two in ten nurses were physically inactive in Sveinsdottir & Gunnarsdottir (2008) majorly because they lacked the time to engage in physical activity and 21.7% rated their physical health as either poor or very poor. Chin et al.,(2016) reported that occupational factors are associated with physical inactivity in nurses as majority of the nurses in their study failed to meet physical activity recommendations. Only about four in ten nurses (41.3%) performed regular aerobics, this is lesser than the general USA adult population rate of 51.6%. While 56.6% of nurses engaged in muscle strengthening activity on 2 or more days weekly, 32.8% did not meet recommendations for either muscle strengthening or aerobics activities. BMI was significantly associated with physical activity because obesity occurred more amongst nurses who did not undertake regular physical activity. Age, gender, race, ethnicity and education all influenced being overweight/obese while being overweight / obese was associated with musculoskeletal symptoms and lesser physical activity. Working full time was associated with overweight or obesity while nurses who perceived heavy workload engaged more in physical activity and were less overweight and obese than those who perceived lesser workload (Chin, Nam and Lee, 2016).

In Fernandes et al., (2013) just over half of the nurses did not engage in leisure time physical activity while about one in four nurses in Hidalgo et al.,(2016) engaged in less than 150 minutes per week of moderate to vigorous-intensity physical activity. About six in ten (60.3%) nurses in Han et al., (2016) were inadequately active while four in ten nurses engaged in regular moderate or vigorous physical activity. About 6% of nurses in Tucker et al., (2010) rarely or never engage in any physical activities, 45% reported engaging in levels that fall below the Centres for Disease Control and Prevention-recommended guidelines while only about 50% of the nurses met the physical activity recommendations. In Nahm et al ., (2012), most nurses did not feel they were adequately physically active as almost three quarters of the nurses (72.2%) reported that they are physically inactive despite busy work which involves walking many steps which they seem to undermine. Apart from time at work, less than half of the nurses (43.2%) engaged in physical activity of 100 or more minutes per week and BMI was significantly inversely related to the amount of time spent on exercise. Nurses also used exercise for stress release more frequently therefore exercises at work may be an opportunity to be maximised in relation to physical activity as previous research reported that nurses steps at 100 steps a minute could be compared to engagement in moderate/vigorous exercise but nurses do not walk as fast as this pace while working (Le-Masurier, Sidman and Corbin, 2003; Levy, 2011).

However, despite previous studies recording nurses steps at over 2 miles per 10-12 hour shift (Welton *et al.*, 2006), many nurses are still hugely physically inactive to benefit their health even by step count. In a mixed pedometer steps measurement study of Nigerian healthcare professionals in an urban hospital by Owoeye at al., (2016), out of 69 nurses, 72.5% were physically inactive ($\leq 10,000$ pedometer steps) compared to 27.5% reported as meeting physical activity recommendations ($\geq 10,000$ pedometer steps). Nurses had higher average steps than other healthcare professionals but there are arguments around whether nurses walk at work counts

as physical activity as this has been shown to have unhealthy effects on nurses physical and mental health. The nurses in Zapka et al., (2009) reported various walking exercises while some did not take walks during their breaks. Men and nurses over age 40 walked more than women and younger nurses. Nurses with higher educational qualifications were less likely to take walks on their break than nurses with lesser educational qualifications and the nurses that were obese walked less. The nurses that perceived their jobs as stressful expended more calories at work. Co-worker activity was associated with low fat consumption and increased likelihood to take walks and increased work-related calorie expenditure. On the average the nurses walk about 4 to 5 miles per 12-hour shift though this is somehow dependent upon the shift worked and the number of patients per nurse.

Overall, nurses walking physical activity at work may have both benefits and hazards for their health as some studies have highlighted nurses reporting musculoskeletal problems such as low back pain. Also, nurses performance of leisure time physical activity in addition to workplace physical activity was found to reduce their rates of sick leave while being busy at the workplace does not necessarily count as physical activity and could on its own lead to stress, certain mental health problems like anxiety and depression, increased BMI and sick leave (Henwood, Tuckett and Turner, 2012). In Zapka et al.,(2009), less walking was done by overweight and obese nurses compared to normal weight nurses while in Kim et al.,(2013), overweight and obese nurses had higher prevalence of regular physical activity (46.2%) than normal and underweight nurses (40.3%). This may imply that some overweight/ obese nurses in their study recognize the need for regular exercises in the management of their weight.

Healthcare professionals in Nigeria have been found to have low levels of physical activity than the general adult population. Iwuala et al., (2015a) in a study of 300 Nigerian healthcare professionals consisting of 43.3% nurses found inadequate/low physical among 79.2% of health professionals while only 20.8% practiced adequate physical activity (9.7% moderate and 11.1% high physical activity). Overweight and obese BMI was associated with inadequate physical activity. This finding mirrors the finding of Akarolo-Anthony et al., (2014) who assessed the prevalence of physical activity among urban professional adults in Nigeria and found that over 80% do not meet WHO recommendations for physical activity. Leisure time physical activity was also found to be very low among the population of urban professionals irrespective of their age and BMI. Vigorous intensity physical activity was also lacking among health sciences students in Nigeria even though 85.3% of the students complied with 150 minutes of moderate intensity activity per week (Oyeyemi *et al.*, 2017). Indeed, performing physical activity can help nurses cope with fatigue, stress and burnout inherent in their nursing roles (Han *et al.*, 2012). On the other hand, nurses perceived health status and self-efficacy may influence their likelihood of physical activity performance (Kaewthummanukul *et al.*, 2006).

Following these findings, it is evident that performance of less physical activity than recommended seem to be an issue of concern for the nursing profession which needs to be resolved given that nurses may perhaps need to improve their personal health to promote improved compliance to physical activity recommendation for patients. Nurses may also be expected to appropriately mentor and role model optimal physical activity behaviours. Also, nurses low physical activity levels are remarkable and may call into question how low their activity levels may actually be given that research on self-reported behaviours such as physical activity are often overestimated instead of underestimated meaning performance levels may be even significantly lower than reported (Boon *et al.*, 2010; Knox *et al.*, 2015). Across these studies, there were also variations in physical

activity levels in line with body mass index (BMI) such that those within a healthy BMI category were more likely to practice recommended physical activity and vice versa. Participation in physical activity is considered to be multifaceted; with social, environmental and personal barriers all considered to be determining factors (Fahlman, Hall and Lock, 2006). Concerning barriers that influence fitting physical activity around nurses' daily schedules; irregular shift pattern, work-related stressors were found to influence nurses exercise behaviours though time constraint was implicated as the most common barrier to engaging in physical activity followed by tiredness/fatigue and lack of motivation (Jinks et al, 2003, Surawongsin, 2002, Zapka et al, 2009, Nursing Times, 2008). These barriers will be discussed in detail in subsequent sessions of this literature review chapter.

2.5.3 Smoking behaviours of nurses

Healthcare professionals particularly nurses are responsible for educating people about the consequences of smoking and the benefits of smoking cessation. In this regard, nurses are well positioned to appropriately inform and encourage smoking cessation in patients who smoke due to their frequent contact with them (Wallace-Bell, 2003). Nevertheless, most nurses under-utilize their potentials in this aspect of preventive health promotion, and this may be due to avoidance of the guilt of being hypocritical due to personal smoking behaviours, inadequate knowledge of smoking consequences and/or lack of confidence. In McKenna et al., (2001), although nurses accepted their roles as smoking cessation health promoters, there was low performance of this role in practice, even when they had the opportunity to do so because they were current smokers and this puts patients at increased risk of inadequate smoking related knowledge. Nurses' personal smoking behaviours are of concern given nurses smoking cessation promotion and nurses' health. The prevalence of smoking in nurses varies across nursing studies in terms of countries and specialties but overall, appears to be on the decrease though some developed nations still have high smoking rates among nurses (Smith and Leggat, 2007). Some nurses still indulge in smoking as reported in published research evidence even though the centrality of health promotion to nursing makes it paradoxical for nurses to be smokers.

Low prevalence of smoking has been found in research on nurses in different countries. Less than one percent of nurses smoked in studies from Hong Kong (Johnston *et al.*, 2005) and South Korea nurses (Han, Choi-Kwon and Kim, 2016). Other studies report between 1% and 5% smoking prevalence for nurses in Korea (Kim *et al.*, 2013), China (Smith, Wei and Wang, 2005; Smith, Zhao and Wang, 2013) and Iran (Kazemi *et al.*, 2015). Smith *et al.*, (2005) found more male nurses reporting being current smokers compared to female nurses and more older nurses smoking compared to younger nurses. In Zapka *et al.*, (2009), about 6% of USA nurses reported smoking while in Nahm *et al.*, (2012), 8.2% of USA nurses were current smokers. Similarly, In Perry *et al.*, (2018), 10.3% of Australian nurses self-reported current smoking. Older nurses and male nurses were significantly more likely to be daily smokers than younger nurses and female nurses. In Bahkshi *et al.*, (2015), 11% of UK nurses were current smokers, 17% were past while almost three-quarters of the nurses were neither past nor current smokers. Hidalgo *et al.*, (2016) reported 87.9% of Brazilian nurses had never smoked with only 12.1% of the nurses being former or current smokers and these nurses were found to be less likely to encourage smoking cessation in patients. In Perry *et al.*, (2015), 18% of Australian nurses were current smokers and 6.8% reported being daily smokers though no males over 45 years reported current smoking. O'Donovan (2009) found that 21% of Irish nurses were smokers and more especially younger nurses between 20 – 30 years (62%)

while 18.6% of Polish nurses were current smokers and smoked more than physicians but similar to office staff in Cofta et al.,(2008).

In Smith et al., (2013), about 25% of nurses were either daily or occasional smokers while majority were either past smokers or non-smokers while in Fernandes et al.,(2013), about 30% reported being former or current smokers though no specific percentage was given for current smokers while almost three-quarters of the nurses were non-smokers.

Even higher smoking rates were found among nurses in some countries. Tada et al.,(2014) reported that 26.9% of Japanese nurses reported habitual smoking which was operationalised to mean smoking for over six months or total of 100 cigarettes and still current smoker. Bloor et al., (2006) studied mental health nurses smoking behaviours and found 35% smoking prevalence among them. This may indicate perhaps that nurses smoking prevalence may be influenced by specific nursing specialties in which occupational stress be higher than in others thus nurses may resort to smoking as a coping mechanism (McVicar, 2003; Cofta and Staszewski, 2008; Sarna *et al.*, 2005). Previous research evidence has actually reported that smoking among nurses is associated with certain nursing specialties. O'Donovan (2009) further highlighted that mental health nurses were traditionally allowed to smoke on duty while they conduct therapies with patients and revealed that more smokers were found in psychiatry (47.4%) and coronary care (33.3%) than other nursing specialties. Furthermore, despite specialty-specific impact on nurses smoking habits, very high smoking rates have been found in previous research on nurses. Vast majority of nurses were smokers in Kumbrija et al.,(2007) even higher than physicians. Also, research by Ruiz and Bayle (2003), Sezer et al.(2007), Hodgetts et al., (2004), Kaplan et al.,(2002) and Pappas et al.,(2005a) reported smoking prevalence to be as high as 45% or over among nurses and even so when compared to physicians and the general population in Spain, Turkey, Bosnia/Herzegovina, Israel and Greece respectively.

Over two-thirds of nurses who were current and ex-smokers in O'Donovan (2009) reported to have begun smoking before becoming registered nurses. This is similar to nurses in McKenna et al.,(2001) whose smoking behaviours worsened after they became nurses. These findings may indicate that certain factors in nursing might have influenced the maintenance and deterioration of their smoking behaviours. Work-related stress may be implicated as a factor that influences the prevalence of smoking among nurses (Hope, Kellerher and O'Connor, 1998). Work related stressors in nursing such as the challenge of meeting the demands of patients and their families, death experiences, long hours of work and shift work predispose nurses to stress thus most nurses take to smoking as a means of alleviating or coping with stress.

Although majority of the registered and pre-registered nurses in Malik et al., (2011) were well aware of the unhealthy implications of passive smoking, almost one in five were current smokers and the registered nurses were more likely to be current smokers. Also, most current smokers in the nursing profession were also found to be significantly less likely to consider quitting smoking (McKenna *et al.*, 2003; McKenna *et al.*, 2001; Hodgetts, Broers and Godwin, 2004; Pappas, Alamanos and Dimoliatis, 2005a; Jinks, Lawson and Daniels, 2003; Malik, Blake and Batt, 2011). Spanish nurses in Fernandez and Perez (2005) were reported to be 30% smokers and whereas three-quarters of the nurses had intentions to quit smoking, seven in ten nurses had attempted quitting smoking previously. Most of the nurses' support smoking ban in the hospital and all public places and majority were regularly involved in smoking cessation promotion. Almost all the nurses did not support nurses smoking in front of patients and majority desired to be role models and cited that as their reason for quitting smoking.

Goldenberg, et al., (2014) reported that higher odds of initiating smoking behaviours and lesser odds of successfully quitting smoking have negative impact on quality of life. Furthermore, poor health and quality of life has implications for nurse retention as it increases the odd of people leaving the nursing profession thereby adversely affecting nursing workforce and public health (de Oliveira *et al.*, 2017). Perry et al.,(2017) found that nurses health, health promoting lifestyles, workplace factors influencing health of nurses, quality of life, retention odds as well as intention to quit nursing are all strongly associated variables. Smoking was associated with less healthy diet in Albert et al., (2014) and in Hakim et al.,(2016a) the percentage of smokers among nurses eating unhealthy diet was significantly higher than the percentage of smokers among those eating healthy and semi-healthy food. Although nurses often work in a health promotion role and most health facilities have either dedicated smoking areas or total smoking ban (Jinks, Lawson and Daniels, 2003), nurses have been shown to be less supportive of smoking bans than other health professionals (Arack *et al.*, 2009). Generally, there seems to be a trend of low smoking rates in more recent studies on nurses though several country specific factors may influence nurses smoking behaviours and more studies may need to be carried out to investigate the current smoking behaviour of nurses. Nevertheless, this may also indicate that more nurses are making efforts to be smoke-free and walk their talk in relation to smoking.

Nurses smoking status holds huge potentials to influence their smoking cessation health promotion practice because it shapes their perceived abilities and role attitudes (Schultz, Hossain and Johnson, 2009). Smokers are less likely to support the promotion of healthy environment within the health care facility but more likely to support individuals right to smoke (Dwyer, Bradshaw and Happell, 2009). Additionally, non-smokers perceive themselves to be more credible to deliver smoking cessation advice (Dwyer, Bradshaw and Happell, 2009) while nurses who smoke are were less likely to advise against smoking (Svavarsdóttir and Hallgrímsdóttir, 2008). In Borelli et al., (2001), none of the nurses who currently smoked provided follow-up to their patients while in Dwyer et al., (2009), smokers perceive that their smoking status plays facilitative roles in their interactions with patients who are also smokers. Additionally, in a systematic review by Duaso et al.,(2017), nurses personal smoking behaviours was not significantly associated with nurses health promotion regarding smoking, however nurses who are current smokers were found to be 13% less likely to encourage patients about smoking cessation and also 25% less likely to schedule follow up for smoking cessation. The data on smoking may be even higher than reported considering that smoking may be perceived as a sensitive topic for most nurses and the self-report nature of the studies reviewed lend themselves to high probability of nurses' under-reporting actual smoking behaviours (Jagoe *et al.*, 2002).

2.5.4 Alcohol consumption behaviours of nurses

World Health Organisation reported that harmful alcohol consumption results in approximately 3 million annual deaths worldwide (5.3% of all deaths) and 132.6 million disability-adjusted life years (DALY) (World Health Organization, 2019). Also in their report, alcohol related mortality exceeded those caused by diseases such as diabetes, tuberculosis and HIV/AIDS with men experiencing more deaths and DALY than women. WHO African region consisting of low and lower-middle income countries recorded the highest age-standardised disease burden attributable to consumption of alcohol (World Health Organization, 2019).

Research into alcohol consumption among healthcare professionals is very limited. This may be related to issues surrounding recruitment of healthcare staff to participate in surveys about alcohol use due to concerns

regarding prejudice of their career, lack of confidentiality and the fear of disciplinary actions being carried out on known alcohol offenders. Given the demanding nature of nursing work, there is tendency for nurses to resort to harmful alcohol consumption (Castledine, 2005). Yet, there are varying research evidence about the use and abuse of alcohol among nurses.

Majority of the nurses in Fernandes et al.,(2013) acknowledged their consumption of alcohol though the prevalence rate was not stated. Nevertheless, compared to the general population, some studies report that nurses' alcohol consumption levels maybe lower or similar (Nahm *et al.*, 2012; Pappas, Alamanos and Dimoliatis, 2005b). More so, research on nurses' alcohol consumption have been measured in several ways such as using questionnaires on alcohol use. Also, comparison of studies on nurses' alcohol consumption have been hampered by the use of differing definitions for alcohol threshold. Research by smith et al.,(2013) on nurses report that up to one quarter or less of nurses consumed alcohol more than once a week while about half drank alcohol once a month or less. However, a significant proportion of nurses consumed alcohol less than once monthly or were non-drinkers or former drinkers. In Servodidio (2011), 6-10% of their sample of nurses reported alcohol abuse and suggestions were made for the increase in awareness concerning detection of alcohol abuse by nurses for the safety of patients, promotion of staff wellbeing and maintenance of workplace policies on alcohol ban.

Similar rates were found in Han et al., (2016) as 5.6% of south Korean nurses engaged in regular alcohol consumption. Even so, a cross sectional survey of nurses in Australia and New Zealand carried out by Schluter et al., (2012) demonstrated a substantially higher prevalence of 14% for nurses who drank harmful doses of alcohol daily while 1.6% reported being diagnosed with problem drinking. Risky drinking was associated with longer working hours per week. Excess workload and stress were also implicated as the commonest risk factor for alcohol use among Nigerian healthcare professionals (Ndukuba *et al.*, 2015). Surveys of qualified nurses in the UK revealed that one-fifth consumed over 10 units of alcohol on each drinking occasion (Department of Health, 2009). Hidalgo et al.,(2016) found that majority of the nurses reported drinking alcoholic beverages on a low level even though few nurses in the same group reported to consuming more alcohol (four or more days and taking three or more doses within the last month). Higher rates of alcohol consumption were found in Kim et al., (2013) with just about half of the Korean nurses indulging in regular alcohol consumption. Habitual drinkers constituted 16.4% of Japanese nurses in Tada et al.,(2014) when it was operationalised as drinking more than 22 g of alcohol per day more than three times per week. Despite the majority of the nurses in Nahm et al., (2012) reporting that they were involved in direct clinical nursing with health promotion being an integral part of their daily job roles, over half of the nurses drank about 2 drinks per week though 30.8% did not consume alcohol.

One –quarter of alcohol drinkers in Bakhshi et al.,(2015) were found to be at risk for harmful drinking or other disorders affecting active alcohol user. Most of the nurses' drink about 1-4 drinks on a typical drinking day. Risky alcohol consumption (≥ 5 drinks per day on more than once monthly) was found in just over one-third of Australian nurses in Perry et al., (2015) especially among younger nurses below 35 years. Female nurses were more prone to hazardous drinking even more than male nurses and the general population irrespective of their age but more especially those below age 35. Male nurses below 34 years also had higher rates of risky alcohol consumption than older age groups. This is higher than 16.2% risky drinking reported for Australian nurses in another study where more male nurses consumed alcohol than female nurses and the youngest age groups of

nurses had the highest rates for risky drinking than other age groups (Perry *et al.*, 2018). In their study risky drinking was defined as consuming more than two standard drinks daily or more than four drinks on a single occasion at least monthly. Nurses had higher drinking rates across most age groups and genders than the general population. These studies warrant concern and highlight the increased level of drinking among young adults even in the nursing profession.

On the other hand, a study of UK, Australia and New Zealand military nurses' alcohol consumption found that defence nurses over 50 years of age consumed alcohol daily and even much more amounts weekly than younger defence nurses (Sheard, Huntington and Gilmour, 2014). It was suggested that older military nurses may have been long exposed to the military drinking culture long before younger nurses and may also have experienced stressors that promote sustained alcoholic behaviours. Therefore, drinking was used as a stress management and coping strategy. Furthermore, more than one-fifth of the nurses exceeded daily alcohol limits for their gender and specifically about one-quarter of the female nurses exceeded daily safe drinking limits with 15% of the nurses exceeding weekly alcohol recommendations (Sheard, Huntington and Gilmour, 2014).

Indeed, healthcare staff who engage in alcohol consumption are prone to work related accidents and problems which endanger their lives and that of their colleagues and clients (Raistrick *et al.*, 2008). Alcohol use also strains social relationships, promotes violence/crimes and results in workplace absenteeism (World Health Organization, 2019). Baldisseri (2007) in a review paper reported that about 10-15% of healthcare professionals will engage in misuse of alcohol or illicit drugs at some point in their careers. In Jinks *et al.*, (2003), majority of the healthcare workers reported consumption of eight or less units weekly while 12% drank more than 8 units per week though 30% were non-drinkers. Nevertheless, more than 6% were interested in reduction of their alcohol usage and very few (<1%) wanted to quit alcohol totally.

These findings are concerning considering that the healthcare environment is not suitable for alcohol consumption and sale in line with professional and organisational policies thus offering nurses a protective barrier.

Alcoholic beverages have been consumed as part of socialisation for centuries and still ongoing. In Nigeria, the late twentieth century saw the expansion of modern breweries which led to an increase in alcohol sales, access and consumption. Alcohol is currently the most commonly used psychoactive drug in Nigeria (Gureje *et al.*, 2007) even among healthcare professionals (Ndukuba *et al.*, 2015). Generally, individuals no longer perceive the existence of certain norms around alcohol consumption and government policies against alcohol use seem laxer and unimplemented. Alcohol use beyond recommended levels is also not perceived by healthcare professionals as a problem that needs to be treated (Ndukuba *et al.*, 2015). Global data on alcohol has been on the increase in Nigeria indicating that people are increasingly consuming alcoholic drinks. Even so unreported alcohol consumption also contributes significantly to total data on alcohol.

In 2016, recorded alcohol per capita in Nigeria was 13.4 litres whilst prevalence of heavy drinking episodes (at least 60g or more of pure alcohol on at least one occasion in the past 30 days) amongst drinkers was 45.4% for males, 12.0% for females and 28.9% overall (World Health Organization, 2019). However, among nurses in Nigeria, the prevalence of alcohol use is yet to be researched therefore remains unknown. Despite the widespread media attention on the issue of unrestricted alcohol consumption in Nigeria there are currently no written national policies (adopted or revised), restriction on sales, monitoring system or national action plan to address the alcohol issue.

Therefore, the burden falls on healthcare providers such as nurses to enlighten the public and their patients about the consequences of alcohol consumption. Indeed, among the female gender in Nigeria which dominates the nursing profession, alcohol consumption is rising alarmingly. Room and Selin, (2005) revealed high drinking problems among females in Nigeria. This may be partly due to the radical advertisement of alcoholic beverages and increase in social events (World Health Organization, 2019).

Other reasons for this new trend are the emerging influence of globalisation and the quest for feminism, gender equality, women empowerment and peer pressure. Indeed, the alcohol related health promotion practice of health professionals was found to be positively associated with their personal attitudes towards alcohol as well as their personal alcohol consumption behaviours (Bakhshi and While, 2014). Nonetheless, some studies on nurses' alcohol behaviours revealed that no associations were found between nurses personal alcohol behaviours and their alcohol related health promotion practice (Vadlamudi *et al.*, 2008; Freeman *et al.*, 2011). In a study to determine levels of burnout syndrome and anxiety among Nigerian nurses, although only 3.3% engaged in alcohol consumption, nurses who consumed alcohol had low burnout rate perhaps because they engaged in alcohol consumption as coping strategy to mitigate the effects of burnout syndrome (Abayomi *et al.*, 2018).

Another study of alcohol consumption of healthcare staff in Nigeria using the AUDIT tool revealed that the prevalence of alcohol use among the hospital employees was 58.3% which includes 36.1% low risk drinkers, 20.9% high risk drinkers and 1.7% were alcohol dependent. Medical staff (doctors and nurses) consumed significantly less alcohol than other non-medical staff (Francis, 2017). Having the above estimates in a region like Nigeria which suffers severe shortage of nurses as well as sub-optimal health care delivery warrants research into the alcohol behaviours of nurses in Nigeria as the indices remain largely unknown.

2.6 What are the facilitators and barriers to nurses' engagement in health promoting behaviours?

Nurses' health promoting behaviours are influenced by both intrinsic and extrinsic factors within their environment, the interplay of which determines their engagement in health promoting behaviours (Holman, Thomas and Brown, 2009; Bogossian *et al.*, 2012; Perry, Gallagher and Duffield, 2015). Therefore, this section seeks to explore existing literature regarding why nurses practice or refrain from healthy eating, physical activity, alcohol consumption and/or smoking. As seen from literature in previous sections, not all nurses are totally unhealthy in themselves with regards to their health promoting behaviours.

Generally, nurses report that the challenging nature of their work seem to work parallel to their best healthy living intentions. Therefore, the strategies for healthy lifestyles recommended as beneficial for healthy living are significantly impractical for most nurses to comply with on daily basis. Thus, as highlighted above, poor weight management, unhealthy dietary habit, physical inactivity, alcohol consumption and smoking are significant problems for the nursing population and in fact the healthcare community in general. Miller *et al.*, (2008) suggested an investigation to be carried out in further research about the enablers and barriers for nurses engagement in healthy lifestyles. Certain barriers reported by nurses may affect particular healthy behaviours while others impact generally on all health promoting behaviours. Additionally, other factors beyond the workplace also influence nurses' health promoting behaviours.

Overall, the most common barrier to engagement in healthy eating and physical activity cited by nurses was time pressures while most common barrier to abstinence from smoking and alcohol limitation were work related stress and peer influence. Shift work has also been highlighted as one major barrier to nurses' practice of health promoting behaviours. Previous studies have also found direct associations between shift work and unhealthy dietary habits, physical inactivity, smoking or alcohol consumption (Smith *et al.*, 2013; Tada *et al.*, 2014; Wong *et al.*, 2010; Yoshizaki *et al.*, 2010; Geliebter *et al.*, 2000; Atkinson *et al.*, 2008; Zverev, 2005; Han, Choi-Kwon and Kim, 2016). Association between regular rotational shift work and increase in BMI as a result of continuous unhealthy behaviours have been previously suggested in published studies and reviews (Smith *et al.*, 2013; Amani and Gill, 2013; Zhao and Turner, 2008; Tada *et al.*, 2014; Kim *et al.*, 2013; Huth *et al.*, 2013). In almost all healthcare settings, nurses are known to practice rotational shift work of about 12 hours per shift especially in developed countries in order to provide round the clock healthcare services. This trend of 12-hour shifts seems unsuitable for most nurses especially aging nurses who due to age-related health concerns would prefer to work for lesser hours due to the physically demanding nature of nursing work (Palumbo *et al.*, 2009; Muecke, 2005). Shift work has been associated with disrupted circadian rhythm and adverse health effects (Matheson, O'Brien and Reid, 2014; Papagiannakopoulos *et al.*, 2016; James *et al.*, 2017). More so, shift work in the longer term, is associated with further stress, unhealthy behaviours and increased BMI (Kim *et al.*, 2013; Tada *et al.*, 2014; Hakim, Eldin and Mohsen, 2016a; Perry, Gallagher and Duffield, 2015) as well as higher risk of chronic diseases (Wang *et al.*, 2011).

Over the past few decades, there has been increase in the number of employees working hours a trend that is also seen in the nursing profession. Working long hours, though seemingly beneficial to employers, pose negative implications to the physical, social and mental health and wellbeing of workers. Nurses also experience long working hours, heavy workload and time pressures very often while on shifts which lead to meal skipping perhaps because they had no breaks for proper meal and these irregular meal patterns predisposed the nurses to making poor food choices (Nahm *et al.*, 2012; Hakim, Eldin and Mohsen, 2016a; Zverev, 2005; Faugier *et al.*, 2001; Sahu and Dey, 2011; Gupta, 2017) and results in eating disorders (King, Vidourek and Schwiebert, 2009). In addition to shift work, barriers such as busy workload, long working hours (professional and/or domestic/personal), lack of time and fatigue also hinders healthy eating and/or physical activity (Hakim, Eldin and Mohsen, 2016a; Han *et al.*, 2011; Malik, Blake and Batt, 2011; Tsai and Liu, 2012; Sveinsdóttir and Gunnarsdóttir, 2008; Persson and Martensson, 2006a). Long busy working hours usually causes lack of energy making one too tired to prepare meals or exercise while causing nurses to engage more in smoking and alcohol consumption (Phiri *et al.*, 2014). Additionally, given that nurses are predominantly females, this long working hours of professional work when added to hours working domestically in their roles as either parents, partners or carers result in even longer cumulative working hours. Exposure to work and time pressures puts nurses at greater risk of stress and further unhealthy behaviours. These unhealthy lifestyle choices may culminate in the development of various kinds of physical/mental illnesses and also make nurses develop further unhealthy behaviours as adaptation and coping mechanism such as comfort eating, junk food consumption, further consumption of alcohol, cigarette smoking, and reduction in physical activity (Smith *et al.*, 2013). In Fernandes *et al.*, (2013), long working hours (both professional and domestic working hours) of Brazilian nurses had strong links with unhealthy behaviours except smoking perhaps due to cumulative stress among the nurses. On the other hand, domestic work may be seen as pleasurable time spent with family and not as stressful work but

therapeutic to help nurses relax after working long hours. Fernandes et al.,(2013) study also showed that long working hours did not lead to smoking in nurses, and this was suggested to be related to the educational level of nurses and their awareness of the harmful consequences of smoking in addition to the massive anti-smoking awareness campaigns ongoing in Brazil as well as the prohibition of smoking in certain areas.

Increased levels of stress among nurses are of significant concern for nurses' health because stress is one factor that may impact on nurses increased practice of unhealthy behaviours. The subject of stress among nurses is not new. Over two decades ago, Hope et al (1998) reported a relationship between work related stress and the prevalence of smoking among nurses and research by McVicar (2003) also highlighted stress as a factor implicated in the increased prevalence of smoking among nurses in comparison to other healthcare professionals. Nursing is perceived to be a profession that is inherently stressful with nurses exposed to myriad stressors in the course of performing their daily roles which are mostly unpredictable. Some examples of the stressors that nurses face include physical, emotional and psychosocial demands from patients and their families, challenging work domains, huge workloads and low pay or pay cuts. Nurses may develop unhealthy behaviours as a way of coping with stressors (Happell *et al.*, 2014; Blaber, 2005; Chang *et al.*, 2005; Nahm *et al.*, 2012; Phiri *et al.*, 2014).

In response to stress, unhealthy coping mechanisms such as comfort eating (King, Vidourek and Schwiebert, 2009; Phiri *et al.*, 2014) could stimulate the release of endogenous opioids that leads to the decrease hypothalamic pituitary adrenal activity and this mechanism results in decreased stress (Adam and Epel, 2007). This phenomenon may be the reason nurses seek to comfort eat after exposure to physical and emotional stress of their work. In a study of stress experience of Nigerian nurses, vast majority of the nurses reportedly perceived that they were stressed which negatively affected the nurses health promoting behaviours (Ingwu *et al.*, 2018). Nevertheless, stressors may also facilitate nurses' engagement in healthy behaviours as coping strategy (Persson and Martensson, 2006a; Zapka *et al.*, 2009). In Zapka *et al.*, (2009) nurses who perceived their jobs were stressful engaged more in physical activity and consumption of more fruits and vegetables.

Diet and physical activity are the core determinants of body mass index therefore whatever compromises the ability of nurses to maintain healthy diet and exercise routines will inevitably result in nurses exhibiting overweight and obesity. In Persson and Martensson (2006a), diet and exercise habits were clearly interrelated, whereby participants with healthy eating habits also had good exercise habits and vice versa. In the research by Miller *et al.*,(2008), just over half of overweight and obese nurses acknowledged that they lacked the discipline to make lifestyle changes such as those required to change their dietary/ exercise habits even though they knew they should do better in those behaviours. A further 40% of the nurses reported that they were unable to lose excess body weight despite engaging in healthy diet and regular physical activity while just under 10% of the nurses either reported being affected by both barriers above or accepted that they were comfortable with their body weight being overweight/obese and not interested in engaging in weight reduction. Lack of motivation and unaffordability may also hinder nurses from engaging in health promoting behaviours such as physical activity that tackle excess weight gain (Malik, Blake and Batt, 2011). Although metabolic issues and other physiologic conditions may halter weight loss, nurses may not be applying the correct method of characterizing what a healthy diet or physical activity regimen entails, or they may not be committed to following the dietary and exercise regimens for the benefits of their health.

Miller et al., (2008) also pointed out that the nurses in their study had inadequate knowledge about overweight, obesity and obesity complications. Only about a quarter of the nurses were knowledgeable about the use of BMI to distinguish between overweight and obesity whereas two in ten nurses made use of arbitrary measures for weight distinction while over half of the nurses reported using various other objective and subjective methods to speculate their patients' weight. Also, the nurses had inadequate knowledge regarding the unhealthy implications of obesity as over half of the nurses could not name more than five complications of obesity while only 41% could name five obesity complications. This knowledge gap is not unrelated to the high prevalence of obesity in the nurses as most nurses may not even realise that they have exceeded the healthy weight range into being overweight, a finding that may have triggered them to make significant healthy lifestyle changes. Given that out of 224 nurses who were overweight, only 170 of them accurately estimated their weight and classified themselves as overweight/obese. If the nurses possessed adequate obesity related knowledge, they would have been better informed on the impending complications and perhaps this may have led to behavioural change. Additionally, self-stigmatisation plays significant roles in overweight nurses not engaging in health promotion with overweight patients and perhaps other patients too, even though this should ideally not be the case and warrants urgent interventions to challenge existing stereotypes (Fruh and Gardenier, 2017; Aranda and McGreevy, 2014)

In Tsai and Liu (2012), health professionals with longer years of practice had better nutrition and health responsibility indicating that they were able to take responsibility for their health related choices perhaps because they had found ways of adapting to the job and planning their schedules. In their study, healthcare staff were indeed interested in maintaining health promoting behaviours but due to several barriers, it was impossible for most of them to maintain healthy lifestyles. This resonates with McElligott et al., (2009) in which nurses had overall low scores for their health promoting behaviours especially in the areas of physical activity and stress management. Older nurses also perceived they were stressed due to being uncared for by their employing organisation, this is in addition to the difficulties with adapting to the aging process which had negative implications for their health and health promoting behaviours (Gabrielle, Jackson and Mannix, 2008). More so, underlying long-term health problems limited participation in physical activity in 13% of nurses in Bakhshi et al., (2015).

Cost issues concerning high cost of fresh fruits, vegetables and healthy meals prevented nurses from eating healthy compared to cheaper cost of high fat and high carbohydrate foods. Additionally, the unavailability and inaccessibility of healthy meals to buy especially during night shifts as a result of hospital cafeterias being closed all night also predisposes nurses to consumption of convenience snacks and drinks that are unhealthy. The ease of access to unhealthy food is made worsened by low levels of self-efficacy and lack of social support thereby leading to poor dietary habits among other unhealthy behaviours (Phiri *et al.*, 2014). Research by Cheung (2003) revealed that nurses were unable to resist high sugar foods that were available to them either as gifts from patients and families or sharable food from colleagues. Social support and self-efficacy for healthy eating were found among some nurses in Persson and Martensson (2006a) but at low levels among others as well as in Malik et al., (2011) and Tsai and Liu (2012) indicating that some nurses feel unable to sustain healthy dietary behaviours in themselves. They also perceived that their friends and family were unsupportive towards encouraging healthy eating. This is despite the registered nurses having relatively high level of knowledge on physical activity and health and also being found to be more likely to eat their five portions of fruits and

vegetables daily and less likely to consume foods that are high in fats and sugars than the pre-registration nurses. Social relationships were found to influence behaviour either positively by encouraging healthy lifestyle choices or negatively by promoting behaviours that encourage poor diet, physical inactivity and subsequent weight gain (Bogossian *et al.*, 2012; Phiri *et al.*, 2014; Persson and Martensson, 2006a).

2.7 Are nurses role models for health?

Role modelling healthy behaviours in nursing though not explicitly defined in nursing theory despite existing perceived, national and international expectations thrives on assumed understanding. The term 'role model' has been conceptualised in nursing literature to mean 'being an example in the practice of health promoting behaviours for others to emulate', having positive personal and professional attributes, or practicing what you preach (Callaghan, 1999; Jaarsma *et al.*, 2004; Undertaking Nursing Interventions Throughout Europe Study Group, 2002; Darch, Baillie and Gillison, 2017b; Rush, Kee and Rice, 2005; Baldwin *et al.*, 2014). Earlier nursing studies from decades ago about role modelling in nursing implies that the subject matter had been highlighted long ago (Rosen and Ashley, 1978; Dalton and Swenson, 1986; Swaffield, 1986; Zahourek, 1981) and remains debatable, under-researched and inconclusive. Nevertheless, concerns for nurses as role models for health is recently gaining increased research, government and media attention. Darch *et al.*, (2017b) proffered theoretical clarity regarding role modelling among nurses using concept analysis methodology and found that being a role model meant nurses have to be examples, portray a healthy image (representing health and fitness) and champion health and wellness amongst other positive personal attributes.

Globally, nurses have been heralded as the frontline champions of the campaign towards promoting preventive health within the healthcare system. Therefore nurses are being encouraged to engender change in the general public by personal healthy behaviour modelling as their health behaviours may affect the likelihood of the public heeding their advice about healthy lifestyles especially regarding diet and exercise (Ochieng, 2006; Royal Society for Public Health, 2014).

The International Council of Nursing (ICN, 2010b) also made a call on nurses by stating that:

“If each of the world’s 13 million nurses made a personal commitment to eat healthily, exercise appropriately, and avoid the use of tobacco, this would improve their health and well-being and reduce the likelihood of their developing chronic disease. If each of these nurses acted as role models, educators and change agents among their families, friends, workplaces and local communities to promote healthier lifestyles, together we could help to halt the tide of chronic disease”.

Following from this vision to promote healthy living and role modelling for nurses internationally, the Nursing and Midwifery Council of Nigeria are still yet to include role modelling into their professional nursing standards. However, professional nursing bodies of some developed countries have shown concern regarding nurses' unhealthy lifestyles in consideration of the potential influence nurses may have on individuals and families. The United Kingdom Nursing and Midwifery Council competency framework require that upon becoming registered, nurses should be able to encourage clients to practice health-promoting behaviours by educating, role modelling and effectively communicating (Nursing and midwifery council, 2010). Nurses in United Kingdom were also advised to recognize that their behaviour at all times can affect and influence others (Nursing and Midwifery Council, 2015). The UK Department of Health (DoH) (2009b; 2010) also support role modelling of healthy lifestyles by nurses. These published policy statements are mostly from the UK because they are the foremost

in the drive to get nurses to be role models. Nevertheless, role modelling seems to be a salient feature that is relatable to nurses despite no published statement of concern or expectation from Nigeria government or Nursing and Midwifery council of Nigeria.

Mixed and divergent reactions have been expressed in the researches on nurses' attitudes, perceptions and opinions about being role models for health and the implications on their tendency to promote healthy lifestyle topics to patients (Blake *et al.*, 2011; Miller, Alpert and Cross, 2008; Hicks *et al.*, 2008; Rush, Kee and Rice, 2005; Zapka *et al.*, 2009; Carlson and Warne, 2007; McDowell, McKenna and Naylor, 1997; Kelly *et al.*, 2017; Clarke, 1991; Connolly *et al.*, 1997; Callaghan, Fun and Yee, 1997; Fruh and Gardenier, 2017). Research also points out that significant inconsistencies exist when nurses' unhealthy behaviours particularly those that are outwardly visible are considered in relation to their roles as health promoters. Furthermore, research evidence points out that nurses themselves perceive a role modelling expectation underpinned on the assumption that effectiveness in health promotion roles is linked to nurses being embodiments of the healthy behaviours they promote (Rush, Kee and Rice, 2005).

Overall, international research studies on nurses' health behaviours reviewed above have shown that based on the reality of nurses' lifestyle behaviours which fall short of recommended healthy standards and perceived expectations, significant proportion of nurses are not healthy role models. This is because several nurses are overweight or obese, have unhealthy dietary behaviours, are physically inactive, smoke and drink alcohol at risky levels. Research also suggests that persistence of these unhealthy behaviours warrants consideration and brings to question nurses' ability to act as good examples for patients (Zapka *et al.*, 2009).

2.7.1 Supporting views about nurses as role models for health promoting behaviours

According to Narayanasamy and Narayanasamy, (2006), as health promotion advocates, nurses have to improve their credibility by avoiding unhealthy habits and modelling healthy ones because nurses who practice unhealthy lifestyles may unintentionally portray to the public that they do not value health. Although most earlier and recent studies of nurses as role models for health based their inferences on nurses' practice of outwardly observable health behaviours, some nurses have also consistently viewed themselves in the same way. Nurses who perceive themselves to be in better physical health or have healthy behaviours tend to be more compliant to carrying out related health promoting activities with clients and vice versa (Petch-Levine *et al.*, 2003; Blake and Patterson, 2015b). This perhaps suggests that nurses' personal negative health behaviours may influence the quality of care they offer to patients, since nurses reported avoiding health promotion in areas where they were not personally meeting recommended standards. Indeed, those nurses who perceived role modelling as unimportant tend to be mostly overweight/obese and/or have unhealthy lifestyle behaviours. A systematic review by Zhu *et al.*, (2011a) showed that having normal weight increases the likelihood of being confident about weight management practices, lessens perception of barriers to weight management and improves role identity. Nevertheless, normal weight status was also associated with lacking empathy, unauthentic experience and negative attitudes towards obese persons than being overweight or obese.

McDowell (1997) found over two decades ago that nurses tend not to promote behaviours that they are not performing optimally in themselves as the nurses in their study who practiced regular physical activity were more likely to talk about physical activity with their patients than the nurses who were not physically active in themselves. Also, nurses who were active perceived the barriers in the system in which they work as having

less limiting effect on their physical activity participation levels and promotion with patients. Similarly other studies have showed that nurses' belief and practice of physical activity affect their tendency discuss and role model a physically active lifestyle to patients (Esposito and Fitzpatrick, 2011; Lobelo and de Quevedo, 2014; Ribera, McKenna and Riddoch, 2005). Also, despite vast majority of nurses in Bakhshi et al., (2015) and Hidalgo et al., (2016) reporting appreciable personal health status, they also reported poor health behaviours which affected their health promotion practice and potential for role modelling. This further bring to question the likelihood for these nurses actually recommending healthy lifestyles to patients and the extent to which they do this in reality even though they were reported to recommend. Nevertheless, in Stanton et al.,(2015) nurses' personal physical activity behaviours were not related to frequency of exercise prescription to mentally ill patients. Studies have also shown that nurses who smoke are less willing to promote healthy behaviour among patients who smoke than nurses who are not current smokers (McKenna et al 2001; Chalmers et al, 2002; Lenz, 2008; Radsma and Botorff, 2009). Furthermore, one may wonder if the obese nurse is an effective patient educator on the health risks of obesity. It may also be reasonable to expect healthcare consumers to be less confident in a plan to reduce weight when the professional presenting that plan does not appear to model it (Miller, Alpert and Cross, 2008). This is because nurses with visibly evident consequences of unhealthy behaviours such as overweight or obesity may also inadvertently negate the credibility of their health advice irrespective of its appropriateness. They may also be less likely to gain clients' confidence in their ability to offer diet and physical activity health promotion when compared to normal weight nurses (Hicks et al., 2008; Kelly, Wills and Sykes, 2017). As reported by Miller et al., (2008) study, just over three-quarters of nurses failed to engage in overweight and obesity health promotion with patients and although some of the nurses acknowledged their feelings of incompetence in relation to knowledge, questions arise about whether the nurses personal body size or weight were implicated in their reasons for not pursuing weight loss related topics with their patients.

Research suggests that nurses that practice what they preach by adopting healthy behaviours in themselves have lesser risk for chronic diseases and can use their behaviours to boost their confidence in giving advice to others about healthy lifestyles because they have higher confidence and self-efficacy levels to motivate clients during preventive lifestyle counselling (Undertaking Nursing Interventions Throughout Europe Study Group, 2002). Increased self-efficacy may also be associated with increased confidence in health promotion practice in both professional and personal lives of nurses.

