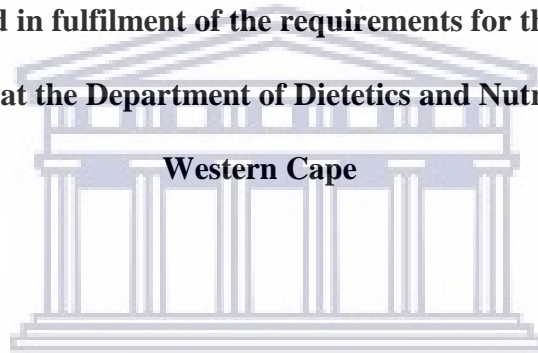


**ATTITUDES TOWARDS HEALTHY EATING, A HEALTHY LIFESTYLE, AND
PHYSICAL ACTIVITY OF HEALTHCARE PROFESSIONALS: A DESCRIPTIVE
CROSS-SECTIONAL STUDY IN A PUBLIC HOSPITAL IN KWAZULU-NATAL.**

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3000779

**A mini-thesis submitted in fulfilment of the requirements for the degree of Master in
Public Health Nutrition at the Department of Dietetics and Nutrition, University of the**



Western Cape

**UNIVERSITY of the
Supervisor: Professor. E Kunneke
WESTERN CAPE
Co-Supervisor: Mrs J Wilkenson**

11th September 2020

DECLARATION

I, Mukondeleli Talelani Mukhodobwane, hereby declare that this study titled “*Attitudes towards healthy eating, a healthy lifestyle, and physical activity of healthcare professionals: a descriptive cross-sectional study in a public hospital in Kwazulu-Natal.*” is my work, and it has not been submitted for any degree or examination in any other university and that all the sources I have used or quoted have been indicated and acknowledged with complete referencing.



Full name: Mukondeleli Talelani Mukhodobwane

Date: 11th September 2020

Signed:

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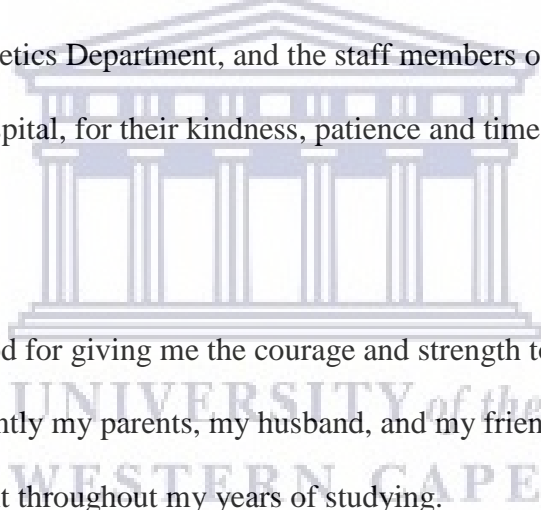
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Finally, I wish to thank God for giving me the courage and strength to embark on this journey, and most importantly my parents, my husband, and my friends, for their consistent support and encouragement throughout my years of studying.



KEYWORDS

Healthy eating

Healthy lifestyle

Physical activity

Healthcare professionals

Non-communicable diseases

Obesity

Health

Enablers

Barriers



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ABBREVIATIONS

HCPs :	Healthcare professionals
NCDs :	Non-communicable diseases
PA :	Physical activity
BMI :	Body mass index
KZN :	Kwazulu-Natal



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DEFINITIONS

A healthcare professional is a health worker who works one on one with patients within a healthcare setting and is affiliated to a council that governs their profession.

Healthy eating involves eating a diet low in fat, sugar, salt, and processed foods but high in whole grains, fruits, and vegetables.

A healthy lifestyle is a lifestyle characterised by healthy eating, physical activity, maintaining a healthy weight, less drinking of alcohol, and less smoking.

Physical activity is a term that refers to any movement of the body, which requires the use of energy.

Attitudes are defined as emotions, motivation, and beliefs that positively or negatively influence the behaviour or practice of an individual.

Enablers are factors that assist or promote the adoption of good health behaviours.

Barriers are factors that make it challenging to adopt good health behaviours.

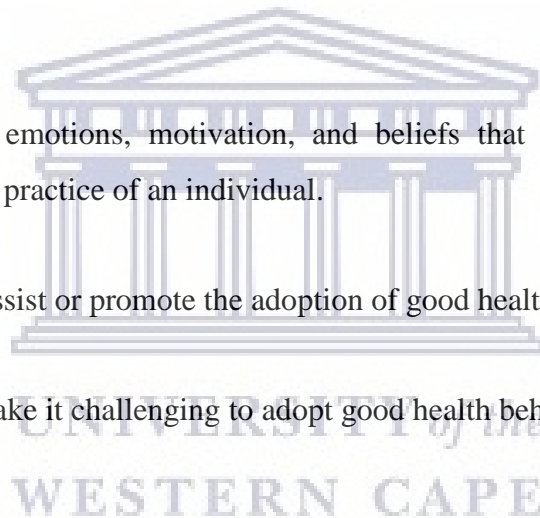
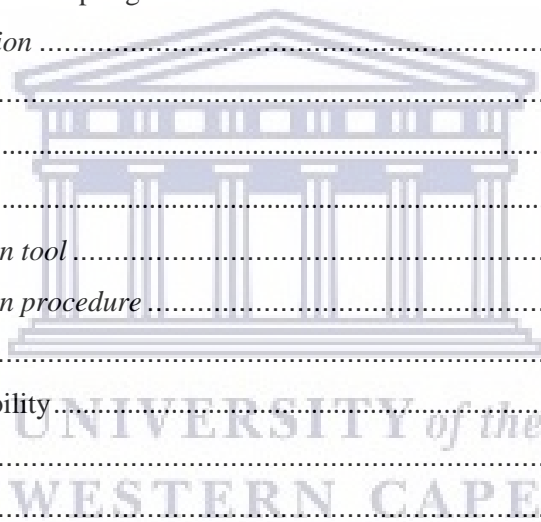


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ABSTRACT

Background: In South Africa, healthcare professionals (HCPs) are at an increased risk of developing non-communicable diseases due to their unhealthy lifestyle behaviours, which mainly consist of excessive alcohol drinking and smoking, physical inactivity, and unhealthy diets. Attitudes towards healthy eating, a healthy lifestyle, and physical activity (PA) of individuals contribute towards individuals engaging in these health behaviours.

Methodology: The study was a descriptive cross-sectional study, and the study sample included a proportional sample of 258 healthcare professionals, excluding dietitians, currently working in a hospital in the north of KwaZulu-Natal. Data on socio-demographic status, body mass index, enablers, and barriers to healthy eating, a healthy lifestyle and physical activity, and attitudes regarding healthy eating, a healthy lifestyle and physical activity were collected using a validated self-administered questionnaire. Data analysis was conducted using Epi.info version 7.2.2.6.

Results: The majority of the HCPs in this research setting were obese (51.9 %), with most females being obese ($32.1 \pm 7.4 \text{ kg.m}^{-2}$) and most males being overweight ($27.1 \pm 4.8 \text{ kg.m}^{-2}$). A low percentage of HCPs were already engaging in PA (33%), eating healthily (24.8%), and living a healthy lifestyle (29.46%). Healthcare professionals in this research setting were not happy with their current eating habits (39.5%) and fitness levels (63.6%), and more than 50% of the HCPs were more than willing to change their current lifestyle despite most reporting laziness as a barrier. Time was the most significant barrier for all health behaviour for most healthcare professionals, and most had positive attitudes towards healthy eating, a healthy lifestyle, and physical activity.

Conclusion: The study has revealed that the majority of the healthcare professionals (HCPs) hold somewhat positive attitudes towards healthy eating, a healthy lifestyle and physical activity. The majority of them were only just thinking about healthy eating, physical activity and leading a healthy lifestyle but not ready to start implementing healthy eating, a healthy lifestyle and engaging in physical activity. A comprehensive wellness program is needed to increase knowledge, the perceived need for health behaviour change, and awareness of living a healthy lifestyle that ensures a healthy diet and physical activity within a busy life schedule.