In Blake and Patterson (2015b) several paediatric nurses expressed significant concern for upsurge of childhood obesity. They also accepted that health promotion was part of their roles and perceived that they should have healthy diet, physical activity and be healthy role models. However, they reportedly had inconsistent behaviours and were not healthy role models due to their sub-optimal lifestyle behaviours. The nurses believed role modelling would improve their impact on patients and families but were unable to promote health in areas where they were not practicing healthy behaviours. Hesitation to promote health was associated with being overweight or obese, having poor diet and/or low levels of physical activity while positive attitude to health behaviours was associated with healthy weight though this was not statistically significant in their study. The nurses perceived their body size affects patients' perception of them and highlighted the importance of having normal weight as paediatric nurses though non-healthy weight nurses had lesser likelihood to accept that their body size was an

important factor affecting their impact. This indicates that nurses' personal health behaviours may indeed affect their attitudes and practice of health promotion.

2.7.2 Contrary views about nurses as role models for health promoting behaviours.

On the other hand, nurses' unhealthy outlook or behaviours did not deter some from their health promotion roles. In comparison to healthy BMI nurses, overweight nurses in Miller et al., (2008) perceive themselves to be equally competent to provide advice and counselling and in Zhu et al., (2011a), they held more positive attitudes towards obese patients than nurses of normal weight. This perhaps also implies that personal experience of an unhealthy behaviour or the complication thereof might contribute positively to improving the quality of health promotion sessions by promoting supportive patient–professional relationships (Aranda and McGreevy, 2014). This notion is held by several nurses despite role modelling being previously documented as the basis for nurses' credibility in health promotion practice (Borchardt, 2000) and nurses who engage in unhealthy behaviours perceived to be at increased risk of sending impressions that present them as hypocritical (Aranda and McGreevy, 2014). Additionally, there are opposing arguments against nurses being expected or perceived to personally exemplify healthy behaviours in order to improve their credibility in health promotion practice. Clark (1991) proposed a subjective dimension to nurses as role models which focuses on the nurse as a person and not the persona in relation to role modelling. Similarly, nurses have been found to be exposed to even more stress as they strive to meet up with perceived expectations and recommendations that qualify them as effective role models (Rush, Kee and Rice, 2005; Rush, Kee and Rice, 2010; Blake and Patterson, 2015b). The factors that prevent nurses from engaging in health promoting behaviours as discussed above ultimately prevent them from being healthy enough to recommend their personal lifestyles to patients as role models and vice versa. These factors which influence nurses span from within them as individuals and encompass their nursing work environment and the larger society (Darch, Baillie and Gillison, 2017b). However, most of the nurses in Blake and Patterson (2015b) felt no pressure towards achieving perfection as healthy role models and over three-quarters of the nurses opined that being humanistic in their health behaviours may improve their nurse–patient interaction since they appear to be 'real' and not 'idealised' or 'perfect' persons. Similar findings are also shown in Blake and Harrison (2013). In Rush et al., (2005), the role model expectation was perceived by some nurses as an idealisation which represents an image of perfection in all health behaviours. Although some nurses viewed this ideal image as a motivation, inspiration and a standard to look up to, others viewed that ideal image as unhelpful and unrealistic while suggesting that a more humanistic view of the nurse as a role model was more in tandem with who nurses are as humans in a real-world situation. According to Scott (1996), the creation of standardised behaviours that are mandatory for nurses to abide by in order to meet professional standards violates their personal freedom and human rights. Scott (1996) also added that it is untypical to extend one's personal lifestyle practices into the domains of professionalism. Eliopoulos and Lagana (1999) also opposes the appropriateness of holding nurses responsible for being healthy role models. These studies from decades ago emphasised that the practice of health promotion reflects nurses' personality as people and not as nurses and argued that nurses are subject to same temptations and same negative health behaviours as general public, and that their own lifestyle choices should not matter if they give good quality care and health education. Furthermore, Kelly et al., (2017) found that nurses opposed the notion of being healthy role models for patients

and disagreed that patients modelled their behaviours based on that of nurses. They perceived role modelling not as a professional duty but as an individual choice as well as being less important than provision of nursing care that is evidenced based and person-centred. Behaviour change was cited by nurses as a more complex phenomena than observation and imitation as is the case with role modelling. Borchardt (2000) argued that limiting the practice of health promoting behaviours to personal domains also counters the professional responsibility which nurses have towards their clients and also highlighted that these views against nurses as role models, however fail to account for the fact that unhealthy personal lifestyles could affect their credibility for health promotion and patients compliance as the case may be.

2.8 What are patients' perceptions of nurses regarding role modelling health promoting behaviours?

Nurses are very often the contact point for patients and the public regarding seeking information about health, illness, healthy lifestyles, weight management, and lifestyle modification advice for the benefit of their health. Nurses also promote practical steps for implementing interventions for health promotion to improve self-management of disease and overall quality of life. Therefore, nurses are invaluable sources of information and practical advice and resources that are critically important for patients at every point on their journey throughout the health-illness continuum. As nurses try to help and support patients and the public to understand and comply with the implementation of health promoting practices, it is pertinent to explore the impact that the health behaviours of nurses have on their patients. Given the responsibility of nurses towards patients in health promotion, role modelling healthy practices and lifestyle by nurses may exert influence on patients as consumers of nursing services. Nevertheless, majority of research on role modelling represent the divergent opinions and perceptions of nurses about whether patients would be any less likely to heed their health advice despite the inconsistency between nurses' unhealthy behaviours and their healthy lifestyle advice. Research studies that explore the perceptions of patients about nurses as role models for health are scarce and prior assumption have been made as seen from studies above about patients' probability of compliance to nurses' advice based on judgement of nurses' health promoting behaviours. Nevertheless, these were done without investigating from patients themselves to explore their views. Therefore, there is limited published information to gain understanding and compare the nurses' perspectives on this subject matter with that of patients. Previous studies have looked at public perceptions of healthcare professionals' health behaviours and findings have been mixed. According to an Ipsos Mori survey (2009), 37% of the public stated that they would decline health and lifestyle advice from health professionals who appeared not to apply their recommendations for healthy lifestyles. Similar findings were seen in Pistikou et al., (2014) study on public perception of healthcare professionals health promoting behaviours in Greece. On the contrary, significant percentage of people still acknowledged that they would listen to and comply with support and advice from seemingly unhealthy healthcare professionals. In such situations, self-disclosure by the sharing personal experiences, goals, challenges, achievements and successes about the efforts towards overcoming unhealthy behaviours or developing new healthy habits may be quite beneficial for influencing behaviour change. An argument that patients should not expect nurses to be role models for healthy lifestyles may seem like a valid one given that nurses face the same challenges in society daily as every other member of society in a real-world situation. As a result, observation of obesity among nurses or any other unhealthy behaviour observed by patients should be

seen as equal to anyone else. Nevertheless, patients may raise question that nurses as health professionals ought to be different and set examples because nurses are presumed to possess advanced health knowledge of both the causes and the health risks of unhealthy lifestyles as well as practical steps to prevent and manage these conditions. Miller et al.,(2008) argues that healthcare providers continuous practice of unhealthy behaviours and disregards for obesity management in themselves may result in unrealistic expectations for patients and the public to adopt and comply with their teachings about healthy lifestyles. Millions of patients could be reached by nurses through health education, but nurses need to understand the perceptions of their patients about their body size and lifestyle behaviours.

The cognizance of this may bridge the gap, promote nurses' responsiveness and uptake of interventions for improvement of their lifestyles and lead to improved impact of nurses in the field of health promotion and public health in general.

On the other hand, behaviour change is perceived to be a complex concept which is determined by an extensive interplay of multiple factors both internal and external to the individual (Kelly *et al.*, 2017). This gap underpins Tucker et al., (2010) suggestion that research into the influence of nurses health promoting behaviours on patients health behaviours is timely and warranted.

McBride (2004) investigated the receptivity of adult in-patients to health promotion in acute hospital setting via questionnaire survey of 320 participants with 100% response rate. Most of the questions were related to nurses' health promotion practices given that nurses are the frequently in contact with patients therefore have more opportunities to offer healthy education to patients directly compared to other healthcare professionals. The study found that patients generally express positive attitudes to health promotion but find translation to practice challenging. From the results, one in three patients did not appreciate nurses' interference in their lifestyles by encouraging lifestyle modification while almost 45% wanted no advice from nurses. This is despite just over 80% agreeing that patients take note of nurses' lifestyle advice and most patients considered it helpful and asked questions where necessary. More so, almost all patients accepted that lifestyle choices have implications for personal health. Non-smokers had more positive perceptions than smokers and almost all patients acknowledged the reassurance they obtain from detailed explanations in health promotion. Patients expressed concern about the robustness of knowledge base in health promotion and reported that nurses did not enquire about their lifestyles. Perhaps nurses' personal unhealthy behaviours may be the reason for omission of lifestyle advice section during health education. Findings are not transferable due to cross sectional nature of the study and use of one study site. However, although there was no reference to nurses' personal health promoting behaviours and its implications for patients' receptivity, an appreciable sample size, total response by participants and mix of patients with varying demographics were the strengths of the study. In a recent research in UK by Kelly et al., (2017) which utilised focused group discussions to collect qualitative data, university based service-users perceived unhealthy nurses negatively and expressed concern for nurses unhealthy lifestyles which need to be addressed. Prior to this study, there was absence of service user perspectives about nurses' health promoting behaviours in the research on nurses as role models for health. Nurses appearance was previously examined by Albert et al., (2008) in the context of the influence of nurses' uniforms on patients and families but their scope and objective was beyond the scope of this research.

Overall, the absence of research on the subject matter of patients' perception of nurses as role models for health and its impact of patients' health and engagement with nurses' health promotion practice is a gap that this

research seeks to produce novel information to bridge. This information is very much overdue and a body of knowledge on it is very important to support patients and nurses in improving the impact of health promotion and public health in general. This is even more important at a time when preventive health care is being heralded globally and lifestyle modifications are promoted to tackle the upsurge of chronic diseases.

Chapter Conclusion

This chapter reviewed the literature around obesity in a global context and among nurses in particular. The aetiology, risk factors and health and economic impact were explained. Nurses' role in health promotion was explained as well as nurses' health promoting behaviours. The determinants of nurses' engagement in health promoting behaviours were explained in relation of facilitators and barriers. Nurses as role models for health and its implications for their roles and health promotion with patients were also presented. The chapter ends with explanations of patients' perception of nurses as role models for health promoting behaviours. The next chapter will focus on the research methodology and processes applied in this research study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the research methodology adopted in this thesis to meet the research aim. The chapter begins by outlining the research aim, research objectives and research questions. Thereafter, the philosophical assumptions underpinning the research approach and justification for the choice of research design for the study are presented. Further sections present explanations of the research design and research setting, respectively. The quantitative and qualitative strands of the research are also discussed with justifications for the choice of data collection methods applied. The procedures followed in the application of different research approaches in this study as well as considerations and decisions made at various points in the research process and their rationales are also explained. The ethical considerations for research with human subjects pertinent to this research are presented thereafter.

3.2 Research aim, research objectives and research questions

Developing research aims, research questions and research objectives are very important steps in research because they guide the entire study as well as give focus and meaning to the research study. They also form the basis upon which methods are chosen that are best suited to answer the research questions (McMillan, 2015; Gerrish, Lathlean and Cormack, 2015; Sim and Wright, 2000; Roe and Webb, 2008).

The research aim, objectives and questions for this research study were designed to be simple, relevant and focused as well as clearly articulate the research problem, direct the research study and be achievable within the scope of available resources (Wood and Kerr, 2010; Mitchell and Jolley, 2012). The research aim, objectives and research questions are stated below.

3.2.1 Research aim

The aim of this study is to assess Nigeria nurses' weight status and personal health promoting behaviours as well as the determining factors of their health promoting behaviours and the implications for their health and health promotion practice with patients.

The aspects of nurses' health promoting behaviours covered in this research study are dietary behaviours, physical activity, alcohol consumption and smoking behaviours. The justification for the choice of these above-mentioned behaviours is the link they have with the increasing rates of chronic diseases globally. They are also key behaviours that have been targeted by several health systems globally to prevent chronic diseases and its complications as well as improve the quality of life for the population (Baum and Fisher, 2014). The mental health of nurses is not covered within the scope of this research study.

3.2.2 Research objectives

Four research objectives were developed for this research study as follows:

1. To examine the health profile of Nigerian nurses in relation to body mass index (BMI) and health promoting behaviours (dietary, physical activity, alcohol and smoking behaviours).
2. To investigate the determinants of Nigerian nurses' engagement in health promoting behaviours.
3. To explore the perceptions of Nigeria nurses about being role models for health.
4. To explore the perceptions of patients about nurses as role models for health and the implications for patients' engagement with nurses' health promotion.

3.2.3 Research questions

- 1.) To what extent do Nigeria nurses practice health promoting behaviours?

Sub-questions under this question are as follows:

- a) What percentage of Nigeria nurses are either overweight or obese based on their body mass index classification?
 - b) How are the eating behaviours of Nigerian nurses?
 - c) What is the prevalence of physical activity and physical inactivity among Nigeria nurses?
 - d) What percentage of Nigerian nurses engage in low risk and risky alcohol consumption respectively?
 - e) What percentage of Nigerian nurses are current smokers?
- 2.) What are the perceived facilitators and barriers to the practice of health promoting behaviours among Nigeria nurses?
 - 3.) What are Nigeria nurses' perceptions of themselves as role models for health promoting behaviours and its implication for their health promotion practice?
 - 4.) What are patients' perceptions of nurses as role models for health and the implications for their health and engagements with nurses?

3.3 Philosophical assumptions underpinning this PhD research.

Philosophical assumptions arise from paradigms which are philosophical standpoints or worldviews (Chalmers, 2013; Lincoln, Lynham and Guba, 2011). Paradigm also refers to the beliefs that underpin any research, provide explanation about what constitutes 'truth' and 'valid' knowledge as well as govern the choice of research methods that are suitable for knowledge development (Howell, 2012; Benton and Craib, 2010). Philosophical positions or paradigms include but are not limited to, positivism, interpretivism, constructivism and critical theory (Tashakkori and Teddlie, 2010; Lewis-Beck *et al.*, 2004). Each paradigm has different perspectives regarding their ontology (views on the nature of reality), epistemology (perceived relationship with knowledge) and methodology (process of discovering and creating knowledge) (Hughes and Sharrock, 2016).

Positivism argues that there is a single fixed external reality which can be discovered objectively using quantitative methods that focus on generalisation and are governed by stated theories and hypotheses. Practically speaking, positivists identify statistical trends, tests hypothesis and explore or predict relationships

and differences between variables in order to arrive at generalizable conclusions about a phenomenon (Ling and Ling, 2016; Schneider, Whitehead and LoBiondo-Wood, 2016). Furthermore, positivist researchers apply the above-mentioned logical methods to examine a subject matter from a detached, external observer perspective.

On the other hand, interpretivists believe there is no single external reality, but rather support that the world can be viewed subjectively in social reality (Chalmers, 2013). Interpretivists qualitatively explore perspectives and perceived knowledge with focus on understanding and interpretation from an attached, internal observer standpoint. Nevertheless, both paradigms though popular in the world of research, have inherent limitations. It is often argued that positivist research is reductionist and lacks depth because it fails to consider participants' voices, meanings and contexts in relation to the phenomenon under study (Popper, 2005). Also, interpretivism has been criticised for being limited by participants construction of reality and/or researchers' interpretations of participants accounts therefore subjecting research findings to bias (LoBiondo-Wood and Haber, 2013).

These differences in philosophical positions between positivism and interpretivism resulted in a debate about the incompatibility between them. Researchers affiliated to respective philosophical paradigms have widely criticised the combination of different epistemological standpoints and engaged in 'paradigm wars' around the incommensurability of quantitative and qualitative methodologies (Teddle and Tashakkori, 2009). The paradigm wars among methodological researchers resulted in the introduction of a single paradigm to mitigate the paradigm incompatibility argument. The new paradigm called pragmatism was developed to support the methodological predilection to mix methods in practical terms for problem solving (Kaushik and Walsh, 2019). Earlier authors had proposed pragmatism as an appropriate paradigm for justification of the mixing different methods in research because it holds as a major tenet, the support for the compatibility of quantitative and qualitative research methods (Howe, 1988; Tashakkori and Teddlie, 1998). Pragmatism addresses the issues of contention and paradigm war regarding what constitutes reality and truth as it supports the singularity and plurality of reality and the use of multiple methods for enquiry (Yvonne Feilzer, 2010; Creswell and Clark, 2017). Furthermore, pragmatist researchers suggest that research method(s) should be considered and selected based on their suitability to answer the research question (Creswell and Clark, 2017). More so, methods may be mixed in research studies if in practical terms, they offer the best approach for answering the research questions as this represents the ultimate goal of any single research project. This is because pragmatism accords the research question more importance than ontologies, epistemologies and methodologies (Tashakkori and Teddlie, 2010). It is worth noting that pragmatism does not seek to refute the previously existing paradigms, but to compliment them by positing that knowledge derived from observations, experiences and experiments correspond to some sort of reality (Morgan, 2013; Benton and Craib, 2010).

Application of pragmatism to this research study.

Given that pragmatism supports the adoption and use of research method(s) considering their suitability in answering the research question(s), pragmatism was the paradigm adopted as the underpinning research philosophy for this research. In this research, quantitative methods and qualitative methods of inquiry were applied in order to best answer the research questions and achieve the aim of this research study. Further justification for the choice of pragmatism for this research lies in the allowance it afforded the researcher to

place equal value on both objective and subjective forms of knowledge generation for meeting the research objectives (Yvonne Feilzer, 2010; Tashakkori and Teddlie, 2010; Creswell and Creswell, 2017).

In order to meet the aim of this research, four research questions were generated as stated above though only one research method was applied to each research question generated. However, the four research questions lent themselves to different modes of inquiry and data collection for practical reasons. The first research question for this study which focused on examining the health promoting behaviours of nurses in Nigeria was answered quantitatively by the use of a cross-sectional questionnaire survey research design. Cross-sectional questionnaire survey was considered best fit and congruent with the descriptive focus of this research question. The questionnaire survey was the most suitable, feasible, efficient, practical and cost effective way to elicit information on the health promoting behaviours this research sought to study (dietary, physical activity, alcohol and smoking behaviours) in a busy hospital setting (Brace, 2018).

Qualitative interviews were utilised for the second, third and fourth research questions which focus respectively on the enablers and barriers to the practice of health promoting behaviours by nurses in Nigeria, the perception of nurses about being role models for health as well as the perceptions of patients about nurses as role models for health. Patients' perceptions offered appreciable insight about whether the nurses who care for them are healthy role models or not and the implications this has for their health. The justification for the use of interviews to generate data was based on the need to obtain rich, subjective, first-hand information from participants in their own words as this had not been previously captured in research. Data obtained were directly from participants' experiences, opinions and perceptions for the purpose of exploring the research phenomena comprehensively. In qualitative interview research, the interaction between the researcher and the research participant leads to maximisation of knowledge creation (Silverman, 2017).

Researcher's position on pragmatism and existing debates.

Pragmatism is a philosophical paradigm that transcends problem solving and is rapidly evolving through increased awareness. Pragmatist paradigm appealed to the researcher because of its focus on the research goal and practicality in the real-world setting. The ever-increasing demand for more accountable and diversified research as a result of the current challenges faced by public health, health promotion, health education and healthcare systems in general warrants an increased demand for more practical approaches in the conduction and integration of healthcare research. This is by no means a drive towards abandonment of the scientific methods or other research paradigms but a drive to maximise research impact by creation of avenues for broadening the focus of research. Pragmatism also encourages placement of significant priority on researchable areas or subject matters that have hitherto received little or no research attention. Ultimately, the researcher supports pragmatism's core tenet of keeping focus and decision making aimed at issues pertinent to the research context and usefulness or practicality (Morgan, 2014). Furthermore, pragmatism places equal value on data produced by each singular research method as well as the possibility of combination of the relevant research methods to produce rigorous and robust research in application and context.

According to Proctor et al.,(2011), in order to increase research impact and relevance, outcomes assessed need to be relevant to stakeholders involved. Therefore, the measures of assessing research outcomes in this research needed to be pragmatic in order to improve the feasibility of conducting the research in a busy healthcare setting with multiple competing demands (Mays and Hogg, 2012; Glasgow and Riley, 2013).

Pragmatism is not without its limitations and there are debates present within the pragmatist philosophical paradigm. Firstly, it is argued that pragmatic research should be context dependent and a good understanding of multilevel context within which pragmatic research are conducted would improve its applicability (Stange *et al.*, 2012; Glasgow, 2013). Yet, despite universal acceptance of the value of context in research, there are presently no standard approaches or widely accepted descriptions that enable assessment of context in pragmatism. There is need for the development of approaches to pragmatically assess context as this would enhance the field of pragmatism. There are also debates about the robustness of pragmatic research which argue that pragmatic approaches are superficial and simplistic. Indeed, pragmatism does not imply that research should not be comprehensively conducted, rather, pragmatism is a philosophy that promotes a better balance in research and upholds the importance existing research methods for problem solving (Morgan, 2014).

3.4 Research design

Research designs are important because they provide road maps for how to rigorously conduct studies to best meet objectives. According to Creswell (2008), mixed methods research design enables the researcher to collect, analyse, and integrate qualitative and quantitative research data in a single study. Mixed methods research has been referred to by research authors as the third methodological movement (Tashakkori and Teddlie, 2003) and the third research paradigm (Johnson and Onwuegbuzie, 2004). The emergence of mixed methods research is now becoming widely used as a mode of inquiry which places equal value on knowledge generated both quantitatively and qualitatively. However, it was acknowledged by Bryman (2016) and Creswell (2017), that although the combination of research methods across contrasting research paradigms is often employed and supported, some researchers do not support the logic of mixing methods which stem from two epistemological stances that are viewed to be fundamentally incompatible. On reflecting upon the use of mixed methods, Bryman (2006) stated that mixing methods in research is becoming even more popular because of increasing complexity of research problems which require data in various forms to achieve the research aim. Researchers are more recently appreciating each other's standpoint and choosing methods not based on their entrenchment in particular ontological or epistemological traditions. Therefore, several authors have now increasingly recognised that the combination of two research methods may be beneficial (Du Plessis and Majam, 2010; Dellinger and Leech, 2007; Creswell and Creswell, 2017; O'Cathain, Murphy and Nicholl, 2010; Hesse-Biber, 2010; Mallick and Verma, 2005).

Nevertheless, despite the introduction for theoretical backgrounds and formal research designs for mixed methods studies, mixed methods research is not without its drawbacks. The research designs are usually complex and requires resources, time, experience and skills in the methodologies to be applied in the research study (Tariq and Woodman, 2013). In addition, one researcher may not be skilled in proposed methods especially when it requires qualitative and quantitative skills to perform a rigorous study within limited timeframe (O'Cathain, Murphy and Nicholl, 2008). Mixed methods have also been proposed to work better with a team of researchers with expertise in one or more of the chosen methods (O'Cathain, Murphy and Nicholl, 2008; O'Cathain, Murphy and Nicholl, 2007). One method may also be more developed than the other based on the researcher's expertise thus achieving comprehensive integration of different forms of data may be difficult and discrepancies between results and findings may be unclear (Bryman, 2006).

In recognition of the strengths and limitations of mixed methods research design, a mixed methods research design was adopted in order to achieve the aim of this research study. Additional justification for the choice of mixed methods lies in the fact that it permitted the researcher to combine the strengths of both the quantitative and qualitative research approaches. This was aimed at developing a stronger and more comprehensive understanding of the research phenomena and satisfactorily meet the research aim which cannot be met by either of both methodologies alone (Tashakkori and Teddlie, 2010; O'Cathain, Murphy and Nicholl, 2010; O'Cathain, Murphy and Nicholl, 2007). Mixed methods research design also compensates for the shortcomings associated with using either of the single methods alone. This research study benefitted from exploring the enablers and barriers to the practice of health promoting behaviours amongst nurses, the perception of nurses about being role models for health as well as the perceptions of patients, as consumers of nursing services about nurses as role models for health. Therefore, these objectives were explored qualitatively in parallel to the quantitative components which examined Nigeria nurses' obesity prevalence and health promoting behaviours. Several studies have highlighted research designs that feature a successful combination of quantitative and qualitative components in a single study (Leach and Tucker, 2018; Wei *et al.*, 2018; Seah *et al.*, 2018; LaFond *et al.*, 2016) showing that both quantitative and qualitative research approaches make significant contributions to research when used in combination. Harris and Brown (2010) pointed out that mixing methods such as questionnaire surveys and interviews can be used to complement each other in a research study, such that the interviews will explore in greater depth aspects of the research scope that were not covered by the questionnaire survey data.

Typology of mixed methods design

The typology of mixed methods research design adopted for this study was the convergent parallel mixed methods design. This typology provides a guide to the sequence and organisation of this mixed methods research by showing how the quantitative and qualitative strands were carried out and the point where the quantitative results and qualitative findings were integrated (**Figure 3.1**). The choice of this typology was informed by the concurrent data collection and data analysis for both the quantitative and the qualitative strands of the study which took place within the same period for different objectives (Creswell, 2013). This is because the data collection instruments were aimed at providing different kinds of data which proved useful in response to respective research questions for the study. As such, no strand of the study depended largely or was developed based on the results of the other. Both strands of the study had equal weight and were accorded equal priority. Thereafter, the results from both strands of the study were integrated and corroborated to arrive at a well-rounded discussion, recommendations and conclusion. The following sections detail the processes undertaken in this convergent parallel mixed methods research study.

Phases of the mixed methods research study

The research study was organised in two distinct strands and would be presented in same order to aid clarity and organisation in reporting throughout this thesis (figure 3.1).

- **Quantitative Strand:** Questionnaire survey to determine Nigeria nurses' weight status and personal health promoting behaviours
- **Qualitative Strand:** One-to-one interview study with nurses and patients respectively.

Although the research was organised according to the strands listed above, common elements to both phases such as ethical issues are explained together in this thesis while specific issues are revisited in relation to each phase where necessary.

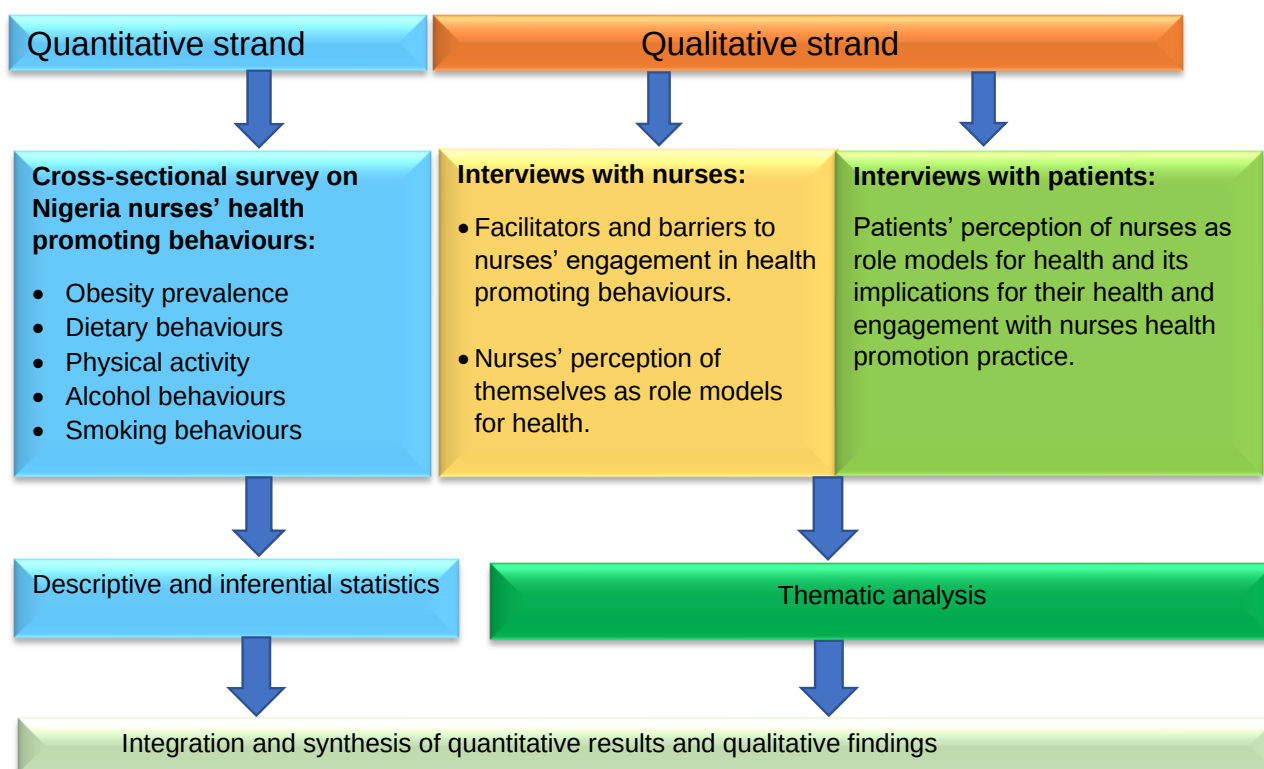


Figure 3.1: Flow diagram for the convergent parallel mixed methods study. (Adapted from Creswell, Plano Clark, Gutmann & Hanson, (2003))

3.5 Research setting

3.5.1 Background overview about Nigeria

Nigeria is a lower middle-income country located in sub-Saharan Africa. With a total population of about 200 million people, it is the most populous nation in the African continent, the most populous black nation in the world and the seventh most populous country in the world (Esu and Udonwa, 2016; The World Bank, 2019). About 95% of Nigeria's economy is dependent on crude oil exports, yet poverty is still endemic, and majority of the population live below the international poverty line of less than two dollars a day (World Bank Group, 2020). According to WHO Global Health Observatory (2016a), life expectancy at birth in Nigeria is 55 and 56 years for males and females respectively. Furthermore, the probability of dying between 15 and 60 years is 372 and 333 per 1000 for females and males respectively. Nigeria has one of the highest numbers of human resources for health in Africa, but the health workforce is still inadequate to meet the country's health needs due to its large population. In 2010, an inventory of health care personnel indicated that Nigeria has 1.6 nurses per 1000 people (World bank, 2010). This represents a significant nurse manpower shortage when compared to developed

countries such as the United Kingdom which has 8.4 nurses per 1000 people (World Health Organisation, 2010c).

3.5.2 Research study setting

This research study was conducted in the Department of Medicine, University of Port Harcourt Teaching Hospital (UPTH), Rivers State, Nigeria. UPTH is one of the 3rd generation Teaching Hospitals established by law in 1985 via Decree No. 10 of 1985 University's Teaching Hospitals Decree. Nevertheless, it commenced operation in 1980 and is owned and funded by the Federal Government of Nigeria (Medical World Nigeria, 2017). UPTH is a multi-specialty teaching hospital, with annual statistics of over 400,000 outpatients, more than 10,000 in-patients and over 800 beds with more than 70% bed occupancy all year round (Port Harcourt Medical Journal, 2016; University of Port Harcourt Teaching Hospital, 2014). As the apex health institution in Rivers State whose population is over five million people according to the Census data of 2006 (National Population Commission of Nigeria, 2016), UPTH serves as the main referral centre for Rivers state and the neighbouring states in the region. Furthermore, UPTH serves a catchment population of approximately 10 million patients annually and boasts of a nursing staff strength of 450 nurses. Besides offering clinical and research services, the hospital provides education and training to students and trainees in medicine and allied healthcare professions.

The mandates/statutory functions of the hospital are:

- To train and develop health manpower for the country especially within their catchment population of the Niger delta region of Nigeria.
- To provide and render specialized health services to the Nigerian populace.
- To engage in healthcare and medical research for the expansion of the frontiers of knowledge and practice.

UPTH is managed through a three-tier managerial system consisting of the following: Board of Management, Hospital Management Committee (HMC) and the Heads of Departments. Over the years, many research activities and results from its organized units and departments have appeared on several major national and international medical and scientific journals (Port Harcourt Medical Journal, 2016).

The choice of UPTH as the research study setting was based on the following reasons:

- It is the largest tertiary health facility in the Niger Delta region of Nigeria.
- It has a larger nursing workforce caring for patients with a wide range of NCDs than other hospitals in the region.
- UPTH has an organised system of patient management which makes recruitment of patients thorough and straight forward.
- UPTH offered a feasible and practical choice of setting for the research study in consideration of limited resources available to the researcher,

Hittleman and Simon (2006) supports the above considerations by suggesting that researchers should be realistic in terms of time, cost, convenience and other practicalities of the research process and should work with populations that are accessible and representative of the target population.

3.6 The quantitative strand

3.6.1 Research objective

To examine the health profile of Nigerian nurses in relation to body mass index (BMI) and health promoting behaviours (dietary, physical activity, alcohol and smoking behaviours).

3.6.2 Quantitative research design

The major aim of survey research designs is to generate data from specific populations for the description of the variables of interest to the research. According to Sousa et al., (2007) quantitative research commonly utilises surveys for data collection. Data collection in surveys are from self-reported information where the research participants respond to questions about the research that have been pre-set most commonly in the form of questionnaires. The advantages of surveys include uniformity in the pattern in which the information is generated, prevention of bias from the interviewer and efficiency in terms of saving time for both the researcher and the respondents (Creswell and Creswell, 2017). Nevertheless, the limitations of questionnaires have been widely recognised and they include generation of relatively superficial information about the research phenomena, social desirability bias where the respondents want to give answers that they perceive to be socially acceptable and respondents' unwillingness to complete the questionnaires leading to low response rates.

In the quantitative strand of this research, a cross-sectional questionnaire survey was applied to examine Nigeria nurses' obesity prevalence and health promoting behaviours (dietary, physical activity, smoking and alcohol lifestyle practices). Inferential statistics were also applied in the analysis to test the study hypothesis by examining the relationships between nurses' health promoting behaviours and their demographic profiles. Prior to this research, there was no previous research that examined Nigerian nurses' health related behaviours and their relationship to nurses' personal demographics. The descriptive statistics of the nurses provide information on their scale of engagement or non-engagement in the lifestyle behaviours under study. Several authors have supported the application of descriptive statistics when studying subjects where there is paucity of information about the phenomena due to little or no research carried out previously (Polit and Beck, 2013; Polit and Beck, 2004; Wood and Kerr, 2010; Dempsey and Dempsey, 2000). Descriptive research is also considered to be highly important for knowledge accumulation, broadening of understanding of a research area as well as underpin the development of further research (Burns and Grove, 2005; McMillan, 2015).

3.6.3 Eligibility criteria for the nurses in the questionnaire survey study.

Inclusion criteria

- Registered nurse working in the department of Medicine, UPTH, Nigeria irrespective of age and experience.

The justification for recruiting nurses from the department of medicine is underpinned by the nurses' daily role of health promotion to wide range of patients especially patients with NCDs. The health promotion role of nurses is pertinent to this study because in the later chapters of this research, nurses' health promotion

role will be discussed in relation to their perceptions of being role models for health within the scope of this research.

Exclusion criteria

- Nurses working in non-clinical and non-patient facing roles within the department of medicine of UPTH, Nigeria. The rationale for this is because this study scope covers comparing their personal health behaviours to their health promotion roles with patients.

3.6.4 Questionnaire measures for data collection

The questionnaire for this study consists of five sections examining nurses' demographic characteristics, dietary behaviours, physical activity behaviours, alcohol behaviours and smoking behaviours, respectively. In order to ensure that the questionnaire measures produce the most consistent results possible, questions used for data generation across the four variables of interest in this research consisted of a combination of standardised validated questionnaire measures and questions from published research studies. The questionnaire measures were selected based on their suitability to elicit appropriate data for the research as well as their feasibility and practicality for use with busy frontline nurses. The instruments for questionnaire data collection are explained below and a copy of the questionnaire for this study can be found in appendix 2.

3.6.4.1 Demographic and health characteristics of study participants.

The first section of the questionnaire measured nurses' demographic characteristics including gender, age, nursing rank, years of nursing practice, objective measure of height and weight, as well as self-perception of their BMI category. Data on height and weight were required for BMI calculation and were objective rather than self-reported measures. Measuring scales for height and weight measurement were provided by the researcher and set up in the nurses' lounge. It was readily available to the nurses and was checked regularly for functionality by the researcher.

3.6.4.2 Dietary behaviours

Dietary behaviours were measured by the Eating Behaviour Patterns Questionnaire (EBPQ). The EBPQ was developed by Schlundt et al., (2003) and consists of 51-items in total. The 51 items in the EBPQ are divided into six factor-analytically derived subscales.

The subscales include one positive domain.

- **Low-fat eating (LFE)** which investigates for behaviours related to cutting out high fat foods and consists of 14 questions e.g., "I reduce fat in recipes by substituting ingredients and cutting portions".

The remaining five subscales highlight negative eating behaviours as follows.

- **Emotional eating (EE)** subscale examines eating behaviours that are underpinned upon emotional states rather than real hunger or energy depletion (10 questions e.g., "When I am in a bad mood, I eat whatever I feel like eating").

- **Snacking on sweets (SOS)** subscale refers to behaviours that lead to consumption of high sugar snacks or foods (6 questions e.g., “I eat cookies, candy bars, or ice cream in place of dinner”).
- **Cultural/Lifestyle behaviours (C/LB)** subscale assesses entrenchment in behaviours and traditions that support unhealthy dietary choices (7 questions e.g., “A complete meal includes a meat, starch, a vegetable, and bread”).
- **Haphazard planning (HP)** subscale examines unhealthy dietary habits related to poor planning (9 questions e.g., “I never know what I am going to eat for supper when I get up in the morning”).
- The last subscale checks for **Meal skipping (MS)** behaviours (5 questions e.g., “I rarely eat breakfast”).

Each item is rated on a 5-point Likert scale which was scored from 1 to 5 as follows: strongly agree (5), agree (4), neutral (3), disagree (2), and strongly disagree (1). Items 9, 12, 24, 42, and 43 were scored in reverse in line with the guideline for analysis of the EBPQ and the scores for all item of each subscale were summed up. The total score for each subscale was divided by the total number of questions in the respective subscale to determine the mean subscale score. All results for each subscale were expressed as means and standard deviations. A mean score of 4 and over for a subscale indicates the presence of the eating behaviour that the subscale refers to.

Psychometrically, the EBPQ is a reliable and valid instrument for investigating unhealthy dietary behaviours which increases the risk of illnesses as a result of the absence or presence of specific eating patterns (Sims *et al.*, 2008). The EBPQ has been used either as a whole or in part to measure dietary behaviours in previous published research studies with adult populations (Sims *et al.*, 2014; Sims *et al.*, 2008; Sîrbu *et al.*, 2015; Grum, 2017; Evans *et al.*, 2009; Bounds and Powers, 2006).

Several instruments exist for collection of data on dietary behaviours and practices. Retrospective measures such as 24-hour recall of diet and food frequency questionnaires are limited by diet related knowledge, memory and insight as well as under-reporting bias. Prospective measures such as the food diaries though popular, are time consuming and limited by dietary knowledge, under-reporting bias and tendency for usual intake to be altered by one’s consciousness of the food recording activity.

This research does not seek to investigate the nurses’ total diet consumption but to assess nurses’ diet related behaviours hence the choice of the EBPQ to assess nurses’ dietary behaviour. Furthermore, the EBPQ was first developed for adults of African descent and targets dietary behaviours found to be common among this population. Also, there was need for a dietary assessment tool which was directly applicable to the research sample without the need for modification of its items. In addition, the EBPQ measures eating behaviours without reference to certain culture-specific foods as is obtainable in food frequency questionnaires (Schlundt, Hargreaves and Buchowski, 2003). Given the dietary difference between and within various countries and regions within Nigeria, no single published food frequency questionnaire could adequately capture the Nigerian diet in order to be directly transferrable to study Nigeria nurses eating behaviour.

3.6.4.3 Physical activity behaviour

There is widespread consensus on the advantages of physical activity in promoting health and wellbeing therefore physical activity assessment is important to determine the inactivity related risk among individuals and communities. In this research study, physical activity behaviours were measured using the short form of the International Physical Activity Questionnaire (IPAQ-SF). The international physical activity questionnaire (IPAQ) was developed by WHO as an instrument for cross-national assessment of health-related physical activity and also for standardising physical activity measures across populations in different countries and contexts (Hallal and Victora, 2004). As a standardised measure, the IPAQ estimates the habitual practice of physical activities and has been validated in 14 centres across 12 countries (Craig *et al.*, 2003). With a reliability between 0.61 and 0.83, the IPAQ is capable generating data on health-related physical activity behaviours in different sociocultural contexts and countries, making its results internationally comparable (Craig *et al.*, 2003). The IPAQ is now the most widely used questionnaire for assessing physical activity and has two versions which includes the 31-item IPAQ long form and the 7-item IPAQ short form. Both versions of the IPAQ generates information on physical activities carried out over the last seven days. Among black adults of African origin, the IPAQ-SF correlated fairly ($r=.26$) with accelerometer-based PA (Wolin *et al.*, 2008). In comparison to other physical activity measures which are lengthy, time-consuming, complex and mostly interviewer administered, the IPAQ-SF best suited this research. The IPAQ-SF is self-administered, cost-effective, convenient in time-limited settings, feasible and suitable for adult population yet encompasses both indoor and outdoor activities. Physical activity questionnaires which are simple and have fewer items have been found to yield better validity and reliability than more complex instruments (Philippaerts, Westerterp and Lefevre, 2001). Also, unlike Likert type questionnaires which limit respondents to one option, the IPAQ-SF allows participants to record the number of days and time in hours and minutes as well as declaring their uncertainty if unsure or not known thereby reducing the tendency for guesswork. The IPAQ-SF records physical activity at four levels of intensity carried out in the last seven days for at least 10 minutes at a time: The four levels are as follows.

- ❖ Vigorous physical activity: This refers to activities that take hard physical effort and makes one breath much harder than normal such as heavy lifting, aerobics, digging or fast bicycling.
- ❖ Moderate physical activity: This covers activities that take moderate physical effort and makes one breathe somewhat harder than normal such as bicycling at regular pace, carrying light loads or double tennis.
- ❖ Walking activities at work, home or travel for reasons such as sports, work or leisure and recreation.
- ❖ Sitting at home or work for any activity.

For each level of energy expenditure, the number of days per week and amount of time spent on activities are required. For scoring and data analysis purposes aimed at understanding activity patterns, the duration of the various intensities of activities are converted to minutes and multiplied by the frequency (days) in the week in which the participants carried out such activities to obtain the total minutes spent per week. To obtain the specific Metabolic Equivalent of Tasks (MET) minutes per week as an overall estimate of weekly physical activity level for either vigorous, moderate or walking activities, the durations and frequencies are multiplied by their respective MET values and summed up to calculate the overall physical activity estimate per week. MET values

for scoring and analysis of IPAQ-SF data are as follows; Vigorous physical activity =8 METs; Moderate physical activity = 4 METs and walking = 3.3 METs.

The IPAQ-SF has been used in previously published research studies to assess physical activity behaviours among adult populations in Nigeria and beyond (Minder *et al.*, 2014; Çolak *et al.*, 2015; Puciato, Borysiuk and Rozpara, 2017; Iwuala *et al.*, 2015d). As is commonly the case with recall questionnaires, the drawback of the IPAQ-SF is the tendency for inaccurate estimation leading to significant overestimation or underestimation. Nevertheless, the choice of physical activity questionnaire ultimately depends on research purpose (Shephard, 2003), hence the IPAQ-SF served as a simple tool for measuring and classifying physical activity among Nigeria nurses.

The IPAQ sitting question indicates time spent on sedentary activities and is excluded in the computation and summary of total physical activity score. Physical activity results generated from the IPAQ can be expressed either by categories such as low, moderate or high physical activity levels or as continuous scores expressed as MET-mins per week (minutes of specific physical activity per day x frequency of specific physical activity per week x specific MET value) according to the criteria presented in **table 3.1** below.