CHAPTER 1: INTRODUCTION

1.1 The non-communicable disease global pandemic

The rise in the prevalence and incidence of non-communicable diseases (NCDs) such as diabetes mellitus, hypertension and heart disease amongst the general public and healthcare professionals (HCPs) has become a global public health concern (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013; Kelly, Wills & Sykes, 2017). Non-communicable diseases (NCDs) have become the leading cause of death amongst the working class and young adults in most developing countries (Derman, Patel, Nossel & Schwellnus, 2008; Skaal & Pengpid, 2011). In South Africa, the prevalence of NCDs is high in the general public and amongst HCPs, and NCDs account for more than a third of all deaths that occur within the country (Kolbe-Alexander, Proper, Lambert, van Wier, Pillay, Nosse, Adonis & Van Mechelen, 2012; Shisana et al., 2013; Phiri, Draper, Lambert & Kolbe-Alexander, 2014). According to the latest South Africa Demographic and Health Survey conducted in 2016, there has been a significant increase in the prevalence of hypertension and pre-diabetes amongst females and males and the majority of females are obese (National Department of Health, Statistics South Africa, South African Medical Research Council & ICF, 2019). The South African National Health and Nutrition Examination Survey (SANHANES) has revealed that more than 50% of these NCDs are preventable by reducing the shared risk factors for NCD development which mainly include unhealthy diets, physical inactivity, and uncontrolled use of tobacco and alcohol (Shisana et al., 2013; Van den Berg, Abera, Nel & Walsh, 2013).

In South Africa, HCPs are at an increased risk of developing NCDs such as heart disease, hypertension, and diabetes mellitus, and a large percentage of them are either overweight or obese (Skaal & Pengpid, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Phetla & Skaal, 2017). The increased risk of developing NCDs amongst HCPs can be caused by their risky lifestyles which are characterised by excessive drinking and smoking, unhealthy diets high in fats and sugars, physical inactivity and poor health-seeking behaviours (Skaal & Pengpid, 2011; Kolbe-Alexander, Proper, Lambert, van Wier, Pillay, Nosse, Adonis & Van Mechelen, 2012; Phiri, Draper, Lambert & Kolbe-Alexander, 2014). This high prevalence and incidence of NCDs amongst HCPs and the general population in developing countries are as a result of urbanization (Skaal & Pengpid, 2011; Van den Berg, Abera, Nel & Walsh, 2013). Urbanization has led to a nutrition transition which is characterised by an increased intake of

processed foods which are high in energy, fats, cholesterol, sugar and salt; and a decreased intake of traditional foods such as vegetables, fruits, and legumes which are higher in fibre (Van den Berg, Abera, Nel & Walsh, 2013). This transition from traditional food to unhealthy processed foods has resulted in increased levels of NCDs, obesity, physical inactivity, and excessive usage of alcohol and tobacco products (Van den Berg, Abera, Nel & Walsh, 2013).

1.2 Healthcare professionals in healthcare settings

Healthcare professionals (HCPs) are an essential asset to healthcare settings as they play a significant role in maintaining and influencing the health of the population and the communities they live in (Han, Choi-Kwon, & Kim, 2016). They provide health education as part of health promotion and disease prevention, and most patients see them as champions and role models of healthy lifestyles and overall good health (Van den Berg, Okeyo, Dannhauser & Nel, 2012; Van den Berg, Abera, Nel & Walsh, 2013; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Han, Choi-Kwon, & Kim, 2016; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017; Simfukwe, Van Wyk & Swart, 2017). Such high expectations for HCPs mean that they need to prioritise their nutritional and health status. Failure to maintain good health and nutritional status negatively affects the service HCPs can offer to patients as failure to do so results in HCPs feeling uncomfortable to offer health education to obese patients and those with non-communicable diseases (NCDs) (Van den Berg, Okeyo, Dannhauser & Nel, 2012; Van den Berg, Abera, Nel & Walsh, 2013; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Han, Choi-Kwon, & Kim, 2016; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017; Simfukwe, Van Wyk & Swart, 2017).

Most HCPs working in public hospitals that serve a large population have reported that their behaviours are a result of the stressful nature of the environment and the kind of shifts that most of the HCPs work (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Phetla & Skaal, 2017). Most healthcare professionals, nurses and doctors in particular work shifts which require them to work outside of the standard eight to five days schedules (Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017). Such working environments and work arrangement places additional strain on HCPs and increases the risk of HCPs developing NCDs as they are often in a situation where they are unable to implement actions towards a healthy lifestyle (Christensen et al., 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017).

1.3 Problem statement

Over the past three years, a high burden of disease due to non-communicable diseases and communicable diseases has affected the KwaZulu-Natal (KZN) province (Department of health KwaZulu-Natal, 2016). As a result, the high burden of NCDs and communicable diseases has significantly contributed to high mortality rates within the province (Department of Health KwaZulu-Natal, 2016). The majority of mortalities in KZN have been as a result of human immune-deficiency virus complications, tuberculosis, motor vehicle accident and NCDs such as hypertension, cancer, heart disease, and diabetes mellitus (Department of Health KwaZulu-Natal, 2016). The high burden of NCDs in the province is due to nutrition transition, and HCPs are at an even higher risk of developing NCDs (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Department of Health KwaZulu-Natal, 2016; Phetla & Skaal, 2017; Simfukwe, Van Wyk & Swart, 2017).

With such a high prevalence and risk of NCDs amongst HCPs in KZN, an influx of HCPs flocking to dieticians for advice on how to improve their diets and lifestyles is expected within the hospital (Mukhodobwane, 2018; unpublished data). However, only a few HCPs in this hospital located on the northern coast of KwaZulu-Natal access dietetic services for nutritional counselling and education to help improve their health and nutritional status despite the majority of them being overweight or obese (Mukhodobwane, 2018; unpublished data). Very few have shown concerns about their nutritional status, and this observation has raised an interest to question how HCPs felt about healthy eating, a healthy lifestyle and physical activity and what they believed were the barriers and enablers towards following these three health behaviours (Mukhodobwane, 2018; unpublished data). This interest has resulted in the need to study the attitudes of HCPs towards healthy eating, a healthy lifestyle, and physical activity within this specific public hospital, as these play a crucial role in understanding why HCPs are willing to change or not change, and what is currently stopping or encouraging them to change.

Internationally, attitudes towards healthy eating, a healthy lifestyle and physical activity of HCPs are not well documented. Most studies have focused on attitudes towards healthy eating, a healthy lifestyle and physical activity of the general population, while the few studies on HCPs have focused on HCPs' attitudes towards obesity, dietary behaviours, nutritional status, health problems and nutritional knowledge of HCPs (Barratt, 2001; Hearty, McCarthy, Kearney, & Gibney, 2007; Skaal & Pengpid, 2011; Van den Berg, Abera, Nel & Walsh, 2013; Phiri, Draper, Lambert, & Kolbe-Alexander, 2014; Han, Choi-Kwon & Kim, 2016; Simfukwe,

Van Wyk & Swart, 2017). Thus, conducting this study will add to the pool of knowledge regarding attitudes towards healthy eating, a healthy lifestyle, and physical activity of HCPs. Moreover, the results of the study will inform advocacy in healthcare settings for staff wellness programs. The Dietetics Department and the coordinators of the hospital staff wellness programme could also use the results as a guide when amending and designing new comprehensive wellness policies aimed at improving the health and nutritional status of HCPs, thus contributing to a decrease in the development of NCDs amongst HCPs within the hospital north of KwaZulu-Natal.

1.4 Research setting

The study took place in a public hospital situated on the outskirts of the northern coast of KwaZulu-Natal, which offers district, regional, and tertiary medical and paramedical services to communities from King Cetshwayo, Umkhanyakude and Zululand Districts (Department of Health KwaZulu-Natal, 2017). The hospital has 19 different units offering medical and paramedical services (Department of Health KwaZulu-Natal, 2017). At the time of research, the hospital had a total of 890 HCPs, both permanent and full-time contract employees which included: audiologists, clinical psychologists, dentists, dental assistants, dieticians, medical doctors, nurses, occupational therapists, optometrists, oral hygienist, physiotherapists, pharmacists, pharmacy assistants, radiographers, social workers, and speech and language therapists (communications with Mr Ndlela - Human resource personnel, 17th October 2018).

1.5 Research question

This challenge has resulted in the development of a research question and sub research questions to try and understand the current problem that exists within the setting. The main research question to answer the problem is:

- What are the attitudes of healthcare professionals currently working in a public hospital northern coast of KwaZulu-Natal towards healthy eating, a healthy lifestyle and physical activity?

1.5.1 Sub research questions

The sub research questions for this study are:

- What are the demographic, lifestyle factors and non-communicable disease profile of healthcare professionals?
- What is the current nutritional status (body mass index) of healthcare professionals?
- What are the attitudes of healthcare professionals towards healthy eating?

- What are the attitudes of healthcare professionals towards a healthy lifestyle?
- What are the attitudes of healthcare professionals towards physical activity?
- What are the enabling factors in healthcare professionals in achieving a healthy diet, a healthy lifestyle, and physical activity?
- What are the barriers that prohibit healthcare professionals from following a healthy diet, a healthy lifestyle, and physical activity?

1.6 Aim and Objectives

1.6.1 Aim

The study aimed to determine the attitudes of healthcare professionals towards healthy eating, a healthy lifestyle, and physical activity in a public hospital northern coast of KwaZulu-Natal.

1.6.2 Specific Objectives

- To describe the demographic, lifestyle factors and NCD profile of healthcare professionals;
- To determine the body mass index of healthcare professionals;
- To determine the attitudes of healthcare professionals towards healthy eating;
- To determine the attitudes of healthcare professionals towards a healthy lifestyle;
- To determine the attitudes of healthcare professionals towards physical activity;
- To determine enabling factors to achieve a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals;
- To determine barriers that prohibit following a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals.

1.7 Mini-thesis Outline

This mini-thesis consists of the following chapters

- Chapter 1: Introducing the study
- Chapter 2: Literature review
- Chapter 3: The methodology used in the study
- Chapter 4: The results from the study
- Chapter 5: The discussion of the results
- Chapter 6: Conclusions, limitations, and recommendations for the hospital and future research
- Reference List

- Appendices



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CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Human beings are individuals of habit and are often reluctant to change their health behaviours even when their behaviours predispose them to diseases (Temple & Steyn, 2011). Many factors influence individuals to be able to engage in healthy eating, physical activities and maintaining a healthy lifestyle (Wardle & Steptoe, 2003; Hearty et al., 2007; Aggarwal, Monsivais, Cook, & Drewnowski, 2014). These factors can range from individuals' attitudes, knowledge, built environment, and socioeconomic status (Wardle & Steptoe, 2003; Aggarwal, Monsivais, Cook, & Drewnowski, 2014). Several factors, such as one's upbringing, education, life challenges, and how one integrates with the society influence an individual's attitude, health beliefs, and perceived barriers to healthy choices (Wardle & Steptoe, 2003; Macías & Glasauer, 2014). Pre-existing attitudes and beliefs regarding healthy eating and a healthy lifestyle also play an essential role in enabling an individual to respond to health education; and negative attitude towards health behaviours play a contributing factor in the development of unhealthy lifestyles and NCDs (Hearty, McCarthy, Kearney & Gibney, 2007; Macías & Glasauer, 2014). The terms attitude, beliefs, and perceptions have been used interchangeably in the literature; however, for this study, attitudes will be defined as emotional, motivational, and beliefs that positively or negatively influence the behaviour or practice of an individual (Macías & Glasauer, 2014).

Non-communicable diseases (NCDs) have become a concern over numerous health departments worldwide as they are the leading cause of death amongst adults and young adults in developing countries (Bradshaw, Steyn, Levitt, & Nojilana, n.d; Derman, Patel, Nossel & Schwellnus, 2008; Skaal & Pengpid, 2011). In South Africa, NCDs not only account for the majority of the preventable deaths within the country, but also the rise in NCDs has contributed towards decreased life expectancy and quality of lives (Bradshaw, Steyn, Levitt, & Nojilana, n.d). It has further added financial burden to the health system as the majority of the NCDs also affect productivity levels at work as well as the number of employees available at work at a given time (Bradshaw, Steyn, Levitt, & Nojilana, n.d).

The major nutrition-related NCDs in South Africa include cardiovascular diseases and diabetes (Bradshaw, Steyn, Levitt, & Nojilana, n.d). The majority of the risk factors associated with nutrition-related NCDs are modifiable (Bradshaw, Steyn, Levitt, & Nojilana, n.d; Shisana et al., 2013; Van den Berg, Abera, Nel & Walsh, 2013). The risk factors for developing NCDs

include having elevated blood pressure, blood glucose levels, blood cholesterol levels, and being of overweight or obesity body mass index, which has been linked with the change in traditional diets and lifestyles to western diets high in energy and increased level of physical inactivity (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013; Bradshaw, Steyn, Levitt, & Nojilana, n.d; Shisana et al., 2013; Van den Berg, Abera, Nel & Walsh, 2013). Moreover, these lifestyle-related risk factors can be reduced through adapting to better health behaviours such as consuming a healthy diet, using less alcohol and tobacco products, and engaging in physical activity (Bradshaw, Steyn, Levitt, & Nojilana, n.d; Shisana et al., 2013; Van den Berg, Abera, Nel & Walsh, 2013). It is, therefore, worth investigating individuals' attitudes towards healthy eating, a healthy lifestyle and physical activity to understand better how individuals feel about these behaviours, and how willing or ready they are to adopt healthier behaviours (Bradshaw, Steyn, Levitt, & Nojilana, n.d; Shisana et al., 2013; Van den Berg, Abera, Nel & Walsh, 2013). Moreover, it is useful to investigate what they perceive as enablers and barriers to these health behaviours (Bradshaw, Steyn, Levitt, & Nojilana, n.d; Shisana et al., 2013; Van den Berg, Abera, Nel & Walsh, 2013).

The goal of this literature review is, therefore, to explore what most studies have found regarding attitudes towards healthy eating, a healthy lifestyle, and physical activity of the general population as well as healthcare professionals working in public health settings and the enablers and barriers towards these health behaviours.

2.2 Attitudes towards healthy eating

2.2.1 Background on healthy eating

There is a notion that exists amongst the general population regarding healthy eating, which suggests that healthy eating is a list of “do not eat” and “must eat” (Hiza, Koegel, Pannucci & Center for Nutrition Policy and Promotion, US Department of Agriculture, 2018). Healthy eating, however, is not just about a list of “do not eat” and “must eat” but includes consumption of a diet low in fat, sugar, salt, and processed foods but high in whole grains, fruits, and vegetables, which contribute towards the reduction of NCDs such as heart disease, type 2 diabetes mellitus, and various cancers (Reeves & Rafferty, 2000; James, 2004; de Mestral, Stringhini & Marques-Vidal, 2016; Hiza, et al., 2018).

Healthcare professionals are the face of the healthcare system, and they are therefore required to be living examples of what they preach daily to their patients (Van den Berg, Okeyo,

Dannhauser & Nel, 2012; Van den Berg, Abera, Nel & Walsh, 2013; Simfukwe, Van Wyk & Swart, 2017). Numerous studies have reported unhealthy eating patterns and behaviours among the healthcare professional population. Most of the HCPs have reported the workload and the lack of healthier affordable options at the workplace as the cause of their unhealthy eating patterns (Blake, Malik, Mo & Pisano, 2011; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqas & Ghaffar, 2015; Perry, Gallagher & Duffield, 2015; Power, Kiezebrink, Allan & Campbell, 2017). Most of the diets consumed by HCPs have moved from traditional diets to more western diets which are high in processed foods which are high in energy, fats, and sugar (Blake, Malik, Mo & Pisano, 2011; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqas & Ghaffar, 2015; Perry, Gallagher & Duffield, 2015; Power, Kiezebrink, Allan & Campbell, 2017).

2.2.2 Attitudes towards healthy eating

Several factors such as age, employment status, socioeconomic status (SES), gender, smoking, and marital status influence an individual's attitude towards healthy eating (Dibsdall, Lambert, Bobbin & Frewer, 2003; Hearty et al., 2007; Sun, 2008). All these various factors need to be taken into consideration when promoting healthy eating, as these factors can either enable or inhibit one from adhering to dietary recommendations (Sun, 2008). A theoretical model presented by Sun 2008, suggests that health concerns influence food-choice motives and thus ultimately influencing attitudes towards healthy eating. The theoretical framework presented by Sun (2008) is presented below in figure 2.1. After testing this model on a group of college students, it revealed that what people ate and the reason why they ate the specific foods was not only because of the nutritional content of food but personal attitudinal factors played a significant role in this regard (Sun, 2008).