IPAQ Category	Criteria
1. Low physical activity	This is the lowest level of physical activity. Those individuals who not meet criteria for categories 2 or 3 are considered low/inactive.
2. Moderate physical activity	Any one of the following 3 criteria: • 3 or more days of vigorous activity of at least 20 minutes per day such as digging, aerobics, heavy lifting or fast paced bicycling - OR • 5 or more days of moderate-intensity activity such as carrying light loads, bicycling at a regular pace, or doubles tennis or walking of at least 30 minutes per day - OR • 5 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 600 MET-min/week.
3. High physical activity	Any one of the following 2 criteria: • Vigorous-intensity activity (digging, aerobics, heavy lifting or fast paced bicycling) on at least 3 days and accumulating at least 1500 MET-minutes/week - OR • 7 or more days of any combination of walking, moderate-intensity or vigorous intensity activities achieving a minimum of at least 3000 MET-minutes/week.

Table 3.1: Criteria for scoring the IPAQ questionnaire (Adapted from the IPAQ Group (2005))

3.6.4.4 Alcohol behaviours measurement

Alcohol consumption behaviours of study participants were measured with the consumption factor items of the Alcohol Use Disorders Identification Test (AUDIT-C) questionnaire (Bush *et al.*, 1998). The AUDIT-C is the most popular short form of the full version 10- item AUDIT questionnaire and contains the first three questions of the full AUDIT questionnaire. AUDIT-C is self-administered and feasible in time constrained settings, with almost equal accuracy as the original AUDIT (Reinert and Allen, 2007). The three items on the AUDIT-C briefly screens for alcohol use and risky drinking. Specifically, the three questions relate to frequency of alcohol consumption, amount of alcohol consumed in an episode and frequency of episodic consumption of hazardous amount of alcohol. Each question in the AUDIT-C questionnaire is scored from zero to four and scores for the three questions are summed up to determine the total AUDIT-C score. The total sum for the AUDIT-C questionnaire range between zero to 12. In alcohol assessments which aim to assess alcohol use and risky drinking as is the case in this research study, cut-off scores of ≤ 3 in females and ≤ 4 for males indicates low risk drinking. However,

if the goal of the research assessment is to diagnose alcohol related disorders, a higher cut off ≤ 4 for females and ≤ 5 for males is used to indicate low risk drinking (Reinert and Allen, 2007). Lowering the AUDIT-C cut off for females enables the tool to perform equally as well as it does in males. The AUDIT-C has exhibited sound psychometric properties and ease of use and scoring as well as being devoid of cultural biases and freely available to use (Reinert and Allen, 2007). Results from this short version of the AUDIT has proven to be as equally as effective as the original AUDIT in screening for risky drinking (Aalto *et al.*, 2006). The reliability coefficient of the AUDIT-C was found to be at an acceptable level ranging from 0.69 to 0.91 (Bergman and Källmén, 2002; Gomez *et al.*, 2005). The limitations of the AUDIT-C questionnaire is the increased risk of obtaining high rate of false positives for alcohol abuse based on the varying cut offs for risky drinking and alcohol use disorders (Bush *et al.*, 1998). Also, the tool is not in itself the basis of clinical diagnoses of alcohol disorder without assessment and examination by the doctor (Peltzer *et al.*, 2007). Published research studies have used the AUDIT-C for studying the scale of unhealthy alcohol behaviours in adult populations of different racial backgrounds (Bradley *et al.*, 2007; Frank *et al.*, 2008). In this study, the standard unit of alcohol was made clear in the questionnaires by a pictorial guide on alcohol unit measurements for different types and amounts of alcoholic beverages.

3.6.4.5 Smoking behaviours measurement

The questions in the smoking behaviour section of the questionnaire were adopted from questionnaires which have been used in previously published research studies to measure smoking behaviours among nursing populations (Blake and Harrison, 2013; Blake *et al.*, 2011; Bakhshi *et al.*, 2015; Baron-Epel, Josephsohn and Ehrenfeld, 2004). The prevalence of smoking among Nigeria nurses had not been previously studied. Smoking among nurses also represents a sensitive subject matter because smoking is highly prohibited within the hospital environment. Therefore, in line with the objective of this research to obtain nurses' baseline smoking information, nurses were asked if they currently smoke cigarette. Responses were reported in a 'yes' or 'no' format. The smoking status of nurses were identified by their responses to the question on smoking. Positive responses represented current smoking behaviours while negative responses represented non-smoking behaviours.

Pilot study for the questionnaires

A pilot study is a small research study undertaken for the purpose of testing data collection instruments, strategies for sample recruitment as well as other potential techniques to be applied in a larger research study (Hassan, Schattner and Mazza, 2006). Undertaking a pilot study is essential and useful for setting the groundwork of research projects because potential problems and deficiencies may be identified and rectified prior to conducting the main research study.

After initial development and organisation of the research questionnaires for this research study, a pilot study was carried out with the aim of examining the feasibility and practicalities of the questionnaire study for Nigeria nurses and to test the measurement instruments for ease of understanding. The pilot study helped ensure that the questionnaire items addressed the research questions in an accurate manner as well as testing the

comprehensibility and appropriateness of the entire questionnaire. The pilot study was conducted on 20 Nigeria nurses who were not part of the main study. Pilot study participants were recruited from nurses attending a professional program organised by the Nursing and Midwifery Council of Nigeria (NMCN). Permission was sought and granted beforehand from the NMCN Continuing Education Co-ordinator after introduction of the researcher and explanation of the research study and the importance of the pilot study. On the day, participants were briefed by the program co-ordinator and introduced to the researcher before the pilot study. All pilot study participants were given a participant information sheet and study questionnaire to read through and complete. There was need to enquire by means of feedback if the questions were clearly understood, simple and consistent in presentation and question sequence. The pilot study also tested the questionnaire participant information sheet for comprehensibility. There was a feedback session afterwards for participants to talk through their observations and concerns with the researcher who carefully noted the concerns for consideration and implementation in the research. The major points raised by the nurses from the pilot study were as follows:

- Nurses were able to comprehend the information detailed in the participant information sheet without difficulty.
- There was minimal difficulty in understanding the questionnaire items, terminology, sequence, question types and how to answer the questions. Despite most nurses reporting good engagement with the questionnaire, some nurses felt clearer instructions specific to each section about how to answer the questions therein might be helpful.
- The format of the questionnaire was easy to follow through and straightforward in terms of font, font size and general layout.
- Most nurses said the time taken to complete filling the questionnaire was practical though very few nurses found it quite lengthy. The longest time taken to read the participant information sheet and fill the questionnaire was reported to be 30 minutes while 16 minutes was reported as the shortest duration.

All concerns and comments from the nurses were considered and necessary adjustments and corrections were made accordingly. However, the results of the pilot study were not analysed and included in the data analysis because the pilot study nurses did not meet the inclusion criteria for the main study. The pilot study revealed that the questionnaire study was feasible and not significantly disruptive to nurses' work to impact on their work time.

3.6.5 Ethical approval and permissions for the research study (Quantitative and qualitative strands)

The research protocol was submitted to the Faculty of Medicine and Health sciences Research Ethics Committees of University of Nottingham and ethical approval was obtained on 8th September 2016 with Ref: OVS26082016 (appendix 8). Ethical approval was also obtained on 19th December 2016 from the Research Ethics Committee of the University of Port-Harcourt Teaching Hospital with Ref: UPTH/REC/19317/126 (appendix 9). After receiving ethical approvals to conduct the research from respective institutions above, permissions were sought from gate keepers such as the Director of Nursing Services of UPTH to seek permission to access nurses in the clinical area.

3.6.7 Questionnaire survey sampling, recruitment and data collection

The sample for the quantitative strand consisted of nurses working in the department of medicine at the UPTH. These group of nurses were selected for this study based on their daily roles which majorly involves promotion of healthy lifestyles and support to patients' especially for long term conditions/chronic illnesses. This study also entails investigating the link between nurses' health promoting behaviours and the impact this has on their ability to provide credible lifestyle related guidance to their patients. Therefore, a sample of nurses who actively engage in health and lifestyle promotion best suited this research study.

The total number of nurses working in the hospital is 450 ($n=450$). Therefore, the sample size for this study was calculated using finite population correction for proportions formula with 95% confidence interval, z-score of 1.96, standard deviation of 0.5 and 5% margin of error to be 208 nurses (Mathews, 2010).

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

The questionnaire survey invitation letters were distributed to the 210 nurses working in the department of medicine through their mailboxes in the hospital. The participant information sheet was included with the questionnaires in same envelope (Appendix 1). The questionnaires were strictly anonymous though each had a unique identification number which were not traceable to the nurses' names. Collection of data via self-administered anonymous questionnaires helped reduce bias in the research (Creswell, 2013). Indeed, the internet is increasingly being used as a platform for conducting electronic questionnaire surveys and may hold clear advantages over paper-based questionnaires in terms of cost effectiveness, convenience, efficiency and wide coverage (Van Selm and Jankowski, 2006). Nevertheless, it may not be suitable for a busy population of nurses who might not have adequate knowledge, skills, time or access regarding internet usage. More so, due to the research sample nurses' internet uptake being previously undetermined, paper-based questionnaires were best suited to generate data from nurses in their workplace. The nurses were requested to fill the questionnaires after reading the participant information sheet. Filled questionnaires were returned via an anonymous return drop-box which was provided by the researcher and kept in the nurses' lounge, a place that was accessible and centrally located. Completion and return of the questionnaire to the secure box provided were taken as implied consent for the questionnaire study (Randall, Cottrell and McKenzie, 2005). Filled questionnaires were retrieved fortnightly and written reminders were sent to nurses at same time period to improve response rate for the questionnaires. Each reminder letter pack contained same questionnaire package initially distributed and in order to avoid duplicating responses, nurses were requested to ignore the reminder letter if a questionnaire had been previously filled. Questionnaire data collection continued until the researcher did not get any filled questionnaires returned for a period of six weeks leading up to the study cut off period.

3.6.8 Questionnaire data analysis

The retrieved questionnaires were arranged and recoded with a unique identification number to ease data entry into the statistics software for data analysis. The questionnaire study examined nurses' demographics, obesity

prevalence, dietary behaviours, physical activity, alcohol consumption and smoking behaviours. The relationships between nurses' demographics and their health promoting behaviours were also investigated. The questionnaire data were analysed with Statistical Package for Social Sciences (SPSS) IBM PASW windows version 24.0.

Firstly, all questionnaires were checked for completeness/missing data before entry into SPSS. The study variables were then created and labelled in SPSS according to the order presented in the questionnaire and the data were carefully entered into SPSS in the sequence of the analysis codes given. Data entry into SPSS was validated by double entry to minimise human data entry error that may jeopardise the results (Barchard and Verenikina, 2013; Barchard and Pace, 2011). Also, to ensure data accuracy, the researcher randomly rechecked 20% of the questionnaire data against the data entered into SPSS database to ensure no errors were made in data entry (Leech, Barrett and Morgan, 2014). Data were analysed using descriptive statistics for demographics and nurses' health promoting behaviours. Descriptive statistics entailed frequencies and percentages for categorical variables and means and standard deviations for continuous variables. Inferential statistics were also applied to investigate the relationships between nurses' demographics and their health promoting behaviours. The normality of continuous variables was examined by eyeballing their histogram as well as skewness and kurtosis, all of which were normal prior to determining the appropriate statistical test to be carried out. The assumptions for each statistical test applied in the analysis were also considered and guided the choice of inferential statistical tests performed in the data analysis. All statistical tests performed were two-sided, significance level was set at $p < 0.05$ and confidence interval was 95%. Pearson's chi-square test of independence was applied to examine the relationship between categorical variables. Independent t-test was used to compare and test for significant differences in group means. Where data were collected as continuous variables and linear relationships existed between variables, Pearson's correlation coefficient which measures the strength of linear relationships or associations was also used to determine the relationship between nurses' lifestyle related variables and nurses' demographic variables.

3.7 The Qualitative Strand

3.7.1 Research Objectives

The objectives of the qualitative strand of this study were as follows:

- 1) To investigate the determinants of Nigerian nurses' engagement in health promoting behaviours.
- 2) To explore the perceptions of Nigeria nurses about being role models for health.
- 3) To explore the perceptions of patients about nurses as role models for health and the implications for patients' engagement with nurses' health promotion.

3.7.2 Qualitative research methodology

Qualitative research is defined as an inquiry based on distinct processes that uncover social or human problems and what lies at the core of people's lives (Creswell, 2012; Guest, Namey and Mitchell, 2013). Likewise, the qualitative strand of this study focused on exploring and understanding the perceptions, views and opinions of nurses and patients through the collection and analyses of their spoken words. Nevertheless, the qualitative

research questions lay outside the confines of the foundational qualitative methodologies such as ethnography, phenomenology and grounded theory. These qualitative methodologies are driven by specific research aims, research questions and philosophical underpinnings (Richards and Morse, 2012). The distinctive features of the key qualitative methodologies are that phenomenology seeks to explore meaning and value in the lived experiences of people, ethnography attempts to understand and interpret human behaviours and actions in their natural settings while grounded theory has at its core, the formulation of a substantive theory from the data (Silverman, 2017).

In order to answer the qualitative research questions stated above, the generic qualitative inquiry research design was adopted. The research method used for data collection was one-to-one interviews. Interviews are one of the frequently used qualitative research methods for data generation. Other methods include diaries, observations and document analysis (Denzin and Lincoln, 2011). Interviews enable researchers to obtain rich, contextual, in-depth and detailed information and understanding about participants' viewpoints and experiences regarding social phenomena (Turner, 2010). The interviews were face-to-face and semi-structured with pre-determined open-ended questions, probes and prompts to generate comprehensive and contextual data from nurses and patients respectively. Semi-structured interviews involve verbal conversation whereby the interviewer elicits information in form of words directly from the respondents by open-ended questioning often guided by an interview guide (Clifford, French and Valentine, 2010). According to Hittleman and Simon (2006) open ended questions in interviews encourage interviewees to express their views, perceptions, beliefs and experiences of the phenomena under study in appreciable detail. In addition, asking open-ended questions broadened the depth and breadth of the answers provided by the respondents and allowed for deep understanding of the research phenomena (Rowley, 2012; Creswell, 2012; Kerlinger and Lee, 2000). The justification for the choice of individual interviews was the focus of the research on exploring individualised meanings and perceptions about the research phenomenon from both the nurses and patients (Schutz and Sandy, 2011).

3.7.3 Pilot testing and interview process refinement

The production of the interview guide for the study was guided by the research questions presented above. A semi-structured interview guide was developed, with questions informed by the literature as well as formal and informal discussions with qualitative research experts, nurses, and lay people. The interview guide developed for the interviews with nurses were aimed at generating qualitative data about the enablers and barriers to their personal practice of health promoting behaviours as well as nurses' perception of themselves as role models for health. Interview guide used with patients encompassed their perceptions of nurses as role models for health and its implications for their health. The interview guides were then pilot tested with two Nigeria nurses and two lay persons outside the study samples after which there was a debriefing meeting to get their feedback (Blessing and Chakrabarti, 2014). The initial drafts of the interview guides for nurses and patients underwent series of further developments and refinements from both qualitative researchers and pilot study feedback before the final version was produced. Modifications based on the feedback from the pilot interviews covered aspects such as word simplifications, timing, sound equipment suitability, interviewer's skills and experience, question sequence, sentence structure, relationship of questions to research questions, appropriateness of questions, prompts and probes to avoid leading questions. The pilot study improved the trustworthiness of the qualitative

study and contributed enormously to the development of the final interview guides even though the results were not included in the data analysis because the pilot study participants were not drawn from the target population.

3.7.4 Eligibility criteria for interviews with nurses

Inclusion criteria:

- Nurses working in the department of medicine at UPTH
- Nurses who had read the participant information sheet and willing to participate.
- Nurses who consent to face-to-face audio-recorded interviews
- Nurses who consent to being interviewed within the hospital premises.

Exclusion criteria:

- Nurses who refused to be interviewed within the hospital premises.
- Nurses who were unable to be interviewed face-to-face.

3.7.5 Eligibility criteria for interviews with patients

Inclusion criteria

- Adults aged 18 years and above.
- Ability to communicate in English language.
- Registered patient with the Department of Medicine, University of Port Harcourt Teaching Hospital Nigeria.
- Able to be interviewed within the hospital premises
- Able to undertake the interview face-to-face.
- Possess the mental capacity to provide informed consent as determined by the clinical team managing the patient.
- Willingness to give informed consent

Exclusion criteria

- Age below 18 years of age
- Patients who are unable to communicate fluently in English language
- Patients who are unable to be interviewed within the hospital premises.
- Patients who are unable or unwilling to be interviewed by face-to-face method.
- Unwillingness to give informed consent.

3.7.6 Methodological rigour

The concept of rigour encompasses all processes that improved the quality and robustness of this qualitative research study to produce more trustworthy findings. Strategies for promoting rigour were embedded in the research process (Cypress, 2017) and ensured by regular discussion of the research development processes,

data collection, data analyses processes and research findings with research supervisors. Qualitative research data requires a fair and accurate representation as this contributes to the rigor of the study. This practice helped to ensure that the researcher's interpretations of participant's constructs were deeply rooted in the participants words and meanings and linked consistently and appropriately throughout the data analysis and reporting phases. Also, it enabled the research findings to accurately represent and be reflective of expressions of meanings in line with the participants perceptions (Bryman and Burgess, 2002). Furthermore, analysis of interview transcripts was not selective, all participants responses in line with the research questions were considered with equal weight and analysed accordingly. From the design stage of this research study, there was clear definition of the aim, objective and scope of the study, and this guided the choice the data collection method (Denzin and Lincoln, 2011). Participants responses were obtained in a private atmosphere away from the clinical area of work. This was to reduce the tendency for external influence that may arise due to nurse-patient power dynamics. This also helped to maximise the chances of responses being open enough to illuminate the subject matter under study. Member checking was ensured by the researcher paraphrasing responses so that respondents may clarify or confirm their responses and intended meanings (Roller and Lavrakas, 2015). This process also enabled the researcher to ensure that the respondents have understood and interpreted each interview question according to how the researcher intended it to be understood. Comparability in the research meant that the research findings from participants were corroborated with each other to arrive at themes that represent the entirety of participants voices. Study findings are also discussed in comparison to findings from similar studies in the broader research context and literature. The provision of an account of the research context, methods, design and participants ensures that readers can make informed judgements about the transferability of this research. Reflexivity in this qualitative study aided the researcher to account for their influence on the research and vice versa noting particularly how these changes have impacted on the research process (Palaganas *et al.*, 2017). Therefore, throughout the research process, the researcher journaled personal thoughts, actions, feelings and reflections to account for the impact of being the primary research instrument on the research result and how potential influences were overcome.

3.7.7 Recruitment of participants for qualitative study

Nurses: The nurses who participated in the interviews were recruited from the questionnaire respondents who expressed interest to participate in the interview study. An expression of interest form for the interviews was included behind each questionnaire. The expression of interest form requested nurses who were interested in the interviews to fill their contact details and return to the same box as their questionnaires. Recruitment of nurses for the interviews were from nurses who returned their completed expression of interest forms (Appendix 3). The justification for this approach was because the researcher intended to corroborate the questionnaire survey results with the qualitative interview findings for the participants as well as utilize the quantitative data to further understand and explain the interviews findings. The initial contact from the researcher to each consenting nurse was made after shortly after retrieving their filled forms with consideration of the nurses' preferred time and method of contact. During such contact, the researcher made an introduction of self and reiterated the research purpose as well as clarified any concerns. Through mutual agreement, a date and time for the interview was scheduled between the nurse and the researcher around the nurses' convenience. Reminder messages were also sent to participants close to the scheduled dates for the interviews. Meeting time and venue were

also clarified to minimize inconveniences to participants. Participants were free to reschedule or cancel the interviews according to their circumstances and to opt out without explanation to the researcher. To promote nurses' response rate, research study posters inviting nurses to participate were placed at strategic points in the nurses' lunchroom (Weierbach *et al.*, 2010).

Patients: Sampling for the interviews with patients to explore their perception about nurses as role models for health was also from the medicine department to allow for direct comparison between nurses and patients perceptions. In order to protect patients' confidentiality and health related data, the researcher could not access the patients' health records directly. Nevertheless, there was a meeting with the nurse managers and clinical team that manage the patients in the department of medicine to explain the eligibility criteria for patients included in the study. Afterwards, eligible patients were identified from their hospital records in line with the inclusion criteria. Initial contact with patients to invite them to participate in the research interviews was via invitation letters on the hospital letter headed papers drafted by the researcher as a doctoral student at the University of Nottingham, United Kingdom. The invitation letters were given to patients by hand at their appointment or via postal mail for patients whose next hospital appointment was more than two weeks away. The invitation letters were given by the clinical team in charge of the patients' management on behalf of the researcher. Each invitation letter contained a copy of the participant information sheet and the researcher's contact details. Contacting the patients via the clinical team in charge of patient care enhanced the recruitment process by helping to ensure patients met the inclusion criteria for the study and protection of patients' personal/health related data. Ten days after the commencement of the distribution of the invitation letters, the first phone call from a patient was received and following introductions and clarifications, the interview was scheduled around the patient's convenience. Preferred contact information for patients were collected by the researcher for further contact. All interviews were scheduled on dates of patients' hospital visit in order to reduce the inconvenience to the patients. Interview times were arranged after patient's routine clinical visit to avoid disruption to patient care during assessment by the clinical team. Additionally, the researcher sent written reminders to the patients after the initial letters to potentially improve patients' response rate by encouraging participation in the research study (Booker, Harding and Benzeval, 2011; Phellas, Bloch and Seale, 2011).

3.7.8 Interview data collection process for nurses and patients

All interviews for nurses and patients were conducted in the clinical team meeting room which was in a quiet and private corner of the building. During the interviews, the researcher made efforts to control ambient noise and reverberations by closing the door and windows whilst leaving the air-conditioner at room temperature to ensure the room was at ambient temperature (Bolderston, 2012). To avoid interruptions, a sign was posted on the door during the interview process which read 'please do not disturb' (Creswell, 2012). Prior to the interviews, the researcher ensured all participants had read the participant information sheet (Appendix 4 & 5) and expressed understanding of the research. The researcher ensured good interaction with the respondents to set the stage and put participants at ease. The participants responded to the questions with neither undue interruption from the researcher nor cues that appeared to be leading to avoid influencing participants towards reporting in a manner that seemed to impress (Polit and Beck, 2013). The interviewees' responses were guided

by the researcher's questions, probes and prompts in the semi-structures interview guide (Appendix 10 & 11) to ensure the topics covered across all interviews consistently related to the research questions.

According to Rowley (2012), this two-way interaction allows the discussions in the interview session to cover both the breadth and depth of the participants understanding of the topic being explored. Participants' consent was obtained in written form (Appendix 6 & 7) and audio-recorded consent was also obtained by the researcher prior to commencing each of the interviews. Prior to the interviews, each participant completed an anonymous demographic information form. All interviews were conducted in English language and all the nurses spoke English language. English language was also generally spoken in the region where the study was carried out. Also, the scope and resources for this research study did not cover conducting interviews in local languages. As suggested by Qu and Dumay (2011), the interviewing began by the researcher welcoming the participants, re-informing them of the general aim and importance of the research as well as other details from the participant information sheet which they needed clarification about. Interviews were audio-recorded with consent of the respondent using an audio recorder as a means of getting an accurate replicate of the information shared during the interview session (Bolderston, 2012). Participants were reassured of the absence of an obligation to respond to any questions they felt uncomfortable about. The interviews sessions for nurses consisted of an introduction section followed by a section of questions on facilitators and barriers to nurses' health promoting behaviors and another section of questions on nurses as role models for health. The closing questions followed afterwards with opportunity for nurses to provide additional information. The interviews with patients had lesser sections but included an introductory section, a section of questions on patients' perceptions of nurses as role models for health and the closing section questions with opportunity for provision of relevant additional information. Each interview was concluded by the researcher expressing thanks to the participant for participating. Participants were provided with snacks, and non-alcoholic drinks after each interview session in appreciation of their time and participation. There was no pre-determined sample size for the interview study with either nurses or patients. Nevertheless, around the fifteenth interview with nurses and the twelfth interview with patients, the researcher recognized recurring patterns in participants' responses. Interviewing continued until the point of data saturation where no relevant new information emerged from further interviews (Silverman, 2017). Interviewing beyond this point only confirmed the data saturation through repetition of issues and concerns raised in previously conducted interviews. Interview duration ranged between 25 to 65 minutes with average of 40 minutes.

The issue of sample size in qualitative research is highly debatable. Guest (2006) argues that there are no existing published guidelines to determine sample sizes in non-probability studies. Additionally, qualitative studies do not focus on recruitment of large samples which are representative of a larger population but on collecting rich contextual data from participants personal perspectives. Likewise, the emphasis of this research was not on how many interviews were conducted but on the quality of the data obtained and how such data links up with the research aim and answers the research questions.

The use of field notes was adopted by the researcher as advocated by Vogt et al., (2014) and Phillippi and Lauderdale (2018). Field notes and memos were valuable resources to keep accurate record and trail of the researcher's ideas, assumptions, challenges, observations, thoughts, decisions, personal concerns, feelings and epiphanies about the data collection and analysis process. Field notes also enhanced reflection on the data collection processes and reflexivity in the research.

3.7.9 Interview data analysis

All audio-recorded interview data were transferred and saved in a password-protected computer file with a unique identifier and pseudonyms. The saved and secure interview data were then transcribed manually by the researcher using the verbatim transcription method. In order to comprehensively capture meanings, every single word from the interviews were written down as well as pauses and expressions of emotions including stuttering, humming, laughter and hesitations. To get the full picture and context of participants' responses and ensure no nuances are missing in the process, interviewees words were prioritised just as important as how they were said in the interviews. Speaker designations, line numbers and time stamps were used to organise each interview transcript. Transcripts were clarified where necessary with addition of clarifying words or phrases for sentences that seemed unclear. Full proof reading of the transcripts was carried out to ensure accuracy before commencement of data analysis.

Data analysis was performed by thematic analysis with an inductive approach that allowed the content of the data to determine the codes and theme development. Thematic analysis is a method of qualitative data analysis that focuses on identification of patterns of shared meaning (themes) across a dataset to proffer an answer to the research question being addressed (Braun and Clarke, 2006; Clarke, Braun and Hayfield, 2015). The six phases of thematic analysis by Braun and Clarke (2006) were adopted to promote data engagement, enhance rigour in data interrogation as well as guide the data analysis in this research. Although the thematic analysis phases are in sequence, each phase stems from the previous phase. Notwithstanding, the data analysis process was typically recursive whereby movement was made back and forth across the six distinctive phases. To facilitate the thematic analysis, all interview data transcripts were imported to NVivo10® software for data organisation and management. The data analysis procedure though inductive, was guided by the pre-determined research questions. Thematic analysis of the data began with familiarisation with each interview transcript through meticulous reading and re-reading to gain a thorough overview of all data collected. Coding of the data followed immediately with generation of succinct labels or codes that identify salient features in the data which might be of relevance in answering the research questions. The entire data set was coded to identify potentially interesting and relevant highlights in relation to the respective research questions. Phrases and sentences were matched to their corresponding existing codes and new codes were added where necessary as data analyses of interview transcripts progressed. After thorough coding of the transcripts, the data were then organised by collating all codes and relevant data extracts into groups identifiable by codes. The codes represented the overview of salient points and common meanings in a condensed way as well as ideas that are recurring all through the data. The codes and data extracts were further analysed to identify developing patterns of meaning and related codes were incorporated into tentative themes in line with specific research questions. The tentative themes were reviewed and revised by revisiting the data to compare the themes against it and check that the research questions are answered. Reviewing the themes also ensured the themes were relevant, useful and accurately represented the data. Theme refinement and finalization of the theme names was performed as well as defining each theme's focus and scope as they best explained the research question and aid comprehension of the data. The findings from the interviews with nurses about facilitators and barriers to their engagement in health promoting behaviours were further mapped onto the socio-ecological model to promote further understanding (Chapter 5).

3.8 Ethical Considerations and processes for the research study

It is fundamental to consider the ethical dimensions of research when conducting research with human subjects, this is in order to avoid subjecting the research participants to any risk of direct or indirect harm throughout the research process. According to Gregory (2003) researchers should consciously ensure that ethical issues are considered such as protecting the anonymity, confidentiality and seeking informed consent. Whilst significant ethical issues did not arise from this research study, ethical features were incorporated to indicate that ethics was clearly thought through, and key principles adhered to. Therefore, considerations were given to the following ethical issues as is obtainable with research with human subjects:

3.8.1 Respect for autonomy, voluntary participation, and Informed consent

The participant information sheet given to all participants to read before the data collection contained comprehensive details of the study aims, process of data collection, reason for invitation to the research, the benefits of the research study, as well as their right to participate voluntarily without any form of coercion and to freely withdraw their voluntary participation in the study at any time without giving any reason and without implications for them. Nurses were informed that refusal to participate will not affect their future career prospects or rights as an employee. The contact detail of the Head of Nursing Research of the University of Port Harcourt Teaching Hospital was also included in the participant information sheet as an accessible focal person to handle participants' complaints about any aspect of the research. This information was also reiterated verbally by the researcher before commencement of the interviews. Participants were also provided with opportunities to ask the researcher any questions and discuss any concerns they had regarding any aspect of the study before the interviews commenced. Completion and return of the questionnaire served as implied informed consent while prior to commencement of each interview, consent was obtained in written and audio-recorded formats.

3.8.2 Data protection and confidentiality

Due to the anonymous nature of the questionnaires, it was not possible to identify respondents by their names or contact details. A unique code was assigned to each questionnaire to organise them before data analysis. Also, participants for the interviews were informed that pseudonyms will be used to promote anonymity, so their identity was not disclosed at any point in the research process. The privacy of the nurses and patients involved in the study was protected by the use of pseudonyms instead of interviewees real names for example the nurses were identified by pseudonyms such as Nurse1, Nurse2, Nurse3 while the patients were identified as P1, P2, P3 etc. The researcher assured participants that they would not be identified by the information they provided, and they were asked not to reveal identifying information during the interview. Participants' personal information was confidential and remained so throughout the study as the researcher ensured all electronic data were stored securely in a password-protected computer device. Research participants' data in print format were preserved securely in a locked office cupboard. Access to participants' personal information was open to the researcher alone, all data obtained were used solely for academic purposes such as discussions with research supervisors, presentation in conferences, research publications, and other educative forums where the findings are disseminated. All data obtained from the research will be kept securely for a period of seven years after which they will be destroyed or securely disposed. However, within this period, the researcher will take all necessary precautions to continue to maintain confidentiality whilst allowing access to only those in the research team (the researcher and two supervisors).

3.8.3 Addressing participants' concerns

This research study explored perceptions about nurses as role models for health from nurses' and patients' respectively. Nurses were reassured that data around nurses' unhealthy lifestyle practices were not used to determine their fitness to practice or escalated to hospital management. On the other hand, some patients expressed discomfort about expressing their views about nurses as role models for health. This was perhaps due to power dynamics and patients thought their care may be affected or nurses' may be upset. These group of patients were reassured by the researcher that their information would be confidential and not revealed to the nurses in any way. Information generation in the data collection process did not reveal any sensitive concerns that needed the researcher's immediate intervention. Overall, there were no significant risks involved in the study and the benefits of the study outweighed any perceived risks.

3.9 Chapter Summary

This chapter discussed the research aim, research questions, philosophical standpoint, research design and methods. The quantitative and qualitative strands of the research were presented respectively and discussed along with the practical issues involved in the research process, pilot studies, data collection and data analysis. The ethical issues relating to this research study were also explained. In the following chapter, the results of the quantitative strand which was a cross-sectional questionnaire survey about Nigeria nurses' health promoting behaviours is presented in detail.

CHAPTER FOUR

RESULTS FROM CROSS-SECTIONAL QUESTIONNAIRE SURVEY OF HEALTH PROMOTING BEHAVIOURS OF NIGERIA NURSES.

4.1 Introduction

This chapter presents the results of the quantitative strand of this PhD research in which a cross-sectional questionnaire survey was carried out to determine the health promoting behaviours of Nigerian nurses. This survey also aimed to investigate the relationships and associations between nurses' health promoting behaviours and their demographic characteristics. The presentation of results in this chapter begins with descriptive statistics and explanations of the participants' demographic characteristics. Thereafter, the nurses' health promoting behaviours that contribute to healthy lifestyles and constitute the focus of this research study are presented as follows: dietary behaviours, physical activity behaviours, alcohol behaviours and smoking behaviours. In addition to the results on nurses' lifestyle behaviours, results from inferential comparisons are presented according to nurses' demographic characteristics.

4.2 Quantitative Research questions

- 1.) To what extent do Nigeria nurses practice health promoting behaviours?

Sub-questions under this question are as follows:

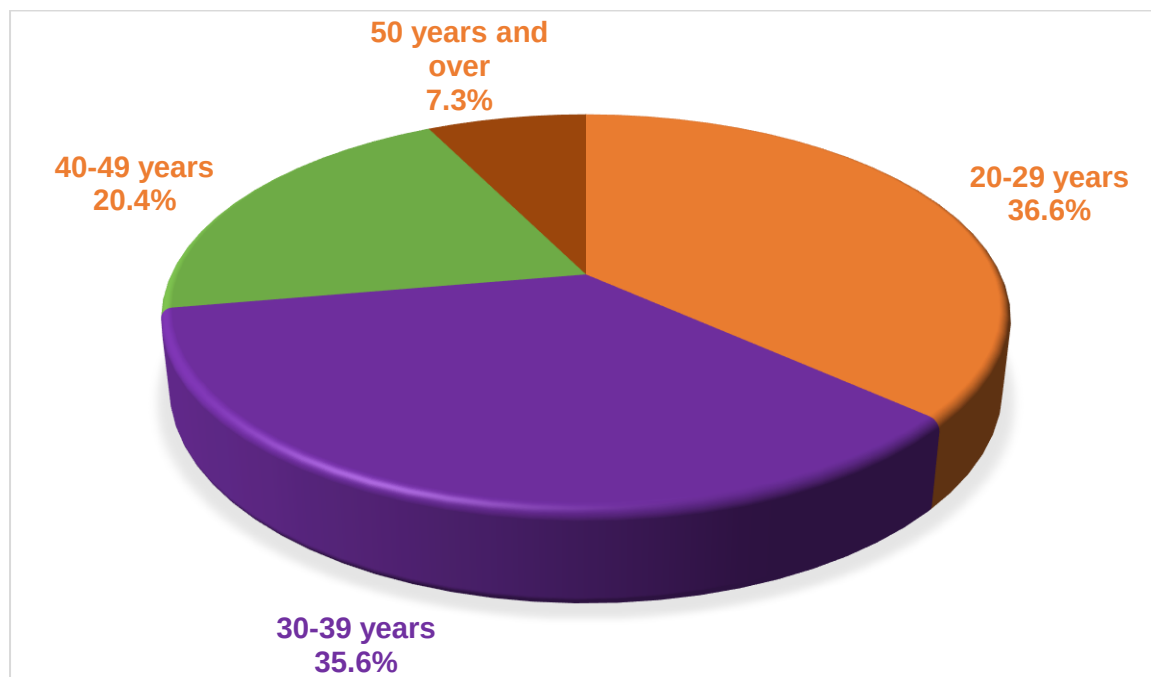
- a.) What percentage of Nigeria nurses are either overweight or obese based on their body mass index classification?
- b.) How are the eating behaviours of Nigerian nurses?
- c.) What is the prevalence of physical activity and physical inactivity among Nigeria nurses?
- d.) What percentage of Nigerian nurses engage in low risk and risky alcohol consumption respectively?
- e.) What percentage of Nigerian nurses are current smokers?

4.3 Demographic characteristics of study participants

Out of 210 nurses invited to participate in the survey, a total of 191 nurses completed the questionnaire study resulting in a response rate of 91%. Majority of the study participants were female nurses ($n=174$; 91.1%) while males constituted less than one-tenth of the study population ($n=17$; 8.9%). This broadly compares to the gender distribution of the hospital nurses where 94% are females and 6% are males. The mean age of the nurses was 34.6 ± 9.2 years with range of 39 (20-59 years). In terms of age groups, the number of nurses in subsequent age groups decreased as their age increased therefore, there were significantly more younger nurses (under age 40) than older nurses (aged 40 and over). Over a third of the nurses ($n=70$; 36.6%) were aged 20-29 years and similar percentage were between 30-39 years ($n=68$; 35.6%). Just over one-fifth of the nurses were aged 40-49 years ($n=39$; 20.4%) while nurses aged 50 years and over constituted less than one-tenth of the study participants ($n=14$; 7.3%). The difference in the distribution of nurses within the age groups were found to be statistically significant ($\chi^2=44.4$; $p<.05$). (Figure 4.1)

Likewise, the distribution of nurses' ages within the entire hospital showed that the percentage population of nurses in the hospital decreased as the nurses age increased. Within the wider hospital, almost one in four nurses (39%) was 20-29 years old, just over a quarter (26%) were 30-39 years of age, little over one-fifth (21%) were 40-49 years old while 14% were 50 years old and over.

Figure 4.1: Nurses' age distribution



Results from nurses' years of experience showed a mean of 12.4 years $\pm$ 8.5. Just over half (51.3%; n=98) of the nurses had 0-10 years of nursing experience while less than a third (30.9%; n=59) had 11-20 years of experience. Nursing experience of 21-30 years was reported by 14.1% (n=27) while the least percentage of nurses (3.7%; n=7) had experience of 30 years and over (Figure 4.2). Nurses' years of nursing experience differed significantly across the categories ($\chi^2=99.3$; $p<.05$). The hospital data on the distribution of years of nursing experience of the total hospital nursing population was unavailable.

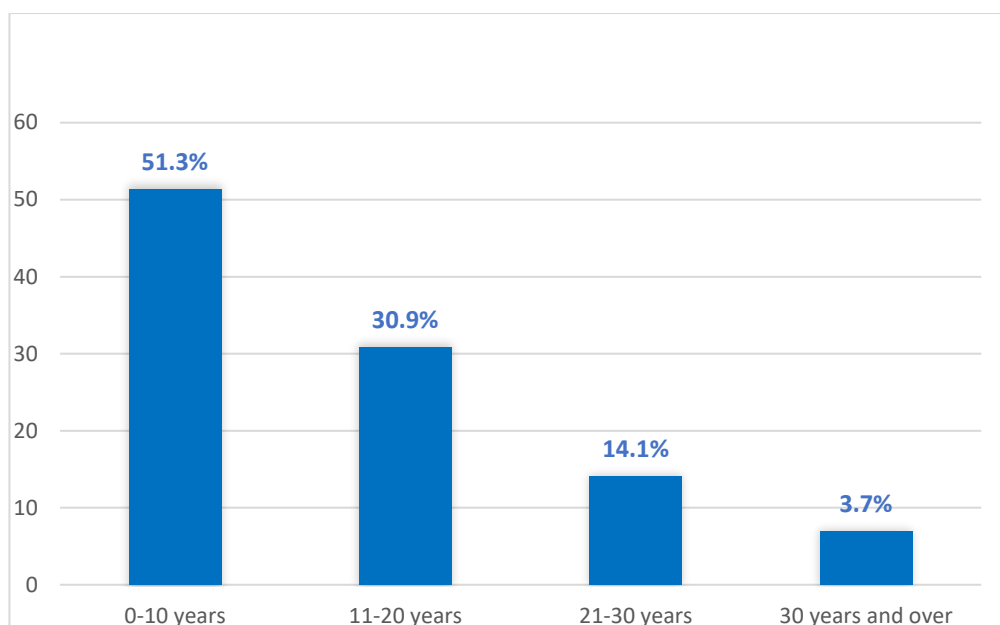


Figure 4.2: Nurses' years of nursing experience.

In terms of nursing designations, nurses reported their designations according to the six-tier ranking system of the hospital which ranges from Nursing Officer II (least rank) to Chief Nursing Officer (highest rank). About on fifth of the nurses were Nursing Officer II (20.4%; n=39) and similar percentage were Nursing Officer I (22.5%; n=43). On the more senior nurses, Principal Nursing Officers constituted about one-fifth of the sample (19.4%; n=37) while Senior Nursing Officers made up 17.8% (n=34). For the most senior nursing cadres, 13.6% (n=13) were Assistant Chief Nursing Officers while the least percentage of nurses (6.3%; n=12) were Chief Nursing Officers (Figure 4.3). The difference in the distribution of the study population across the nursing ranks was statistically significant ($\chi^2=19.94$; $p<0.05$). Similar to the study sample, there were more junior staff nurses than senior nurses among the hospital nursing staff, just over four in ten nurses were either nursing officer I or II (21% and 24% respectively) while principal and senior nursing officers had similar percentages at 16% and 17% respectively. Assistant chief nursing officers made up 13% of hospital nurses while 9% were chief nursing officers.

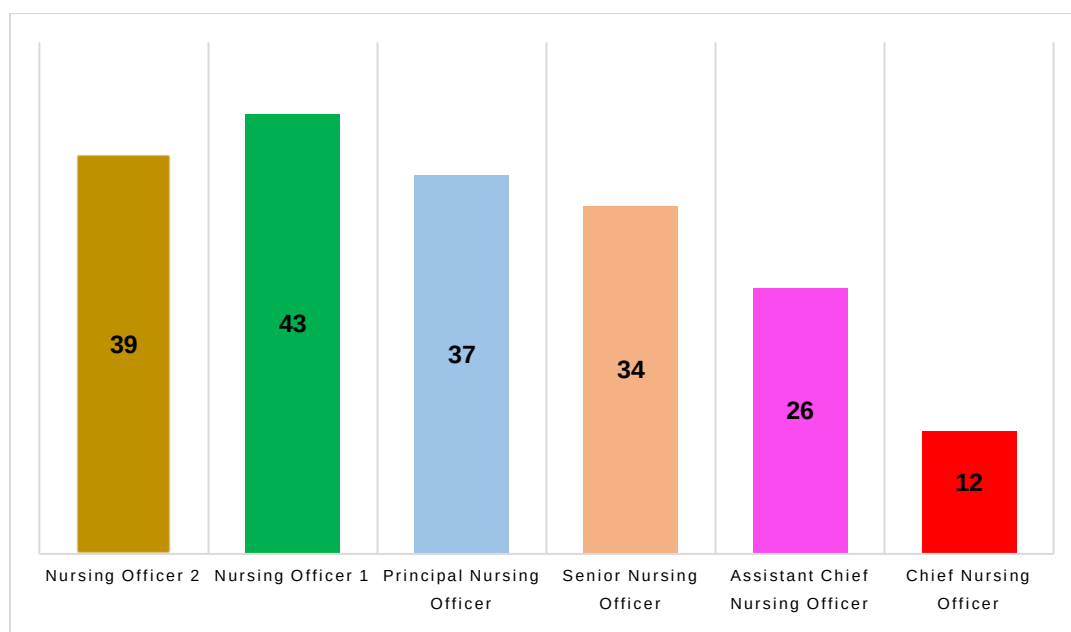


Figure 4.3: Nurses' rank distribution

4.4 What percentage of Nigeria nurses are either overweight or obese based on their body mass index classification?

Nurses' BMI scores were calculated from their self-reported height and weight using the standard formula of body weight in kilograms divided by the square of height in meters (Kg/m^2). The mean BMI score was $30.5\text{kg/m}^2 \pm 5.9$ and range of 26.9 (19.3-46.25 kg/m^2). Nurses' BMI were categorised according to WHO guidelines for adult population ($<18.5\text{ Kg/m}^2$ =underweight; 18.5 -24.9 Kg/m^2 =normal weight; 25.0-29.9 Kg/m^2 =overweight; $\geq 30\text{ Kg/m}^2$ =obesity). The results revealed that vast majority (82.2%; $n=157$) were either overweight or obese while only 17.8% ($n=34$) were normal weight and none was in underweight category (Table 4.1). BMI data were not available for the wider hospital nursing population. Results from nurses' perceptions of their BMI showed that contrary to their standard BMI scores, 24.6% of nurses under-reported their BMI to be either underweight or normal weight while 24.7% of nurses in the overweight/obese category under-reported their BMI to be either healthy or underweight (Table 4.1). Nurses' BMI scores differed significantly across the calculated BMI categories ($\chi^2=21.69$; $p<.05$), the perceived BMI categories ($\chi^2=14.15$; $p>.05$) and between nurses' calculated BMI and self-reported BMI categories ($\chi^2=56.17$, $p<.05$). An independent t-test analysis showed that older nurses are more likely to be overweight or obese than younger nurses ($t=-3.52$; $p<.05$).