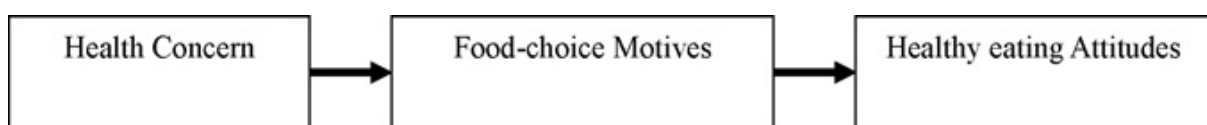


Figure 2.1: Sun's Theoretical Framework (Sun, 2008)

Some studies have also reported an individual's SES as an essential factor that influences attitudes of individuals towards healthy eating significantly (Biloukha & Utermohlen, 2001; Hearty et al., 2007; Sun, 2008). Hearty and colleagues (2007) found that males of a low SES, who smoked and were less educated were most likely to have negative attitudes towards healthy eating compared to women from the same SES class (Hearty et al., 2007). Additionally,

women of low SES are more proactive when it came to healthy eating and nutrition compared to their male counterparts, which may suggest that females are more likely to have positive attitudes towards healthy eating compared to males (Biloukha & Utermohlen, 2001).

There are very few studies on healthy attitudes of HCPs, and the few there are have focused on the general population. One study conducted on HCPs reported unhealthy diets despite positive attitudes amongst HCPs (Albert, Butler & Sorrell, 2014). However, in the same study, a small group of nurses from the United Kingdom reported somewhat positive attitudes towards healthy eating, its benefits, and its potential in assisting in achieving their desired goals (Albert, Butler & Sorrell, 2014). The majority of the nurses who felt some control of their diet choices believed that eating healthy foods was somewhat critical in helping them to achieve the desired positive benefits associated with healthy eating such as losing weight, being healthier, having more energy and feeling good (Albert, Butler & Sorrell, 2014).

2.2.3 Enablers to healthy eating

Psychological, socioeconomic, individual, environmental and socio-cultural factors play a vital role in enabling healthy eating (Dibsdall, Lambert, Bobbin & Frewer, 2003; Geaney, Kelly, Greiner, Harrington, Perry & Beirne, 2013; Aggarwal, Monsivais, Cook, & Drewnowski, 2014; de Mestral, Stringhini & Marques-Vidal, 2016). The majority of the general population in several studies reported being role models to family and friends and the ability to grow and produce food and being able to access farmers' markets as enablers to healthy eating. Very few studies on enablers of healthy eating amongst nurses and other HCPs exist (Dibsdall, Lambert, Bobbin & Frewer, 2003; Eikenberry & Smith, 2004; James 2004; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017).

2.2.3.1 Role models to family and friends

The majority of women from low SES are more willing to consider eating healthily because of their family, and because they wanted to be good role models compared to men from the same SES (Dibsdall, Lambert, Bobbin & Frewer, 2003; Eikenberry & Smith, 2004; James 2004). Some nurses in South Africa have also reported their colleagues were role models who motivated them to eat healthily and often shared advice on different healthy food options (Phiri, Draper, Lambert & Kolbe-Alexander, 2014).

2.2.3.2 Being able to grow food and having access to farmers' markets

A group of women from rural communities in the United States of America (USA) reported that the ability to grow and produce food was an enabler to healthy eating (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). This ability to grow and produce food such as fruits and vegetables enabled these women to have access to a constant supply of fresh foods, thus allowing them and their families to maintain healthy eating regularly (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014).

Having access to Farmers' markets was reported to be an enabler to healthy eating amongst people living in rural communities in the USA (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). Having access to these markets made access to fresh, healthy foods such as fruits and vegetables easier as these farmer's markets were within proximity to residences (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). The benefit of having access to farmers' markets meant that food prices of fresh produce and other healthy foods were often affordable compared to the local supermarket prices (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014).

2.2.4 Barriers to healthy eating

The ecological framework/model presented by Fitzgerald & Spaccarotella (2009) best illustrates the barriers to healthy eating (Fitzgerald & Spaccarotella, 2009). This model suggests that there are many factors at different levels that all contribute as barriers to healthy eating. These levels include the intrapersonal level, which looks at preferences, knowledge and skills, age, self-confidence, health status, motivation, socioeconomic limitations, and perceptions (Fitzgerald & Spaccarotella, 2009). The interpersonal level looks at social support, food availability at home, screen time, time constraints, and culture, while the community or institution level looks at workplace food environment, school food environment, and food availability at stores, socioeconomic characteristics, eating out, portion size, built environment and access to food (Fitzgerald & Spaccarotella, 2009). Lastly, the macro or policy level looks at media advertisements, public policy, development regulations, and food pricing (Fitzgerald & Spaccarotella, 2009). Below is a diagram of the Ecological Model (Fitzgerald & Spaccarotella, 2009).



Figure 2.2: The Ecological Model (Fitzgerald & Spaccarotella, 2009)

Time constraints, adverse work schedule, financial constraints, poor work food environment, access to healthy foods, and work tea time and break policies are the most common barriers to healthy eating amongst the general population and healthcare professionals (Zapka, Lemon, Magner & Hale, 2009; Eikenberry & Smith, 2004; Albert, Butler & Sorrell, 2014; Bukman, Teuscher, Feskens, van Baak, Meershoek & Renes, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). A few studies have also reported the lack of self-control and willpower, lack of knowledge and resistance to change as other barriers to healthy eating (Biloukha & Utermohlen, 2001; James, 2004; de Mestral, Stringhini & Marques-Vidal, 2016).

2.2.4.1 *The cost of food*

The cost of food is a common barrier to achieve and maintain healthy eating amongst most people of middle to low socioeconomic status (Bukman, Teuscher, Feskens, van Baak, Meershoek & Renes, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016). Healthy food in most countries is overpriced compared to unhealthy food, and this has resulted in healthy food being unaffordable to people of lower socioeconomic status who are barely making ends meet (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016). The high cost of healthy foods for most people has resulted in people increasing their consumption of unhealthy foods as they

are more cost-efficient than healthy food (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016).

2.2.4.2 Self-efficacy

The lack of willpower and /or poor self-efficacy, and peer pressure from colleagues and family members were some of the intrapersonal barriers reported amongst the general population and a few nurses in South Africa and the United Kingdom (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; de Mestral, Stringhini & Marques-Vidal, 2016; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Knowledge alone on what to eat is inadequate to encourage individuals to make good food choices, some self-efficacy and self-discipline are required for one to ultimately put their knowledge to practice (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017).

Poor self-efficacy has been reported amongst the general population and HCPs internationally as a barrier to healthy eating (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Some South African nurses have admitted to making unhealthy food choices despite knowing about healthy eating and the benefits associated with healthy eating (Simfukwe, Van Wyk & Swart, 2017). They attributed their poor health behaviour to the fact that the unhealthy foods in the hospital were convenient and that there were limited healthy food options to choose from in the hospital (Simfukwe, Van Wyk & Swart, 2017). Similarly, individuals from a rural community in seven US states showed an inability to choose healthy foods when presented with different options (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). The inability to make the right food choice is as a result of poor self-efficacy which acts as a barrier to them eating healthily; however both groups believed their inability to eat healthily was as a result of poor access to healthy food (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017)

2.2.4.3 Time

The lack of time is a universal barrier to healthy eating reported amongst most HCPs and women across the world (James, 2004; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017). A group of women in the rural USA reported that the lack of time due to competing family and household priorities was a significant barrier that contributed to unhealthy eating habits within the households (James, 2004; Seguin,

Connor, Nelson, LaCroix & Eldridge, 2014). Shift work is the leading cause of lack of time amongst most HCPs, which makes it difficult for them to prepare healthy meals for themselves and their families thus resulting in them opting for unhealthy food options (James, 2004; Zapka, Lemon, Magner & Hale, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015).

2.2.4.4 Availability and access to healthy food

Several people, including HCPs, have reported lack of availability and access to healthy food at workplaces as barriers to healthy eating (Fitzgerald & Spaccarotella, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Albert, Butler & Sorrell, 2014; Power, Kiezebrink, Allan & Campbell, 2017). This challenge means that HCPs are left with no choice but to buy whatever food options are available and easily accessible in their working environment, which in most cases is processed foods and sugary beverages (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Power, Kiezebrink, Allan & Campbell, 2017). The majority of the studies on HCPs revealed that the hospital tuck shops or cafeteria provided an unhealthy food environment, as they usually sold oily and overly processed foods at a lower price compared to healthier alternatives such as fruits and vegetables, leaving them susceptible to indulging in such unhealthy foods (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017).

Unhealthy work food environments characterised by a lack of healthy foods are often a result of a lack of or unsatisfactory tuck shop and cafeteria policies and their implementation (Simfukwe, Van Wyk & Swart, 2017). Poor management with a lack of health awareness is the leading contributing cause of the lack of good tuck shop and cafeteria policies and implementation thereof (Simfukwe, Van Wyk & Swart, 2017). Simfukwe and colleagues (2017) further elaborated that hospital management should intervene by engaging with the hospital cafeteria/tuck shop to ensure that healthy food options at hospitals are made accessible and affordable for the staff members, patients, and patients' relatives (Simfukwe, Van Wyk & Swart, 2017).

2.2.4.5 Other barriers

Some studies have reported other factors such health beliefs, cultural beliefs, and norms, and social influences as barriers to healthy eating (Fitzgerald & Spaccarotella, 2009; Zapka,

Lemon, Magner & Hale, 2009; Skaal, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017). These include the following:

- *Health beliefs*

The fear of contracting Tuberculosis (TB) is one barrier to healthy eating reported by a small group of South African nurses (Phiri, Draper, Lambert & Kolbe-Alexander, 2014). Nurses said this fear often led them to indulge in large amounts of unhealthy foods in large portions (Phiri, Draper, Lambert & Kolbe-Alexander, 2014). This fear of contracting TB has also contributed to the development of a recurring excessive eating pattern, characterized by high consumption of processed foods that are more accessible to them at work and financially affordable (Phiri, Draper, Lambert & Kolbe-Alexander, 2014).

- *Cultural beliefs and norms*

In South Africa, some cultural norms contribute toward unhealthy eating patterns and following unhealthy diets (Skaal, 2011). Excessive eating and drinking is a norm for most South African events, and such social occasions encourage people to eat and drink more than their usual portion, and the food is generally high in fats and salt and often served in massive quantities along with large amounts of alcohol (Skaal, 2011). Such practices have been passed on from generation to generation and can become a barrier to healthy eating for individuals who regularly attend such events, and some of these practices leave one at a greater risk of developing obesity and NCDs such as hypertension and diabetes (Skaal, 2011).

- *Social influences*

Interestingly, some nurses from the USA reported patients' relatives as barriers to healthy eating (Zapka, Lemon, Magner & Hale, 2009; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017). Relatives contribute to a certain extent to the unhealthy eating patterns of nurses as they shower them regularly with unhealthy gratitude gifts which mostly consisted of chocolates and sweets, which are all high in sugar (Zapka, Lemon, Magner & Hale, 2009; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017). Most HCPs reported feeling more compelled to take the gifts and eat them to avoid disappointing their patients and their relatives and often at times they often shared them amongst other HCPs (Zapka, Lemon, Magner & Hale, 2009; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017).

2.3 Attitudes towards a healthy lifestyle

2.3.1 Background on healthy lifestyle

Lifestyle choices play an essential role in the primary and secondary prevention of many NCDs (Derman, Patel, Nossel & Schwellnus, 2008). A lifestyle refers to the habits that an individual has (Derman, Patel, Nossel & Schwellnus, 2008). For this study, a healthy lifestyle is a lifestyle characterised by healthy eating, physical activity, maintaining a healthy weight, less alcohol consumption, and less smoking (Derman, Patel, Nossel & Schwellnus, 2008; Loef & Walach, 2012). Adherence to a combination of these healthy lifestyle behaviours is associated with a reduction in mortality by up to 66%, improvement in overall wellness, and an increase in life expectancy (Loef & Walach, 2012; Albert, Butler & Sorrell, 2014). Leading a healthy lifestyle helps promote reasonable physical, social and psychological wellbeing of an individual, and also reduce the risk of developing NCDs, decreases mortality caused by NCDs and ultimately increases the life expectancy of individuals (Loef & Walach, 2012; Kurnat-Thoma, El-Banna, Oakcrum & Tyroler, 2017). Numerous studies have found poor health lifestyle choices to be strongly associated with several NCDs such as cardiovascular diseases, diabetes mellitus, and cancer (Derman, Patel, Nossel & Schwellnus, 2008; Kurnat-Thoma, El-Banna, Oakcrum & Tyroler, 2017).

Poor health lifestyle choices have been documented amongst HCPs internationally, and as a result, most healthcare professionals have become overweight or obese, and have developed NCDs (Zapka, Lemon, Magner & Hale, 2009; Blake, Malik, Mo & Pisano, 2011; Skaal & Pengpid, 2011; Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Kunene & Taukobong, 2015; Perry, Gallagher & Duffield, 2015). The majority of HCPs lead risky lives which are characterised by high consumption of unhealthy diets high in fats and processed foods, physical inactivity, and the uncontrolled use of alcohol and tobacco products (Skaal & Pengpid, 2011; Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Hidalgo, Mielke, Parra, Lobelo, Simões, Gomes, Florindo, Bracco, Moura, Brownson, Pratt, Ramos & Hallal, 2016; Kelly, Wills & Sykes, 2017). Such unhealthy lifestyles predispose HCPs to the development of NCDs (Skaal & Pengpid, 2011; Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Hidalgo, Mielke, Parra, Lobelo, Simões, Gomes, Florindo, Bracco, Moura, Brownson, Pratt, Ramos & Hallal, 2016; Kelly, Wills & Sykes, 2017).

Studies have shown that HCPs' unhealthy lifestyle can negatively impact their health and their health promotion skills (Im, Stuifbergen, & Walker, 2010; Albert, Butler & Sorrell, 2014; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqa & Ghaffar, 2015; Hidalgo et al., 2016; Kelly, Wills & Sykes, 2017). Healthcare professionals with unhealthy lifestyles are less likely to educate patients on healthy lifestyle practices (Im, Stuifbergen, & Walker, 2010; Albert, Butler & Sorrell, 2014; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqa & Ghaffar, 2015; Hidalgo et al., 2016; Kelly, Wills & Sykes, 2017). Studies have shown that HCPs' inability to maintain healthy lifestyles might affect their confidence in being able to engage with a patient when providing health promotion (Im, Stuifbergen, & Walker, 2010; Albert, Butler & Sorrell, 2014; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqa & Ghaffar, 2015; Hidalgo et al., 2016; Kelly, Wills & Sykes, 2017). In contrast, HCPs who integrate core health practices into their lives have a stronger sense of professional adequacy and confidence, which allows them to have a meaningful engagement with patients and colleagues (Albert, Butler & Sorrell, 2014).

2.3.2 Attitudes

Practising a healthy lifestyle is influenced by one's attitude towards health and the knowledge learned at school, through life experiences, and the social environment (Wardle & Steptoe, 2003). Differences in attitudes towards a healthy lifestyle exist amongst people from different socioeconomic status (SES) (Wardle & Steptoe, 2003). People from higher SES have been found to have positive attitudes towards healthy behaviours and were found to be less likely to smoke, be inactive and consume an unhealthy diet, compared to people from a lower SES (Hearty et al., 2007; Wardle & Steptoe, 2003). A study by Shahar et al. (2009) found positive attitudes towards healthy lifestyles amongst HCPs and found most HCPs to be engaging in a healthy lifestyle (Shahar, Henkin, Rozen, Adler, Levy, Safra, Itzhak, Golan, & Shai, 2009). However, Kelly and colleagues found that nurses leading unhealthy lifestyles were less likely to hold positive attitudes towards health-promotion practices (Kelly, Wills & Sykes, 2017: 74).