Table 4.1: Nurses' BMI scores by gender

BMI (N=191)	GENDER N (%)					
	Standard BMI scores			Self-reported BMI scores		
	Male	Female	Total N	Male	Female	Total N
Underweight ($<18.5\text{kg/m}^2$)	0	0	0	0	7 (3.7)	7 (3.7)
Normal weight ($18.5 - 24.9 \text{ Kg/m}^2$)	4 (2.1)	30 (15.7)	34 (17.8)	9 (4.7)	65 (34.0)	74 (38.7)
Overweight ($25.0-29.9\text{Kg/m}^2$)	9 (4.7)	64 (33.5)	73 (38.2)	7 (3.7)	63 (33.0)	70 (36.6)
Obese ($>30 \text{ Kg/m}^2$)	4 (2.1)	80 (41.9)	84 (44.0)	1 (0.5)	39 (20.4)	40 (20.9)
χ^2 statistic (P-value)	56.17 (p<.05)					

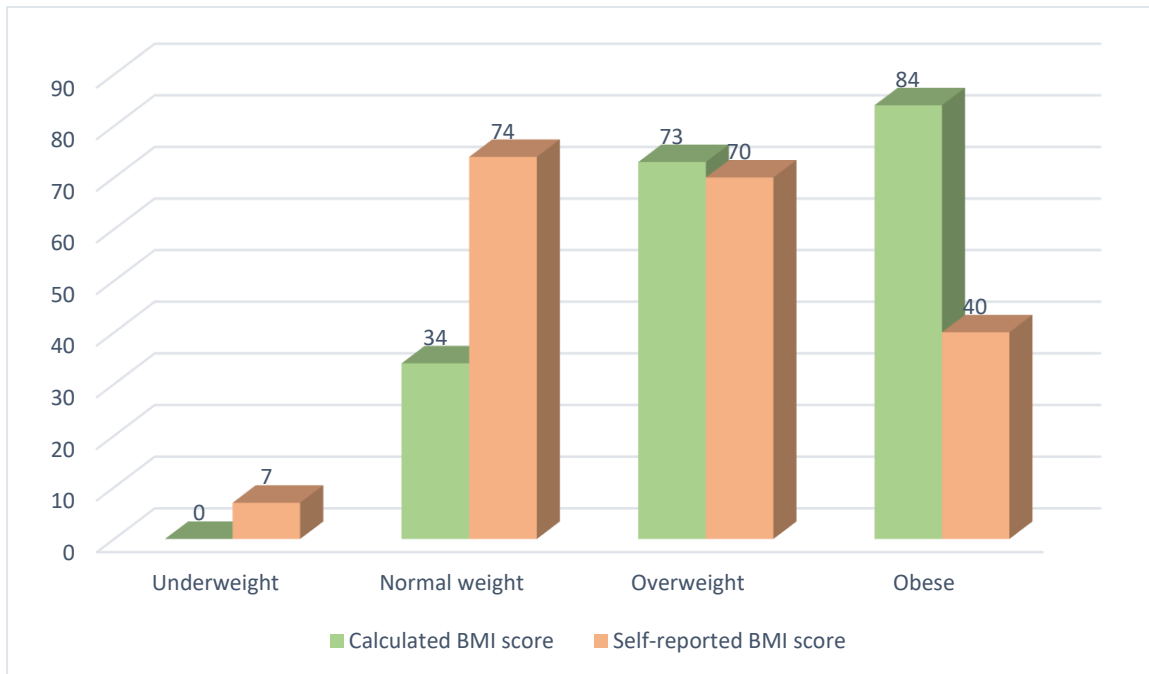
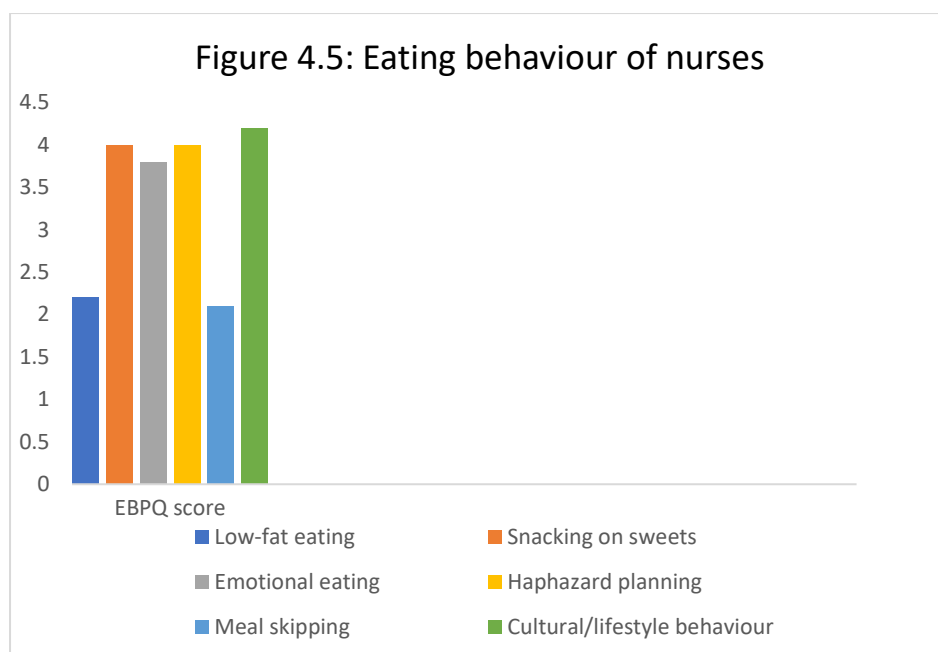


Figure 4.4: Bar chart of nurses calculated and self-reported BMI

4.5 How are the eating behaviours of Nigerian nurses?

The dietary behaviours of the study participants were investigated using the six subscales of the eating behaviour pattern questionnaire (EBPQ). As explained in the previous chapter, the EBPQ consists of 51 items aimed at identifying by means of subscales, six distinct aspects of dietary behaviour as follows: low-fat eating, snacking on sweets, emotional eating, haphazard planning, meal skipping and cultural/lifestyle behaviour. All 51 items on the EBPQ are scored on a five-point Likert scale ranging from strongly disagree (1 point) to strongly agree (5 points). The mean score for each subscale was computed and a mean score of 4 and over for each respective subscale indicated the presence of the corresponding aspect of nurses' dietary behaviour.

The result from the data indicates that the nurses did not generally possess characteristics of low-fat eating (2.2 ± 0.38) and meal skipping behaviours (2.1 ± 0.27). Nevertheless, among the study participants, a mean score of approximately four or more which indicated the presence of respective eating behaviours was found for emotional eating (3.8 ± 0.68), snacking on sweets (4.0 ± 0.47), cultural/lifestyle behaviours (4.2 ± 0.27) and haphazard planning (4.0 ± 0.24).



The EBPQ composite scores differed significantly by gender ($F=75.92$; $p<0.05$) despite no significant subscale gender differences except for emotional eating. Female nurses were significantly more likely to report emotional eating behaviour compared with males (Females: mean= 4.0 ± 0.39 ; Males: mean= 2.0 ± 0.25 ; $F=435$; $p<0.05$).

Each age group was found to mirror the study sample results for all subscales described above. There was no statistically significant difference in subscale means compared by nurses age group both on a composite ($F=0.97$, $p=0.50$) and across age categories (Low-fat eating $F=0.46$, $p=0.71$; Emotional eating $F=1.98$, $p=0.12$; Snacking on sweets $F=0.81$, $p=0.49$; Cultural and lifestyle behaviour $F=1.54$, $p=0.21$; Haphazard planning $F=0.53$, $p=0.66$; Meal skipping $F=0.68$, $p=0.56$). Similar non-significant trend was found when nurses' dietary behaviours were compared on a composite ($F=0.88$, $p=0.57$) and across BMI categories (Low-fat eating $F=0.75$, $p=0.48$; Emotional eating $F=1.04$, $p=0.36$; Snacking on sweets $F=0.10$, $p=0.91$; Cultural and lifestyle behaviour $F=0.02$, $p=0.36$; Haphazard planning $F=0.49$, $p=0.62$; Meal skipping $F=1.95$, $p=0.15$). Statistical non-significance persisted when subscales were compared by nurses' years of nursing experience either as a composite ($F=0.87$, $p=0.61$) or respectively (Low-fat eating $F=0.91$, $p=0.44$; Emotional eating $F=0.54$, $p=0.66$; Snacking on sweets $F=0.27$, $p=0.85$; Cultural and lifestyle behaviour $F=0.56$, $p=0.65$; Haphazard planning $F=0.90$, $p=0.44$; Meal skipping $F=1.89$, $p=0.13$).

Furthermore, in relation to nurses' rank, senior nursing officers scored ≥ 4 on four subscales (emotional eating, snacking of sweets, cultural and lifestyle behaviours and haphazard planning) while principal nursing officers scored ≥ 4 on only two subscales (cultural/lifestyle behaviours and haphazard planning). Despite the observable trend, mean subscale was statistically non-significant across the nurses' ranks overall ($F=0.55$; $p=0.98$) and for respective subscales (Low-fat eating $F=1.10$, $p=0.36$; Emotional eating $F=0.58$, $p=0.72$; Snacking on sweets $F=0.88$, $p=0.49$; Cultural and lifestyle behaviour $F=0.15$, $p=0.98$; Haphazard planning $F=0.34$, $p=0.89$; Meal skipping $F=0.31$, $p=0.91$). Nurses' eating behaviour data are presented in table 4.2 below with means, standard deviations, test statistic and p-values for corresponding statistical analysis performed.

Table 4.2: Dietary behaviour of nurses and comparison with demographic characteristics.

* Statistical significance at $p < 0.05$

Demographic Variables (N=191)	Low Fat Eating M(SD)	Emotional eating M(SD)	Snacking on sweets M(SD)	Cultural/L ifestyle behaviour M(SD)	Haphazard planning M(SD)	Meal skipping M(SD)	F-statistic. p-value
Total	2.2 (0.38)	3.8 (0.68)	4.0 (0.47)	4.2 (0.27)	4.0 (0.24)	2.1 (0.27)	75.92; 0.00*
Gender: Male	2.2 (0.44)	2.0 (0.25)	4.1 (0.45)	4.2 (0.32)	4.0 (0.19)	2.2 (0.34)	
Female	2.2 (0.38)	4.0 (0.39)	4.0 (0.47)	4.2 (0.26)	4.0 (0.25)	2.1 (0.27)	
F-statistic; p-value	0.26; 0.61	435; 0.00*	0.17; 0.68	0.27; 0.60	0.02; 0.88	2.57; 0.11	
Age							0.97; 0.50
20-29	2.2 (0.40)	3.7 (0.79)	4.0 (0.48)	4.2 (0.26)	4.0 (0.25)	2.1 (0.27)	
30-39	2.2 (0.37)	3.9 (0.50)	4.0 (0.48)	4.2 (0.25)	4.0 (0.26)	2.1 (0.27)	
40-49	2.3 (0.36)	3.7 (0.72)	4.1 (0.47)	4.1 (0.31)	4.0 (0.17)	2.1 (0.30)	
50 and older	2.3 (0.43)	4.0 (0.70)	4.2 (0.36)	4.3 (0.22)	4.0 (0.26)	2.0 (0.21)	
F-statistic; p-value	0.46; 0.71	1.98; 0.12	0.81; .49	1.54; 0.21	0.53; 0.66	0.68; 0.56	
BMI Category							0.88; 0.57
Normal weight	2.2 (0.41)	3.9 (0.75)	4.0 (0.49)	4.2 (0.23)	4.1 (0.28)	2.1 (0.29)	
Overweight	2.2 (0.40)	3.7 (0.77)	4.0 (0.44)	4.2 (0.25)	4.0 (0.25)	2.0 (0.27)	
Obese	2.2 (0.37)	3.9 (0.57)	4.0 (0.50)	4.2 (0.29)	4.0 (0.22)	2.1 (0.27)	
F- statistic; p-value	0.75; 0.48	1.04; 0.36	0.10; 0.91	0.02; 0.36	0.49; 0.62	1.95; 0.15	
Years of nursing experience							0.87; 0.61
0-10 years	2.2 (0.40)	3.8 (0.73)	4.0 (0.51)	4.2 (0.26)	4.0 (0.26)	2.0 (0.28)	
11-20 years	2.2 (0.35)	3.8 (0.65)	4.0 (0.39)	4.2 (0.26)	4.0 (0.22)	2.1 (0.27)	
21-30 years	2.3 (0.41)	3.9 (0.57)	4.0 (0.52)	4.2 (0.30)	4.0 (0.19)	2.1 (0.26)	
30+ years	2.1 (0.37)	4.0 (0.62)	4.1 (0.41)	4.1 (0.30)	4.1 (0.28)	2.1 (0.22)	
F-statistic; p-value	0.91; 0.44	0.54; 0.66	0.27; 0.85	0.56; 0.65	0.90; 0.44	1.89; 0.13	
Nursing rank							0.55; 0.98
Nursing officer II	2.2 (0.40)	3.8 (0.70)	4.0 (0.46)	4.2 (0.22)	4.0 (0.23)	2.1 (0.32)	
Nursing officer I	2.3 (0.42)	3.7 (0.82)	4.0 (0.46)	4.2 (0.28)	4.0 (0.27)	2.1 (0.20)	
Principal nursing officer	2.3 (0.40)	3.8 (0.65)	3.9 (0.57)	4.2 (0.25)	4.0 (0.23)	2.0 (0.28)	
Senior nursing officer	2.2 (0.32)	4.0 (0.52)	4.1 (0.44)	4.2 (0.26)	4.0 (0.23)	2.1 (0.32)	
Assistant chief nursing officer	2.1 (0.34)	3.8 (0.68)	4.1 (0.40)	4.2 (0.33)	4.0 (0.23)	2.1 (0.25)	
Chief nursing officer	2.4 (0.41)	3.7 (0.64)	4.2 (0.48)	4.2 (0.31)	4.0 (0.30)	2.1 (0.23)	
F-statistic; p-value	1.10; 0.36	0.58; 0.72	0.88; 0.49	0.15; 0.98	0.34; 0.89	0.31; 0.91	

4.6 What is the prevalence of physical activity and physical inactivity among Nigeria nurses?

The results for Nigeria nurses' physical activity behaviours according to IPAQ-SF (Hallal and Victora, 2004) scoring guidelines are presented in table 4.3 below. The mean MET minutes/week among the nurses was found to be low (293.1 ± 308.9). Male nurses had mean of 676 (400.3) MET minutes/week, more than twice the sample mean and significantly higher than mean of 196.4(263.3) MET minutes/week for females ($t=6.8$; $p=0.00$). The majority of the sample had low levels of physical activity (81.7%, $n=156$). In this sample, those reporting moderate physical activity levels (18.3%, $n=35$) were significantly more likely to be men than women ($\chi^2=26.8$; $P=0.00$). No respondents engaged in high levels of physical activity. There was a trend of non-significance in the comparison of nurses' physical activity data with their demographics. The results further revealed a low mean of less than 300 MET minutes/week across all age groups and non-significant difference METs by age group ($F=1.23$; $p=0.30$). Almost all nurses aged 50 years or over reported low level of performance of physical activity (85.7%; $n=12$) compared to moderate physical activity (14.3%; $n=2$). Overall, nurses' level of physical activity was neither significantly different across age groups ($\chi^2=3.90$; $p=0.28$) nor BMI ($\chi^2=1.85$, $p=0.40$). Regarding moderate Physical activity, normal weight nurses had the lowest performance (14.7%; $n=5$) while obese nurses had highest (22.6%, $n=19$). Mean MET minutes /week remained low at <300 for all categories of nursing years of experience with non-significant mean difference ($F=0.29$; $p=0.84$) even when compared by levels of physical activity ($\chi^2=0.81$, $p=0.67$). Comparison of MET minutes/week and level of physical activity respectively by nurses' ranks also yielded no significant difference ($F=1.41$, $p=0.22$; $\chi^2=4.25$, $p=0.50$).

FIGURE 4.6: PHYSICAL ACTIVITY LEVELS OF NIGERIA NURSES

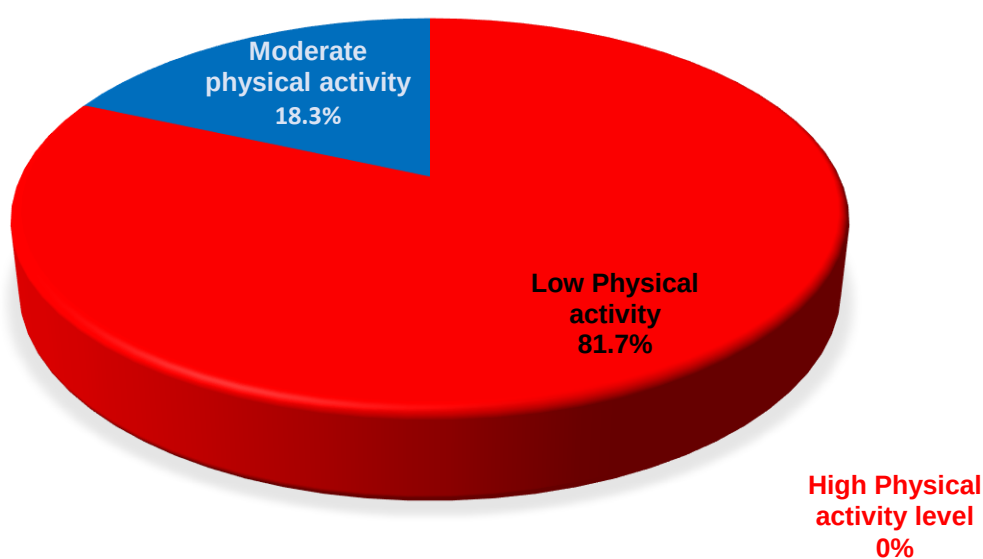


Table 4.3: Nigeria nurses' physical activity behaviours and comparison with their demographic characteristics.

Demographic Variables (N=191)	Physical activity behaviours		
	MET mins/ week M(SD)	Low physical activity N (%)	Moderate physical activity N (%)
Gender			
Male	676.0 (400.3)	6 (35.3)	11 (64.7)
Female	196.4 (263.3)	150 (86.2)	24 (13.8)
Total	293.1 (308.9)	156 (81.7)	35 (18.3)
Test statistic; p-value	t=6.80; 0.000*	χ^2 =26.80; 0.00*	
Age			
20-29	250 (329.5)	57 (81.4)	13 (18.6)
30-39	186.3 (263.9)	59 (86.8)	9(13.2)
40-49	296.7 (349.5)	28(71.8)	11(28.2)
≥50	280.0 (308.8)	12 (85.7)	2 (14.3)
Test statistic; p-value	F=1.23; 0.30	χ^2 =3.90; 0.28	
BMI category			
Normal weight	228.0 (350.0)	29 (85.3)	5 (14.7)
Overweight	203.8 (288.6)	62 (84.9)	11 (15.1)
Obese	274.1 (308.3)	65 (77.4)	19 (22.6)
Test statistic; p-value	F=1.04; 0.36	χ^2 =1.85; 0.40	
Years of nursing experience			
0-10 years	222.8 (310)	82 (83.7)	16 (16.3)
11-20 years	253.1(318.5)	46 (78.0)	13 (22.0)
20+ years	262 (295)	28 (82.4)	6 (17.6)
Test statistic; p-value	F=0.29; p=0.84	χ^2 =0.81; p=0.67	
Nursing Rank			
Nursing officer II	142.4 (217.0)	36 (92.3)	3 (7.7)
Nursing officer I	248.93 (324.2)	35 (81.4)	8 (18.6)
Principal nursing officer	262.0 (342.7)	29 (78.4)	8 (21.6)
Senior nursing officer	219.5 (322.3)	26 (76.5)	8 (23.5)
Assistant nursing officer	321.3 (336.0)	20 (76.9)	6 (23.1)
Chief nursing officer	324.5 (265.2)	10 (83.3)	2 (16.7)
Test statistic; p-value	F=1.41; p=0.22	χ^2 =4.25; p=0.50	

*Statistical significance at p<0.05

4.7 What percentage of Nigerian nurses engage in low risk and risky alcohol consumption respectively?

The AUDIT-C (Bush *et al.*, 1998) was used as a tool for measuring alcohol consumption behaviour in nurses, the result of the alcohol behaviours of the nurses showed that majority of the nurses (92.1%, n=176) reported low risk alcohol consumption while only 7.9% (n=15) reported risky alcohol consumption (**Table 4.4**). Among the male nurses, a high proportion (76.5%, n=13) reported risky alcohol consumption while only four males (23.5%) were low risk drinkers. On the other hand, out of 174 female participants, vast majority of them consumed alcohol at a low risk level (98.9%, n=172) with only 2 female nurses (1.1%) reporting risky alcohol consumption. The independent t-test carried out showed that there was significant difference in the mean AUDIT-C score between male and female nurses. Further statistical test using Pearson's Chi square showed that nurses' alcohol risk level compared according to gender between males and females yielded a significant difference ($p=0.00$). Fisher's exact significance was used in this 2 x 2 analysis because 25% of the cells from crosstabulation of gender by alcohol consumption levels had expected cell counts less than 5 thereby failing to meet the assumptions for using Pearson's Chi square significance.

Furthermore, for the Pearson's Chi square test to compare nurses age groups, years of experience and ranks respectively with their levels of alcohol consumption, group categories variables were collapsed to ensure no more than 20% of cells have expected counts below 5. For analysis on alcohol consumption, nurses' ages were categorised into two: < 40 years and ≥ 40 years. More so, years of experience were categorised into two: ≤ 20 years of nursing experience and > 20 years of nursing experience. Nurses rank was condensed into three categories; junior nurses (Nursing Officers II and I); senior nurses (Principal Nursing Officers and Senior Nursing Officers) and chief nurses (Assistant Chief Nursing Officers and Chief Nursing Officers).

The independent t-test examining mean difference in AUDIT-C score by age group showed no significant difference in mean AUDIT-C score across nurses age categories ($t=0.71$, $p=0.48$). Similarly, nurses' alcohol behaviours were also found to be independent of their age group ($p=0.57$). Furthermore, no significant difference in mean AUDIT-C score existed when compared by nurses 'years of nursing experience ($t=-0.28$; $p=0.78$), BMI categories ($F=1.48$; $p=0.230$) or nursing ranks ($F=0.61$; $p=0.55$), respectively. Additionally, alcohol consumption behaviours of nurses were found to also be independent of nurses' years of nursing practice ($p=0.73$), BMI categories ($\chi^2=3.3$; $p=0.19$) and nurses' designations ($\chi^2=0.89$; $p=0.64$), respectively.

Table 4.4: Nigeria nurses alcohol consumption behaviours and comparison with their demographic characteristics.

Demographic Variables (N=191)	Alcohol behaviours		
	AUDIT-C Score M(SD)	Low risk alcohol use N (%)	Risky alcohol use N (%)
GENDER			
Male	4.7 (0.8)	4.0 (23.5)	13 (76.5)
Female	1.2 (1.3)	172 (98.9)	2 (1.1)
Total	1.5 (1.6)	176 (92.1)	15 (7.9)
Test statistic; p-value	t=10.57; p=0.000*	p=0.00*	
Age			
< 40 years	1.4 (1.6)	128 (92.8)	10 (7.2)
≥ 40 years	1.6 (1.7)	48 (90.6)	5 (9.4)
Test statistic; p-value	t= .714; p=.48	P=0.57	
Years of nursing experience			
≤ 20years	1.5 (1.6)	145 (92.4)	12 (7.6)
> 20 years	1.6 (1.6)	31 (91.2)	3 (8.8)
Test statistic; p-value	t=-0.284; p= .78	P= .73	
BMI Category			
Normal weight	1.8 (1.7)	32 (16.8)	2 (1.0)
Overweight	1.6 (1.7)	64 (33.5)	9 (4.7)
Obese	1.3 (1.5)	80 (41.9)	4 (2.1)
Test statistic; p-value	F=1.482; p=0.230	$\chi^2=3.3$; p=0.19	
Nursing Rank			
Junior nurses	1.6 (1.7)	74 (90.2)	8 (9.8)
Senior nurses	1.4(1.5)	67 (94.4)	4 (5.6)
Chief nurses	1.4 (1.7)	35 (92.1)	3 (7.9)
Test statistic; p-value	F 0.61; p=0.55	$\chi^2= 0.89$; p= 0.64	

*Statistical significance at p<0.05

4.8 What percentage of Nigerian nurses are current smokers?

Results from the question on smoking behaviour of participants which elicited information on whether the nurses were smokers or non-smokers revealed all the study participants reported themselves to be non-smokers (100%; n=191). In relation to previous smoking history, only 3.7% (n=7) of the participants reported that they are past smokers and all seven of them are males, the remaining 96.3% (n=184) of the participants reported that they had never smoked in the past. As a result of all the nurses reporting smoking abstinence, there was no basis for comparison of the nurses smoking behaviours across their demographic characteristics.

4.9 Null hypothesis: There is no significant relationship between nurses' demographic variables (age and years of practice) and their lifestyle variables (BMI and MET minutes/week).

Pearson's correlation was carried out to examine the strength of linear association between continuous variables after confirming they were normally distributed and demonstrated linear relationship. Lifestyle related variables were compared with nurses' demographic variables and the variables included nurses age, BMI, years of practice and MET minutes/week of physical activity (**Table 4.5**). The result from the Pearson's correlation coefficient test showed that there was a moderate positive relationship between nurses age and their BMI which was statistically significant ($r=0.33$; $p=0.00$). Similar moderate and positive relationship were also found when nurses years of nursing practice was correlated with their BMI and the correlation was statistically significant ($r=0.40$; $p=0.00$). After controlling for nurses' age by partial correlation, nurses' years of nursing practice produced a weak correlation with their BMI though the correlation retained its statistical significance at $p<0.05$ ($r=0.16$; $p=0.03$) and may likely be related to nurses' age. Nevertheless, a small positive relationship existed between nurses' MET minutes/week and their BMI, but this trend did not reach statistical significance ($r=0.14$; $p=0.06$). Using a partial correlation to control for nurses' years of practice and age still yielded a small positive but non-significant correlation between nurses MET minutes/week and BMI ($r=0.12$; $p=0.10$).

Rejecting the null hypothesis due to significance showed that there is a significant relationship between nurses age and their BMI. Also, nurses years of nursing practice was found to be significantly related to their BMI.

Table 4.5: Pearson's correlations test between nurses' demographic and lifestyle related variables.

Variables	BMI	
	Pearson's r statistic	p-value
Age	0.33	0.00*
Years of nursing practice	0.40	0.00*
Controlled for age	0.16	0.03*
MET minutes/week	0.14	0.06
Controlled for years of practice and Age	0.12	0.10

*Significance at $p<0.05$; BMI-Body mass index, MET- Metabolic equivalent of task

4.10 Chapter summary

This chapter presented the results of the quantitative strand of this mixed-methods study which was a cross-sectional questionnaire survey of Nigeria nurses. The aim was to determine nurses' health promoting behaviours and the relationships with their demographic characteristics. The nurses were found to have less than optimal dietary behaviours based on the EBPQ. Physical activity levels were generally low among the nurses though males had higher levels than females. Current smoking behaviours were not found in the sample and most nurses engaged in low-risk alcohol consumption despite males engaging more in risky alcohol consumption than female nurses. Moderately positive correlations were found when nurses BMI was correlated with their age and years of nursing practice, respectively.

CHAPTER FIVE

Perceived Facilitators and Barriers to Nigerian Nurses' Engagement in Health Promoting Behaviors: A Socio-Ecological Model Approach

5.1 Introduction

This chapter explores the determinants of nurses engagement in health promoting behaviours in terms of the facilitators and barriers. The chapter begins with description of the nurse participants demographic characteristics and a tabular representation of the same. Thereafter, the research findings are presented in form of the themes and sub-themes with summary table and further explanations presented afterwards with relevant corresponding quotes.

5.2 Participants' Characteristics

The interview participants were mostly females (Table 1). This reflects the gender distribution of females to males in the wider population of nurses (over 90% of nurses working in Nigeria are females). Their ages ranged from the age group 20–30 to over 50 years, with majority of the participants being between 31 and 50 years. This age distribution broadly aligns with the age bracket for the majority of the nursing workforce in Nigeria. Most of the nurses had 15 years of nursing experience or less. Bachelor of Nursing was the highest educational qualification of the nurses interviewed. Most of the nurses had the basic nursing diploma level training, which in the Nigerian context enables them to be registered nurses. In relation to self-reported health, the majority of the nurses reported their health to be either 'very good' or 'good'. None of them reported being in poor health although two nurses reported their health condition as 'fair' while three nurses reported theirs as 'excellent'.

Variable	Category	<i>n</i>	%
Gender	Male	2	11.1
	Female	16	88.9
Marital status	Married	12	66.7
	Single / Divorced/ Separated	6	33.3
Employment status	Full-time	18	100
Ethnicity	Black Nigerian	18	100
Dependents	Yes	17	94.4
	No	1	5.6
Age	18–30	3	16.7
	31–40	7	38.9
	41–50	5	27.8
	>50	3	16.7
Self -reported health	Excellent	3	16.7
	Very good	6	33.3
	Good	7	38.9
	Fair	2	11.1
	Poor	-	-
Years of nursing experience	0–5+	3	16.7
	6–10+	5	27.7
	11–15+	4	22.2
	16–20	3	16.7
	>20	3	16.7
Nursing designation	Nursing officers	3	16.7
	Principal nursing officer	4	22.2
	Senior nursing officers	6	33.3
	Chief nursing officers	5	27.7
Shift worked	Rotating	18	100
Educational qualification	Nursing diploma	16	88.9
	Bachelor of Nursing	2	11.1

Table 5.1 Demographic characteristics of nurses for interview study.

5.3 Research Findings

The research findings reveal that Nigeria nurses' HPBs are affected by perceived influences at all five levels of the SEM. However, in almost all the research themes, nurses reported more perceived barriers than perceived facilitators for their engagement in HPBs. Table 2 below shows the perceived facilitators and barriers to Nigeria nurses' personal HPBs practice at respective levels of the SEM and highlights aspects where no facilitators were reported despite several existing barriers (Table 2).

SEM Levels	Main Theme	Categories	
		Perceived Facilitators	Perceived Barriers
Intrapersonal	Knowledge and experience	Knowledge of health promoting behaviors	Unawareness of healthy lifestyle guidelines
		Knowledge of family health history.	
		Personal experience of lifestyle related illness.	
		Experience of caring for people with lifestyle related illness	
	Perceptions, attitudes and beliefs	Perceived value for personal health.	Indifference
		Positive self-regulatory mechanisms	Lack of self-regulatory mechanisms
			Time constraint
			Lack of planning
			Personal preference and habit
			Sleep deprivation, stress and fatigue
	Personal demographics	Aging	Aging concerns
		Religion	Income
		Male gender roles	Female gender roles
Interpersonal	Social circle relationships	Internet / social media influence	Family/ Peers /colleagues influence
		Family influence	
Community	Physical Environment	*** None reported	Lack of Infrastructure Weather
	Sociocultural factors	Cultural beliefs and Social Norms	Cultural beliefs, social norms, and stereotypes
			Access, cost, and quality concerns.
			Hygiene, safety, and security concerns
			Media advertisements
Organizational	Nursing related factors	Days off	Shifts work
			Heavy workload
			Lack of scheduled on-shift breaks
	Hospital management and environment	*** None reported	Inadequate infrastructure
			Access, cost, and quality of hospital food.
			Perceived lack of value for staff health
Public policy	Government leadership and policy issues	*** None reported	Perceived lack of concern for health promotion.
			Inadequate implementation, regulation, and monitoring

Table 5.2 Themes for facilitators and barriers to Nigeria nurses' engagement in health promoting behaviors (HPBs) mapped onto the five levels of the socio-ecological model (SEM).

5.3.1 Intrapersonal Level

Intrapersonal level themes include (a) knowledge and experience, (b) perception, attitudes, and beliefs, and (c) personal demographics.

Nurses expressed that their health-related knowledge served as a facilitator for their practice of HPBs. The knowledge of the health benefits and consequences of unhealthy lifestyle behaviors seemed to be a further motivating influence for nurses to make healthy lifestyle choices. Nurses' awareness of their family healthy history also exerted a positive health influence on their HPBs.

I know that living a healthy lifestyle (...) are good for the body to be healthy. [Nurse5].

(...) knowing what [illness] my mum and grandma went through makes me strive for a healthier me [Nurse18].

Although the knowledge nurses possessed did not automatically translate into engagement in healthy behaviors, especially in healthy eating, and physical activity, it regularly awakened the nurses' consciousness to endeavor to make healthier choices, irrespective of whether they acted on their intentions. For some nurses, personally experiencing certain illnesses and symptoms directly related to, or as the consequence of, unhealthy behaviors were perceived to have an enabling influence on their current practice of HPBs. This is despite the fact that most of these nurses self-reported their personal health as being either good or fair. The experience of caring for people with illnesses associated with unhealthy lifestyles, was also frequently cited by several nurses as a reason to reflect on their own HPBs with consideration towards making better, healthier lifestyle decisions. Additionally, some nurses felt that their experiences of caring for patients with lifestyle related conditions mirrored the probable later consequences of their own unhealthy behaviors and seemed to put their own actions and choices into perspective.

"I once cared for a friend who had cancer [...] since then I decided to put my daily choices in check [Nurse10]".

Lack of knowledge about national healthy lifestyle guidelines was a significant barrier for nurses; although nurses expressed having knowledge and experience, they made no reference to any evidence-based health guideline or recommendation (in relation to healthy eating, physical activity, alcohol consumption, or smoking). Nurses mostly emphasized in general terms the importance of a nutritious well-balanced diet, exercise, not smoking, and consuming little or no alcohol. For example, nurses appeared to be unaware of the World Health Organization (WHO) physical activity guidelines, and so it was impossible for them to know whether they met physical activity recommendations themselves [42]. The nurses in our study were not able to adequately classify their HPBs as healthy or unhealthy based on evidence-based standards. This prevented them from assessing their own current behaviors or engaging in decisions as to whether they needed to make improvements (or not) where necessary.

I'm not aware of any guidelines for health promoting behaviours [Nurse8].

Nurses' perceptions, attitudes and beliefs contributed to determining their HPBs. As a result of their perceived value for personal health, some of the nurses reported making efforts to eat healthy foods and perform physical activity, but they acknowledged that these actions were not undertaken on a regular basis. Of nurses who described that they valued their health, a similarity between them was that they reported having one health challenge or another that made them more careful about their health and lifestyle choices.

My health is my wealth and priority now, (...), as I have some health issues [Nurse18].

For the nurses who described valuing their health even in the absence of any reported illnesses, being healthy and fit was their motivator and underpinning for making healthy choices especially with regards to alcohol and smoking behaviors. Indeed, smoking and alcohol behaviors were more likely to be discussed in the context of value for health compared to their dietary and physical activity behaviors.

It all comes to how much regard I have for my health (...) I never indulge for my health sake [Nurse3].

Positive self-regulatory mechanisms also helped nurses maintain healthy habits through the use of self-efficacy, self-discipline, and self-motivation. Nurses' intrinsic regulatory measures were greatly enhanced by their perceived health-related knowledge. Nurses also acknowledged their challenging journeys towards adopting and maintaining healthy eating and physical activity. Nevertheless, nurses who reported being resilient about consistently being able to make healthy choices expressed general assertiveness and appeared to have confidence and hold beliefs about their capability for success with regards to long-term health.

I push myself to eat the right food and not junk food.... I'm determined to hang on for the long term [Nurse15].

Few nurses commented on non-health related experiences that prompt them to engage in healthy eating and physical activity. These nurses reported that their experiences were related to their negative self-image and self-perception and led to positive change towards their engagement in HPBs [Nurse4, Nurse7, and Nurse13].

On the other hand, lack of self-regulatory mechanisms were expressed by nurses as a barrier to their practice of HPBs. Self-efficacy concerns were highlighted in the nurses' inability to cope with maintaining their perceived HPBs because they found it challenging. The trend of vacillation especially in diet and physical activity behaviors was obvious from the nurses' accounts. Nurses recalled several personal strategies, such as diet and activity plans, which they had utilized previously in order to stay active and eat healthy. However, loss of intrinsic motivation to persist and sustain the healthy behaviors was of primary concern to the nurses.

My motivation is quite low because each time I set out to be healthy, (...) but in a few days I'm back to where I started. [Nurse14].

A general lack of interest and concern for healthy lifestyles was expressed by some of the nurses. The indifference reported was often associated with their perceptions of healthy lifestyle activities as being an additional stress to their already busy lives. Some nurses also reported that they felt they already had good health and were fit for their job performance irrespective of their own behaviors and choices. They acknowledged healthy lifestyles are beneficial but exhibited nonchalance and a general lack of enthusiasm to go beyond their comfort zones and make any conscious effort to engage in HPBs they were not practicing.

I'm not keen on all the details and prescriptions [for healthy lifestyles] (...) long as I get by every day, that's ok. [Nurse2].

Furthermore, nurses regularly mentioned time constraints and competing priorities, particularly as barriers to healthy eating and physical activities. Time constraint barriers were reported more frequently by female nurses, who were married with children, than by the single female nurses, or male nurses. Time pressure was

mostly reported as a key factor influencing their unhealthy dietary choices such as unhealthy snacking because nurses perceived that they had less time for healthy meal shopping and preparation. Regarding physical activity, nurses also attributed their inability to exercise both at home and at gyms to a lack of time. Even when off work, nurses still reported having other more important activities and domestic engagements that competed for their time which they prioritized over physical activity.

On most days, I don't really have much time [...], I might just have another fast-food meal
[Nurse1]

I don't seem to be able to find the time to be active enough [Nurse7].

Lack of planning was cited as a factor preventing nurses from being able to incorporate healthy eating and physical activity into their daily schedules and this was closely linked to time management concerns. Nurses perceived that not having plans resulted in them spending more time on some activities at the expense of others. In addition, the nurses also perceived that they had less choice over the foods they consumed due to poor planning. None of the nurses alluded to any sort of schedule for healthy eating and physical activity being built into their daily routines.

I don't plan, no plans for exercising and to cook too so I survive on snacks or fast foods
[Nurse14].

Personal preferences and habits such as comfort eating and affinity for high-fat and high-sugar foods were described by most of the nurses, and these actions were seen to inhibit their practice of HPBs because they were established habits that were seen to be difficult to break, preventing them from adopting healthier options. Taste seemed to be the main driver of meal selection, although the meal choices reported were found to consist mainly of unhealthy high-fat and high-sugar food options.

I don't feel that I'm depriving myself or selecting this food and rejecting that food when I eat what I want to eat [Nurse2].

Sleep deprivation, occupational stress, and fatigue were mentioned by most of the nurses. Nurses reported experiencing disrupted circadian rhythms and reported high daily stress levels. Increased stress levels meant that nurses' willingness to be active or make healthy meal choices was reduced. Tiredness and stress were considered to be related to nurses needing more rest to conserve their energy for future tasks. Therefore, plans and tasks related to physical activity and preparation of healthy food were frequently put aside. The nurses also related stress to their habits of comfort eating, overeating, and unhealthy snacking, which they perceived to be mechanisms for coping with unpleasant events. The experience of stress, fatigue, and sleep deprivation was reported more among nurses who had family and dependents.

Whenever I'm stressed, I can't make sound decisions for my health, (...) It makes me reach for the wrong foods I would normally walk past [...]. When I could have walked some distance, I find that I'm picking a taxi so I can get home and into my bed [Nurse9].

Personal demographics of the nurses such as age, gender, religion, and socio-economic status were also found to influence their HPBs. While older nurses reported that advancing age makes them more conscious about their dietary intake due to age-related changes in their body metabolism, their engagement in physical

activities greatly reduced with increasing age. The fear of injury was also expressed by older nurses as contributor to their non-engagement in regular physical activity behaviors. These findings were mostly expressed by both male and female nurses who were middle aged or closer to retirement.

I have to be careful and mindful about what I'm eating now that I'm getting older.
[Nurse11].

After ten minutes of exercise (...), I began to pant like I was going to pass out. I've never tried it [exercise] again since then. [Nurse18].

Religious beliefs and inclinations underpinned nurses' non-smoking and non-alcohol consumption behaviors. Almost all nurses reported being non-smokers and the vast majority stated that they consumed no alcohol. There seemed to be strong control of smoking and alcohol behaviors by religious tenets among the nurses, irrespective of the religion they belonged. A similar trend was not reported for unhealthy eating and sedentary behaviors as nurses did not link their actions in these behaviors to their religion.

I'm not allowed by religious principles to smoke or drink alcohol, so I don't [smoke or drink alcohol] [Nurse12].

Male nurses explained that the nature of male gender roles meant that men were exempt from most of the domestic chores. This gave males more free time at home to fit exercises into their daily activities. Also, having wives or other females at home to prepare meals also meant that planning and preparation of meals was not a concern for male nurses, leaving them less time constrained. Female nurses perceived that their cases were the exact opposite of that of the males. They explained that having several domestic chores and family roles in addition to nursing work bars them from regular engagement in physical activity and healthy eating. Female gender roles were very frequently associated with time constraints and increased workload as nurses considered the summative influence of their professional and domestic work demands on their HPBs.

I'm busy round the clock, wearing different hats...a fulltime nurse, a mum, a wife, a daughter, a sister...all these hats carry responsibilities, it's a lot to take on [Nurse13].

Several nurses explained that having low socio-economic status prevented them from affording the cost of regular healthy eating, especially the high cost of fruits and vegetables for the family and electricity for food storage. Affordability of gym subscriptions and exercise equipment was also reported as a negating factor to their practice of physical activity. Nurses linked their inability to afford their perceived cost of healthy eating and physical activity to low income, in the face of other competing financial demands and household bills to be paid.

I don't earn enough to afford eating well [healthy meals] every day (...). It's even more when you add the money for family care, transport, bills, and school fees...oh no! I can't afford that [healthy meals] [Nurse17].

5.3.2 Interpersonal Level

At the interpersonal level, social media, and relationships nurses have within their social circle were found to influence their health promoting behaviors in both healthy and unhealthy ways. Internet and social media platforms represented useful information resources for healthy lifestyles which nurses accessed regularly.

Recipes for meals and different types of exercises were among the lifestyle resources accessed online though only a few nurses, mostly younger nurses, mentioned utilization of the internet. These nurses expressed that they derive motivation for healthy behavior from online information and interactions.

I browse and see people eating healthy and being active (...) that's very encouraging.
[Nurse10].

(...) So many nice healthy foods there (Facebook group) and simple exercises you can do at home. I've downloaded them to use. [Nurse6].

Family traditions and value systems appeared to be a strong motivator for enabling nurses to abstain from smoking and risky alcohol consumption. Most nurses recalled the unacceptability of smoking and alcohol consumption in their families, especially among females. Nevertheless, family influence did not appear to have a similar enabling influence on the nurses' dietary and physical activity behaviors. Conversely, the nurses perceived that their social circle had a negative influence on their dietary and physical activity behaviors. For most nurses, their family, peers and colleagues were perceived to make healthy lifestyle practice challenging by further reinforcing and encouraging decisions related to unhealthy eating and physical inactivity; social pressures were highly prevalent at home and at work. Lack of support, persistent enticement to indulge in unhealthy behaviors, and pressure to conform to group norms were the main challenges at the interpersonal level of influence, preventing nurses from healthy eating and physical activity engagement.

When you want to be healthy, they just laugh and say 'yeah, we know you...don't even bother (...), you can't do this'...that's so discouraging. It's hard to keep up [with healthy eating and physical activity] when I don't feel supported by either my family or my friends
[Nurse3].

Regular snacking is our usual get-away, it's like a tradition among us [nursing colleagues]
[Nurse12].

5.3.3 Community Level

At the community level of influence, the physical environment was found to negatively influence nurses' engagement in HPBs. Nurses reported lack of infrastructure and felt that the built environment and infrastructure within the community was unsupportive of an active lifestyle, this concern prevented performance of outdoor exercise, such as active travel—walking or cycling to work—or outdoor recreational physical activities or sports. Healthy food and exercise equipment were not easily accessible and affordable to nurses within the society. Additionally, preservation of healthy food items such as fruits and vegetables were challenging for nurses, leading to wastage due to lack of refrigeration and poor electricity supply. On the contrary, the community was reported to consist of a multiplicity of fast-food outfits and food shops that sold predominantly calorie dense, high-fat and high-sugar snacks, food, and drinks.

There are no good roads, no sidewalk...The electricity conditions here too (...) it's very poor so I can't preserve the perishable foods (...), but there are lots of restaurants and shops everywhere tempting you to come and buy junk. [Nurse15].

The weather condition in Nigeria for most months of the year was also reported as unsuitable for engaging in outdoor physical activity due to the hot temperatures. Unfavorable weather temperatures result in discomfort and an unpleasant physical activity experience for nurses, thus increasing their likelihood to quit their practice of regular physical activity.

I don't like the sweaty sticky feeling of exercising in the hot weather [Nurse9].

Nurses expressed concern for the unhygienic condition of the towns, poor traffic control, and security situation within the community. They perceived that they were limited in the times and places they commute. These issues further compounded their ability and interest in mobility, and also the regularity with which they have healthy meals at home and engage in activities.

Imagine I went out to jog, I'll be at risk of being knocked down [Nurse15].

There has been too much kidnapping recently, even among nurses [Nurse14].

Negative cultural beliefs and social norms around involvement in smoking and alcohol behaviors were perceived by nurses to have a positive impact on the respective behaviors. These behaviors were reported to be culturally and socially unacceptable in Nigeria, especially among females, though were still practiced by some. The social identity of nurses also meant it was improper to be seen smoking or consuming alcohol, especially when wearing the nurses' uniform.

On the other hand, unhealthy eating behaviours and physical inactivity were reported to have widespread acceptability within cultures and societies in Nigeria. The prevailing social acceptability of unhealthy eating, physical inactivity, and obesity indicated that people were celebrated for their weight gain and sedentary lifestyles. From the nurses' accounts, being overweight and obesity were perceived positively within the culture, while slimmer body frames were perceived as indications of malnutrition and need for diet fortification. Traditional rites around marriage, pregnancy, and childbirth also contributed to unhealthy eating and physical inactivity among women. Certain perceptions and stereotypes within the society prevented nurses from being physically active and eating healthy meals. For example, walking and cycling were perceived to be reserved for the financially challenged. Perceived stigmatization associated with slender body size was also reported to be a barrier to physical activity, as nurses who were more active and/or lost weight received negative comments from their peers.

When I decided to make healthier choices (...), [people] were asking me what the matter was that was eating me up, because I lost some weight (...) some even demanded that I gained back the weight [Nurse18].

Nurses pointed out that the media worked contrary to their healthy eating intentions. The media was portrayed by nurses to be an embodiment of adverts with continual enticements to indulge in certain high-fat and sugary foods; these were irresistible for nurses and undermined their self-control. Adverts were perceived to display more unhealthy foods and very few healthy meals.

It's hard to look away, those picture-perfect adverts of the unhealthiest foods are all around, so many promos and free gifts too, they never do that with fruits [Nurse9].

5.3.4 Organizational Level

Factors related to nursing practice and hospital management constituted organizational influences on nurses HPBs. Nurses reported that getting days off from work meant that, in theory, they could use this time to recuperate and engage in healthy meal preparation and physical activity. The nature of nurses shift work was such that nurses work between 8 to 12 h shifts for about four to five day or night shifts and get about two to three days off work. Days-off were the only facilitator for nurses at the organizational level of the SEM.

My off days are my active days at home, I always look forward to it [days off], to relax well, sleep, shop, and cook some nourishing food. [Nurse6].

For most of the nurses, especially the female nurses, working in a rotating shift work of doing night and day shifts interchangeably was a strong barrier to HPBs. The nurses strongly linked shift work to barriers experienced at the interpersonal level especially sleep deprivation, lack of time for planning and perceived time constraints as described above. The nurses reported experiencing negative health consequences of shift work and believed that shift work was a factor that prevented them from engaging in healthy eating and physical activity.

Working mornings, evenings, and nights irregularly mean I don't have a routine (...), it's not good for my body [Nurse10].

Nursing as an occupation was associated with heavy workload, and this was linked specifically to the geographical setting, since nurses described high patient coverage within the Nigerian healthcare facility. Nursing shortage was reported by all nurses to be the main cause of their heavy workload. Being busy at work was associated with a sense of time pressure during the working day which affected nurses getting hydration and regular meals. Busy schedules for the nurses often resulted in meal skipping or having irregular meal schedules, unhealthy snacking, and then overeating when they had gone long periods without food, which caused them to feel stressed and led to fatigue.

Being short-staffed means we have lots of work to do...you don't think of yourself at those times (...), there's hardly time to eat, drink, or urinate. [Nurse12].

Lack of scheduled on-shift breaks also had significant negative impact on nurses' HPBs. The nature of Nigerian nurses' shift schedules were reported to involve no scheduled on-shift breaks. The lack of protected breaks was seen to be a major barrier to healthy eating, and to engaging in physical activity. The personal stress caused by a lack of breaks was viewed to be a contributing factor to poor choices, particularly with regards to diet. All of the nurses felt that having protected breaks would alleviate stress, and would likely lead to changes in their habits, such as taking walks, resting, and thinking more carefully about food intake and food choices.

I don't get any breaks, [...] we have to eat handy snacks on the go or forget about eating until after handover, that is not helpful [Nurse6].

Hospital management and environmental barriers included inadequate infrastructure, poor access, high-cost and low-quality of hospital food, and perceived employer lack of value for nurses' health. Most of the nurses commented on the inadequacy of facilities for healthcare workers within the hospital. Nurses reported a lack of adequate space to relax and recuperate away from patients. This concern was associated with increasing

nurses stress levels. A recurring challenge was that of poor electricity supply within the hospital, which indicates that the hospital environment posed similar barriers as the community environment.

From the nurses' accounts, the hospital environment does not support healthy eating. Lack of breaks and adequate food storage facilities, coupled with working night shifts was reported to make access to food difficult for nurses, thereby promoting unhealthy snacking behaviors. Within the hospital, unhealthy foods and snacks were the more convenient and accessible options, offered at cheaper prices. Snacks and foods available to purchase within the hospital were reported to be of low nutritional quality. The nurses perceived that their employing organization did not value their health and wellbeing. This perceived lack of value for nurses' health by hospital management was associated with the absence of any facilities or services to support their wellbeing, such as healthy food outlets or workplace health initiatives, while in contrast, they spoke of the presence of multiple triggers for unhealthy dietary behaviors and physical inactivity.

It's hard to find nicely prepared healthy food to eat around here [hospital environment], it's either junk food, too far to get to or sold for very high price. It's even harder on night shift when all restaurants have closed, [Nurse3].

(...) we [nurses] should be looked after so we can look after the patients well [Nurse13].

5.3.5 Public Policy Level

Concerns around government leadership and policy were reported as barriers to HPBs among nurses. There was no facilitator for nurses' practice of HPBs reported for this level of influence on the SEM. Nurses perceived a national lack of concern and prioritization for public health and linked this concern to the government of Nigeria not placing adequate value on the health of the citizens more generally. This perception was related to the lack of adequate infrastructural development to support healthy lifestyle choices, and a lack of preventive interventions and an absence of health promotion programs more broadly, across the country. Nurses also felt that the government was responsible for dissemination and publicizing healthy lifestyle guidelines and recommendations nationally through the Ministry of Health and other sources to create awareness among its citizenry, but that this was inadequate on a national level.

Nothing is ongoing to improve our health and lifestyles; the government is not doing enough [Nurse11].

Nurses also reported the government's inadequate implementation, regulation, and monitoring of health promotion policies. Some of the nurses commented on the government failing to implement bills related to improving the living standard of workers in order to ameliorate financial challenges to healthy eating. Nurses explained that healthy food options such as fruits and vegetables are more expensive to purchase than unhealthy high-carbohydrate, sugary and fatty foods.

The government and labour unions need to implement our pay rise bill...so we can afford healthy diets every day [Nurse6].

It was generally viewed that the government did not appropriately regulate or monitor interventions for the promotion of healthy lifestyles. For example, media advertisements were seen to advocate unhealthy lifestyles,

and nurses proposed that the multiplicity of unhealthy foods and promotions needed to be cautioned by the appropriate bodies within the government.

If the government were sensitive to these junk food adverts, they would see that they are not helping people (...). The government is doing nothing about that [Nurse5].

Chapter Conclusion

This chapter provide insight into the facilitators and barriers to Nigeria nurses' engagement in HPBs with regards dietary habits, physical activity, smoking, and alcohol consumption. The study findings are unique and represent Nigerian nurses' current circumstances given that socio-economic, geo-cultural, and contextual differences make findings from studies on nurses in developed countries directly inapplicable to the context of Nigeria nurses. Findings have been mapped onto the SEM, with obesity, unhealthy dietary habits, and physical inactivity being major concerns in this group because socio-cultural and religious beliefs advocated abstinence with regards to smoking and alcohol. This research shows that nurses experience significantly more barriers to their practice of HPBs compared to facilitators. Nurses report a general lack of policies and interventions to support health and wellbeing, both nationally and within healthcare institutions. There were a high number of societal, organizational, and job-related barriers to healthy lifestyle behaviors, and nurses did not feel that their employer valued the wellbeing of its workforce. Many nurses lacked knowledge of national guidelines for health in these areas, and further education could be provided to Nigerian nurses to clarify the national and global recommendations for health-related behaviors. Occupational stress, high workload, lack of protected breaks, and shiftwork were main barriers to healthy diet and active lifestyles. Interventions are warranted to support Nigerian nurses' health and wellbeing, but these should take into consideration these job-related barriers, and be specific to the Nigerian healthcare context since workplace wellness programs from developed countries may not be appropriate in resource-poor environments.

CHAPTER SIX

PERCEPTIONS OF NIGERIA NURSES AS ROLE MODELS FOR HEALTH AND IMPLICATIONS FOR HEALTH PROMOTION PRACTICE: QUALITATIVE FINDINGS FROM NURSES

6.1 Introduction

This chapter presents the findings to answer the research question on Nigeria nurses' perceptions about being role models for health promoting behaviours. This chapter also highlight the complexities as well as areas of convergence and divergence in nurses' perspectives and experiences about role modelling health promoting behaviours. Nurses' perception of the implications of role modelling on their health promotion practice are also covered within this chapter. No reports from patients' perspectives are reported within this chapter. Patients perspectives of nurses as role models for health are presented in the next chapter (Chapter 7). The nurses' demographic profile has been presented previously in chapter 5 (Table 5.1).

6.2 Themes

Two overarching themes emerged from the findings on nurses' perception about being role models for health. Each respective theme consists of three subthemes (Figure 6.1). The first theme explains nurses' perceptions of expectations to be role models for health. Subthemes under this theme include consensus on nurses' perceiving the existence of healthy lifestyles role modelling expectations upon them, divergent viewpoints about perceived role modelling expectations, and the perceived impact of the expectations to be role models for health promoting behaviours on nurses. The second theme covers the reality of nurses' health as paradoxical to the expectation for nurses to be role models for health. The subthemes include nurses' realities and attitudes regarding role modelling health promoting behaviours, rationalisations for nurses' attitudes to role modelling healthy lifestyles and implications of nurses role modelling health promoting behaviours.

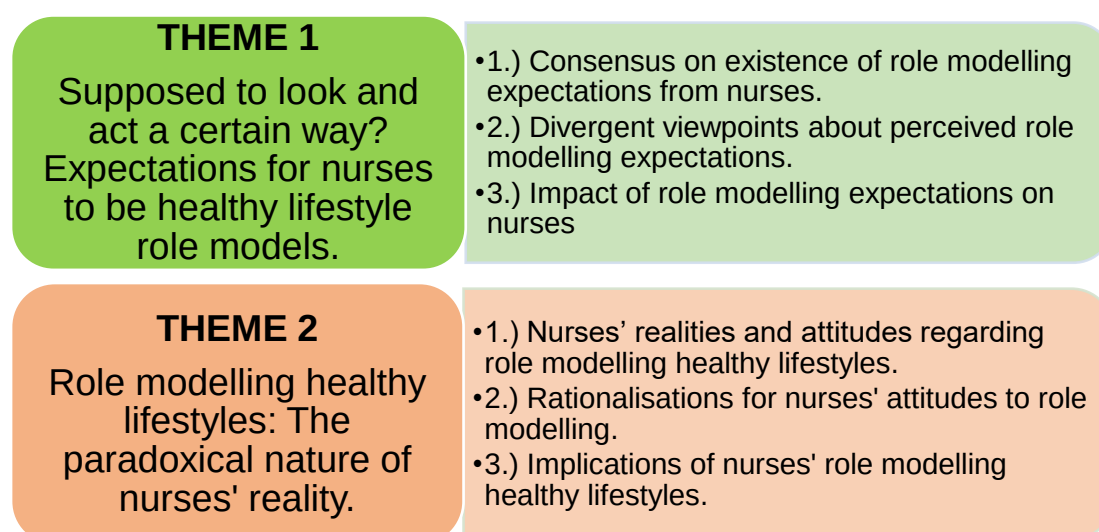


Figure 6.1: Thematic diagram showing the themes and subthemes for perceptions of nurses as role models for health.

6.3 Theme 1: Supposed to look and act a certain way? Expectations for nurses to be healthy lifestyle role models.

This theme provides insight on the perceptions of nurses about the existence of expectations among patients, the general public and professional bodies that nurses should be role models for health promoting behaviours. Under this theme, nurses' opinions about the perceived foundation and underpinning of their perceived existing role modelling requisites are presented. Also presented are views expressed by nurses to support or disagree with the expectation for nurses to be personal examples of healthy lifestyles in order to encourage health promoting behaviours in their patients and the public. The extent to which these expectations impact on nurses is also explored within this theme. The subthemes explored under this theme include:

- 1.) Consensus on existence of role modelling expectations from nurses.
- 2.) Divergent viewpoints about perceived role modelling expectations.
- 3.) Impact of role modelling expectations on nurses.

6.3.1 Consensus on existence of role modelling expectations from nurses.

There was consensus on nurses' perception about the existence of general suppositions and expectations for them to role model healthy lifestyles to patients and the public. Though nurses reported the expectations to not be from everyone in society, nurses reported perceiving the expectation because a general notion that nurses should exemplify healthy lifestyles. According to nurses, majority of people would expect nurses to or would appreciate nurses who practice what they preach. Nurses' felt that healthy lifestyle role modelling was a goal they were expected to meet in order to improve their credibility for health promotion and impact on patients. Nurses perceived that the role modelling expectation is interpreted as befitting the historical nurse image and that role modelling healthy lifestyles was generally viewed as an attribute historically ingrained in the social identity of nursing. The role modelling expectation nurses perceived were also frequently linked to their professional identity, health related knowledge, and the public's view of nurses as health promoters. Nurses revealed that identifying with the nursing profession as student nurses instantly positioned nurses to be held at higher health behavioural pedestals. Experiences with friends and family which suggested that nurses should be making healthy choices to be healthy examples were frequently recounted and nurses considered the healthy role model expectation to be inseparable from what nursing represents to the public domain.

"I know that people look forward to seeing me make healthy lifestyle choices as a nurse, this has actually been an ongoing thing right from my nursing school days, I mean, we[nurses] were immediately expected to behave in healthy ways. It's like the moment you are into nursing then you must fit into some kind of healthy behaviour pattern, and to abide by the do's and don'ts health wise, everyone automatically expects so much healthy habits from you." [Nurse3].

Additionally, nurses reported that identity markers such as their nursing uniforms triggers the expectation to portray health promoting behaviours or be embodiment of the health promotion advice they offer to patients. Issues about the nursing uniform representing the nurses' professional identity were viewed to be linked with

the nursing uniform setting nurses apart as a unique entity and creates an impression for people to expect healthy choices from them. For nurses themselves, taking up a socially recognisable professional identifier like the nursing uniform also meant behaving in ways that were healthy and responsible. The words “automatic” and “immediately” were frequently used by nurses to describe the immediacy of transition from being ordinary members of society to being held to high health standards upon wearing the nursing uniform besides being known as a nurse.

“As a nurse, you’re at the centre of it all, It’s not just the patients we care for that look up to us, whenever you’re in the town or the market or anywhere else, as long as you are wearing the nursing uniform or maybe they know you are a nurse then they see you through that [nurse] lens and immediately begin to expect all kinds of healthy behaviours from you” [Nurse15].

“We [nurses] are broadly expected to live at a healthier standard and display the best healthy actions and be examples of healthy living for others to follow. These assumptions are there because we are nurses. People always expect more [healthy behaviours] from us [nurses] because of what they think nursing represents, that image of health and wellness [Nurse11].

Nurses’ reported their perceptions of the underpinnings of the role modelling expectations and provided insight into their views about the background upon which the role modelling requirement developed. Nurses acknowledged being historically perceived by the general public to be exemplars of not only healthy behaviours but also moral excellence. Historical reference was made to Florence Nightingale as the mother of nursing because her exemplary lifestyle paved the way for role modelling in the nursing profession. Furthermore, nurses expressed that the role modelling expectation is widely present within society albeit covertly and passively because it is rarely expressed. The subject matter of nurses as role models for health or the requirement of such was also reported by nurses as not yet professionally acknowledged at the national or local level in Nigeria. Nurses reported that the professional nursing standards of Nigeria did not highlight or make remote reference to nurses being healthy exemplars. Nurses revealed role modelling of health behaviours had also not gained the interest of the Nigeria government at local or national levels to the extent of documentation of an official statement of concern. Furthermore, nurses expressed unawareness of the report from the International Council of Nurses (ICN) that explicitly urges nurses to commit to healthy lifestyles and be personal exemplars of healthy behaviours to encourage healthy living in their patients and the public.

“The demands to live healthy lifestyles are always on us [nurses] and we are expected to comply [with healthy lifestyles] even though it’s not written as a requirement to be a registered nurse. I’ve also not heard of it [professional role modelling requirement] in the government’s agenda for health promotion. I think it’s majorly popular public opinion about what they expect nurses do be doing or not doing” [Nurse4]

Nurses reported feeling the expectation more with time and even more in recent years because of the stereotypical view of contemporary nurses as mostly unhealthy exemplars who appear to contradict “norm” based on their outward appearances especially large body size. The “norm” was referred to by the nurses as the model image of the perfectly healthy nurse who resonated health both inwardly and outwardly.

“It’s common these days for people to often make side comments about nurses and say that nurses nowadays have drifted away from the norm, that we are now getting too big to nurse well, that it didn’t used to be like this in the past. I think they simply mean that nurses are supposed to be slender, and that we are not living up to their expectations” [Nurse7]

Nurses also made further frequent reference to the requirement for role modelling being inherent in the nursing profession by citing examples from their experiences to emphasise that society seeks for nurses to conduct themselves in a manner that is conformable to the lifestyles presumably expected of a ‘model’ nurse or the “norm”. Nurses felt this was aimed at getting nurses to “fit in” to certain idealisations of who and what a role model nurse should be and/or do. Nurses reported that there exists a mental image of ideal picture-perfect model nurse who flawlessly exhibited impeccability regarding lifestyle behaviour and appearance. The quintessential nurse image idealisation was cited as the standard to which nurses’ health promoting behaviours are constantly compared to in order to ascertain whether a nurse is a role model for health or not. Nurses mentioned that due to global increase in sedentary behaviours and unhealthy lifestyles leading to deterioration in the health of the public and increasing prevalence of non-communicable diseases, nurses have had to do significantly more health promotion work. This expanded and extended health promotion role of nurses was reported to have made nurses perceive even more than ever before that patients and the public look up to them to be role models for health promoting behaviours they promulgate.

“More and more people are becoming unhealthier and ill as the years go by. This clearly means more health promotion work for us, to support people get back into healthy lifestyles. The irony here is that everyone feels that we [nurses] should keep up with healthy living and support from a place of perfection health wise” [Nurse10]

6.3.2 Divergent viewpoints about perceived role modelling expectations.

Despite the consensus in nurses’ perception of the existence of public expectations for nurses to be role models for health promoting behaviours, nurses expressed mixed opinions concerning their support for the perceived role modelling expectations. The opinions expressed by nurses were either to support or oppose their perceived role modelling expectation. Most nurses fully agree with and support the existing role modelling expectations they perceived which required them to be healthy and fit role models. On the other hand, few nurses disagreed with and opposed the expectation upon nurses to be personal healthy lifestyle exemplars even though they perceived the expectations exists. Nurses in support of the role modelling expectation explained that it was common sense to expect health promoters to pursue lifestyles that are congruent with what they teach others to practice. Frequent references were made to nurses’ health literacy and the strategic position of professional

influence nurses occupy as key frontline healthcare professionals and primary contact points for patients in the health sector. These characteristics of nurses were presented as valid justifications for nurses being expected and best suited to affect people's behaviours positively or negatively based on their personal health related lifestyle choices.

"As nurses, we should behave healthier than lay people because we know better about health. I think expecting us [nurses] to set healthy examples is logically right. We [nurses] ought to be models that patients look up to and learn from because indeed, whether we like it or not they [patients] look up to us, they're watching, and forming impressions" [Nurse9]

The cruciality of the expectation for nurses to be role models for healthy lifestyles to the general public image of nursing was highlighted by nurses. Role modelling was viewed by these nurses as a professional obligation nurses ought to work towards fulfilling in order to reclaim the declining public image of nurses' health and the nursing profession. Majority of these nurses not only perceived external expectations but also reported self-expectations to role model health promoting behaviours to their patients.

"The nurse is the person that clients see most frequently in the hospital and most often she's the first and the last person they see there too. We are potentially contributing to make first and lasting impressions on people. Wouldn't it be rational and wise to expect us [nurses] to make daily healthy choices so we'll be giving the right impressions? I think I owe my patients a duty to be a healthy example for them" [Nurse1].

As previously stated, despite nurses' broad acknowledgement of the existence of role modelling expectations, few nurses who were unsupportive of the expectations criticised it. These nurses felt they should not be expected to personally epitomise health promoting behaviours. More so, they considered the notion of nurses being expected to be personal embodiments of healthy lifestyles as a hugely unrealistic and impractical demand upon nurses. These nurses reported themselves to be faced by the same challenges as everyone else in society. Looking forward to nurses to be exemplars of healthy behaviours was criticised by nurses for being characterised by idealism and predisposing nurses to public judgement and blame.

"Anticipating that we[nurses] should double as healthy role models makes us[nurses] open to being judged unfairly by people and in the media. I'll do what I like to do, I don't think I should just play along because I'm a nurse, no, I'll rather be myself. Nurses shouldn't be expected to be anyone else but themselves, along with their imperfections like humans that they are" [Nurse11]

The nurses who opposed the role modelling expectation cited that nursing is made up of diverse individuals with differing backgrounds and personalities who cannot be held to a common standard of healthy behaviour. Frequent mentions were made of the expectation being not only unachievable but also overbearing given the challenges to healthy lifestyles prevalent in the Nigerian healthcare system, the society and the nation at large. Furthermore, carrying out the stressful role of nursing amidst the myriad barriers that prevent them from engaging in health promoting behaviours was highlighted by nurses as justification for their view that it was ironical for nurses to be expected to role models for healthy lifestyles.

"Nurses are a mix of different individuals, different backgrounds, different lives, different challenges, different histories and different factors that influence our lifestyles in different ways. It's impossible to expect us all to commit to a set of healthy habits just because we're nurses"
[Nurse14]

"For a nurse who gives herself for the good of others to still be perfect in health for others to emulate, I feel it is too much to ask for. It's hard enough being a nurse and there's always one challenge or another that makes one not keep up with healthy lifestyles" [Nurse17]

Some nurses expressed curiosity about why it was always nurses that were expected to be healthy exemplars noting that nurses do not work in a vacuum but as part of clinical team that is made up of other healthcare professionals. Nurses offering contrary views on their perceived role modelling expectations made references to sexist concerns surrounding the nursing profession in Nigeria. Nurses felt the reason was because nursing staff are predominantly females compared to other health care professions which they perceived were predominantly males hence not frequently picked upon for fat-shaming and victim blaming.

"It just feels like the focus is always on nurses to lead by example because to people, nurses are everything unhealthy but there are doctors and physiotherapists and so on. We are all healthcare professionals; we are a team, and we are all involved with patient care but it's always about nurses maybe because we're [nurses] mostly women and they're mostly men"
[Nurse9]

6.3.3 Impact of role modelling expectations on nurses

Nurses expressed their different views about the actual and potential impacts of expectation for them to be role models for health. Some nurses felt positively influenced by the expectations and revealed that it gave them strong reasons to pursue healthy lifestyles and be healthy exemplars. The self-consciousness resulting from the perceived expectations to be role models was found to represent a positive influence for some nurses who considered it boosted their morale and served as motivators. The expectations to be healthy role models also created an active sense of intentionality in their lifestyle choices and they endeavoured to keep up with healthy living despite they had not yet achieved their health and lifestyle goals. Nurses reported that the expectation also helped them avoid complacency in self-care which may potentially hold negative impact for both nurses' health, job role performance and patient care. The awareness of the expectation was also perceived to play the role of awakening nurses' consciousness of their professional power to influence behaviour change.

"The mere fact that I'm a nurse and people look up to me to behave in healthy ways just keeps me alert all the time, 'cos whether I like it or not people will expect me to practice what I preach, and you never know, people watching may be drawing inferences from any aspect of my lifestyle, but whatever it is, let it be a healthy lesson and not a negative one".
[Nurse12]

On the other hand, some nurses were negatively affected by the healthy role modelling requirement and referred to being constantly self-conscious of it, a feeling they found very uncomfortable. Nurses reported that they risked losing the opportunity to be themselves because the profession and the public already have an ideal image which they expect nurses to conform to. The role modelling expectations and comparisons of nurses to the idealised mental picture of the ideal nurse which nurses felt represented the “norm” to the general public was not only used as a yardstick to rate nurses’ credibility for health promotion but also to judge their efficiency in job role performance. Nigeria nurses’ criticisms of the role modelling expectation were also reported with particular reference to the relationship between the perceived expectation and self-critical unhealthy perfectionism which is unsustainable and results in stress from unrealistically aiming for perfection in their health-related lifestyles.

There were also issues around nurses perceiving the expectation to be a healthy role model as exerting additional pressure for nurses to prove by their lifestyles that they value health. This was despite nurses considering they experience several challenges to healthy lifestyles ranging from their nursing roles to their personal/family lives and within society at large. These nurses felt that the pressure to fit into the perfect healthy nurse picture and behave in “healthy ways” was the direct impact of the perceived public beliefs and expectations about how nurses should be or behave.

“There is much pressure so you just find you may be struggling to be who you are not, people always say we[nurses] need to protect the image of trust the society has for nurses, the public image of nursing, that we should be slim and smart, I think about that all the time and it stresses me out just thinking of keeping up with the demands” [Nurse3]

Nurses mentioned that the impact of the expectations to be healthy role model are perceived differently by nurses whose daily job role involved health promotion advice to patients when compared to other nurses whose jobs do not necessarily involve frequent patient education or lifestyle health promotion. Nurses supported that although the expectation to be a healthy role model may be perceived generally by the nursing workforce, it has more impact on health promotion nurses. This was reported to be because even more healthy behavioural standards are expected from them on daily basis given their regular health promotion role which involves healthy lifestyle advice to patients and their family.

“I feel patients expect more from me. I carry out health promotion on a daily basis at work, so I’d be expected to be more committed to healthy choices, to be more careful about my diet, and do exercises and try to lose weight. I have to try to make my looks match my words somehow so patients can take me seriously. It’s so overwhelming how much of myself I’m expected to apply to tick all these boxes. I’m worried I never get to do them [healthy lifestyles], patients do expect much and I’m doing little or nothing” [Nurse2].

Nurses expressed unpleasant emotions such as worry, discomfort, discouragement, feeling undervalued and pressurised due to the role modelling expectation. It was revealed that the expectations tend to make nurses doubt their potentials to be good nurses in the eyes of patients and the public.

“The feeling of doing what people expect me to do instead of what I want to do is not a comfortable feeling. It’s very hard for me no matter how much I try to, and I’m not motivated to live like that” [Nurse3]

“Do I have to meet up with them [expectations] to be a good nurse? If after all the effort I put in at my job, people still feel that I am not doing enough or that I’m not a good nurse because to them I am not doing or looking in some kind of way, that is not encouraging at all.” [Nurse10]

Nurses perceived they had the potential to appear unsuitable for their job roles irrespective of their knowledge, skills and positive attributes if they appear to as much as slightly contradict the expectation to mirror their health promotion message. According to some nurses, leading by example and being an exemplar for healthy lifestyles places nurses in an awkward position and not only undermines their health promotion efforts but also reduces the entirety of what nurses represent to mere conformers to people’s impressions about their physical appearance. Nurses linked their personal health behaviours to factors at various socio-ecological levels as previously discussed in chapter 5. Most comparisons of nurses’ actual health promoting behaviours with the idealised image were reported by nurses to be hugely based on their body size and outward appearance than their actual health promoting behaviours. Nurses disagreed with this notion and reported that in some cases one’s behaviour may be unrelated to their body size and other factors may be implicated especially among females. As a result, nurses reported that the expectation results in undue labelling of nurses’ outward appearance that appeared large as representative of unhealthy lifestyles. With regards to undue labelling, nurses reported that slim nurses do not always have healthy eating and physical activity behaviours and overweight nurses do not always have unhealthy diet and exercise behaviours. This vague labelling was perceived by nurses as a phenomenon that would continue to occur because expectations and judgement of nurses’ health and lifestyles are mostly in the minds of beholders such as patients, colleagues and the public. Irrespective of their healthy eating and activity behaviours, overweight/obese nurses felt perceived as not credible and hypocritical because they do not appear to meet the expectations for nurses to be like the idealised image of the ideal nurse.

“They[onlookers] may think I’m unhealthy because I appear overweight but I’m not [unhealthy], a nurse can be slim but only feed on junk food and very inactive, but no one sees that. They only see the slim figure and think yeah, she’s okay, she’s the perfect icon compared to me. It just gets me thinking what superhumans nurses are expected to be” [Nurse13]

The emotion of being undervalued was emphasised by nurses. Some nurses perceived that the healthy role model expectation was a sign that people do not appreciate their work, knowledge and skills, their contributions to patient experience and the quality of care they offer. The identity of nurses as health professionals, health information custodians and health promoters were reported by nurses to obscure their identity as individuals like anyone else within society. Nurses felt the expectation undermined their individual agency and capacity to

make own lifestyle choices without being compelled to comply to existing structures to determine their decisions or behaviour. This feeling of being unappreciated was linked with the nature of nursing work making nurses give less attention to themselves for the sake of giving more to promote patients' health and wellbeing. Further expectation beyond the core duties of nurses were perceived to undermine the impact of nurses' work and considered by nurses to be less important. Nurses felt that expecting them to be role models without foundational structures to support healthy lifestyle was counterproductive. Nurses also felt the requirement for them to live exemplary healthy lifestyles would have been helpful if it was backed up with evident interventions and frameworks to support nurses towards adopting, maintaining and sustaining healthy lifestyles.

"There's no point in looking forward to nurses being examples with their health without any groundwork to make that a reality. It's like chasing the wind, there has to be some program in place to ensure we [nurses] are healthy, then it will be ok to suppose that we should be fit and healthy because the supporting structures have been made available for us to explore".
[Nurse8]

A few participants were indifferent about the expectation for nurses being role models for health and appeared to be quite uncertain about their opinions or the impact of the subject matter. These nurses either considered the expectation or role modelling to be trivial and inconsequential to their nursing practice. In these cases, the nurses could not relate to times when they felt they had negative influence on patients by their work irrespective of existing role modelling expectations, their health promoting behaviours or its observable consequences such as increased body size or obesity. These nurses though appearing to be indifferent about the impact of the expectation on them also lent no support for the role modelling expectation.

"It doesn't matter if everyone feels we [nurses] are supposed to be role models, they'll never understand what it's like to nurse and that nurses also have behaviour change challenges. People looking at us[nurses] from the outside can think oh, they are nurses so they should be this and that way but what matters is to be a competent nurse with the right qualities to be a good nurse too" [Nurse4]

6.4 Theme 2: Role modelling healthy lifestyles: The paradoxical nature of nurses' reality.

This theme discusses nurses' self-reported reality in relation to role modelling healthy lifestyles and its tendency to contradict nurses' health promotion practice. Nurses' attitudes towards engagement in and role modelling health promoting behaviours and how that affects their health promotion practice are also covered within this theme. This theme is discussed under three subthemes. The first subtheme gives insight into the reality of nurses' health promoting behaviours, whether or not they act as healthy lifestyle role models and the extent to which nurses' role model healthy behaviours. The paradoxical nature of nurses' unhealthy reality in relation to role modelling is also highlighted. The second subtheme explains nurses' rationalisations for their lifestyle choices with regards to role modelling health promoting behaviours. The final subtheme provides insight into nurses' perspectives about the implications of healthy lifestyle role modelling or otherwise non-role modelling.

The subthemes discussed under this theme are presented as follows:

- 1.) Nurses' realities and attitudes regarding role modelling healthy lifestyles.
- 2.) Rationalisations for nurses' attitudes to role modelling.
- 3.) Nurses' perceived implications about role modeling health promoting behaviours.

6.4.1 Nurses' realities and attitudes regarding role modelling healthy lifestyles.

Nurses reported they were not unhealthy role models in all health promoting behaviours. They acknowledged being role models for healthy practices they engaged in and unhealthy role models for other behaviours where they made less healthy choices. As such, nurses assumed that their health promoting behaviours worthy of emulation presents them as role models. Despite most nurses agreeing and supporting that nurses should be role models for health, majority of nurses reported that they do not lead healthy lifestyles or act as role models for healthy eating and physical activity. Nevertheless, almost all the nurses perceived themselves as role models for non-smoking and low risk alcohol consumption behaviours because they had healthy practices in both behaviours.

Nurses reported that maintaining healthy smoking and alcohol behaviours were unchallenging compared to healthy eating and physical activity. On the other hand, nurses reported not optimally taking personal responsibility for healthy eating, regular physical activity and weight management leads to consequences that presents them as unhealthy role models. Nurses made references to their evidently larger than normal body sizes as observable proof of poor dietary habits, physical inactivity and justification for possible perceptions as unhealthy role models. Nurses expressed concern at the extent to which their physical appearance being of slightly larger or large body size could instantly present them as "unhealthy" role models. Overweight and obese nurses felt that at first glance, they created impressions in others that they are unhealthy role models who do not take their own advice.

"I'm not into smoking and drinking [alcohol], so it's okay to say to a patient, "have you considered quitting smoking"?, "you should limit alcohol for the sake of your health" and yes because I'm in a good place, It's more like do as I do, but all that changes when it's about healthy eating or worse off about exercises, about weight loss, then it's like, do as I say and not as I do, they'll just look straight at me and my size immediately gives me away and they may be thinking "nurse, do you do all you're asking me to do, I really don't think so" [Nurse6]

Nurses highlighted that generally, unhealthy behaviours whose complications or consequence are outwardly observable have huge potentials to make nurses appear hypocritical. Nurses perceive that taking their own advice does not breed hypocritical emotions but promotes self-belief in one's own teaching, practicing first-hand and enjoying the benefits. Nurses felt their physique affected their probability to influence behaviour change in topics related to overweight and obesity resulting from poor diet and physical inactivity. Comparisons were also made to smoking and alcohol behaviours which may often have no outwardly observable consequences but are equally unhealthy behaviours but nurses practicing these behaviours may appear slim and "healthy" outwardly so seen as role models. Nurses expressed concern that it may seem like smokers and alcoholics made better health choices or possessed better health promoting behaviours than overweight and obese

nurses. This concern was linked to the likelihood of people basing their assessment of nurses' health at the point of offering health advice on whatever physical evidence on the nurses' part that seems suggestive of ambivalence and contradiction. However, the nurses expressed that because they possessed healthy behaviours in relation to alcohol and smoking behaviours, they had a positive perception of themselves as role models for alcohol and smoking behaviours. Despite that, because the result of both healthy behaviours is not outwardly observable, there would be no physical basis upon which nurses' teachings could be compared whenever they offer alcohol or smoking cessation advice to patients. Consequently, nurses felt they were not creating as much impressions by being role models for healthy alcohol and smoking behaviours in comparison to the extent of unhealthy impressions created by being overweight or obese.

"I'm fat so people may feel, ahh look who's talking to us about our weight, or healthy diet or to do exercises? I won't look healthy enough to them because they can see my body size then they think, oh she eats too much or she is not active, then they can judge me on all that but if I was slender and a smoker and drink a lot, it can be hidden from the world then no one sees or knows so to everyone I am showing good example, but it's not like that with poor diet and not doing exercise, everyone can see when you're getting fatter" [Nurse10].

Few nurses considered themselves to be role models for all four health promoting behaviours despite being overweight and obese. These nurses reported healthy eating, physical activity, non-indulgence in alcohol and non-smoking behaviours. They linked demonstrating to patients that they are an embodiment of the health advice they promulgate to positive emotions in themselves and better outcomes on negotiating behaviour change with their patients. This is despite their body size which they perceived may inadvertently contradict their advice.

"I try to do a good chunk of all of them, I eat healthy meals, regular activity, non-alcoholic drinks only and non-smoker, it feels good to be following my own advice and I can discuss with and help patients to do same too" [Nurse11]

Nurses who reported healthy behaviours felt they are frequently having to deal the issues around their body image giving them off as unhealthy, appearing ironical and less credible. Perceptions were expressed around the suppositions that they might exert more influence on patients' behaviour change with a reduced body size in addition to their healthy habits.

"I look like I'm not a good role model because I look chubby, but I am trying to maintain a healthy lifestyle. Suppose I lost some weight I mean like look slimmer, then I may look more convincing whenever I health educate" [Nurse17].

Participants generally expressed concern and dissatisfaction about the judgement of one's body size as evidence of unhealthy dietary and physical activity behaviour and further pointed out that many factors contribute to increase in body size. Nurses felt that although such suppositions may be true for most nurses, the assumption is not generally applicable to all nurses. The assumption was cited as the reason why nurses who are practicing healthy lifestyles but still overweight/obese feel that they are misinterpreted because of their body size and perceived as unhealthy role models thus reducing their impact on patients. The nurses who reported themselves as role models further explained that as a result of the high priority they place on their

health, they make regular conscious efforts to practice healthy lifestyles as much as possible in the face of many challenges. They reported making regular conscious efforts towards maintaining their health and weight for personal benefits though they may also inadvertently serve as personal examples for others. These nurses expressed their opinion about nurses taking on the challenge of healthy living associated with the personage of a nurse. Further reasons included that nurses possess strong influence, nursing is a call to serve humanity and nursing is much more than just one's source of livelihood but a window through which one is perceived throughout society.

"it is because I value my health that I work hard most times to try and be healthy, to keep fit, it's never easy but I keep on trying and you never know who's learning from you, who's drawing motivation from you" [Nurse13]

Some nurses perceive themselves to be "unintentional" role models regarding body size despite their unhealthy dietary and physical activity behaviours. These nurses appear trim figured and may be perceived by onlookers as within a healthy weight in spite of their unhealthy behaviours. Consequently, these nurses perceived they were viewed by patients as living the exemplary life expected of the ideal role model as a result of their trim looking body weight irrespective of their unhealthy diet, physical inactivity, smoking or risky alcohol consumption. There were opinions around exhibiting poorer dietary and physical activity habits than overweight or obese nurses and still be perceived as the ideal role model. However, given they are seemingly perceived to be as close as possible to the idealised picture of the perfectly healthy role modelling nurse, the unhealthy habits they practice often go overlooked because it appears outwardly unrecognisable.

"I won't say I have a healthy lifestyle, I'm quite sedentary, I eat food mindlessly and eat way too much junk, I'm heavy eater too but you'll guess I'm not all that because I'm slender right? That's the way I am, my nature. I won't recommend my lifestyle to my patients but the patients, they may think that I am the one justified to talk about healthy eating and physical activity, but I'm not, I know I'm not". [Nurse1]

6.4.2 Rationalisations for nurses' attitudes to role modelling.

Nurses presented mixed arguments regarding themselves as role models for health promoting behaviours in relation to justifications for healthy role modelling or not. Explanations were reported to justify nurses' current health behaviours, body size and other issues that influence nurses' role modelling.

"No one cares how healthy nurses are faring, we're not valued because management makes us to work in unsuitable conditions and then complains when we are being wrongly influenced by our job and work environment, but our unhealthy habits are just how we adapt to these barriers, I mean they are our coping strategies." [Nurse9]

Furthermore, the barriers to nurses' engagement in health promoting behaviours discussed in chapter 5 were re-emphasised to be associated with nurses' unhealthy diet and exercise behaviours, their current sub-optimal state of health and subsequent inability to exemplify healthy living by their personal health. As previously seen in chapter 5, nurses made frequent references to several existing barriers and paucity of enablers for healthy

living. In view of the multiple barriers vis-a-vis the unsupportive system within the organisation and society at large, nurses felt they are already set up to fail in their quest for healthy eating and physical activity. Nurses questioned the possibility of thriving amidst these barriers and becoming the role models they ought to be for their patients. Feeling unsupported was linked to lack of initiatives and interventions to get nurses eating healthy and becoming active by reducing their perceived barriers. Nurses perceived improvement in their dietary and activity behaviours would not only lead to weight loss and better health but will also position nurses to have more impact through role modelling.

“When we have gotten it right with our personal healthy lifestyles, it will be helpful for us, then we can show others how we got there, it will also be helpful to them, you never know, but how can we give what we don’t have? [Nurse 5]

Whilst highlighting the barriers, nurses mentioned not taking care of their personal health such as stress management and demonstrated its associations to poor weight management. The issue of being deficient in self-care was linked to nurses’ caring nature, an attribute that according to most nurses attracted them to the nursing profession and still guides their practice. Not looking after themselves enough to be role models to patients was reported by nurses as the result of always putting themselves last and others first for the sake of patient care. Although this philosophy did not help nurses with self-care, healthy lifestyle adoption and subsequent role modelling, it emphasised the inherent positive attributes the nurses possessed that contributed to improving the experiences of patients and families that come under their care. Nurses found this to be at the core of their nursing practice and felt that caring for themselves would be at the expense of caring for their patients. Nevertheless, most nurses questioned the huge imbalance between nurses’ self-care and patient care then compared it to the need to be role models for health and considered nurses’ self-care impossible without interventions.

“We are too busy caring for others that we do not self-care for ourselves. There is no role modelling without self-care and support. Unfortunately, I’m not a role model, I won’t even advice anyone to have my lifestyles. I’ll advise them to do better than me. They may be in a better place to be successful in healthy living. I’m in nursing, a different domain. Nursing complicates your life by making it unhealthy and then tries to dictate for you how to live your life with unrealistic expectation. It just doesn’t follow that a nurse should be role modelling in the same job where healthy lifestyles are not supported in any way” [Nurse 7]

Most nurses also opposed the view that nursing is a job like any other and should be unrelated to the pattern of lifestyle of its members. These nurses were of the view that the nursing profession could not be totally divorced from nurses’ personal health promoting behaviours. It was rationalised that nurses’ behaviours impacts their personal health which ultimately affects their job roles as well as the image of the profession and patients’ perception of nurses.

“If nurses see nursing as just a job then it will show in the choices we make, and in the lifestyles that we live but nursing means way more because it affects people lives directly and indirectly.

Who nurses in a vacuum? I bring myself to the job so what I do with that “myself” that I bring affects others somehow, its inseparable”. [Nurse2]

Few nurses made links with their personal health behaviours being the reason they enjoyed being nurses, because they can be good health role models and have positive influence on the health of people. However, each time nurses alluded to their not being role models like they would love to be, further reference was made with displeasure to the barriers hindering these nurses from being healthy eating and physical activity role models.

“I used to be one who made mostly healthy choices, I remember like yesterday, how I wanted to touch lives and teach people healthy lifestyles. Sadly, now I can’t say the same for still applies anymore, a lot has happened in-between and even though I still try to stay healthy, it’s not as much as I would have loved to. I can’t confidently call myself a role model”. [Nurse3]

To further justify their positive role modelling attitudes, nurses reported that patients’ observation of nurses’ health related lifestyles contributes towards weakening or reinforcing patient’s tendency for behaviour change and adoption of a modelled healthy behaviour. Nurses felt that patients’ self-efficacy might be boosted significantly by seeing their nurse making healthy choices towards behaviour change and vice versa. Some nurses agreed that role modelling health promoting behaviour improves the effectiveness of health promotion advice only after the they had displayed positive attributes required of the therapeutic nurse-patient relationship. Other nurses believed that displaying positive personal attributes has huge impact when nurses appear to not practice what they preach.