2.3.3 Enablers of a healthy lifestyle

Many factors ranging from self-efficacy, friends, family, support, easy access to and from healthy lifestyle programmes, and availability of healthy lifestyle programmes influence participation in such programmes (Withall, Jago & Cross, 2011; Smith, Straker, McManus & Fenner, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). These factors that act as enablers to a healthy lifestyle are similar to those of healthy eating and physical activity, as the two factors play an essential role in healthy living.

2.3.3.1 Self-efficacy

Self-efficacy is a facilitator of leading a healthy lifestyle (Simfukwe, Van Wyk & Swart, 2017). The more HCPs became confident in achieving a healthy lifestyle, the more they felt they could easily maintain that healthy lifestyle (Simfukwe, Van Wyk & Swart, 2017). A high level of self-efficacy to maintaining a healthy lifestyle amongst HCPs does not only benefit one's health, but it also improves effectiveness and productivity at work of HCPs who engage in a healthy lifestyle compared to those who do not engage in a healthy lifestyle (Simfukwe, Van Wyk & Swart, 2017).

2.3.3.2 Friends, family and family support

A few nurses from different parts of the world have reported the importance of their family and their children as enablers of healthy eating and engaging in physical activity (Kloosterboer, van den Brekel, Rengers, Peek & de Wit, 2015; de Mestral, Stringhini & Marques-Vidal, 2016; Power, Kiezebrink, Allan & Campbell, 2017). The involvement of family and friends is an enabler to engaging in healthy lifestyle programmes for most people (Smith, Straker, McManus & Fenner, 2014; Kloosterboer, van den Brekel, Rengers, Peek & de Wit, 2015). The involvement of family and friends in these programmes meant that there was a possibility of having fun and socialising, which would make it worthwhile (Smith, Straker, McManus & Fenner, 2014).

2.3.3.3 Easy access to and from healthy lifestyle programmes

Smith et al. (2014) reported that people were more willing to engage in healthy lifestyle programmes if the programmes allowed for an easy commute back home as safety was one of the main concerns for most participants (Smith, Straker, McManus & Fenner, 2014). Similarly, a group of individuals from the Netherlands reported that easy access to structured programmes plays a vital role in enabling them to engage in lifestyle programmes at health facilities and other community-based prevention projects (Kloosterboer, van den Brekel, Rengers, Peek & de Wit, 2015).

2.3.3.4 Availability of healthy lifestyle programmes at work

The availability of healthy eating and physical activity healthy lifestyle programmes in the workplace is an enabler to HCPs, which encourages and motivates them to engage in healthy lifestyle behaviours (Albert, Butler & Sorrell, 2014). Although the availability of healthy lifestyle programmes at work is an enabler for a few HCPs, Albert et al. (2014) found that this

was more of an enabler to nurses who were physically active compared to those who were not physically active regularly (Albert, Butler & Sorrell, 2014).

2.3.4 Barriers to a healthy lifestyle

Barriers to a healthy lifestyle are similar to those of healthy eating and physical activity, as the two factors play an essential role in healthy living as well. Other barriers in other studies include low self-efficacy and self-esteem, financial constraints, lack of social support, lack of time, poor implementation and support of work-based healthy lifestyle programmes (Zapka, Lemon, Magner & Hale, 2009; McGuire, Anderson & Fulbrook, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Simfukwe, Van Wyk & Swart, 2017).

2.3.4.1 Low self-efficacy

Older women with Diabetes Mellitus have reported low self-efficacy as a barrier to a healthy lifestyle (McGuire, Anderson & Fulbrook, 2011). Low self-efficacy is a perceived personal barrier towards healthy lifestyle activities and is associated with a lack of interest due to low motivation levels and poor self-esteem, which are characteristics of poor mental health (McGuire, Anderson & Fulbrook, 2011).

2.3.4.2 Financial constraints

Financial constraints or the lack of sufficient funds are also reported barriers to healthy lifestyle activities amongst widowed, divorced, or single older women and most HCPs (McGuire, Anderson & Fulbrook, 2011; Simfukwe, Van Wyk & Swart, 2017). A few South African nurses have reported the lack of sufficient funds due to poor salaries as a barrier to adopting a healthy lifestyle (Simfukwe, Van Wyk & Swart, 2017). Their lack of sufficient funds meant that they were not able to afford healthy food and costly gym memberships, which made it difficult for them to engage in healthy lifestyles (Simfukwe, Van Wyk & Swart, 2017).

2.3.4.3 Lack of social support

A lack of support from colleagues, family, and friends is a barrier to healthy lifestyle activities amongst widowed, divorced, or single older women with diabetes, the general population, and HCPs across the globe (Zapka, Lemon, Magner & Hale, 2009; McGuire, Anderson & Fulbrook, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Kloosterboer, van den Brekel, Rengers, Peek & de Wit, 2015; Power, Kiezebrink, Allan & Campbell, 2017). Some nurses have reported their lack of support from their own family and colleagues as barriers to

healthy eating and engaging in physical activity as they made it difficult to make them prioritise leading a healthy lifestyle because they were not concerned about healthy living (Zapka, Lemon, Magner & Hale, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014). In contrast, some nurses reported the lack of support from their co-workers as barriers to leading a healthy lifestyle (Zapka, Lemon, Magner & Hale, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014). Some of the nurses felt that their colleagues indirectly forced them to engage in unhealthy health behaviours characterised by regular eating of processed foods such as potato chips and candy bars, low intake of fruits and low physical activity levels (Zapka, Lemon, Magner & Hale, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014). The lack of enough self-efficacy and self-motivation to overcome this pressure and the fear of being questioned and perceived as one who thinks they are special have been reported as the main reason why most nurses reported their colleagues as a barrier to leading a healthy lifestyle (Zapka, Lemon, Magner & Hale, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014).

2.3.4.4 *Lack of time*

The lack of time is the most commonly reported barrier to lead a healthy lifestyle amongst HCPS worldwide (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017). Long, tiring working hours and the ever-changing work environment that most of these HCPs find themselves working in makes it difficult for HCPs to engage in a healthy lifestyle due to lack of time (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017). Working in healthcare settings for most nurses and doctors often means working long shifts to ensure continuous service delivery to patients (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Simfukwe, Van Wyk & Swart, 2017). Moreover, this kind of working arrangement often leaves HCPs with less time to implement actions towards a healthy lifestyle due to fatigue (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Simfukwe, Van Wyk & Swart, 2017). This kind of working arrangement often leaves most HCPs stressed out and feeling overworked, and most of them resort to risky health behaviours such as heavy drinking, smoking, consumption of diets high in energy and processed foods, and physical inactivity (Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015). This kind of lifestyle places HCPs at risk for developing NCDs and becoming obese (Albert, Butler & Sorrell, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015).

2.3.4.5 Poor implementation and support of work-based healthy lifestyle programmes

For some HCPs, the lack of support regarding staff health and wellness matters from healthcare facility management played a major contributing factor towards HCPs not being able to maintain healthy lifestyles, as at times they do not make provision for HCPs to engage in workplace healthy lifestyle programmes as per governmental policies (Simfukwe, Van Wyk & Swart, 2017).

2.4 Attitudes towards physical activity

2.4.1 Physical activity background

Physical activity (PA) is a term that refers to any movement of the body, which requires the use of energy (Shin, Lee & Belyea, 2018). International guidelines recommend that an individual should engage in moderate-intensity aerobic PA for greater than 150 minutes per week to achieve desired health results (Haskell et al., 2007). Physical activity can be in the form of activities such as power walking, jogging, running, swimming, aerobics classes, dancing classes, group training classes, cycling and many other activities (Kunene & Taukobong, 2015). Engaging in regular physical activity as recommended is beneficial for all individuals in all age groups (Shin, Lee & Belyea, 2018). Physical activity reduces the risk of development of many NCDs such as diabetes mellitus, hypertension, dyslipidemia, by actively reducing high blood pressure, improving lipid profile, and improving blood glucose in overweight individuals. (Kunene & Taukobong, 2015; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016). Furthermore, regular physical activity is associated with decreased colon and breast cancer, improved bone and muscular health, improved cognitive function, improved quality of life, and decreased mortality amongst all age groups (Haskell, Lee, Pate, Powell, Blair, Franklin, Macera, Heath, Thompson & Bauman, 2007; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016; Shin, Lee & Belyea, 2018; Zafiroopoulos, Alison & Heard, 2019).