“Some patients may base their compliance on how I look, and they will not disclose that to me so I’ll never know but I must still show the knowledge and skills that make me a nurse. I will have to treat that patient with dignity and respect and be good too. I’m doing all these to improve the patients’ journey and that matters to patients a lot, even more than whether I was a role model because actually I am not role modelling. I have poor dietary habits and I don’t get active as I should be” [Nurse17]

Some nurses who had no personal experience of behaviour change perceived themselves as role models but expressed concern about being unrelatable, superficial and likely to be judgemental and unempathetic in their encounter with patients. Therefore, they felt unlikely to be efficient role models for patients because role modelling was considered by these nurses to go beyond nurses’ outward appearance to include nurses’ role performance.

“I feel I may not be what they want though, like I won’t be able to show empathy, if I had at least tried to lose weight in the past then I will engage more with the patient but clearly I can’t”. [Nurse9]

Some nurses who reported not role modelling health promoting behaviours supported the adoption of healthy lifestyles by nurses but argued that the primary focus should be on improving nurses’ health, wellbeing and productivity. They disagreed with the focus on role modelling. Nurses felt there should be more interest in their health and the major emphasis should not be because of role modelling as this made them feel they were not a priority but commodities to patronise patients into behaviour change. Nurses advocated for the focus to be on increasing nurses’ self-efficacy for healthy lifestyle or other nurses-health focused motive. Nurses mentioned that not having role models to look up to as nurses

would not be blamed for their non-engagement in health promoting behaviours. However, it was explained that nurses have no role models to look up to yet are being looked upon to exemplify healthy practices.

"If patients are looking up to us then who do we [nurses] look up to? Don't we need role models too? I would appreciate a healthy lifestyle role model myself. I'm not doubting that patients are important but for once it should about nurses for nurses' health sake. If it's always all about patients every time, then I feel like we are being used". [Nurse3]

Some nurses referred to their individual agency as priority in their behaviour choices and thus would not conform to doing otherwise. These nurses considered nursing to be a career and not different from any other job people do for a living. While supporting nurses' choice of behaviours and role modelling as personal choice, nurses considered themselves to be whole systems being affected by other aspects of life besides from the nursing profession. They emphasised the need to separate personal from professional domains within nursing because they felt nurses being personal health exemplars far exceeds the professional domain and encroaches into nurses' personal domain. It also infringes upon nurses' private life choices and personal space which participants felt displeased with. Due to the reported absence of professional guidelines in Nigeria regarding nurses as role models for health, nurses felt it was a personal issue how a nurse lives her life as long as she performs her duties adequately. Nurses argued that their professional responsibilities to patients and their employers were being met and alluded that they had no compulsory responsibility to mirror healthy lifestyles. Nurses being healthy lifestyle role models was also perceived by these nurses to be totalitarian and dictatorial.

Patients and in some instances even colleagues have made hurtful statements, indeed, losing weight will make my health promotion delivery easier and less contentious, but I think it should be a personal thing a nurse had decided to achieve" I have a duty of care to my patients, I don't necessarily have to mirror it, there's no policy guiding nurses' lifestyle habits, it's ones' personal domain to decide out of their own volition to make healthy choices, be a healthy weight, to not smoke or drink alcohol" [Nurse17]

"No one dictates to adults how to live their lives so why should nursing be different? I don't feel I like to be an example to anyone, what I have is a duty of care and that I do very well. Then in my life, I do what I want to do because everyone should be themselves". [Nurse14]

Nurses who reported not being role models further stated that role modelling healthy lifestyles was not a requisite for determining a competent nurse. Role modelling was also perceived by these nurses to be potentially inconsequential to motivating behaviour change in adult patients because supporting individuals through behaviour change [health promotion] is not hugely dependent upon nurses being an embodiment of their teaching [healthy role modelling]. The health of nurses was considered to be a reflection of the health of the wider society. Nurses perceived themselves to be like people in the general public and prone to same unhealthy behaviours and challenges of behaviour change as the patients whose health they promote. Consequently, references were made to nurses being open and self-starting instead of appearing as perfect to their patients. It was considered that developing understanding relationships and sharing honest experiences

of personal challenges or success with lifestyle behaviours and partnering with patients to explore likely successful options held more potential for behaviour change. Reflections were made to their nursing practice and how nurses' personal positive attributes such as empathy and compassion in addition to knowledge, skills and competence mattered the most and was of highest impact in behaviour change. For these nurses, role modelling represented empathetic acknowledgement of the patients' journey, challenges and efforts at behaviour change and supporting patients at every point of the journey.

"Nurses are not perfect and to think that only perfect nurses can be effective in health promotion is erroneous. Support can also come from people facing similar challenges at behaviour change. They may understand better. To demand nurses to remain healthy means to reduce the workload on nurses and address what's stopping nurses from being healthy because that's what causes the unhealthy lifestyles to remain." [Nurse12]

"The perfect image of healthy nurse may be intimidating for patients, and they may not engage with such person so there is little effectiveness but nurses who share similar challenges as the patients may be far more relatable to the patients and engender a more therapeutic relationship" [Nurse10]

Although acknowledging one's challenges whilst also disseminating evidence-based information which the nurse is making efforts to attain might be realistic and make patient feel included, some nurses expressed opposing views about this notion. Sharing similar health struggles and behaviours facilitated being a role model by promoting relatability and empathy for some nurses but was considered by some to cause patients to be discouraged and unmotivated to change their behaviours due to fear of challenges.

"Telling patients about my own issues and how I don't eat healthy, how I don't exercise? It will not be good news for some patients. It may scare them and make them to tune out with me. They might feel that "if she as a nurse cannot, how on earth can I?" [Nurse7]

Other nurses highlighted that sharing their challenges within sensible boundaries and as necessary in addition to portraying positive attributes was helpful in their interaction with patients.

"I usually chat with patients in a way that seems to encourage while telling a bit of my story to motivate them. I knew it was time to focus on losing the extra weight when patients began pointing out that what I advised was at odds with my large body frame. For example, when I'm teaching the links between obesity, hypertension and type 2 diabetes" [Nurse5]

Participants who reported not being role models for patients rationalised that adults need to be held generally responsible for the lifestyle choices they make and should not hold anyone responsible for their unhealthy choices. Nurses felt that adults should take conscious responsibility for their health by taking advantage of evidence-based information from verified sources instead of looking for role models in nurses to determine whether or not they would engage in health promoting behaviours. Emphasis was made to cases of ill health and the priority one places on health and life as a major motivation for behaviour change. Behaviour change was perceived to involve much more than nurses being examples or a notion that nurses who practice healthy lifestyles would be more credible and suitable to motivate behaviour change in their patients whether directly or indirectly.

“Patients unhealthy behaviour is not as a result of nurses’ unhealthy outlook or lifestyle. The decision has to begin with the adult patient perceiving a benefit of the supposed behaviour change. Irrespective of a nurses’ outlook, an adult that wants to change a behaviour and is determined will change. Other factors are present too so the nurse will do her bit at health promotion, providing all necessary evidence-based information and signposting to relevant services and professionals who would also do their bits too. It’s then up to the patient to make the final decision. Nurses say, “do as the evidence says” and because the nurse does not seem to follow the evidence does not invalidate the evidence as a fact. Nurses have their lives to live and personal shortcomings. The evidence is the gold standard not the nurse who in herself needs help to engage daily in healthy lifestyles” [Nurse9]

“As a mature person, the moment you know what is good and what is not good for your health, then you’re halfway there, it’s time to do the needful, to take your health seriously and help yourself stay healthy so you don’t complicate things for yourself and blame the failure on someone else” [Nurse16]

Being overweight doesn’t make nurses advice and work any less credible, it is an acknowledgement that nurses are human too and that health promotion advice is not an easy advice to follow given the kind of society we live in. A nurse can say “oh, I’m finding it difficult too but I’m trying” then she can share some discussion with the patient about strategies for improvements whilst acknowledging that it could be better. [Nurse4]

Few nurses felt it had never been an issue in their years of practice that they should personally model their teachings and cited that they have never been criticised by either colleagues or patients. Rather, they experienced social acceptability and their professional contributions to healthcare irrespective of their personal health promoting behaviours were welcomed and valued. Nurses expressed that no concerns have been raised about their body size or health status in relation to their jobs. As a result, no considerations have been given to role modelling health promoting behaviours as a concern for their health promotion practice.

“You don’t think about it [role modelling] if let’s say it doesn’t spoil things and not for a moment has a patient complained, or even others at work, that I’m not showing a healthy example or that I’m not performing well at work or about my size being too big to nurse and getting in the way.” [Nurse5]

“Healthy lifestyles are a very personal decision, every positive change I have attempted before has been entirely for personal reasons, as nurses we know a lot about healthy lifestyles, but we do not seem to act on our wealth of healthy lifestyle knowledge. It’s like the culture, most of us are unhealthy size, unhealthy weight, poor diet, physically inactive... I mean, so there’s no stigmatisation at all and there’s no pressure to be healthy in any way unless you generate personal reasons for yourself to be healthy and the reason has to be a strong one to sustainably take you through” [Nurse11]

Nurses reported that they are humans caring for fellow humans and should not be heralded as superhumans with superpowers for perfect and healthy lifestyles and outlook. They preferred to be supported to improve their physical outlook and their health promoting behaviours in order to improve their impact and promote public health through healthy lifestyle role modelling. Furthermore, while some nurses felt the concern about role modelling was timely and important, others felt it was more of victim blaming nurses and related this issue to gender inequality and sexism among healthcare professionals.

“Who gets a superhuman badge with a nursing degree, nurses are like everyone else, we have our flaws and weaknesses. Unkind comments and pressures will take us[nurses] nowhere but supporting us to be healthy just be what we need.” [Nurse17]

6.4.3 Implications of nurses’ role modelling healthy lifestyles.

This subtheme explores the implications of nurses’ attitudes and perceptions of themselves as role models for health. Opinions were expressed in relation to the positive and negative implications of nurses practice / non-practice of role modelling healthy living. There was consensus among nurses that unhealthy lifestyles result in poor health status and other personal and job performance consequences. References were made to engagement in health promoting behaviours being primarily beneficial to the nurses’ personal health and extending to benefit the health of their patients directly through healthy nurses providing direct patient care and indirectly through patients motivated by nurses’ behaviours/outlook. Nurses felt that their appearance has the potential to persuade or dissuade patients in relation to behaviour change. Nurses shared personal experiences where they seemed to contradict their health advice as well as the implication such experience had on both themselves and their patient.

In situations where nurses counteracted with their teachings and perceived themselves as unhealthy role models, nurses expressed going through a range of negative emotions. These unpleasant emotions and feelings were also expressed to occur within the nurses’ minds and may not be noticed by onlookers. Nurses frequently pointed out that the feelings occur when they do not perceive themselves or are not perceived by others to be role modelling healthy lifestyles especially when they appear to be visibly contradicting their words of advice. Emotions expressed by nurses included embarrassment, ashamed, guilt, feeling unmotivated, unwilling, shyness, dissonant, less confident and tensed. Nurses also reported self-esteem concerns as a result of their being overweight or obese, and this contributed significantly to the emotions nurses felt.

“It’s so shameful, who wouldn’t be? To be 100kg or more and still gather the gut to tell patients to shed weight, I can’t even look them in the face, so I just look up or down or away and rush through things” [Nurse1]

Overweight and obesity also affects nurses’ productivity and efficiency at work making them poor role models to not only patients but also to junior nurses and student nurses who look up to them thereby affecting the nurses’ potential to be perceived as role models for health promoting behaviours. Furthermore, outwardly visible attributes of unhealthy behaviours such as smoking, smelling of cigarette smoke and larger body size not only represented imperfect role modelling by nurses but also undermined nurses’ best intentions at health promotion.

However, nurses who adopt healthy lifestyles reported still feeling credible when engaging in health promotion. These nurses felt that though their body size may seem to send an impression that they have poor diet or activity levels, they may not feel the inner guilt because they adopt healthy eating and are physically active for the benefit of their health.

"I can guess what they [patients] may thinking about this "big nurse" before them, but its fine.

I'm not bothered much because I know I'm not doing anything they're thinking". [Nurse4]

More so, nurses of slimmer body frame also reported emotions felt when promoting health about weight loss and weight related lifestyle modification. These nurses perceived they could not relate well with overweight/obese patients and perceived patients would see them as judgemental and perfectionist.

"Being slimmer makes me embarrassed to tell patients to lose weight... Role modelling is not about dishing out orders to patients, they may be thinking, how on earth will you ever be able to understand our struggle? I feel I'm not relatable during weight loss discussions." [Nurse6]

Some nurses who do not perceive themselves as role models for health expressed their views about not letting their personal behaviours or physique prevent them from their role performance and quality of care rendered. This is despite concerns around unconsciously promoting unhealthy lifestyles and creating unintended reactions in patients as well as probability of patients being discouraged and lose confidence in nurses and their health teachings. For the nurses, being healthy was more about staying healthy for themselves and avoiding illnesses of lifestyle than focused on their desire to be role models. They were more interested in remaining longer in their jobs and not be put away prematurely as a result of poor health status. While some nurses reported that being obese does not necessarily affect their work performance, they reported it affects their physical health and few alluded that obesity makes them feel less credible, but they endeavour to be cognitively dissonant from the inner feelings.

"I don't let my weight come in the way and it's been good and going strong. I still give 100% at my job and I don't know of anyone negatively affected by my lifestyle, I've supported hundreds of patients through my health promotion role" [Nurse11]

Nurses reported that they had tendency to not only rush through health promotion sessions, but they also superficially address or cut out aspects of patients' health teaching sessions where they do not feel confident about discussing due to their contradicting health behaviours or appearance indicating inconsistency or ambiguity. This action was reported to have implications such as patients not receiving quality health education and uncomprehensive health teaching they would hitherto have benefitted from if nurses had offered the teaching package in full. These omissions hold consequences for the burden of disease, quality of care, self-management and illness prognosis. In such cases nurses also often felt in breach of the duty of care where care represents adequately promoting healthy lifestyle education to patient.

"It's hard to be in that position, you know you're the direct opposite...you'll look like a joke if you dwell there, so better to just rush through or even leave it off and give a leaflet instead" [Nurse18]

Nurses also feared that patients may not value the advice given and own behaviour may negatively impact on patient's personal health while nurses' unhealthy behaviour may be used as excuse for non-compliance to healthy lifestyle unbeknownst to the nurse.

"Even though obese nurses get through their work and professional life there is no questioning the length their weight affects their work performance and productivity. Obesity can compromise the work

of the nurse, irrespective of the nurses' responsibilities. It's like working for and against the patients at the same time, it's like being two-sided, what I'm talking about versus what I practice in my personal life. I may even be their regular reason for non-compliance, who knows?" [Nurse13]

For nurses who believed they are role models of their teachings, the experience was opposite. Their self-confidence was boosted, they could draw from personal experiences, and they explored the teaching packages extensively, allowing patients to ask questions and providing answers comprehensively with examples. This was perceived to have advantages for patient health, improved quality of care, patient outcome and knowledge advancement as well as improve the therapeutic nurse-patient relationship. Nurses also reported a sense of fulfilment that comes from delivering their duties without reservations.

"I never feel like a mismatch, I'm happy I can be myself and affect others too while being the nurse that I am". [Nurse12]

Although nurses engage in unhealthy habits and physical inactivity, those who are determined to live healthy lifestyles mostly found it easier navigating healthy lifestyle information available because of their health-related knowledge.

I show patients my old photos and they can't believe it's me, I already knew what I wanted and what to do, it was the doing part that was my major challenge but I'm winning. I tell patients that if I can, they can too [Nurse10].

These nurses supported that every contact with nurses counts in terms of behaviour change no matter how brief. Their influence was perceived to be related to positive personal and professional attributes which contribute to define the patients overall experience and level of satisfaction. Even though nurses' health behaviours would not automatically change patients' behaviours, participants generally emphasised that it would contribute to motivating behaviour change which is the crux of obesity and long-term conditions management globally. Thus, positive behaviour change is more likely when nurses are role models to patients and practice what they preach.

"We can encourage behaviour change one patient at a time, because nurses cannot force patients into behaviour change by their attitudes and personal behaviours, they just have to contribute their quota in addition to other factors that also play roles in determining patients' outcome" [Nurse6]

Concerns were raised by nurses about the need to understand how patients perceived them as this was unknown to them while some felt their lifestyles did not affect patients in anyway because most patients appear to be adhering. These nurses indicated interest in knowing how their patients perceive their health behaviours and perhaps this would have positive effects for them in changing their behaviours for better. This issue relates to third research question for this research study and these nurses were reassured that the result of this research would be shared with them.

Chapter Summary

In this chapter, the findings from the thematic analysis of the qualitative data on perceptions and experiences of nurses about nurses as role models for health promoting behaviours are presented. From the findings of this qualitative interview research study, nurses perceive an expectation for them to be role models for health though some nurses disagree with this notion and express negative impacts it has for them. Nigeria nurses do not perceive themselves to be diet and exercise role models because they had suboptimal practice while they felt they represented good examples as alcohol and smoking behaviours role models. There is need to understand that nurses' health behaviours especially the ones that are outwardly visible influence their patients. Nurses emphasised the need for support for healthy lifestyle adoption to improve nurses' potential to motivate and inspire healthy living in their patients through role modelling.

CHAPTER SEVEN

PATIENTS' PERCEPTION OF NURSES AS ROLE MODELS FOR HEALTH

7.1 Introduction

This chapter presents the findings from patients' perspectives of nurses' as role models for health promoting behaviours and the implications of these behaviours on patients' receptiveness and engagement with nurses' health advice. First, the demographic information of the patients is presented. This is followed by the presentation of the themes for this study.

7.2 Patients' demographic characteristics

Sixteen patients participated in the interview study. The patients consisted of 10 men and six women aged between 30-35 years and 70-75 years. Eight patients were aged 50 and below while the other half were aged over 50 years. All patients were of Nigerian nationality and black African ethnicity (Table 7.1). The patients' frequencies of hospital visits were regular and ranged from fortnightly to quarterly. The duration of the interviews conducted with patients ranged from 25 minutes to 48 minutes with mean duration of 42 minutes.

According to the hospital data pool, the demographics of the population from which these patients were drawn shows that 65% of the patients are women while 35% are men. There was incomplete data on the age distribution, but the available data shows that majority of the patients were aged 40 and above and of Nigerian nationality.

Table 7.1 Demographic characteristics of patients.

Participant (Patients)	Sex	Age group	Ethnicity	Frequency of hospital visit
P1	M	46-50	Black African	Fortnightly
P2	F	66-70	Black African	Monthly
P3	M	36-40	Black African	Bimonthly
P4	M	30-35	Black African	Quarterly
P5	F	60-65	Black African	Quarterly
P6	F	46-50	Black African	Bimonthly
P7	F	36-40	Black African	Bimonthly
P8	M	51-55	Black African	Quarterly
P9	M	40-45	Black African	Fortnightly
P10	F	60-65	Black African	Monthly
P11	M	70-75	Black African	Monthly
P12	M	56-60	Black African	Bimonthly
P13	M	40-45	Black African	Monthly
P14	F	51-55	Black African	Monthly
P15	M	40-45	Black African	Bimonthly
P16	M	66-70	Black African	Fortnightly

7.3 Themes

There are two themes, and each theme consists of two subthemes. The findings from the interview study with patients provide insight in response to the fourth research question of this research: “What are patients perceptions of nurses as role models for health and the implications for their health and engagements with nurses?”

The findings for this research question are organised into two themes:

- 1.) “Nurses ought to walk the talk”: Nurses’ roles encompass role modelling health promoting behaviours.
- 2.) Nurses body size influences patients’ engagement with health promotion

7.3.1 “Nurses ought to walk the talk”: Nurses’ roles encompass role modelling health promoting behaviours.

All patients acknowledged nurses’ caregiving and health education roles. Nevertheless, most patients perceived nurses’ health promotion roles in an expanded dimension. Patients felt that nurses’ roles extend beyond nursing care and health promotion into domains whereby nurses’ personal health, health promoting behaviours and appearance hold significant impact for patients. Patients reported perceiving that nurses as health promoters are professionally obligated to lead by example in health promoting practices. Nurses’ role modelling obligation

perceived by patients was frequently linked to the patients' expectations that there should be higher standard of healthy lifestyles from nurses. Patients reported looking up to nurses as sources of healthy lifestyle education for optimum illness management especially self-management and lifestyle modification. Patients also expressed that role modelling healthy behaviours not only showed nurses commitment to health promotion but also holds huge potential to promote patients' engagement with nurses' health promotion message and recommendations. It was generally perceived that in addition to nurses' knowledge, skills, experience and positive personal attributes, holistic nursing care also entails nurses inspiring behaviour change by personally exemplifying healthy lifestyle choices.

"Nurses are health experts that look after sick people and help people achieve good health. They[nurses] ought to continually show examples of good health practices by behaving according to their better health knowledge. We[patients] have so much to learn from them about being healthy in both theory and practice, not by talking the talk alone, nurses ought to walk the talk" [P11].

There was consensus about nurses' caregiving and the significant impact it has on patients' health. However, in relation to disseminating health advice as health promoters, patients expressed it was pertinent that nurses demonstrated some evidence that they also believe and practice their health promotion messages. Patients reported that they preferred nurses apparently setting a healthy example for others to follow compared to nurses looking contradictory and the opposite of their advice to patients. Patients felt that nurses represent much more than health educators when they appear to have acknowledged and internalised their health-related knowledge and prioritised healthy living/self-care consequently. It was strongly expressed by patients that because nurses promote health, inspiration and motivation of patients to adopt healthy behaviours would be sup-optimal when nurses do not role model the healthy lifestyles they promulgate. The concept of nurses being knowledgeable educators but neither inspire nor motivate patients by their personal appearance and outwardly observable behaviours was a significant concern for most patients. These patients felt that despite nurses' literacy about health and health behaviours, there was need for obvious evidence that nurses as disseminators of the health messages practices what they preach otherwise patients may not engage with nurses or comply with health promotion. Patients emphasised on nurses' inspiration of behaviour change by possessing outwardly observable characteristics that did not seem to undermine nurses' health promotion message. Patients expressed that they valued being inspired by nurses' healthy practices in addition to health education over health education alone where the nurses' appearance or behaviour was incongruent with their message.

"If the [health promotion] messages were mere fables and untrue, they [nurses] would not be promoting health, but they are facts well known to nurses. It makes sense to reason that nurses would be applying same facts too not just dumping them on us[patients]. I imagine that a nurse telling me to quit take-aways would not also be into junk food. I would expect her to be abiding by her advice too because junk is not good for anyone. If I see her somewhere eating junk, I'd be worried and asking questions. Is what's good for the goose not good for the gander? It is only logical to want to see nurses practice healthy lifestyles for what it's worth for them too." [P2]

For patients, perceiving nurses as role models for health meant that they were they were justified to hold nurses accountable for their words and to compare nurses' health at least outwardly to whatever lifestyle advice nurses provided to them. This comparison provided patients with a crude impression of whether a nurse was taking their own advice or not and was a basis of judging nurses compliance with their health promotion message. It was also perceived by patients that healthy habits among nurses would improve nurses' credibility as well as the impact of nurses' health promotion message in addition to inspiring patients towards behaviour change. Examples of personal experiences around nurses' credibility appearing questionable when not meeting up with role modelling expectation were expressed and found to be of negative significance to most patients when nurses offer health advice on lifestyle topics whereby the nurses themselves do not seem to be exemplifying.

"They are in that position where you think that their looks and words should match so that's what I look forward to seeing, anything else simply feels like, 'now something is not right here', I mean everything begins to sound like a joke". [P5]

Patients highlighted that nurses may feel their personal lifestyles do not matter to patients without knowing that patients look up to nurses as role models. This may result in nurses' unhealthy choices inadvertently affecting patients' health negatively. The difficulty of making healthy choices was also acknowledged by patients and necessitated their expectance of nurses as health promoters to practice behaviours which patients themselves found challenging such as healthy eating and performing regular physical exercises to lose excess body weight and get fit. Patients felt that beyond educational materials, they needed more practical examples such as having role models to support them towards adopting and maintaining healthy choices.

"They[nurses] need to try their best to be in good health, it's not easy but nurses are in a critical position to influence people either positively or negatively. It will be very motivating to see that my nurse is living up to her words. Actions speak louder than words so I would like to see in my nurse that the healthy living she tells me about is a possibility, that it is something achievable and real." [P16]

Most patients expressed that although they had healthy lifestyle role modelling expectation from nurses, they had never raised the concern with nurses due to either power dynamics, patients' perceived vulnerability in the nurse-patient relationship or a deep sense of appreciation for clinical care in a setting where human resources for health are very limited. Therefore, patients' unmet expectations and its potential impact remains with the patients and may result in consequences often at the expense of patients' health. These patients reported being in complex decision-making position while ruminating in confusion at the contradiction between nurses' health and health advice in a covert process occurring in patients' minds.

"Who am I to comment that the nurse looking after me appears like she needs to eat well [healthy] and trim down? I've never said a word to the nurses about the way they appear. They should be the ones we should be learning from, but it looks like the nurses here need so much help, they are almost all plus sized and its very discouraging, but I can't complain. They do a fantastic job of looking after us. I can't tell my nurse something I feel she wouldn't

like to hear and might take personal and become upset with me, so I just carry on and stay quiet.” [P7]

Very few patients presented contrary views regarding their expectation for nurses to be role models for health. These patients reported although engaging in healthy lifestyles and subsequent role modelling by nurses fits within and may enhance nurses’ roles and impact, they had little or no personal expectations for nurses to be role models for healthy living. These patients were of the opinion that role modelling healthy behaviours does not constitute part of nurses’ role and opinions were expressed that nurses have the liberty to make their lifestyle choices without being bound by pressures to set examples by stretching beyond their capabilities. Rather, these patients emphasised their perceived priorities in the therapeutic nurse-patient relationship which they felt helps promote positive experience despite their nurses’ not personally role modelling health promoting behaviours. These priorities included qualities such as competence, communication skills and empathy. Patients felt these attributes though unrelated to nurses’ body size or personal health choices and behaviours, contributes significantly to promoting engagement with nurses and increasing potential for compliance with health promotion advice.

“I feel that nurses do not need to have perfectly healthy lives or be exemplary to others because that is not realistic at all. Nurses are not perfect; they are humans, and I don’t expect that nurses would always live up to my expectations from them especially for something as demanding as healthy habits. Personally, all I need is a nurse that is one I can relate with, an understanding person that I can approach and feel comfortable to talk with. I think everybody should try their best to be healthy not just nurses.” [P1].

These patients were of the opinion that instead of nurses being expected to stretch further and beyond on their own in order to be exemplary role models for health, nurses deserve to be supported and motivated by their employers to attain the level of good health and well-being they promote to patients. Patients also suggested that support for nurses to make healthy choices should be on a regular basis considering nursing is a demanding profession. Patients added that healthy habits in nurses would help nurses try their best to live healthily and benefit nurses themselves, patients, employers and the society.

“I would not blame or judge nurses for being unhealthy or think that they should be an example to me. I take them for who they are and appreciate all they do. I see how challenging their job is and with such a challenging job it would be very difficult to live a healthy lifestyle. They do a fantastic job to say the least and they need would to be spurred on and encouraged in different ways so they can possibly develop healthy habits. Maintaining a healthy lifestyle is not for patients alone, it is beneficial for patients, nurses and everyone else.” [P9]

Few patients mentioned that behaviour change for them goes beyond nurses’ role modelling health promoting behaviours. Behaviour change for these patients represents a complex decision-making process whereby several factors interplay to determine their behaviour change decisions. Nurses’ role modelling was perceived

by these patients to play minor contributory roles because patients felt nurses being healthy exemplars did not represent major influences in their behaviour change process.

“If I decide that from today, I’ll start to eat fruit and veggies daily, that has nothing to do with any nurse or how they are. I might think and remember that nurse A who keeps talking about healthy diet needs some healthy diet too but, in the end, I’ll think of the practicalities and my readiness. I’ll think of my health and how I want the best for myself no matter what, that’s what matters most to me, my driving force.” [P13]

7.3.2 Nurses body size influences patients’ engagement with health promotion

Patients expressed their opinions about nurses’ as role models for health promoting behaviours with frequent reference to nurses’ body size. Nurses body size represented an externally obvious feature upon which patients based their assessment of nurses’ dietary and physical activity behaviours. Patients reported that majority of the nurses caring for them were plus-sized and linked nurses’ overweight or obesity related physique to nurses’ engagement in unhealthy dietary habits and physical inactivity. Patients reported that overweight and obese nurses did not represent suitable body size role models especially considering that their health promotion message constituted mainly of obesity reduction topics such as healthy eating and physical activity. Patients perception of nurses’ appearance as antithetical to their health promotion role was reported to be evident during health promotion sessions, especially when nurses discussed subjects such as weight loss, dietary management and physical activity.

“I’ve noticed a distinct pattern of “do as I say and not as I do,” among these nurses. If outlook was anything to go by, many of the nurses here are not justified to talk about how I need to lose weight and exercise more because clearly their looks are mostly at odds with their advice. Going by their large sizes, when most of the nurses start to talk of how my food choices are bad, and how my I’m not keeping active enough. I just let them go on and on but within me I just don’t get it. In front of me is someone who is almost twice my size telling me to lose weight. Most of the nurses are very much below my expectations from them, I mean in terms of fitness and weight. They are mostly obese and appear unfit. That’s not a good way to be a role model.” [P15]

For most patients, although nurses’ body size does not interfere with their care delivery in the clinical skills-based aspects of nursing care, they felt uncomfortable and less receptive of advice from nurses whose body size contradicts their advice. Some patients shared thoughts about nurses’ outlook in relation to body size being significant to them because overweight or obese nurses were perceived to be unable to effectively and efficiently carry out their clinical roles as a result of their large body sizes. Patients expressed concerns around nurses’ low productivity due to excess body weight and considered the impact on the quality of care that patients receive from overweight or obese nurses. Majority of patients felt that nurses with larger body size look visibly unhealthy

and do not appear to be adequately suited for their jobs. Patients' expressed doubt and concerns about these nurses' competence, efficiency, job performance and productivity.

I feel that what nurses know about healthy living should be evident in their behaviours. They should also try to be living out the healthy lifestyles they teach patients about. I often wonder how the plus sized ones would manage if an emergency happened. I don't see them getting around swiftly and smartly as you'll expect from life savers like them. When they come around, I just observe them and think to myself, "will this fat nurse be able to do look after patients well"? [P10]

Some other patients who reported that nurses are not body size role models expressed that they have personal expectation from nurses to epitomise healthy living and nurses are not meeting up with their expectations. However, patients also acknowledged that very few nurses are an embodiment of the behaviours they promote at least in visible terms. Patients referred to nurses whose physique looked trim and most patients felt they were best suited to talk to them about obesity and weight loss related issues. This perceptions of patients about nurses were irrespective of nurses whose outlook was healthy looking but had behaviours that were far from healthy. Although patients reported that they do not regularly encounter slim or weight-appropriate nurses, they referred to slim nurses as representing an embodiment of their message compared to nurses with larger body sizes. Almost all patients felt that health education around obesity and weight management are better promoted by nurses whose body physiques are congruent with their message. Patients recounted encounters with nurses who had slim builds and reported that they felt these nurses were justified to discuss the subject of weight loss. Although some patients felt uncomfortable expressing their lifestyle challenges to these nurses for fear of being judged considering the existence of stereotypes around overweight and obesity. Patients felt that slim nurses they encountered displayed professional behaviours and positive personal attributes. Weight-appropriate nurses were perceived by patients as suitable body size role models because they appear to have internalised their teachings and can serve as exemplars to patients that healthy weight is achievable.

"But you know, they can't be saying do 'A' and then they look like they are doing 'B'. It clearly doesn't tally, but I must say one or two of the nurses are just okay, not fat but not many of them. Those ones should be the ones talking the eat right and lose weight talk". [P5]

Very few patients talked about their encounters with overweight and obese nurses and how these nurses have demonstrated personal strategies to encourage them to lose weight and maintain healthy eating behaviours despite the nurses not appearing to practice what they preach. These patients reported some plus-sized nurses they encountered, acknowledged their personal challenges and communicated empathetically even though their appearances seemed to contradict their healthy lifestyle messages. Patients perceive that overweight or obese nurses who personally experience challenges with weight loss and dieting plans makes for better understanding of patients challenges and improved support from a place of empathy.

Patients also perceived that few overweight or obese nurses have considered the negative impact of their body size may have on their health promotion practice. In such cases patients felt these nurses utilise their positive

personal attributes such as communication skills, empathy and kindness to enhance the quality of the therapeutic nurse-patient relationship and promote patient engagement. The result of this enhanced nurse-patient relationship was reported by patients to be one whereby the patient perceives the overweight nurse as a partner in the journey towards adoption and maintenance of healthy lifestyles. Nevertheless, this practice was reported to be adopted by minuscule number of overweight or obese nurses. Furthermore, despite patients not reporting that this practice resulted in engagement with health promoting behaviours, the quality of the improved therapeutic nurse-patient relationship initiated by these nurses afforded patients a non-judgemental platform to share their lifestyle challenges with their nurse and vice versa. Patients perceived that besides the relatability and sharing genuine experiences in their authentic relationship with these nurses, the nurse-patient relationship had demotivational aspects because the nurses do not role models weight loss, healthy eating or physical activity. Consequently, these patients reported not benefitting significant inspiration for lifestyle modification from such relationships with nurses.

“There’s one of them here, she’s quite big framed for body size but she’s my best nurse here. She’s so caring and would take you for who you are. I feel very free to tell her I’ve not been good at all with my diet or that I’ve been in bed all weekend watching movies. I like that we have a good chat now and again about how to get it right because she’s also trying too, I mean she also wants to lose weight and try making healthy food choices too. The sad thing is, that’s as far as it gets and we are both stuck where we have been for so long, or even worse. I feel that to pick up healthy habits, you need someone nudging you on, I mean you need someone you can look up to as an example that gives you a reason to become who or what you need to become. [P3]

On the other hand, there was less reference to nurses smoking and alcohol behaviours. Patients felt that due to the outward invisibility of either the characteristics or consequences of these unhealthy behaviours, they could not tell whether nurses engaged in them or not and therefore there was no basis for assessment of nurses in relation these behavioural aspects. Patients expressed that their perceptions of nurses’ role modelling or exhibition of behaviours that were at variance with their health advice were insignificant when nurses educated them about healthy lifestyle modifications which nurses did not appear contradictory. On these instances, most patients perceived that nurse were engaging healthily and relied on nurses’ advice as well as support systems and materials available to encourage healthy practices. A small number of patients also reported that nurses’ disclosure of their personal practice of unhealthy behaviours albeit outwardly invisible during health promotion sessions may promote rapport and engagement as well as foster discussions of real-life challenges and practical ways of overcoming them. Nevertheless, for some other patients, nurses’ disclosure of their personal behaviours may create contradiction and negate the goal of the health promotion session because patients may not be able to process the complexity of nurses’ ambivalence in relation to their health advice.

“As a patient, you never know about those habits [smoking and alcohol consumption] among nurses so it’s best to think it’s okay, even if you can’t tell if it’s okay or not. For example, if a nurse tells me she drinks alcohol, then we can have further conversations along that line that

may help me quit. I can't tell by their looks, and I don't bother to ask. In their usual manner, they just hand you loads of leaflets. Those leaflets do very little or nothing to help with quitting [alcohol consumption].” [P4]

Indeed, the patients that did not support the expectations of body size exemplification from nurses acknowledged the dichotomy between nurses' outlook and their health teachings. Although minority of the patients claimed that nurses' behaviours/outlook do not affect theirs, major concerns were expressed from these minority about nurses sending inappropriate impressions to people that health is not important to them. These patients also felt that there needs to be intentionality and self-consciousness among nurses and efforts towards leading a healthy lifestyle as a result of being fully aware of the high standard of healthy behaviours expected of nurses. The effort expected from nurses was explained to be way higher than what would ordinarily be expected of a lay person and represents that nurse's knowledge and experience has had impact on their lifestyle. If otherwise, patients reported that perhaps the nurse may be inadvertently depicting that he/she nurse has been unable to keep up with their words. Issues around the factors influencing patients' engagement to nurses' health advice beyond nurses being body size were also highlighted and nurses body size was perceived by very few patients to be insignificant in their perception of nurses' health promotion practice.

“Even though their size does not bother me, there may be other people that may be affected, they may not take them seriously if it looks like they are not following their own advice. In the end, it's really up to the nurse to do what she wants to do, I'm not directly affected. I receive the lectures and my wife and kids support me to stay afloat with my meals and walks and all, they always keep close watch on me, but if I must say, most of them look nothing like what they tell me to do and it's understandable.” [P6]

Patients who seemed unconcerned about nurses' body size are part of those who mostly expressed personal vulnerabilities as stated above due to their health conditions and regular need for nursing care. These patients perhaps attempted to justify their personal views on nurses' body size although they expressed that there was obvious incongruence between nurses' body size and their health advice and acknowledged the potential negative implications this might have on patients.

Indeed, patients seemed to take a very sophisticated position in health decision making when nurses' body size appeared to counteract their teachings and other factors were reported to contribute towards determining patients' engagement and compliance to nurses' advice on health promoting behaviours. Only very few patients felt nurses outlook was of least consequence if nurses performed their jobs efficiently and gave evidence-based information while others expressed satisfaction with nurses who demonstrated good personal qualities. Nevertheless, a significant trend among these patients was that their consideration that being diagnosed with an illness placed them in vulnerable positions to not expect anything but care from nurses. These patients expressed the privilege they felt to have nurses irrespective of the nurses' unhealthy outlook or behaviours because nursing care mattered most to them due to significant nursing shortages compared to the teeming population of patients needing nursing care. Every contact with a nurse was valued by these patients who felt

they had no justification to seek exemplification and role modelling because patients perceived nurses as benefactors and themselves as beneficiaries in the nurse-patient relationship.

“Nurses try to help patients out on things that they may be totally not in control of in their own personal lives. That’s what nurses are trained to do, and they just need to know their jobs very well. I’ll cut them some slack ‘cos I’m clearly the one who’s ill and needs their help and I’m here for them to look after me. There are good nurses here, they work very hard because they are few looking after plenty patients. It doesn’t matter how or what they’re like, when it gets to my turn after a long wait and I get in, all I want to do is listen and feel cared for by the team. At that point I’m not even looking at how they are or what they are like” [P1]

For other patients, nurses’ exemplification of weight appropriate body size represented a huge determinant of their likelihood to engage with nurses’ healthy eating and physical activity promotion. Nurses who are deemed to be mirroring their health teaching were perceived by patients as logical and justified to talk about behaviour change. However, patients seemed not referring to perfection in health behaviour or body size, rather they reported that the inconsistency between nurses teaching, and behaviours should be at least modest.

“The moment I see that they[nurses] walk their talk, it feels good, that’s how it should be and not the other way round, and I can comfortably sit back and pay attention to what they have to say” [P10]

These patients expressed personal concerns arising from nurses’ ambivalence which may make the nurse less effective in her role as a health promoter while complicating the patients’ condition consequently. Patients reported impacts such as feeling uncomfortable and confused about getting health advice from nurses whose behaviour seems to be evidently incongruent with their message, hence affecting their probability to adhere to such advice. Impressions passed on by nurses whose outlook contradicts their health message ranged from nurses devaluing health, nurses appearing to be unconsciously making a mockery of their profession and status as health promoters, demonstrating that achieving healthy behaviour is not only challenging but also seemingly unachievable. Patients also perceived that they would find healthy eating and physical activity advice from an overweight or obese nurse incoherent, and the discrepancy holds potential to reduce their confidence and trust in such nurses to the extent of doubting their credibility to offer health advice.

“It’s always easier said, for me, once a fat nurse says lose weight I just tune out of the session, and yes I should disconnect, if it was that easy why can’t she lose her own excess weight moreover she’s a nurse, a health person. If they’ve failed to live up to the standards they profess, why would they think we should? The nurses may not know this, but they are leaving us patients thinking this [healthy living] is not possible, like it’s obviously never practicable in reality” [P4]

Some patients also expressed that nursing is a female dominated profession and that nurses’ generally large body size is not unrelated to their female gender. Links were made to the cultural perception of big body size in women which patients felt was widely socially acceptable in Nigeria and often perceived as an indicator of luxury and affluence.

“We are speaking about nurses who are mostly women and body fullness is common among our [Nigerian] women. That’s how we like our women, it shows they are well looked after. Nurses’ can’t shy away from how our culture and traditions affects their body weight. When they get fat, it doesn’t bother anyone among their family or friends because it’s a normal thing for our women, but it can get in the way of their work and they can’t be good role models for patients” [P8].

Some patients reported they had no justification to discard a nurses’ health advice based on the nurses’ outlook or body size. Rather, they consider nurses’ health and lifestyle as advice with evidence-based content targeted at improving the patients’ quality of life in line with existing medical diagnosis for which the patients is being managed. The patients perceived that although they would prefer to be cared for by a nurse who listens to her own words, they would not be any less willing to follow health advice from visibly unhealthy nurses and would not question their competence because nurses body size and competence were reported by these patients to represent separate domains.

“I’ll still value nurses’ talks despite that they may look otherwise, it’s not their own talk but based on science to help me in my illness. The nurses are mostly on the big side, but they do their jobs really well, I’m happy with them” [P14]

Chapter summary

This chapter presented the findings from patients’ perceptions about nurses as role models for health. Patients perceived that holistic nursing care should include nurses’ role modelling health promoting behaviours. This was seen to be essential for improving the impact of nurses’ health promotion practice and emphasis was on nurses’ outward visibility which portrays to their patients the characteristics or consequences of unhealthy behaviours. Nurses body size was perceived by patients to be influential with regards to their respect for, and engagement with nurses’ health promotion advice. Patients generally preferred to be cared for by nurses who practiced what they preached, although this perspective was less significant for a minority of patients who felt a sense of vulnerability as a result of their illness. Although nurses’ role modelling was not necessarily seen to impact on their competence in delivering health promotion advice, patients were concerned that nurses who were overweight or obese might be less efficient and productive at work. Patients also reported that many nurses in Nigeria seem to be overweight or obese based on their perception of the majority of nurses’ physique and body frame. Nurses having a larger body size (e.g., visibly overweight or obese) impacts negatively on most of the patients either directly or indirectly and there is an increased likelihood for patients to doubt nurses’ credibility to provide health promotion advice and be less likely to take their advice seriously, because they do not appear to practice what they preach.

CHAPTER EIGHT

DISCUSSION AND CONCLUSION

8.1 Introduction

This chapter discusses the results and findings from research on Nigeria nurses' weight status and health related behaviours as well as nurses and patients perceptions of nurses as role models for healthy lifestyles and implications therein. The novel and interesting contributions of this research study to the existing body of knowledge are explained in this chapter. The results and findings of this research study are also compared with the wider research literature about nurses' health and health-related behaviour to further accentuate the essence of this research study. This chapter also discusses the implication of this research study for research, education, policy and practice with recommendations enumerated accordingly. Following on are the strengths and limitations of this research study with justifications for decisions made to strengthen the study and manage the limitations as much as possible. This chapter ends with a general conclusion of the research.

8.2 High overweight and obesity rate among Nigeria nurses

Nurses are the most numerous frontline healthcare professionals leading the promotion of healthy lifestyles to address the global obesity pandemic. Nevertheless, overweight and obesity represent one of the most visible yet unrecognised health concerns among the nursing population in Nigeria as well as several other developing and developed countries. Overweight and obesity not only increases the risk of nurses having poor physical, psychological and mental health and wellbeing but also poses significant threat to health systems especially in developing countries (Kinlen, Cody and O'Shea, 2018). Considering also, that overweight and obesity have been reported to increase the risk of morbidity and mortality in people with COVID-19 disease (Chang, Chou and Chang, 2020) which is currently prevalent, Nigeria nurses' body weight profile and obesogenic behaviours have never been more concerning and thus cannot be ignored.

In the Nigeria health care system, health services are paid for at the point of care, resulting in huge direct and indirect costs of managing the impact of overweight and obesity (Yusefzadeh, Rashidi and Rahimi, 2019) both to the individual and to the government. Whilst the direct costs include cost of obesity related preventive, diagnostic and treatment services, indirect costs relate to cost of obesity associated mortality and morbidity such as income lost by reduced productivity and absenteeism. Although these estimates for Nigeria are not documented from available literature, considering Nigeria's huge population of almost 200 million persons, these costs may amount to huge sums annually. Furthermore, these actual and potential untoward impacts of obesity on nurses and the healthcare system in both short-term and long-term necessitates a focus on actively promoting healthy body weight and lifestyles among nurses.

This study is the first to investigate Nigeria nurses' weight profile, unhealthy eating behaviours and physical inactivity as well as the potential impacts of nurses' body size and health promoting behaviours on their health promotion practice with patients. Nurses are in a position to support and advice clients on adoption and maintenance of healthy lifestyles as part of efforts towards reducing high obesity levels in the population. Nevertheless, it is noteworthy that Nigeria nurses are themselves at higher risk of obesity-related chronic

diseases and cancers than the general population. Nurses in this study had markedly higher overweight and obesity prevalence than the general population despite their health literacy on healthy living. As highlighted previously in chapter four, overweight and obesity affected over three-quarters of Nigeria nurses. This prevalence is markedly above the prevalence of overweight and obesity reported for general adult population in Nigeria (Ijoma *et al.*, 2019; Adeloje *et al.*, 2021b; Chukwuonye *et al.*, 2013).

Overweight and obesity prevalence research among adult populations in Nigeria also show that there are more overweight adults compared to obese adults (Ng *et al.*, 2014a). This finding does not correspond with the results of the current study of Nigeria nurses as more nurses were found to be obese than overweight even though nurses under-reported their self-perceived BMI as more overweight than obese. The high overweight and obesity rates found among Nigeria nurses in this study are comparable to studies carried out in nurses from other developing countries (Aslam *et al.*, 2018; Gupta, 2017; Skaal and Pegpid, 2011; Goon *et al.*, 2013; Monakali *et al.*, 2018). Although cultures and environments differ among countries and geographical regions globally, certain factors that prevent nurses from maintaining healthy body weight and lifestyle abound and persist generally. Besides nurses, research on healthcare professionals in Nigeria have also reported similar high overweight and obesity prevalence to the results found for this study as well as prevalence of obesity higher than that of overweight. In a survey of 230 healthcare workers in a Nigerian hospital by Egbi *et al.*, (2015), overweight and obesity prevalence was 82.9%, with obesity almost trebling overweight prevalence among the health professionals. Additionally, several other studies show prevalence of between 57% and 75% for overweight and obesity among Nigeria healthcare workers (Adaja and Idemudia, 2018b; Dankyau *et al.*, 2016a; Iwuala *et al.*, 2015c). This highlights a current challenge and potential for future shortages in human resources for health especially in the nursing profession in Nigeria. There is urgent need for interventions and innovations to support the health of Nigeria healthcare professionals in weight loss and weight management.

Previous research has shown that nurses' demographics seemed to underpin their poor weight profile because females and urban dwellers were reported to be at higher risk of weight gain (Egbi, Rotifa and Jumbo, 2015; Iwuala *et al.*, 2015b; Adeloje *et al.*, 2021b; Ng *et al.*, 2014b; Agyemang *et al.*, 2021). Therefore, the very high overweight and obesity prevalence in this study could perhaps be related to vast majority of the nurses being females and also urban residents compared to studies on the general population of adults with more heterogeneous demographics.

Nurses' age correlated significantly with their BMI perhaps because with majority being female, certain age-related physiological factors might have potentially contributed to their weight gain with increasing age. However, contrary findings were reported by Nahm *et al.*, (2012) in a study of American nurses where nurses age was not significantly associated with their BMI. Irrespective of underpinning risk factors for weight gain among Nigeria nurses, their current poor weight profile is deleterious to their health, wellbeing, efficiency, patients outcomes and public health in general.

Given the current drive towards the innovation of several nurse-led interventions in preventive and clinical healthcare practice, nurses have comprehensive roles in obesity interventions both at preventive and management levels. Nevertheless, nurses unhealthy weight and large body size may be barriers to their active engagement with these roles, or the reason patients may not potentially engage with their health advice. Considering also that obesity prevalence has been projected to increase globally (World health Organisation, 2020), nurses and in fact healthcare professionals in general would have to intensify their current efforts on

tackling the obesity pandemic. Therefore, high overweight and obesity rates among nurses may represent an unprepared nursing workforce not best suited to promote weight management and healthy lifestyle maintenance. Consequently, this may lead to further increase in the prevalence and complications of overweight and obesity among populations and reduced quality of life, thus ultimately increasing the global morbidity and mortality rates. Set in the context of the aforementioned, this study highlights that Nigeria nurses' poor weight profile needs urgent intervention to promote weight management in order to improve their personal health and wellbeing as well as their public health impact.

8.3. Obesogenic behaviours and their determinants among Nigeria nurses.

Regular engagement in healthy lifestyles contributes to achievement and maintenance of healthy body weight, reduction in obesity and consequent chronic disease risk as well as improvement in general physical and mental health and wellbeing (Farhud, 2015). Nurses in this research were found to exhibit obesogenic behaviours such as unhealthy eating behaviours and physical inactivity. Nevertheless, their cigarette smoking, and alcohol consumption behaviours were reported to be generally at low prevalence rates.

8.3.1 Low smoking and alcohol behaviours among Nigeria nurses

Specifically, this research shows that smoking behaviour was non-existent among Nigeria nursing population while alcohol consumption levels were at non-risky levels though risky drinking of alcohol persisted in about 8% of the nurses irrespective of their gender. The low smoking and alcohol consumption rates found in this study is relatively similar to previous nursing research findings (Han, Choi-Kwon and Kim, 2016; Smith, Zhao and Wang, 2013; Smith, Wei and Wang, 2005). Smith et al., (2013) in a survey of the smoking habits of nurses in China found very low smoking rate of 1% out of 83 nurse respondents. Although higher smoking levels have been found from nurses in previous studies (Tada *et al.*, 2014; Smith *et al.*, 2013), none of the studies from the nurses in the Africa region presented high nurses' smoking prevalence.

Given that tobacco use currently represents one of the leading causes of preventable deaths globally, nurses have roles to play in smoking cessation health promotion because they are in a significant position to enlighten people on the dangers that cigarette smoking poses to global health. Nevertheless, nurses' personal smoking behaviour may impact their actions in the march towards promoting a smoke free population. Our findings showed that nurses who do not smoke may be more confident to promote smoking cessation in their patients. Smoking cessation represents a very important health promotion topic that nurses should seize teachable moments to address and refer patients accordingly. Nonetheless, research has shown nurses exhibiting smoking and alcohol behaviours that surpass levels in the general adult population. Perry et al., (2018) found alcohol levels in nurses in their study to be more than that of the general adult population. However, the low alcohol consumption and non-smoking behaviours among Nigeria nurses in this study is appreciably less than the statistics for the general adult population in Nigeria which is 10.4% for smoking prevalence (Adeloye *et al.*, 2019a) and 34.3% for harmful alcohol consumption (Adeloye *et al.*, 2019b). In these studies, both behaviours were more prevalent in men than in women and although smoking in rural dwellers was similar to urban dwellers, rural dwellers engaged more in harmful alcohol consumption than urban dwellers.

In the Nigerian context, socio-cultural and/or religious restraint on smoking and alcohol consumption especially among females mean that engaging in these behaviours are traditionally unacceptable especially for women even though these behaviours still persist in the population. Generally, smoking and alcohol consumption are also on the decrease in Nigeria, perhaps due to increased healthy lifestyle and risk factor awareness. It is worth noting that in a country with such cultural restrictions on smoking and alcohol consumption, people may tend to under-report their actual smoking and alcohol behaviours due to social norms and cultural unacceptability of these behaviours. Additionally, nurses in the Nigerian context are also bound by bureaucratic restraints such as professional codes of conduct, hospital policies and social norms preventing nurses from indulging in smoking and alcohol consumption behaviours because engaging in these behaviours present them as the antithesis of healthy living.

8.3.2 Poor dietary and physical inactivity behaviours among Nigeria nurses

On the other hand, despite Nigeria nurses' presumed health literacy and health promotion roles, the result from this study reporting obesogenic behaviours such as high physical inactivity levels and unhealthy eating behaviours (such as high fat and sugar consumption, emotional eating, haphazard planning, overeating and cultural and lifestyle behaviours) warrants significant concern. Unhealthy diet and physical inactivity behaviours may have persisted among nurses due to associated widespread social acceptability within society and in the workplace. Nurses felt no organisational, socio-cultural, policy or professional restraints preventing them from indulging in sedentary lifestyles, high fat and sugary foods as they did with smoking and alcohol consumption. In fact, nurses feel covertly encouraged to engage in highly processed snacks and sweets to help them cope while on shift or as an appreciation from patients. Poor dietary behaviours and physical inactivity are both associated with increased BMI, overweight and obesity either as standalone behaviours or in cluster as is usually the case. Regular consumption of high fat and sugary foods among nurses was also found in previous nursing researches (Cheung, 2003; Zapka *et al.*, 2009) and mostly attributed to several work related barriers (Wong *et al.*, 2010). In a study of Chinese nurses working rotational shifts, meal skipping behaviours were found to be related to work stress and contributed to high underweight prevalence among the nurses (Han, Choi-Kwon and Kim, 2016). Conversely, nurses in this study did not exhibit meal skipping behaviours and findings from the interviews confirm that there is multiplicity of processed fast food and snack sold both within the hospital and the society. This makes nurses indulge in overeating of calorie dense snacks and drinks on a regular basis and is worsened by unhealthy food advertising and ever-available marketing promotions for junk foods.

Nigeria physical inactivity prevalence of 52% implies that over half of the adult population are physically inactive with women reporting higher levels of inactivity compared to men (55.8% and 49.3% respectively) (Adeloye *et al.*, 2021a). Urban dwellers also have significantly higher physical inactivity (56.8%) compared to rural dwellers (18.9%). In fact, going back in time, physical inactivity among Nigeria adults increased by 240% within a 25-year period (1995-2020) from 14.4 million adults to 48.6 million adults (Adeloye *et al.*, 2021a). These estimates are predicted to be on the increase at an even higher rate considering technological advancements and its impact on reducing human physical activity and promoting sedentary living. Despite poor physical activity in the general population, nurses have been found to have poorer physical activity behaviours than the general population (Perry *et al.*, 2018). This study findings support this concern and highlights the urgent need to support nurses to improve their attitudes towards, and engagement in physical activity.

The rationale for this is obvious, physical inactivity related diseases are increasing in low- and middle-income countries such as Nigeria. These diseases constitute an estimated 3 million deaths in Sub-Saharan Africa and are predicted to rise to about 80% by year 2020 unless urgent actions are taken to encourage physical activity (World health Organisation, 2014; World Health Organization, 2013; Abegunde *et al.*, 2007). Currently in Nigeria, physical inactivity related diseases are responsible for one-quarter of deaths (Oyeyemi *et al.*, 2018) and like most other African countries, physical inactivity data are mostly unreported hence may even be occurring at higher levels than reported. Also, there are currently no physical activity plans and no dedicated observatory for the monitoring of physical activity in Nigeria despite Nigeria being the sixth largest country globally and the most populated country in the African continent. Nevertheless, improvement in levels of physical activity in Nigeria will represent a strategy for the control of NCDs given that almost two decades ago, the prevalence of adult physical activity was reported to be high at 78% (79% for males and 76% for females) (Akinkugbe, 2003) and markedly reduced a decade later to 68% of Nigerian adults meeting WHO physical activity recommendations (Oyeyemi *et al.*, 2013) and then plummeting currently to 48% physical activity prevalence (Adeloye *et al.*, 2021a).

8.3.3 Socio-ecological model of multiple barriers and lack of adequate facilitators for Nigeria nurses' engagement in health promoting behaviours.

This study findings show that the strength of personal, social, organisation and environmental barriers to healthy lifestyles and their influences upon nurses' dietary and physical activity behaviours seem to be overwhelmingly significant in nurses' behaviour decision making. Additionally, organisational and policy motivators for healthy lifestyles were found to be almost non-existent in the Nigeria context. This calls to question the Nigeria healthcare organisations' interest in fostering a culture of support for staff health and wellbeing.

Furthermore, study findings show that Nigerian nurses' practice of healthy dietary and physical activity behaviors are affected by more perceived barriers than facilitators at all levels of the socio-ecological model (SEM). The determinants of Nigerian nurses' HPBs are also clustered at the intrapersonal level and increased perception of barriers to healthy eating and physical activity was found to be associated with decreased engagement in these behaviors (Ross and Melzer, 2016; Pinho *et al.*, 2018). On the other hand, strong religious, social, and socio-cultural factors underpinned non-smoking and low-risk alcohol consumption behaviors among the nurses. Previous research found that religion exerted a strong deterrent effect on smoking behaviors (Garrusi and Nakhaee, 2012) and was associated with less alcohol use, especially among women (Holt *et al.*, 2015).

Indeed, most factors such as knowledge, perceptions and attitude, and personal demographics influenced nurses' dietary and physical activity behaviors, and these health behaviors seemed to cluster together (Leech, McNaughton and Timperio, 2014; Joseph *et al.*, 2011). Therefore, interventions to sustain facilitators and address the barriers to healthy dietary behaviors may also result in improvement in physical activity performance among Nigerian nurses (Fleig *et al.*, 2015).

Nurses as health professionals may be expected to practice healthy lifestyles and be role models for health (Blake and Harrison, 2013; Darch, Baillie and Gillison, 2017a; Kelly, Wills and Sykes, 2017). Nevertheless, the inconsistency in the literature about the mixed influence of knowledge on HPBs may be explained by the relationship between psychological factors, such as self-regulatory mechanisms, and behaviour. Consistent with this study's findings, previous studies have also reported that nurses' health related knowledge may not

directly translate into healthy diet consumption and physically active lifestyles (Blake and Harrison, 2013; Blake and Patterson, 2015a; Malik, Blake and Batt, 2011; Nahm *et al.*, 2012; Ross *et al.*, 2017). Similarly, a recent systematic review of obesity determinants in West Africa also found that in Nigeria, demographic, socioeconomical, lifestyle, biological and environmental factors contributed to obesogenic lifestyles and obesity development (Agyemang *et al.*, 2021).

In line with interpersonal determinants found from this study, other studies have highlighted the mixed influence of family and social support on HPBs (Phiri *et al.*, 2014; Pinho *et al.*, 2018; Cheung, 2003; Homish and Leonard, 2008a; Homish and Leonard, 2008b; Umberson, Crosnoe and Reczek, 2010; McIntyre and Rhodes, 2009). Specifically, nurses have been found to have both negative and positive influences on the HPBs of their work colleagues (Persson and Martensson, 2006b; Power *et al.*, 2017), yet our study found that Nigerian nurses influenced only unhealthy behaviours (such as unhealthy diet, poor food choice, and physical inactivity) among their work colleagues. Social norms around eating behaviours and physical activity clearly determined nurses' engagement (or not) with these respective behaviours, and previous research also reported similar findings (Ball *et al.*, 2010). The social acceptability of obesogenic lifestyles found within the nursing population and society at large may indicate that there exists minimal social support for healthy lifestyle choices. The tendency to appear non-judgemental and making excuses for own and others indulgence in unhealthy choices is on the increase not just among nurses in this study, the society is also showing increasing acceptance for large body sizes and this has been reported to increase unhealthy behaviours (Lin and McFerran, 2016). This demonstrates a need to consider efforts to change health-related culture and attitudes within nurses working environment, as well as more widely in the Nigerian society.

At the organization and public policy levels of the SEM, there was lack of facilitators for nurses to engage in healthy eating and physical activity. Although organization and policy level barriers seemed to be beyond the nurses' sphere of control, nurses are constantly affected, and most impacts were experienced at the intrapersonal level. Nurses' self-regulatory mechanisms and self-efficacy may also have become undermined in the presence of several higher-level barriers. In the Nigerian healthcare context, there is a lack of education, or intervention in the areas of self-care or workplace health and wellbeing. More so, the lack of learning packages which are targeted at the modification of lifestyle behaviors within nurses' continuing professional development (CPD) training has been highlighted by previously published studies in the United Kingdom, United States of America, and Australia (Miller, Alpert and Cross, 2008; Brown *et al.*, 2007; Cass, Ball and Leveritt, 2014). Health promotion interventions may help to build nurses' self-efficacy for healthy eating and active lifestyles; also, interventions to build resilience may alter their perception of barriers and their influence (such as to reduce the negative impact of behavioral 'norms' instilled by work colleagues). This might help nurses to be more confident to change maladaptive personal health beliefs that appear to exist in the presence, or absence of good intentions to act, and overcome barriers to change. In a study by Jackson *et al.*, (2007), the value placed on health and health-related self-efficacy was associated with engagement in HPBs and predicted the levels at which people engage in healthy lifestyles.

In Nigerian healthcare settings, nurses' practice rotational shift work of about 8 to 12 h per shift, on a full-time basis. This working pattern is similar to that of nurses in developed countries and is aimed at providing 24-hour healthcare services despite acute nursing shortages. Nevertheless, the direct results for individual employees is busy shifts, heavy workload, and long working hours. These organizational barriers are also

associated with several individual level barriers such as disrupted circadian rhythm and adverse health effects (Papagiannakopoulos *et al.*, 2016; Matheson, O'Brien and Reid, 2014; James *et al.*, 2017). Work-related stress in nurses has also been reported in studies of nurses in a range of international contexts (King, Vidourek and Schwiebert, 2009; Phiri *et al.*, 2014; Fernandes *et al.*, 2013; Nahm *et al.*, 2012; Power *et al.*, 2017; Hope, Kellerher and O'Connor, 1998; McVicar, 2003; Blaber, 2005; Chang *et al.*, 2005; Happell *et al.*, 2014). Stress results from unfavorable working conditions, such as lack of scheduled on-shift breaks, and negatively affects nurses' likelihood to engage with HPBs. In the long term, working in an unhealthy reality predisposes nurses to chronic stress, further adoption of unhealthy behaviors, increased body mass index (BMI) (Hakim, Eldin and Mohsen, 2016b; Kim *et al.*, 2013; Tada *et al.*, 2014; Perry, Gallagher and Duffield, 2015), as well as higher risk of chronic diseases (Wang *et al.*, 2011). A study of the stress experience of Nigerian nurses found that vast majority of the nurses reported perceived stressed which negatively affected the nurses' HPBs (Ingwu *et al.*, 2018). Interestingly, nurses have also been found to build resilience by engaging in healthy lifestyle behaviors as a positive coping mechanism for work-related stress (Zapka *et al.*, 2009; Persson and Martensson, 2006b). Nevertheless, development of strategies to improve the health and wellbeing of nurses and other hospital employees lies with the employing organizations (DeJoy and Wilson, 2003). Previous studies have shown that workplace health promotion programs (WHPP) hold benefits for improving employee HPBs (Rongen *et al.*, 2013; Merrill *et al.*, 2011; Gubler, Larkin and Pierce, 2018). Therefore, discussions around WHPP will be presented in later sections of this chapter.

At the policy level, nurses perceived that the government needed to prioritize preventive health strategies on a national level. Interventions to promote the practice of HPBs in the general population are lacking and urgently warranted. Therefore, this study findings support advocacy for the implementation of policies and best practices that expand choices and options for healthy lifestyles within society, as well as the review and modification of the cost associated with healthy foods and physical activity. According to Goryakin *et al.*, (2019), policies for monitoring and regulation or restriction of public promotion of unhealthy lifestyles may also reduce nurses' perceived barriers, a concern highlighted by nurses in this study. The cost-effectiveness of programs aimed at improving HPBs needs to be established to determine the potential for long-term benefits in supporting behavior change. Therefore, researchers might focus on identifying the optimal designs for behavior change initiatives that are essentially low cost but have sustained effects. Deeply grounded social and cultural norms affecting HPBs may also need to be tackled at the policy level by behaviorally informed policies. Availability of local data ensures that collaboration between researchers, policy makers, and health practitioners would enhance effective translation of health research into practice and policy development (Sallis *et al.*, 2016).

8.4 Nurses' perceptions about role modelling health promoting behaviours and its impact on nursing practice.

Nurses have a great level of visibility and are uniquely positioned to play pivotal roles in health promotion as the largest single group of frontline healthcare professionals in Nigeria healthcare system. In line with recent healthcare policies focused on preventive health, this exposure affords nurses ample potentials and opportunities to contribute to public health promotion by advising and supporting people to improve their health promoting behaviours (Kemppainen, Tossavainen and Turunen, 2013). Nurses are also increasingly expected to expand their approach to health promotion from traditional health education to incorporate becoming

embodiments of the health promotion practices they promote as a result of growing expectation for role modelling in healthcare (While, 2014; Hensel, Middleton and Engs, 2014). Nevertheless, nurses' self-perception of their body weight and lifestyle behaviours seems to have bearing on their health promotion attitudes and practice.

Although nurses in this study expressed understanding of what role modelling healthy lifestyles represented, they were predominantly not role modelling in lifestyle behaviours which they practiced sub-optimally or where they showed the outwardly visible consequence of unhealthy behaviours such as large body size.

As noted in preliminary chapters, there exists international discourse asserting that nurses should act as role models for health promoting behaviours by making personal commitments to healthy lifestyles and health improvement as part of international efforts to tackle the burden of chronic diseases (ICN, 2010a). Nursing policies and professional documents in some countries such as the UK have explicitly spelled out the need for nurses to be role models and the potential for nurses' behaviours to influence others (Nursing and Midwifery Council, 2015). Role modelling is also included in the UK competencies for nursing registration (Nursing and midwifery council, 2010). However, the topic remains contentious in professional literature and has also not been explicitly expressed in nursing standards and policies in Nigeria to charge nurses to be role models for healthy behaviours.

Nurses' health is important in public health and their health behaviours may impact on patients and the public. This study findings show that Nigeria nurses generally perceive the existence of healthy role modelling expectations from patients and the public. Nevertheless, nurses had mixed views about these perceived role modelling expectations such that whilst these expectations were welcomed by most nurses, they were unrealistic for few others. Previous research has also reported about the controversial nature of the topic of nurses role modelling health promoting behaviours (Blake and Patterson, 2015b; Darch, Baillie and Gillison, 2017a; Rush, Kee and Rice, 2010; Borchardt, 2000; Narayanasamy and Narayanasamy, 2006; Kelly *et al.*, 2017; Blake and Harrison, 2013). Indeed, the credibility and effectiveness of nurses in health promotion may be linked to their ability to fulfil these healthy role modelling expectations judged on the basis of observable evidence of compliance. Similar to nurses in Blake and Patterson (2015a), nurses in this study reported not perceiving themselves as role models in body size, healthy weight and physical activity because their behaviours in these aspects were suboptimal and incongruent with their knowledge of healthy lifestyles recommendations as well as inconsistent with the health advice they offered their patients. Given that nurses' personal health behaviours influence their ability to engage in health promotion activities to people, it can be deduced that nurses attitudes towards and practice of their roles in health promotion may potentially vary based on their personal health behaviour profile. According to Borchardt (2000), nurses who personally practice healthy lifestyles will have more confidence while undertaking health promotion with patients. This study supports this notion based on finding that overweight/obese nurses have a likelihood to feel lack of confidence, uncomfortable and hypocritical in their role of obesity prevention health promotion in the face of globally increasing obesity chronic diseases. Previous research also found that nurses who are overweight or obese avoid weight-reduction health promotion with overweight patients (Aranda and McGreevy, 2014), a vital intervention needed to improve patients health and wellbeing. This not only results in reduced efficacy in their health promotion practice but patients may find advice from unhealthy nurses less credible, further reducing

nurses' impact on patients and patients likelihood to follow nurses' advice (Aranda and McGreevy, 2014; González *et al.*, 2009; Esposito and Fitzpatrick, 2011; Bakhshi *et al.*, 2015; Dunkley and Ward, 2005).

Previous research also agrees that nurses' personal health behaviours influence their attitudes towards engagement in health promotion with resultant impacts on nurses' practice, patient outcome and public health (Perry, Gallagher and Duffield, 2015; Zhu, Norman and While, 2013b; While, 2014; Blake and Harrison, 2013; Zhu, Norman and While, 2011b; Blake and Patterson, 2015a).

Surely, effective health promotion practice involves empowerment on a personal level to engage in healthy lifestyle choices which then forms the basis for role-modelling within nurse-patient encounters. This notion hinges on the premise that nurses are unavoidably healthy lifestyle role models to the public and should practice healthy lifestyles (practice what they preach) in their personal lives if they expect patients to engage with their healthy lifestyle recommendations (Miller, Alpert and Cross, 2008; Rush, Kee and Rice, 2005; Hicks *et al.*, 2008).

Contrary views exist on this subject matter and in line with Cook (2010), nurses felt they should have the freewill to make individualised lifestyle choices like everyone else in society rather than conforming to healthy expectation about their lifestyles. The nursing profession was perceived to be conferring this role modelling status upon nurses and setting nurses on an unrealistic pedestal which differentiates them from others in society despite the multiplicity of factors that determine nurses lifestyle choices. Rush *et al.*, (2005) highlights that imperfect, realistic role models are equally as valuable as the idealised perfect role model because nurses' imperfections can be positively adapted to harness its usefulness in relational health promotion practice. For example, these seemingly unhealthy nurses may be more equipped to empathise better with patients. Moxham *et al.*, (2013) opined that nurses who engage in healthy behaviours themselves may actually find it easier to develop therapeutic relationships with unhealthy patients. Furthermore, in Blake and Patterson (2015a), nurses felt that patients may prefer a real nurse over an ideal one even though they recognised that nurses physical outlook and weight exert influence on how nurses' health are perceived such that healthier weight nurses may be perceived as healthy role models and more effective in health promotion than overweight or obese nurses. Nurses in this study also highlighted the importance of relational health promotion in their practice when their body size and/or unhealthy behaviours tend to contradict their health promotion practice. The nurses' positive attributes were a significant highlight from this study that nurses harnessed to improve the nurse-patient therapeutic relationship and to navigate the ambivalence their outlook may tend to send across to patients in order to improve their impact on patients.

The personality of a nurse is an important concept that has been long highlighted from research published decades ago. Clarke (1991) emphasised that positive personal attributes such as warmth, personal integrity and self-awareness, empathy, respect and genuineness help to improve the quality of patients' relationship with nurses and also in establishing trust in nurses' advice. Notwithstanding, positive attributes, skills and competence in clinical practice may make for patient engagement with nurses but this study showed that their impact may be short lived, not applicable to all patients and/or not extend beyond the health promotion session. Nurses who are overweight or obese reported that they approach obesity health promotion from a place of experience and understanding of the challenges of overweight or obese patients because of their personal experiences. This resonates with Zhu *et al.*, (2011b) where overweight and obese nurses had more positive attitudes towards obese patients than normal weight nurses. Bakhshi and While (2014) also suggests that

nurse-patient communication and in fact nurses' likelihood to carry out lifestyle interventions with patients may be determined several factors. Amongst others, these factors include the nurses' professional and personal attitudes, experiences and beliefs around unhealthy behaviours as well as nurses' own personal sub-optimal health behaviours. Nurses may draw from their personal unhealthy experiences to gain deeper understanding of their patients' challenges in achieving healthy lifestyle as well as aid them in supporting their patients from a place of empathy.

Additionally, nurses may harness shared experience as an avenue for creating opportunities where nurses and patients can mutually support each other. This approach takes into serious consideration the fact that patient-professional interactions are bi-directional in nature and enable both parties to maximise the influence of relational health promotion approaches (Kyle, Neall and Atherton, 2016). According to While (2014), nurses' personal and professional self-presentation contributes significantly in the creation of a general first impression, which subsequently influences the interactions they have with patients in terms of its nature and quality.

Generally, nurses need to have a personal commitment to healthy living, be able to first holistically engage in selfcare and then role model this selfcare for others to emulate both at work and outside of work setting (Borchardt, 2000; Brown, 2009; Hicks *et al.*, 2008; Miller, Alpert and Cross, 2008; Kelly *et al.*, 2017; Han, Choi-Kwon and Kim, 2016). As a result, interventions that focus on improving nurses healthy lifestyle practice are urgently warranted. Better health behaviours in nurses will mean that nurses feel more confident about undertaking their health promotion roles and can ultimately role model more effectively.

8.5 Patients' perceive nurses as role models for health promoting behaviours.

Patients are the direct consumers of nursing services and in the nurse-patient interaction, patients may be influenced by nurses' appearance and/or health promoting behaviours. Therefore, patients' perceptions about nurses as role models for healthy lifestyles were investigated with the aim of exploring whether nurses' body size and health related behaviours have impact on patients' receptivity of nurses' health advice, their perception of nurses' credibility for health promotion and whether nurses are role models for health promoting behaviours. This study found that although patients' experience may be characterised by nurses' professional attributes and positive personal characteristics (such as empathy and compassion), most patients are influenced by nurses' visible appearance and related lifestyle behaviours. Most patients are more likely to engage with and take advice from nurses who appear to be practising the health behaviours they promulgate to patients and vice versa. This relates to previous research by Hicks *et al.*, (2008) which demonstrated that patient take nurses' weight into consideration and weight appropriate nurses may better inspire patients towards healthy behaviour change.

Therefore, this study suggests that nurses can improve their health promotion influence by making healthy changes in their personal health and lifestyle especially regarding their body size. Nurses should be supported to aim for a body weight which places them at a healthy BMI as this represents a reduction in body fatness compared to being overweight or obese.

It is worth noting that the essence of this research was not to determine what was more important in influencing behaviour change in patients. Therefore, this study does not dwell on the issue of comparison between nurses' role modelling and nurses' rendering evidence-based care. This is because the later does not replace the former but compliments it to improve the effectiveness of nurses' impact on promoting healthy behaviours to patients.

Previous research has not highlighted patients voices in the investigation of nurses as role models for health or sought patients perception about nurses health and health promoting behaviours. Research studies looking at patients perceptions of nurses as role models for health are very scarce. In a systematic review by Kelly *et al.*, (2017), the paucity of studies on this subject matter was highlighted. Service users in Kelly *et al.*, (2017) who utilised nursing services perceived nurses who had unhealthy outward appearance in a negative way adding that nurses lifestyles warranted addressing. More so, previous research that have suggested that patients may be less likely to adhere to the advice of overweight/obese nurses have done so without exploring the views and perceptions of patients cared for directly by nurses (Hicks *et al.*, 2008). These studies have made assumptions either premised on findings from research with nurses, other adult groups who are not patients or postulated on the premise that nurses' health behaviours hold potential to affect the patients they care for.

Interestingly, this is the first study to explore patients' perception of nurses as role models for health and the implications for patients receptivity of nurses health promotion practice. This study showed that majority of patients expect nurses to give professional advice as well as serve as role models for health promoting behaviours. Nevertheless, patients perceive that Nigeria nurses do not appear as role models for weight management, healthy eating and physical activity. Patients' report of the widespread possession of large body size among the Nigeria nursing population resonates with and further emphasises the high overweight and obesity rate found in the questionnaire study of this research. Nurses' body size was particularly highlighted as a feature of nurses' self-presentation that hold potential for creating impressions about the nurses' health and makes patients' perceive nurses as healthy/unhealthy, credible for health promotion and suitable for their clinical roles. Patients in this study perceive that overweight or obese nurses are not active enough to meet the heavy demands of their job roles. One key feature of nurses' appearance found from this study is that more often than not, patients do not discuss nurses' appearance or its potential impact on them with the respective nurse or another, perhaps due to power dynamics in the nurse-patient therapeutic relationship (Kwame *et al.*, 2020). Rather, nurses' appearance as overweight or obese raises questions in the minds of patients which may potentially impact negatively on patients' healthy lifestyle decision making and health choices. Nevertheless, the overriding view from patients was that they are more likely to lose confidence in, not take advice or question the advice from a nurse that seems to contradict her health promotion message. Patients acknowledge that nurses may find it more difficult to offer advice which they do not follow themselves and this may affect health promotion and patient engagement. Findings from nurses in this study also confirm the report of patients indicating that there is a gap hindering health promotion delivery from overweight and obese nurses because obesity has psychosocial consequences which may hinder overweight and obese nurses from offering any contribution in relation to weight reduction whilst being visibly overweight because they risk being perceived as ambivalent.

However, in the face of looming nursing workforce shortages, overweight or obese nurses should still feel able to support patients through their weight management and offer healthy lifestyle support but will need to bear in mind that their body size may hold potential negative impact on the patients engagement with their health promotion practice. Practical ways to mitigate this gap should be comprehensively explored and embedded into practice for overweight/obese nurses.

The high percentage of overweight and obese nurses represent huge proportion of the healthcare work force. Therefore, these findings highlight a gap and an opportunity for improving relational health promotion and

teachable moments through strategies such as self-disclosure about nurses weight management journey while the nurses also seek support with improving their self-efficacy for healthy lifestyles. Nurses' self-disclosure may offer some hope to patients about the challenges of weight management. Personal weight loss goals, strategies and achievements can be shared as well as referrals to support groups and recourses. Patients also appreciate that nurses can afford them a non-judgemental environment that promotes open discussions about their unhealthy lifestyles while walking through steps towards progress in weight management. These interventions in the interim, may make nurses more open to discuss weight related subject matter with patients and vice versa because the drive towards reducing global obesity and chronic diseases risk must continue while interventions to improve nurses lifestyle behaviours are underway.

Aranda and McGreevy (2014) argued that patients may easily relate to nurses who are also challenged with engaging in healthy lifestyles as them. Accordingly, minority of patients in this research also argued that nurses are as human as the rest of society and highlighted that they may feel intimidated and inferior when an ideal looking nurse is counselling them because the nurse represents the picture of a perfect level of healthy outlook that the patients perceive they cannot achieve, a finding that resonates with Evans et al., (2017).

Taking both perspectives into context, this research recognises that each patient is different in personality and experiences. Patients also undergo a complex decision-making dilemma and certain factors interplay to determine patients behaviour change decision making despite nurses' health related behaviour or appearance. In Kelly et al., (2017), nurses and students nurses also demonstrated this notion and disagreed that patients always modelled their behaviours to that of their nurses. Behaviour change was also perceived to be more complex than imitation and observation of nurses. Nevertheless, patients' in this study confirmed that nurses behaviours played significant roles in impacting their health promoting behaviours.

8.6 Implications for nursing education, research, practice, policy and healthcare organisations in Nigeria.

The demands for healthcare services are on the increase especially for preventive healthcare and nurses are majorly the frontline healthcare staff to render these services. Therefore, whatever undermines nurses' general health, role modelling potential and credibility for health promotion negatively impacts healthcare delivery and poses huge threat to global health. This study focused on nurses' health as important in the public health/health promotion context because of nurses' vital roles and patients' potential to perceive nurses as role models or judge nurses' credibility to offer health advice based on their outward appearance.

Taking the above into context, the findings from this study have very important implications for nursing education, research, practice, policy and healthcare organisations in Nigeria.

8.6.1 Educational implications

This research not only hopes to increase awareness and knowledge base but also to prompt renewed interest in intervening into Nigeria nurses' high overweight/obesity rate, unhealthy eating, physical inactivity behaviours, nurses' role modelling and patients' perspectives. This study also showed that despite nurses' health related occupation and prior training and experience in healthcare, there was limited knowledge about healthy lifestyle guidelines. Burdick et al., (2015) presented a similar case where knowledge of physical activity guidelines was investigated and almost half of the Brazilian health professionals in their survey were unaware of the WHO

recommended physical activity level. Nurses in Nigeria need health information awareness and regular update of healthy lifestyle guidelines and recommendations. Dissemination of information in this regard could be by continuing education and interprofessional learning forums where nurses can be educated about the recommendations for healthy lifestyles to improve their confidence for health promotion and counselling of patients on healthy lifestyles (Hidalgo *et al.*, 2016). Nevertheless, there needs to be protected study periods for nurses to avail themselves of educational opportunities to improve their knowledge. Regular bite size learning and information dissemination in form of leaflets and posters within the hospital may help improve and update nurses' healthy lifestyle knowledge. The use of technology is currently becoming the norm for sharing information so channels such as emails and apps can also be used to disseminate bitesize learning to nurses regularly considering their busy schedules. Furthermore, the health promotion content of nursing education in Nigeria warrants further investigation as there may be scope for inclusion of healthy lifestyle educational interventions specifically targeting nurses-in-training as the next generation of healthcare workers.

8.6.2 Practice implications

The findings from this research highlight deep concern for nurses' health and retention as current and future health promoters in a world challenged by obesity, chronic diseases and nursing shortages. Firstly, nurses need to be supported to narrow the cognitive dissonance between their beliefs that nurses should be role models for healthy lifestyles and their actual unhealthy behaviours which appear contradictory to their beliefs (Blake and Patterson, 2015a). Lack of motivators for healthy lifestyle in the social and work environment of nurses may explain the widespread obesity prevalence and point to a common challenge faced by not only nurses but the society at large considering that similar high level of obesity was found in a previous research study on Nigeria healthcare professionals living and working under the same conditions as the nurses in this study (Iwuala *et al.*, 2015b). Nurses in practice could also benefit from sensitization about the implications of their body size and body mass index for their health, work and patients via programs where nurses in practice serve as champions of behaviour change and help motivate other colleagues to comply and receive incentives accordingly. In relation to patients, nurses' health promotion practice with patients may be affected negatively or positively based on the understanding that nurses' health has impact on patients. Nevertheless, nurses' awareness and potential engagement in interventions for healthy lifestyles is expected to foster improvement in nurses' practice and patient experience. More specifically, this study prompted nurses to reflect on the impact of their personal health on their health promotion practice, a link which risks being undermined by the power dynamics in the nurse-patient therapeutic relationship. The concept of nurses as role models for health promoting behaviours though understood by the nurses, represented a new subject matter which the nurses had not engaged with previously. This study also highlighted that using observable indicators of healthy behaviours as a gauge for determining whether nurses are adequate role models may also have negative repercussions on nurses' practice. Also, there is need to carefully manage the feelings of inadequacy, lack of credibility and hypocrisy that nurses feel when they do not meet healthy role modelling standards, as nurses' morale maybe further dampened, health promotion as well as potential for nursing workforce retention may be compromised. This research also forms part of the foundational network of interventions for improvement of nurses' practice impact in the field of health promotion and global health in general.

8.6.3 Research implications

This study also represents the baseline research for further studies that would be fundamental for the development of healthy lifestyle interventions and role modelling for Nigeria nurses. The need for further research on patients' views of nurses' health promoting behaviours and nurses as role models for health in other regions of Nigeria are very much warranted. Understanding patients' perceptions of this subject matter in a broad context would aid nurses in strategizing and optimizing their practice to improve their impact in health promotion. This research emphasises that investment in research to explore and investigate ideas and potential problems in clinical practice is a worthwhile investment in improving the quality of care and outcome. Given that HPBs result from complex interaction of multi-level behavioural determinants, positive changes in health-related behaviours are more likely to last when the change simultaneously targets the individual and their environment (Sallis, Owen and Fisher, 2015). Therefore, further research into interventions within healthcare settings is needed as well as into the potential for the use of technology as a tool for disseminating health information and educating Nigeria nurses. Nurses health promoting behaviours and awareness of healthy guidelines should also be evaluated through research on a regular basis to ensure that interventions are developed, utilized, effective and highlight areas where further interventions are needed.

Nigeria nurses' eating and physical activity behaviours were found to be negatively influenced by external factors such as traditional beliefs and social circles. Support programs for people and communities within society regarding adoption and maintenance of healthy lifestyles may yield a positive impact on nurses as social beings by providing them with support from family, peers and colleagues towards maintenance of healthy habits. This perhaps may improve nurses' positive impact in their health promotion practice given that nurses' lifestyles may be haloed to patients and improve patients adherence to their advice. Nonetheless, research into this subject matter is warranted to explore what social support systems hold potential to work among Nigeria nurses.

Further studies are also needed to investigate other interventions that will be suitable for nurses in Nigeria because interventions from developed countries or different geo-cultural setting, if adopted for Nigeria nurses may not fit within the Nigeria context thereby hindering their applicability. Priority should be also placed on regular evaluation of intervention after implementation to ascertain nurses' engagement with them and if the health of nurses is improving or healthy eating and physical activity are being maintained. Nurses working in private sector should also be investigated to determine if they display better health promoting behaviours than government employed nurses. This would not only aid comparability but may also highlight salient organisational differences and how they impact on nurses health and HPBs.

8.6.4 Policy implications

This study also illuminates vital gaps in health promotion policy that needs urgent attention and interventions at national and local levels in Nigeria. Government policies should prioritize the promotion of population health even in the workplace setting, by advocating the development, implementation, regulation, and monitoring of healthy lifestyle policies. Several features of the built and social environment in Nigeria support physical inactivity and unhealthy dietary habits. This implies that nurses live and work in an obesogenic environment and several changes and modifications are required if nurses health are to be prioritised to promote healthy living. This is because individual level motivators irrespective of how numerous they are, may be unable to equip

nurses with the needed self-efficacy and support needed to adopt and maintain a healthy lifestyle in an environment that predominantly encourages and socially accepts unhealthy lifestyles. Blake et al., (2012b) highlighted that in the UK National Health Service, there was low level of hospital support in terms of policy and plans for promoting obesity reduction. Although interventions may be underway in the UK in response to their finding, nurses in all countries need to be supported by policy to incorporate healthy lifestyle choices into their daily activities as much as possible. Policies for improving nurses' healthy lifestyle practice should also target multilevel factors, support multi-sectorial collaboration and integrate surveillance on nurses health related demographics and lifestyles given the urgent and compelling need to get nurses to be healthier in their lifestyles. Psycho-cultural determinants of obesity was found in Nigeria nurses as most nurses in this study underperceive their weight status especially regarding obesity and viewed themselves in line with the cultural perception of larger body size in women being a sign of luxury, femininity and beauty. This may have impacted negatively on their weight management behaviours and implies that cultural perceptions still persist among nurses despite their health literacy and healthcare experience. This finding is noteworthy and similar to that of Chigbu et al., (2021) about obese Nigerian adults mis-perceiving their weight to be normal, a behaviour found to decrease the odds of exhibiting weight management behaviours or engaging in weight loss. Similar findings were seen in previous study of Nigerian nurses by Ogunjimi et al., (2010) and another study by Streigel-Moore et al. (2004) who reported that black women experienced less social pressure about their weight when compared to white women. Indeed, there exists a dilemma for Nigeria nurses which puts them in an awkward position regarding decision making for healthy living. Nigeria nurses are predominantly female and affected by socio-cultural norms which encourage Nigerian women to have large body size to appear 'beautiful' or 'feminine' while also being nurses and responsible for promoting and role modelling healthy weight. This represents a major contributor to high obesity among Nigeria nurses. More so, navigating this position of ambivalence is challenging for nurses and warrants an urgent sensitisation intervention via national policy and community stakeholders in Nigeria that target changes in the body size misperceptions and the trend of social desirability of larger body sizes as seen in socio-cultural circles in Nigeria.

Currently in Nigeria, there is a lack of clear national policy or plan for healthy eating and physical activity. This potentially underpins the government's inadequate efforts towards mitigating identified lifestyle risk factor profiles nationwide and brings to question Nigeria's capacity to meet the rising challenges of lifestyle related diseases ravaging the country. Although a draft of the policy for non-communicable disease exists for Nigeria, plans for interventions targeting healthy lifestyles were not pragmatically captured in the policy document and its implementation has not been evaluated (Federal Ministry of Health, 2013). In order to reduce the practice of unhealthy lifestyles at a national level, public health policies and actions promoting health may be best served as planned interventions embedded in policies that strategically focus on promoting health related behaviours. These policies should involve all stakeholders and partners in sectors such as health, transportation, education, town planning, communities, policy and non-governmental organisations from planning stages to policy formulation, implementation and evaluation (Oyeyemi *et al.*, 2018; Oyeyemi, Akinrolie and Oyeyemi, 2015). Specifically, there are also currently no known healthy lifestyle interventions or programs for nurses in Nigeria and this may in part contribute to the unhealthy eating, physical inactivity and high combined overweight and obesity burden reported for this population. Hospital management was reported by nurses to not prioritise staff healthy lifestyle practice as evidenced by an absence of policy or plan to tackle the obesity menace among its

nurses and health professionals in general. Practically, policies can be developed for health promotion interventions that target related lifestyle behaviours to improve food intake and maintain a healthy weight, alongside physical activity for energy expenditure and should be introduced to the Nigerian nursing population. Mass media campaigns also represent useful strategies to promote healthy lifestyles (Morley *et al.*, 2016; O'Hara *et al.*, 2016; Novichikhina and Romanova) and policies around this needs to be considered in Nigeria. Although our study may not directly influence policy or change existing cultures of laissez-faire governance in Nigeria, it forms the basis for future research on policy issues around healthy lifestyles for Nigerians in general. We suggest that health policies consider initiation of interventions (both nationally, and within workplace settings) that are coordinated in ways that increase their potential to change ingrained behaviours, beliefs, and perceptions of nurses and Nigerian citizens. This may be achieved through a combination of social change, habit formation, and knowledge improvement (Loewenstein *et al.*, 2017).