Internationally, the majority of nurses and other healthcare professionals display unhealthy physical activity behaviours (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Skaal & Pengpid, 2011; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Power, Kiezebrink, Allan & Campbell, 2017). Healthcare professionals internationally have lower physical activity levels than the general population, and a majority of them do not meet the general recommendations for physical activity in spite the numerous benefits of PA (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Skaal & Pengpid, 2011; Zhu, Norman & While, 2011; Kolbe-

Alexander, Proper, Lambert, van Wier, Pillay, Nosse, Adonis & Van Mechelen, 2012; Ahmad et al., 2015; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016).

In South Africa, female HCPs and older HCPs above the age of 40 years are less active and less willing to engage in PA promoting practices, and this is not surprising as most South African female HCP are obese or overweight (Skaal, 2011; Kunene & Taukobong, 2015). Healthcare professionals' inability to engage in PA regularly has been found to affect their weight status as well as the promotion of PA to patients, as most of the physically inactive HCPs are overweight and they are less likely to counsel patients on PA because of their poor health behaviours (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Skaal & Pengpid, 2011; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015).

2.4.2 Attitude towards physical activity

Attitudes towards PA is positive amongst individuals with a high awareness of the health benefits of PA and individuals who regularly participate in recreational activities regardless of their SES (Hearty et al., 2007; Withall, Jago & Fox, 2011). Within the healthcare population, the majority of HCPs have a positive attitude towards PA; however, their positive attitude towards physical activity does not translate into a change in exercise behaviour (Skaal, 2011). Most of these HCPs with a positive attitude towards physical activity and fewer PA barriers had reported that they had not yet started engaging in physical activity but were thinking of participating in PA (Skaal, 2011). Nurses in the United Kingdom have a somewhat positive attitude that physical activity would keep them healthy, and a few of the nurses also showed positive attitudes towards the fact that physical activity was a priority in their lives (Albert, Butler & Sorrell, 2014). Interestingly, healthcare professionals who were unfit and did not engage in physical activity regularly are less likely to have positive attitudes towards promoting physical activity than HCPs who are physically fit (Zhu, Norman & While, 2011).

2.4.3 Enablers to physical activity

Enablers of physical activity are factors that assist or promote participation in physical activity (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013). Individual, physical, and social environment factors influence participation in PA (Sandu, Chereches, Baba, Revnic, Mocean, 2018; Withall, Jago & Fox, 2011; Zafiroopoulos, Alison & Heard, 2019). The commonly reported enablers to PA in literature are self-efficacy/self-motivation, social support and environmental factors (Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-

Shaw, 2013; Albert, Butler & Sorrell, 2014; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016; Simfukwe, Van Wyk & Swart, 2017)

2.4.3.1 Self-efficacy/ self-confidence

Some studies have reported self-confidence, a higher self-efficacy and having goals such as to become fitter, healthier, as individual factors that enable them to engage in PA (Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Albert, Butler & Sorrell, 2014; Simfukwe, Van Wyk & Swart, 2017). Healthcare professionals with higher self-efficacy for PA have been found to have better self-motivation and were more likely to engage in physical activity more regularly than their counterparts (Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016). Attaining higher self-efficacy in integrating PA in one's life has been found to impact professional adequacy positively and also improve health promotion skills in the workplace (Albert, Butler & Sorrell, 2014; Simfukwe, Van Wyk & Swart, 2017).

2.4.3.2 Social support

Internationally, social support from friends, family, and life partners is a significant enabler to engaging in PA for a few HCPs (Albert, Butler & Sorrell, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Social support from family, friends, and life partners encourages most HCPs to remain motivated and makes the process of engaging in PA more enjoyable (Albert, Butler & Sorrell, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017).

2.4.3.3 Environmental factors

Accessibility and availability of affordable exercise or recreational facilities and equipment, urban planning, transportation systems, parks, and trails are environmental enablers reported in several studies (Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Sandu, Chereches, Baba, Revnic, Mocean, 2018; Zafiropoulos, Alison & Heard, 2019). Being able to quickly and safely get to these recreational facilities meant that one did not have to stress about travel safety and this made engaging in PA easy and stress-free (Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Sandu, Chereches, Baba, Revnic, Mocean, 2018; Zafiropoulos, Alison & Heard, 2019).

2.4.4 Barriers to physical activity

Several individual, social, and environmental factors contribute towards an individual becoming physically inactive (Zafiropoulos, Alison & Heard, 2019). Studies have reported

individual factors such as socioeconomic status, fatigue due to long working hours, a lack of will power, low self-efficacy, time and increased family responsibilities as some of the barriers to physical activity amongst the general population (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Albert, Butler & Sorrell, 2014; Baruth, Sharpe, Parra-Medina & Wilcox, 2014; Shin, Lee & Belyea, 2018). Environmental barriers to PA reported in studies include violence within the community, high traffic volume, low air quality, pollution, and lack of recreational facilities (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Shin, Lee & Belyea, 2018; Sandu, Chereches, Baba, Revnic, Mocean, 2018; Zafiropoulos, Alison & Heard, 2019). Furthermore, rainy and windy weather, lack of public transportation, and lack of close and convenient facilities with flexible times for physical activity are other environmental barriers to PA reported in some studies (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Shin, Lee & Belyea, 2018).

2.4.4.1 Low self-efficacy

A few nurses from the United Kingdom report low self-efficacy as a barrier to engaging in physical activity (Albert, Butler & Sorrell, 2014). The leading cause of low self-efficacy found in these nurses is low self-confidence (Albert, Butler & Sorrell, 2014). Most of the UK nurses report that they had little hope that they would be able to engage in physical activity for more than three days per week or to try a new form of physical activity (Albert, Butler & Sorrell, 2014). Other studies attribute low self-efficacy to lack of motivation, will power, and interest in PA (Skaal, 2011; Albert, Butler & Sorrell, 2014; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016; Simfukwe, Van Wyk & Swart, 2017). A few obese South African nurses reported low self-efficacy as a barrier to engaging in PA and most of them found it difficult to get themselves to exercise as it was not their strongest point and they did not have the patience for it and felt like it was punishment (Simfukwe, Van Wyk & Swart, 2017). Low self-efficacy amongst individuals has been attributed to several factors such as low self-motivation for engaging in PA, and self-motivation is inversely associated with the level of physical activity (Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016).

2.4.4.2 Socioeconomic status

An individual's socioeconomic status contributes to a certain extent to physical inactivity (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016). Results from a study by Jamil et al. (2016) revealed that individuals from a lower SES level were less likely to engage in PA compared to those from a higher SES level (Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016). This finding is in line with what

other studies have found about individuals from the general population from a lower to middle SES, who were not able to engage in PA as they were unable to afford gymnasium fees (Blake, Malik, Mo & Pisano, 2011; Albert, Butler & Sorrell, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017).

2.4.4.3 *Time*

The lack of time is a barrier to PA amongst the general population, nurses and doctors (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Albert, Butler & Sorrell, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). The lack of time for most HCPs is due to the nature of their working schedule (Albert, Butler & Sorrell, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). In addition, women from rural communities in the USA, and female nurses from the UK and South Africa have reported lack of time due to family responsibilities and roles they assume in their households as a barrier that contributes toward them being unable to engage in physical activity (Skaal, 2011; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Furthermore, for those who were able to engage in physical activity, majority of them felt that they had to either sacrifice family time and/or sleep time for physical activity (Skaal, 2011; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Skaal (2011), however, argued that the lack of time to engage in PA could be a result of poor time management for leisure activities, or they are overworked (Skaal, 2011).