8.6.5 Healthcare Organisation implications

This study emphasises the importance of worksite health promotion initiatives or programmes. Indeed, the workplace represents a promising and good starting point for interventions targeted at improving nurses lifestyle profile given that nurses spend significant amount of their waking hours at work. It is important for organizations to recognize their responsibility towards provision of a supportive working environment with functional healthy lifestyle promotion programs as well as supporting employees in the uptake and maintenance of healthy behaviours (Martinsson *et al.*, 2016; Thompson, 2007). Government and hospital managers need to also consider workplace health promotion initiatives as a strategy for promoting healthy lifestyles and reducing obesity among nurses. Worksite health promotion initiatives have been reported as vital to reinforce awareness, individual lifestyle interventions and social support (Zapka *et al.*, 2009). Interventions in the workplace can target behaviour clusters and harness the benefits of peer support. According to Shaw *et al.*, (2006), combination of physical activity and dietary interventions may work in synergy at promoting weight loss. Therefore, such interventions may be helpful considering that the dietary and physical activity behaviours of nurses in Nigeria were found to be interrelated.

Hospital management support may also benefit nurses health include advocacy for better working conditions and workplace business environment modification to make healthy eating and physical activity more available, accessible, cost effective and affordable to staff. Skills acquisition programs for staff could target affordable and easy-to-prepare healthy food options, resilience training and incidental physical activity practices such as simple exercises without equipment, increased stair usage, walking/brisk walking, cycling and increasing daily step count on pedometer reading. Nigerian nurses could also benefit from tailored workplace health promotion interventions promoting healthy eating and physical activity, as have been delivered in other geographical regions (Malik, Blake and Suggs, 2014; Mazzola, Moore and Alexander, 2017) but these should first be pilot tested and evaluated before implementation..

The Nigeria hospital system also needs restructuring so that nurses as well as other healthcare staff get scheduled protected break periods as priority during their shift to enable them to rest and relax to relief stress. Nurses involvement and opinions should be considered in intervention development from the planning stages through to evaluation and revision so that consideration is given to the practicalities of usage of the facilities by

nurses given their particularly busy work schedules. Notwithstanding, nurses' personal readiness to change will be the basis upon which interventions from management will yield any success (Han, Choi-Kwon and Kim, 2016).

8.7 Strengths of the research study

One major contribution of this research study is that the findings are new and contributes unique and current information to the body of knowledge and research about nurses' health behaviours in Nigeria. Overall, this study provides knowledge on Nigeria nurses unhealthy weight status, unhealthy eating and physical activity behaviour. Findings from this study also highlights the implication of nurses body size and unhealthy lifestyle behaviours on nurses potential for role modelling and patients perception of nurses credibility. To the best of the researcher's knowledge, no previous research study has investigated Nigeria nurses' overweight and obesity prevalence, their health-related behaviours and perceptions about nurses' role modelling healthy lifestyles. Unique and novel information about patients' perceptions about nurses as role models for health are also provided by this research. It is of great importance for nurses and healthcare system managers to gain understandings about how nurses health may impact patient from the perspectives of the patients themselves as information on this subject matter has long been assumed and not researched into. These findings together form the supportive baseline for further research and development of interventions to promote nurses' health and health behaviours as well as further exploration of patients' perspectives on this subject matter. This recommendations from this research if put into action, may hold potential for improving nurses' lifestyle behaviours and enable a more confident and committed nursing workforce who are prepared to discuss the all-important subject of obesity prevention and healthy lifestyles with their patients in Nigeria.

The response rate for the questionnaire survey was 91%. According to Fincham (2008), researchers should aim for response rates approximating 60% for most research because a high response rate increases the representativeness of the sample. With a high response rate, the readers may evaluate the study findings with assurance that the sample of respondents is a reflection of the population in depth and breadth (Fincham, 2008). The high response rate in this research study is similar to response rates found for previous research on healthy lifestyles of health professionals in Nigeria (Banwat *et al.*, 2018) and for research on nurses in other countries (Bakhshi *et al.*, 2015; Persson and Martensson, 2006b). Dillman (2011) suggests that researchers appearance, multiple contacts, incentives and personalisation may significantly increase response rates in research. Dillman (2011) added that high response rates are achievable and have been achieved in samples across many research studies. Also, the questionnaires were selected with consideration of the nurses' busy nature of work and tendency to want to take time off work to provide answers to questions on their personal health. As a result, it was estimated to take about 20 minutes to complete which perhaps contributed to the high response rate in the cross-sectional survey. Although the cross-sectional surveys design used limited investigations of causality, valuable insight was obtained on the weight status and health promoting behaviours of Nigeria nurses. Another strength of this study was the use of standardised questionnaires and the selection of a sample that was representative by including of nurses who majorly undertake health promotion as part of their daily job roles. Homogenous sampling from one professional group also reduced response bias in analysing the samples. Interview participants were drawn from nurses who filled questionnaires. The participants for the qualitative arm

of the study were drawn from the nurses that completed the questionnaire study and expressed interest to participate further in the interview study. Utilising survey participants for the qualitative arm of the study helped promote continuity in exploration of the broad subject matter and aided understanding in the analysis of the nurses' perspective on the subject matter in a broad context as well as promote synthesis of the results and findings of both studies.

To reduce reporting bias, nurses' BMI was not self-reported but was calculated by the researcher from height and weight measured and reported by nurses in the questionnaire. Nurses were provided with height and weight machines and the researcher ascertained the scales provided were same as those used by nurses for checking patients' parameters, so it was not strange for the nurses to use. There is usually a tendency for people to underreport in questionnaire studies features that do not seem to impress but the result of this study shows that this may not be the case for nurses in this study. This may perhaps be due to the assurance and maintenance of anonymity in the research study which encouraged majority of nurses reported their high body weight, engagement in unhealthy eating and physical activity.

8.8 Limitations of the research study.

This research is not without some important limitations which deserve recognition therefore, the study findings should be interpreted with consideration of these limitations. Nurses in this study were from one division of the hospital, although this aided understanding of the perspectives of nurses and their patients about nurses as role models for health, future studies may include nurses drawn from various other clinical settings and the community. This ensures that health promoting behaviours of nurses and their perceptions of role modelling is explored across nurses in various specialties and not perceived as irrelevant in some nursing specialties compared to others. Recruiting nurses and patients from only one hospital in Nigeria limits generalisation of the findings to wider population of nurses and patients due to varied differences across settings. This study would have better benefitted from recruiting nurses and patients from hospitals in different regions of the country and results compared accordingly. The qualitative findings of this research cannot also be generalised for other populations of nurses.

This study utilized self-report questionnaire data which are prone to recall bias and may potentially compromise the accuracy of nurses' recall in questionnaire responses. Questionnaire data was cross sectional hence the analysis of changes in study variables over time were not determined. Also, causal factors that may have contributed to overweight/obesity, physical inactivity or unhealthy eating cannot be investigated. The use of questionnaire instruments that were heterogeneous to those used in previously published nursing research limits effective comparison of the literature on nurses' health behaviours as well as generalisability.

Considerations need to also be given to other issues around the use of self-administered questionnaires such as data over- or under- reporting and reporting socially desirable responses of demographics or health behaviours. Nevertheless, study results showed high obesity rates, unhealthy eating behaviour and physically activity among Nigeria nurses. Additionally, given that qualitative data was based on self-perception, information about behaviours such as smoking, and alcohol consumption that are seemingly unacceptable for social, work policy or cultural reasons may be underreported and limit the study findings. Although the use of a focus group would have elicited extensive insight from broad range of views on the subject matter, one to one interview was

best fit to explore nurses and patients personal perspectives, respectively. Despite the processes applied to minimise bias in this research, this study recognises that due to the subjectivity in the utilisation of thematic analysis in data interpretation and theme development, this study relied on the researchers interpretation of the participants' accounts. Therefore, some nuances in the data might have been missed and the researcher's interpretations may have introduced some bias in the data analysis and subsequent findings. Nevertheless, the application of reflexivity in this research enabled the researcher to minimise this bias as much as possible.

8.9 General conclusion of the research study

The novel contribution of this research study to the body of knowledge is the perspectives of patients about nurses as role models for health. This research has also highlighted that Nigeria nurses as current and future health promoters are challenged with high overweight and obesity prevalence, unhealthy eating behaviours and physical inactivity. Also, nurses allude to working in an unhealthy reality where the barriers outweigh the facilitators for their practice of health promoting behaviours. Given that a healthy nursing workforce has strong links with improved patient outcomes and public health in general, patients may engage better with nurses who appear to practice what they preach in terms of healthy living. Gaining insight on nurses' weight, health promoting behaviours and perspectives of nurses and patients about nurses as role models are important because of the nurses and patients health and wellbeing, the need for organisations to foster healthy human resources for health, and the potential for nurses to serve as role models for health to others. Social acceptability was a trend that promoted the persistence of sedentary lifestyles and unhealthy consumption of junk and processed food. Also, nurses seem to promote health and perceive themselves as role models in health behaviours in which they practice optimally and vice versa. This implies that patients may ultimately not be receiving comprehensive health promotion from nurses who perceive themselves to be sub-optimally healthy. The resultant effect may be reduction in patient outcomes and increase in morbidity and mortality at a time when preventive healthcare is even more important than it has ever been. Also, patients opined that they feel more confident receiving health advice from nurses who appear to practice what they preach in terms of healthy lifestyles and vice versa.

Healthy lifestyle interventions for the wider society are solicited in addition to workplace health promotion interventions aimed specifically for supporting nurses and other healthcare staff to maintain healthy lifestyles. Conclusively, the present study highlights the ultimate need for the planning, developing and implementation of interventions tailored to supporting Nigeria nurses to reduce perceived barriers and improve supporting structures for healthy lifestyles with the aim of promoting nurses personal health, healthy lifestyles, potential for role modelling and health promotion practice in general.

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Appendices

Appendix 1



Participant Information Sheets for questionnaire Survey of Nurses Final version 1.1 (September 2016)

Title of Study: Health behaviours and attitudes of Nigerian nurses and implication for health promotion practice.

Name of Researchers: Chinenye Obinuchi Uchendu, Dr. Holly Blake and Dr Richard Windle

We would like to invite you to take part in our research study. Before you make a decision about whether you would like to participate, we would like to explain what the research is about and what your involvement would be. Feel free to discuss this study with others and ask questions.

What is the purpose of the study?

Due to the increase in occurrence of chronic diseases, especially in developing countries, physical activity, diet and generally healthy living are becoming increased priorities. Nurses as health promoters have the responsibility for raising awareness about the importance of healthy lifestyles for patients and their families. Notwithstanding, nurses have to first be in good health and practice healthy lifestyles. However, due to nurses health behaviour in Nigeria not been known, this study seeks to investigate the health behaviour of nurses. To achieve this, we are inviting nurses to take part in a questionnaire survey. The aim of this questionnaire is to assess nurses' personal health and health promoting behaviours (dietary behaviours, physical activity behaviours, alcohol consumption and smoking behaviours). The questionnaire survey should take no longer than 15 minutes to complete. Also, if you wish to be interviewed in order to provide us with further information on your opinions about the enablers and barriers to effective role modelling among nurses as well as your perceptions about nurses as role models for health, please fill out the expression of interest slip at the end of the questionnaire. After filling the slip, please detach it carefully from the questionnaire and drop it into the same letter box as the questionnaire.

Why have I been invited?

You are being invited to take part because you are a registered nurse at department of medicine, University of Port-Harcourt Teaching Hospital Nigeria, where the study is taking place.

Do I have to take part?

It is your decision whether or not you would like to participate in this questionnaire. Please read this information sheet. If you would like to take part, you can complete the questionnaire in your own time and return it to the letter-box which has been placed in the general nurses' lounge. If you start filling the questionnaire, you are still free to withdraw at any time you decide not to continue without giving a reason.

What will happen to me if I take part?

This study involves completing a brief questionnaire survey, where you will be asked to answer a series of questions regarding your personal health habits. There are no right or wrong answers, we are simply interested in your views. If you would like to take part in the study, please complete the attached questionnaire and post the completed form in the anonymous letter box which is in the general nurses' lounge. Completion and return of the questionnaire will be taken as your agreement to take part.

Expenses and payments

Participants will not be paid to participate in the study.

What are the possible disadvantages and risks of taking part?

There are no particular risks associated with this study, we are simply asking for you to provide some information about your personal health and health behaviours.

What are the possible benefits of taking part?

Although this study is not designed to help you personally, the information you share will increase the knowledge base about the health behaviour of nurses in Nigeria. This may help us to develop supportive interventions for nurses in the future.

What if there is a problem?

If you have a concern or questions about any aspect of this study, you should contact the researcher in the first instance (Chinenye Uchendu, Tel: 08037452324, email: ntxcou@nottingham.ac.uk). Alternatively, you may contact Dr. Holly Blake, email: holly.blake@nottingham.ac.uk). Further contact details are printed at the end of this information sheet. If after this process you have not received a satisfactory reply then you are advised to contact the Head of Nursing Research, University of Port Harcourt Teaching Hospital on 08032744550 or Mrs Louise Sabir, Secretary to the Medical School Research Ethics Committee at university of Nottingham, email: louise.sabir@nottingham.ac.uk.

Will my taking part in the study be kept confidential?

This study will follow ethical and legal practice and all information you provide will be handled in confidence. All information which is collected during the course of the research will be kept strictly confidential, stored in a secure and locked office, and on a password protected computer database. At no point will you be asked for identifying details such as your name or address, and we will assign your completed questionnaire a unique code for analysis purposes. Questionnaire data will be kept securely for 7 years, only accessible to members of the research team. After this time your data will be disposed of securely.

What will happen if I don't want to carry on with the study?

You are under no obligation to participate. You may choose whether or not to take part without giving any reason, and without your legal rights being affected. The study requires completion of a questionnaire survey on a single occasion. As we do not ask for your name on this survey, once you have completed and returned the survey, your responses would be used in the research study analysis and would be anonymous.

What will happen to the results of the research study?

When the research is complete, a summary of the findings will be made available to the University of Nottingham, School of Health Sciences and will be accessible on request to participants. Findings will form part of the researcher's PhD thesis and subsequently be published in a peer-reviewed journal. No participants will be identified as part of this process.

Who is organising and funding the research?

This study is being organised by the research team and is a non-funded study conducted as part of a PhD thesis.

Who has reviewed the study?

This study has been reviewed and approved by the University of Nottingham Medical School Ethics committee and hospital ethics committee of the University of Port Harcourt Teaching Hospital. The study will be supervised by Dr. Holly Blake and Dr Richard Windle.

Further information and contact details

Please do not hesitate to contact the researcher if you have any queries or require any assistance.

Chinenye Obinuchi Uchendu
Doctoral Researcher, School of Health Sciences
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Appendix 2:

Questionnaire Survey

Please find below some questions about your personal health and health behaviours. Responses are entirely anonymous and voluntary. You may refuse to complete any part or all of this survey as you wish. By completing this questionnaire survey, you are consenting to participate in this research.

Please read each question carefully and choose the option that applies to you.

Section A: Demographic information.

1. What gender are you? Male ☐ Female ☐ Prefer not to say ☐
2. Age in years _____
3. What is your nursing rank? Nursing Officer I ☐ Nursing Officer II ☐ Principal Nursing Officer ☐
Senior Nursing Officer ☐ Assistant Chief Nursing Officer ☐ Chief Nursing Officer ☐
4. Years of nursing practice: _____.
5. What is your height in metres: _____ m.
6. What is your current weight in kilograms: _____ kg
7. How do you consider your current weight to be?
Underweight ☐ Normal weight ☐ Overweight ☐ Obese ☐

Section B: Dietary behaviours. Please mark [X] where appropriate.

	Questions	Strongly agree	Disagree	Neutral/Not applicable	Agree	Strongly disagree
1	I reduce fat in recipes by substituting ingredients and cutting portions.					
2	I am very conscious of how much fat is in the food I eat.					
3	I use low-fat food products.					
4	I choose healthy foods to prevent heart disease.					
5	I count fat grams.					
6	I carefully watch the portion sizes of my foods.					
7	When choosing fast food, I pick a place that offers healthy foods.					
8	Fish and poultry are the only meats I eat.					
9	I like to eat vegetables seasoned with fatty meat.					
10	I eat meatless meals from time to time because I think that is healthier for me.					
11	I try to limit my intake of red meat (beef and pork).					
12	I buy snacks from vending machines.					
13	I take a shopping list to the store.					
14	Instead of planning meals, I choose what is available and what I feel like eating					
15	I eat when I am upset.					
16	When I am in a bad mood, I eat whatever I feel like eating.					

17	I eat for comfort.					
18	My emotions affect what and how much I eat.					
19	If I am bored, I will snack more.					
20	I sometimes snack even when I am not hungry.					
21	I am a snacker.					
22	I snack more at night.					
23	When I buy snack foods, I eat until I have finished the whole package.					
24	When I am upset, I tend to stop eating					
25	Sometimes I eat dessert more than once a day.					
26	I usually keep cookies in the house.					
27	I have a sweet tooth.					
28	I eat cookies, candy bars, or ice cream in place of dinner.					
29	I snack two to three times every day.					
30	To me, cookies are an ideal snack food.					
31	On Sunday, I eat a large meal with my family.					
32	I buy meat every time I go to the grocery store					
33	I associate success with food.					
34	I have a serving of meat at every meal.					
35	I take time to plan meals for the coming week.					
36	A complete meal includes a meat, a starch, a vegetable, and bread.					
37	I eat at church socials.					
38	I would rather buy take-out food and bring it home than cook.					
39	I eat out because it is more convenient than eating at home.					
40	I stop for a fast-food breakfast on the way to work.					
41	When I don't plan meals, I eat fast food.					
41	I have at least three to four servings of vegetables per day.					
43	My eating habits are very routine.					
44	I eat at a fast-food restaurant at least three times a week.					
45	I hate to cook.					
46	I never know what I am going to eat for supper when I get up in the morning.					
47	If I do not feel hungry, I will skip a meal even if it is time to eat.					
48	If I eat a larger than usual lunch, I will skip supper.					
49	If I eat a larger than usual lunch, I will replace supper with a snack.					
50	I rarely eat breakfast.					

51	If I am busy, I will eat a snack instead of lunch.					
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SECTION C: Physical Activity Behaviour

We are interested in finding out about the kinds of physical activities that you do as part of your everyday life. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think **only** about those physical activities that you did for at least 10 minutes at a time.

- During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

_____ **days per week**

☐

No vigorous physical activities → **Skip to question 3**

- How much time did you usually spend doing **vigorous** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐

Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

- During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

_____ **days per week**

☐

No moderate physical activities → **Skip to question 5**

- How much time did you usually spend doing **moderate** physical activities on one of those days?

_____ **hours per day**

_____ **minutes per day**

☐

Don't know/Not sure

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

- During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

_____ days per week

☐

No walking → Skip to question 7

6. How much time did you usually spend **walking** on one of those days?

_____ hours per day

_____ minutes per day

☐

Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ hours per day

_____ minutes per day

☐

Don't know/Not sure

Section D: Alcohol consumption.

Please circle the option that applies.

The illustration below will help guide you on alcohol measurements.

One standard drink= One unit of alcohol

One standard drink is...

	Half pint of regular beer or cider		1 small glass of wine		1 single measure of spirits		1 small glass of sherry		1 single measure of aperitifs
---	------------------------------------	---	-----------------------	---	-----------------------------	---	-------------------------	---	-------------------------------

The following quantities of alcohol contain more than 1 standard drink

2	3	1.5	2	4	2	9
						
Pint of Regular beer/lager/cider	Pint of Premium beer/lager/cider	Alcopop or can/bottle of Regular Lager	Can of premium Lager or Strong Beer	Can of Super Strength Lager	Glass of wine (175ml)	Bottle of wine

How often do you have a drink containing alcohol?	Never	Monthly or less	2 - 4 times per month	2 - 3 times per week	4+ times per week
How many standard drinks do you have on a typical day?	1 or 2	3 or 4	5 or 6	7 to 9	10+
How often do you have 6 or more standard drinks if female, or 8 or more if male, on a single occasion?	Never	Less than monthly	Monthly	Weekly	Daily or almost daily

Section E: Smoking behaviours (Please tick the option that applies)

Do you smoke cigarettes? Yes [] No []

Thank you very much for your time.

.....

Appendix 3: Expression of interest for interview slip

If you are interested in the study and willing to be contacted by the researcher for a brief interview with the researcher about your views on nurses as role models for health, please provide the following details and you will be contacted accordingly.

Name:

Preferred contact time: (Please mark ✓ in the box, if you prefer the method and fill information)

Morning [] Afternoon [] Evening []

Preferred contact method: (Please mark ✓ in the box, if you prefer the method and fill information)

- ☐ By Phone: Phone number:
- ☐ By email:
- ☐ By post: Address:
- ☐ In person
- ☐ Others.....
- ☐ Any specific needs or wishes to be considered:

Please detach completed slip from questionnaire along the dotted lines and drop it into the letter box provided in the nurses' lounge.

Thank you very much.

Appendix 4



Participant information sheet for interview with nurses. Final version 1.1 (September 2016)

Investigators:

Ms Chinenye Uchendu, PhD researcher
Dr Holly Blake, Associate Professor of Behavioural Science.
Dr Richard Windle, Associate Professor.
School of Health Sciences, University of Nottingham

Healthy volunteers information sheets

You have been invited to take part in a research study. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with friends and relatives if you wish to. Please ask the investigator, Chinenye Uchendu, if there is anything that is not clear or if you would like more information. Take your time to decide whether you wish to take part or not. Thank you for your interest in this study.

Background

Nurses play very important roles in health promotion. The purpose of this research is to explore the health behaviours and attitudes of Nigerian nurses and implications for health promotion practice. To achieve this purpose, we are inviting nurses from the medical department of the University of Port Harcourt Teaching Hospital to talk about the motivating factors and barriers to their practice of healthy lifestyles as well as their perceptions of nurses as role models for health. The motivating factors and barriers to your health promotion practice, your personal perceptions about nurses as role models for health and whether your personal health behaviours affect your health promotion work and patients care will also be discussed. Findings from interviews will provide an understanding of the specific issues about Nigerian nurses current health status as well as whether or not this impacts the care they deliver.

What does the study involve?

This research involves interviews with nurses from the medical department. Eligible participants will be invited to take part in a one-to-one interview with the researcher (Chinenye Uchendu) at a mutually convenient time. The interview will last approximately 45-60 minutes and the conversation will be recorded and then transcribed and typed up for analysis. All identifiable data (e.g., your name, personal information) will be removed from the transcript.

Why have you been chosen?

You have been chosen not only because you filled and returned the expression of interest slip attached to the questionnaires but also because you work in the department of medicine and carry out health promotion on a daily basis with patients as part of your job roles especially with patients experiencing chronic diseases.

Do you have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part:

Please keep this information sheet and sign the consent form.

If you would like any further information, please do not hesitate to contact Chinenye Uchendu on 08037452324 or via email on ntxcou@nottingham.ac.uk

If you decide to take part, you are still free to withdraw at any time and without giving a reason.

What do I have to do?

If you consent, all you have to do is arrange a convenient time to do the interview by contacting Chinenye Uchendu on the phone number or email above.

What if something goes wrong?

If you have reason to complain about this study, complaints should be addressed in the first instance to: Dr Holly Blake (Chief Investigator), Associate Professor in Behavioural Sciences, School of Health Sciences, University of Nottingham Medical School, Queen's Medical Centre, Nottingham, NG7 2HA, Email: holly.blake@nottingham.ac.uk. If this achieves no satisfactory outcome, you should contact the the Head of Nursing Research, University of Port Harcourt Teaching Hospital on 08032744550 or the University of Nottingham Medical School Ethics Committee Secretary: Louise Sabir, Division of Therapeutics and Molecular Medicine, D Floor South Block, Queen's Medical Centre Campus, Nottingham University Hospitals, Queen's Medical Centre, Nottingham, NG7 2UH. E-mail louise.sabir@nottingham.ac.uk.

Will my taking part in this study be kept confidential?

In accordance with the current Data protection Act all information collected about you will be stored on a database which is password protected and strictly confidential. Any information about you will have your name and address removed so that you cannot be recognised from it.

What will happen to the results of the research study?

Data from the interviews will add to the body of knowledge about determinant of Nigerian nurses' engagement in health promoting behaviours as well as nurses' perception of themselves as role models for health and its implications for their health promotion practice.. Recommendations will also be made on ways of improving nurses' health and supporting nurses to maintain healthy lifestyles. Results will also be written up and submitted to a peer review journal and presented as part of a PhD thesis.

Who is organising and funding the research?

The research is organised by the researcher as part of a PhD thesis. There is no funding from funding bodies to organise this research.

Who has reviewed the study?

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee.

Contact for Further Information

If you would like to find out more about the study, please contact:

Chinenye Obinuchi Uchendu, PhD student.

E-Mail: ntxcou@nottingham.ac.uk

Mobile: 08037452324

Thank you for your time.

APPENDIX 5



Participant information sheet for interviews with patients# Final version 1.1 (September 2016)

Investigators:

Ms Chinenye Uchendu, PhD researcher
Dr Holly Blake, Associate Professor of Behavioural Science.
Dr Richard Windle, Associate Professor.
School of Health Sciences, University of Nottingham

Healthy Volunteers Information Sheet

You have been invited to take part in a research study. Before you decide whether to take part it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with friends and relatives if you wish to. Please ask the investigator, Chinenye Uchendu, if there is anything that is not clear or if you would like more information. Take your time to decide whether you wish to take part or not. Thank you for your interest in this study.

Background

Nurses play very important roles in health promotion. The purpose of this research is to explore the health behaviours and attitudes of Nigerian nurses and implication for health promotion practice. To achieve this purpose, we are inviting patients registered at the medicine department to talk about their perceptions of nurses as role models for health and its implications for their health and engagement with nurses' health promotion. Interviewees will be encouraged to talk about how nurses' personal health behaviours affect their perception of them and their care. Findings from interviews will provide an understanding of the how patients perceive nurses' health status in terms of healthy role modelling as well as how this impacts patients.

What does the study involve?

This research involves interviews with patients from the department of medicine to talk about their perceptions of nurses as role models for health. Choosing to participate in this study will not affect your clinical care in anyway. Eligible participants will be invited to take part in a one-to-one interview with the researcher (Chinenye Uchendu) at a mutually convenient time. The interview will last approximately 45-60 minutes and the conversation will be recorded and then typed up for analysis. All identifiable data (e.g., your name) will be removed from the transcript. Data from these interviews will add to the body of knowledge about how /whether nurses' health behaviours affect patients' perception of them.

Why have you been chosen?

You have been chosen because you visit the clinic regularly for check-ups or you have been admitted unto the ward for medical management.

Do you have to take part?

It is totally up to you to decide whether or not to take part. If you do decide to take part, please keep this information sheet and sign the consent form.

If you would like any further information, please do not hesitate to contact Chinenye Uchendu on 08037452324 or via email on ntxcou@nottingham.ac.uk

If you decide to take part, you are still free to withdraw at any time and without giving a reason.

What do I have to do?

All you have to do is arrange a convenient time to do the interview by contacting Chinenye Uchendu on the phone number or email above.

What if something goes wrong?

If you have reason to complain about this study, complaints should be addressed in the first instance to: Dr Holly Blake (Chief Investigator), Associate Professor in Behavioural Sciences, School of Health Sciences, University of Nottingham Medical School, Queen's Medical Centre, Nottingham, NG7 2HA, Email: holly.blake@nottingham.ac.uk. If this achieves no satisfactory outcome, you should contact the the Head of Nursing Research, University of Port Harcourt Teaching Hospital on 08032744550 or the University of Nottingham Medical School Ethics Committee Secretary: Louise Sabir, Division of Therapeutics and Molecular Medicine, D Floor South Block, Queen's Medical Centre Campus, Nottingham University Hospitals, Queen's Medical Centre, Nottingham, NG7 2UH. E-mail louise.sabir@nottingham.ac.uk.

Will my taking part in this study be kept confidential?

In accordance with the current Data protection Act all information collected about you will be stored on a database which is password protected and strictly confidential. Any information about you will have your name and address removed so that you cannot be recognised from it.

What will happen to the results of the research study?

Data from the interviews will be used to will add to the body of knowledge about patients' perspective about the impact of nurses' health on them. Data will also be written up and submitted to a peer review journal and presented as part of a PhD thesis.

Who is organising and funding the research?

The research is organised by the researcher as part of a PhD thesis. There is no funding from funding bodies to organise this research.

Who has reviewed the study?

This study has been reviewed and approved by the University of Nottingham Medical School Ethics Committee.

Contact for Further Information

If you would like to find out more about the study, please contact:

Chinenye Obinuchi Uchendu, PhD student.

E-Mail: ntxcou@nottingham.ac.uk

Mobile: 08037452324

Thank you for your time.

APPENDIX 6:



Consent Form for Nurses

Title of Project: Health behaviours and attitudes of Nigerian nurses and implications for health promotion practice.

Names of Investigators:

Ms Chinenye Uchendu, PhD researcher
Dr Holly Blake, Associate Professor of Behavioural Science.
Dr Richard Windle, Associate Professor.
School of Health Sciences, University of Nottingham

Please initial box

- | | |
|---|--------------------------|
| 1. I confirm that I have read and understand the information sheet version number.....dated..... for the above study and have had the opportunity to ask questions. | ☐ |
| 2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. I understand that should I withdraw then the information collected so far cannot be erased and that this information may still be used in the project analysis. | ☐ |
| 3. I understand that relevant sections of my data collected in the study may be looked at by the research group and by other responsible individuals for monitoring and audit purposes. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential. | ☐ |
| 4. I understand that the interview will be audio recorded using an audio recorder and that anonymous direct quote from the interview may be used in the study reports. | ☐ |
| 5. I understand that all data will be anonymous and confidential with the exception of information being revealed during the interview which is of concern and may need reporting, i.e. potential risks to another person or to myself such as psychological distress or being abused. | ☐ |
| 6. I understand that information about me recorded during the study will be kept in a secure database. If the data transfers, it will be made anonymous. Data will be kept for 7 years after the study has ended and then securely destroyed. | ☐ |
| 7. I agree to take part in the questionnaire section of the study | ☐ |
| 8. I agree to take part in the interview section of the study | ☐ |

_____	_____	_____
Name of Participant	Date	Signature
_____	_____	_____
Name of Person taking consent	Date	Signature

Appendix 7:



Consent Form for Patients

Title of Project: Health behaviours and attitudes of Nigerian nurses and implications for health promotion practice.

Names of Investigators:

Ms Chinenye Uchendu, PhD researcher

Dr Holly Blake, Associate Professor of Behavioural Science.

Dr Richard Windle, Associate Professor.

School of Health Sciences, University of Nottingham

Please initial box

1. I confirm that I have read and understand the information sheet version number.....dated..... for the above study and have had the opportunity to ask questions.

☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason. I understand that should I withdraw then the information collected so far cannot be erased and that this information may still be used in the project analysis.

☐

3. I understand that relevant sections of my data collected in the study may be looked at by the research group and by other responsible individuals for monitoring and audit purposes. I give permission for these individuals to have access to these records and to collect, store, analyse and publish information obtained from my participation in this study. I understand that my personal details will be kept confidential.

☐

4. I understand that the interview will be audio recorded using an audio recorder and that anonymous direct quote from the interview may be used in the study reports.

☐

5. I understand that all data will be anonymous and confidential with the exception of information being revealed during the interview which is of concern and may need reporting, i.e. potential risks to another person or to myself such as psychological distress or being abused.

☐

6. I understand that information about me recorded during the study will be kept in a secure database. If the data transfers, it will be made anonymous. Data will be kept for 7 years after the study has ended and then securely destroyed.

☐

7. I agree to take part in the questionnaire section of the study

☐

8. I agree to take part in the interview section of the study

☐

Name of Participant

Date

Signature

Name of Person taking consent

Date

Signature

Appendix 8: Ethics approval letter from University of Nottingham



Direct line/e-mail
+44 (0) 115 8232561
Louise.Sabir@nottingham.ac.uk

8th September 2016

Ms Chinenye Obinuchi Uchendu
PhD Student, Nursing Studies
c/o Dr Holly Blake,
Associate Professor of Behavioural Science
School of Health Sciences
QMC Campus
Nottingham University Hospitals
NG7 2UH

Faculty of Medicine and Health Sciences

Research Ethics Committee
C/o Faculty PVC Office
School of Medicine Education Centre
B Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham
NG7 2UH

Dear Ms Uchendu

Ethics Reference No: OVS26082016 – please always quote	
Study Title: Health behaviours and attitudes of Nigerian nurses and implication for health promotion practice.	
Chief Investigator/Supervisor: Dr Holly Blake, Associate Professor of Behavioural Science, School of Health Sciences.	
Lead Investigators/student: Chinenye Obinuchi Uchendu, PhD Student, Nursing Studies, School of Health Sciences.	
Co Supervisor: Dr Richard Windle, Associate in Health E-Learning, School of Health Sciences.	
Type of Study: PhD, qualitative, interviews	
Proposed Start Date: 01/12/2016	Proposed End Date: 31/05/2017 6mths
No of Subjects: 40-210	Age: 18+years
School: Health Sciences	

Thank you for submitting the above application which was considered by the Committee and the following documents were received:

Short Title: Health behaviour and attitudes of Nigerian Nurses, Final Version 1.0, Date: 24/08/2016

- FMHS Research Ethics Committee Application for,
- Protocol
- Participant Information Sheet - Questionnaire
- Questionnaire Survey
- Expression of Interest For Interview Slip
- Participant Information Sheet – interviews (Nurses)
- Participant Information Sheet- interviews (patients)
- Consent Form for Nurses
- Consent Form for Patients
- Participant Interview Guide for Nurses
- Participant Interview Guide for Patients

These have been reviewed and are satisfactory and the study has been given a favourable opinion.

A Favourable opinion is given on the understanding that all appropriate ethical and regulatory permissions are respected and followed in accordance with all local laws of the country in which the study is being conducted and those required by the host organisation/s involved.

A favourable opinion is given on the understanding that the conditions set out below are followed:

1. Please submit copies of letters of permission/approval from the participating Department of Internal Medicine, University of Port-Harcourt Teaching hospital, Rivers State, Nigeria when these are available for our records.
2. You must follow the protocol agreed and inform the Committee of any changes using a notification of amendment form (please request a form).
3. You must notify the Chair of any serious or unexpected event.
4. This study is approved for the period of active recruitment requested. The Committee also provides a further 5 year approval for any necessary work to be performed on the study which may arise in the process of publication and peer review.
5. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely



Professor Ravi Mahajan
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix 9: Ethical approval letter from University of Port Harcourt teaching hospital, Nigeria.

UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL

P.M.B. 6173. PORT HARCOURT - website: www.upthnigeria.org

CHAIRMAN
DR. SEGUN OGUNDIMU
MBBS (Lagos) FWACP, FACPE

DIRECTOR OF ADMINISTRATION
B. AMAOMU-JUMBO (MRS.)
M.Sc. (UK) MCMI (UK) MNIM (CHARTERED) FHAN, FWIMA



CHIEF MEDICAL DIRECTOR
PROF. AARON C. OJULE, JP
MBBS, M.sc, FMCPATH. FNIM, FHAN

CHAIRMAN, MEDICAL ADVISORY COMMITTEE
DR. CHARLES I. TOBIN-WEST
MD, MPH, FMCPH, Adv Dip Admin.

HOSPITAL ETHICS COMMITTEE

19TH December 2016

Ms Chinenye Obinuchi Uchendu
Doctoral researcher
University of Nottingham, Nottingham
United Kingdom.

ETHICAL APPROVAL

TOPIC: HEALTH BEHAVIOUR AND ATTITUDE OF NURSES AND IMPLICATIONS FOR HEALTH PROMOTION PRACTICE.

The Research Ethics Committee of the University of Port Harcourt Teaching Hospital has critically appraised your research proposal on the above mentioned title and approval is hereby given to you to commence your study

Please note that the study can only be started after it is approved by the examining body. The hospital also reserves the right to withdraw this approval if at any time during the conduct of the study you infringe on the ethical regulations of the hospital or ethical rights of your study subject.

Yours sincerely

D. S. Green
For: chairman

APPENDIX 10



Participant interview guide for nurses

Research Topic: Health behaviour and attitudes of Nigerian nurses and implications for health promotion practice

Interview mode: Face to face/ one to one with Nurses

Introduction

- General introduction: Greet participant and exchange pleasantries.
- Personal introduction: Introduce self as researcher
- Explain the nature of the research and purpose and process of the interview
- Explain that the interview will be recorded, transcribed and used as data for research.
- Explain that questions from the participant are welcome at any time, he/she can stop the interview at any time and questions are not compulsory.
- Explain that the interview to last about 45-60 minutes, seek consent to continue.

Start recording

**** Obtain verbal consent to participate on tape ****

Prior to beginning:

- Ask if participant has read the information sheet, consent form and signed accordingly?
- Ask if participant is happy for you to continue with the interview?

Introductory questions: General questions about topic area

- Could you please explain to me your opinion about healthy living?
- Do you currently endeavour to live a healthy lifestyle? Could you share your experience?
Prompt: If not compliant, ask the following question.
- Have you attempted in the past to live a healthy lifestyle? Could you share your experience?

*** Think about your daily activities, how would you describe your _____ behaviours?

Probes: Ask specifically for

- Dietary behaviours
- Physical activity behaviors
- Alcohol consumption behaviors
- Smoking behaviours

Ask about above mentioned behaviors

- At work
- Outside of work

Research question 2: What are the perceived facilitators and barriers to the practice of health promoting behaviours among Nigeria nurses?

Questions on facilitators.

***Think about the healthy choices you mentioned that you make in _____ (named healthy behaviour). Can you tell me about the factors that encourage you to make the healthy choices in _____ behaviours?

Probes:

Ask specifically for facilitators for

- healthy eating
- Physical activity
- Non-risky alcohol behaviours

- Non-smoking behaviours

(Adapt as applicable to respondent)

***Can you explain how _____ factor (named facilitator) positively affects you?

Probes:

Ask specifically for facilitators for

- healthy eating
- Physical activity
- Non-risky alcohol behaviours
- Non-smoking behaviours

(Adapt as applicable to respondent)

Ask about facilitators

- At work
- Outside of work.

*** Tell me of anything you feel would further encourage you (or make it easier for you) to adopt or sustain healthy behaviours?

Probes:

Ask specifically for

- healthy eating
- Physical activity
- Non-risky alcohol behaviours
- Non-smoking behaviours

(Adapt as applicable to respondent)

Consider facilitators:

- At work
- Outside of work.

Questions on barriers

***Think about the health promoting behaviours (Probe: Mention specific health promoting behaviour as applicable) you previously said you were not practicing (adequately/regularly). Could you describe what you feel prevents you from engaging in _____ (named behaviour(s))?

Probes:

Ask specifically for

- healthy eating
- Physical activity
- Non-risky alcohol behaviours
- Non-smoking behaviours

Ask about above mentioned health promoting behaviours

- At work
- Outside of work.

***How would you explain the challenges you encounter (or mentioned) regarding taking part in _____ (Probe: Mention specific health promoting behaviours as applicable).

Probe: How does the barrier make it difficult or impossible to make healthy choices sometimes or regularly?

***Can you tell me about any changes you perceive would help to eliminate or reduce the impact of (named barrier)?

Probe: Repeat question but adapt to elicit information for other barriers mentioned by respondent.

***Suppose _____ (named barrier) is reduced or removed, tell me how it would improve your engagement in _____ (named health promoting behaviour)? In what ways would your behaviours in _____ (named health promoting behaviour) be improved?

*** What sort of programs or interventions do you feel might be helpful for improving your behaviours related to _____ (Probe: Mention specific health promoting behaviours as applicable)? How might these programs and/or interventions be helpful.

CLOSING QUESTIONS

***Would you like to provide any additional information you feel might be relevant that we have not discussed concerning the facilitators and barriers to your optimal engagement in health promoting behaviours?

Research question 3: What are Nigeria nurses' perceptions of themselves as role models for health promoting behaviours and its implication for their health promotion practice?

Interview Questions.

- What are your opinions about healthy lifestyle practices among nurses?
What are your perceptions about the impact of healthy lifestyle practice on nurses' roles in health promotion?
- What are your opinions about nurses as role models for health?
- Do you serve as a role model for health? Could you discuss the ways in which you serve as a role model for health?
- Do you feel patients and the public expect nurses to be role models for health? Could you please explain the reasons for your views?
- Do your personal health and lifestyle behaviours as a nurse affect your roles in health promotion? Could you explain the reason for your response?
- Do nurses practice of healthy lifestyles impact on patients? How in your view do these influence patients?
- In contrast, does nurses' non-practice of recommended health lifestyles impact on patients? How in your view do these influence patients?
- Could you explain to me the significance in nurses living healthy lifestyles in order to be role models for patients?
- Does your role as a nurse impact on your health and lifestyle choices? Could you tell me how?
- In your opinion, how does your personal health related behaviours and attitudes impact on your role in health promotion with patients and families?

Closing questions

Tell me about any contributions you would like to add to the discussions we have had in this interview?

Ask me any questions would like to ask me about the subject matter we have discussed in this interview?

Thank respondent for participation.

End interview and recording



**University of
Nottingham**

UK | CHINA | MALAYSIA

Interview guide for patients

Participant Interview Guide for patients

Research Topic: Health behaviour and attitudes of Nigerian nurses and implications for health promotion practice.

Interview mode: Face to face/ one to one interview.

Introduction

- General introduction
Greet participant and exchange pleasantries
- Personal introduction
Introduce self as researcher
- Explain the nature of the research and purpose of the interview.
- Explain that the interview will be recorded, transcribed and used as data for research.
- Explain that questions from the participant are welcome anytime, he/she can stop the interview at any time and questions are not compulsory.
- Explain that the interview may last for about 45-60 minutes, seek consent to continue.

Start recording

**** Obtain verbal consent to participate on tape ****

Prior to beginning:

- Ask if participant has read the consent form and information sheet?
- Ask if participant is happy for you to continue with the interview?

1. General question about topic area.

- Could you tell me how regularly you visit the clinic for check-ups?
- Could you please tell me how regularly you receive health promotion advice from nurses during your hospital visit?

Research question 4: What are patients perceptions of nurses as role models for health and the implications for their health and engagements with nurses?

Interview Questions:

- As a patient in this clinic, tell me what your views are about nurses' personal practice of the health advice they offer you. What are your perceptions about nurses' role modelling healthy behaviours? (Give examples as necessary)

Prompts: Do you personally expect nurses to be role models for health? What are your opinions about whether or not nurses have to personally practice the health and lifestyle advice they give to you?

- Have you been in a position to receive lifestyle advice from a nurse who you felt that they seemed to practice the lifestyle he/she was offering you?
***Could you tell me your experience and how it made you feel?
***How did this experience impact on your health?
- On the contrary, have you been in a position to receive healthy lifestyle advice from a nurse who you felt did not seem practice the lifestyle he/she was offering you?
***Could you tell me your experience and how it made you feel?
***How did this experience impact on your health?

- When receiving healthy lifestyle advice from nurses, tell me about the factors that promote your engagement with the health promotion they are offering you.
- When receiving healthy advice from nurses, tell me about the factors that negatively affect your engagement with the health promotion they are offering you.

Closing questions:

Tell me about any contributions you would like to add to the discussions we have had in this interview?

Ask me any questions you would like to ask me about the subject matter we have discussed in this interview?

Thank respondent for participation.

End interview and recording