2.4.4.4 *Cultural norms*

Internationally, black African women have been unable to participate freely in sports and exercise due to cultural beliefs and norms (Skaal, 2011; Walter & Du Randt, 2011). Walter and Du Randt (2011) found that black women from younger and older generations from a small part of Eastern Cape were very reluctant to exercise because of socio-cultural barriers within that particular region (Walter & Du Randt, 2011). Socio-cultural barriers within that particular region prevented females from engaging in PA, as PA is predominantly reserved for males (Walter & Du Randt, 2011). Similarly, some nurses in South Africa and older people of New Zealand have reported cultural norms as a barrier to PA (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Simfukwe, Van Wyk & Swart, 2017). The high demand to be seen as desirable and beautiful by society is a significant concern amongst the majority of South African women, including nurses. The need to be desirable influenced their engagement in PA,

as attaining a smaller body frame is not desirable by men, and having a larger body was seen as a sign of wealth and beauty (Walter & Du Randt, 2011; Simfukwe, Van Wyk & Swart, 2017).

2.4.4.5 *Social stigma*

Social stigma is a barrier to PA amongst individuals from rural communities in the USA (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). Some individuals reported that taking bicycles to work as a way to incorporate physical activity in their busy schedule was stigmatised within their community, and this acted as a barrier to physical activity for those who felt that they had no time to engage in structured physical activity (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). Individuals who took their bicycles to work as opposed to driving were seen to be in dire financial situations or were perceived as an irresponsible driver as people would assume that their driving licenses were banned (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014).

In a small region in the Eastern Cape, engaging in exercise as an older woman was stigmatised, and women in this age group were seen as a disgrace amongst people from the community (Walter & Du Randt, 2011). This stigma around older women engaging in PA negatively affect women and resulted in most of them being reluctant to exercise because of fear of being labelled as a joke in the community, or an attention seeker or someone who did not want to accept old age (Walter & Du Randt, 2011).

2.4.4.6 *Lack of social support*

A lack of social support is a barrier to PA in the general population and amongst many HCPs globally (Skaal, 2011; Walter & Du Randt, 2011). Support from family and partners plays a major influencing factor to individuals engaging in PA, mostly amongst those individuals with low self-efficacy and low motivation (Skaal, 2011; Walter & Du Randt, 2011; Simfukwe, Van Wyk & Swart, 2017). Most HCPs reported that they felt as though they required external support from someone close for them to maintain an active lifestyle (Skaal, 2011; Walter & Du Randt, 2011; Simfukwe, Van Wyk & Swart, 2017).

2.4.4.7 *Cost of a gym membership*

The cost of gym memberships is another influencing factor amongst some nurses and the general population in engaging in physical activity (Blake, Malik, Mo & Pisano, 2011; Albert, Butler & Sorrell, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017). The majority of the general population and HCPs reported that the cost

of a gym membership was a barrier to engaging in PA despite their interest in it. The high cost of gym memberships means that the people who need them the most cannot access them. Most individuals preferred gyms as a way of engaging in PA, because of their safety, the abundance of space, and convenience (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017).

2.4.4.8 Accessibility to work-based gymnasiums

The lack of a flexible work-based gymnasium and lack of access to a work-based gymnasium is also a contributing factor to physical inactivity amongst most HCPs (Skaal, 2011; Simfukwe, Van Wyk & Swart, 2017). Most HCPs have reported that the operating times of the workplace gym were not favourable to shift workers who work till late and those HCPs who used public transportation to and from work at awkward times, thus making it difficult for them to engage in PA (Skaal, 2011; Simfukwe, Van Wyk & Swart, 2017). Most HCPs from these two studies reported that having access to a workplace gymnasium would motivate them to engage in PA as they were the only convenient, affordable and time-effective options for them as they arrived home so late and tired (Skaal, 2011; Simfukwe, Van Wyk & Swart, 2017). The lack of access to a work-based gymnasium for personal use is believed to be due to the lack of support from management (Skaal, 2011; Simfukwe, Van Wyk & Swart, 2017).

2.5 Conclusion

It is evident from the current literature that most studies conducted have focused on the general population, and few studies exist on healthcare professionals. The few studies conducted on healthcare professionals have mostly focused on obesity, health behaviours such as physical activity, dietary patterns, nutritional status, attitudes towards healthy eating and healthy lifestyles of nurses, enablers, and barriers to these three health behaviours. There is very little knowledge regarding attitudes of HCPs towards healthy eating, a healthy lifestyle and physical activity (Barratt, 2001; Hearty, McCarthy, Kearney, & Gibney, 2007; Skaal & Pengpid, 2011; Van den Berg, Abera, Nel & Walsh, 2013; Phiri, Draper, Lambert, & Kolbe-Alexander, 2014; Han, Choi-Kwon & Kim, 2016 Simfukwe, Van Wyk & Swart, 2017).

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter, the methodology followed in this study is described. The methodology section will discuss the study design, study population, sample size, sampling, data collection tool, data collection procedure, and also address issues of validity and reliability within the study.

3.2 Aim and Objectives

3.2.1 Aim

The study aimed to determine the attitudes of healthcare professionals towards healthy eating, a healthy lifestyle, and physical activity in a public hospital on the northern coast of KwaZulu-Natal.

3.2.2 Specific Objectives

- To describe the demographic and lifestyle factors and NCD profile of healthcare professionals;
- To determine the body mass index of healthcare professionals;
- To determine the attitudes of healthcare professionals towards healthy eating;
- To determine the attitudes of healthcare professionals towards a healthy lifestyle;
- To determine the attitudes of healthcare professionals towards physical activity;
- To determine enabling factors for achieving a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals;
- To determine barriers that prohibit healthcare professionals from following a healthy diet, a healthy lifestyle, and physical activity.

3.3 Study design

The research study took a quantitative research approach and used a descriptive cross-sectional study design. The descriptive cross-sectional study design was appropriate as it aimed at explaining the distribution of variables in a study population at a point in time (Varkevisser, Pathmanathan & Brownlee, 1991). This study design was logistically efficient, and it allowed the researcher to measure the attitudes of healthcare professionals towards healthy eating, a healthy lifestyle and physical activity, the enablers, and barriers to healthy eating, a healthy lifestyle and physical activity.

3.4 Study setting

The study took place in a public hospital situated on the northern coast of KwaZulu-Natal, which offers district, regional, and tertiary medical and paramedical services to communities from King Cetshwayo, Umkhanyakude and Zululand Districts (Department of Health KwaZulu-Natal, 2017). The hospital has 19 different units offering medical and paramedical services where nurses and medical doctors work (Department of Health KwaZulu-Natal, 2017). At the time of research, the hospital had a total of 890 HCPs, both permanent and full-time contract employees which included: audiologists, clinical psychologists, dentists, dental assistants, dieticians, medical doctors, nurses, occupational therapists, optometrists, oral hygienist, physiotherapists, pharmacists, pharmacy assistants, radiographers, social workers, and speech and language therapists (communications with Mr Ndlela- Human resource personnel, 17 October 2018).

3.5 Study population and sampling

3.5.1 Study population

The study population included all permanent and full-time contract healthcare professionals currently employed in a hospital in the north of KwaZulu-Natal. A healthcare professional was defined as any employee who sees patients and is registered at a council governing their profession.

3.5.2 Sample size

3.5.2.1 Sample size calculation

The sample size was calculated using an equation by Yamane, Taro (1967). The equation used to calculate the sample size is

$$*n = \frac{N}{1 + N(e)^2}$$

The level of precision was taken into account when calculating the sample size. The level of precision used for this study was 5% and a confidence level of 95%. The level of precision means that results will apply to at least 95% of the overall population of healthcare professionals in the hospital. Dieticians were not included when calculating the sample size, as they were not part of the study because they were likely to provide biased answers as they deal with diet-related issues, and thus the total population was 885 and not 890. The required sample size for a total population of 885 HCP was calculated, and the calculations are presented below:

$$*n = \frac{N}{1 + N(e)^2} = 885 / (1 + 885(0.05)^2) = 885 / (1 + 2.225) = 885 / 3.225 = 275$$

The total number of subjects required for the study was 275 healthcare professionals from the hospital. The proportion of HCP, which was required from each healthcare professional, is presented in Table 3.1. The overall sample size after data collection is presented in Table 3.2.

Table 3.1: The proportion of HCP required from each healthcare professional.

Healthcare Professional	Total number of personnel	The proportion of total sample size of HCPs (expressed in %)	The sample size required from each of the HCPs group
Medical Doctor	152	17.2%	47
Nurses	647	73.1%	201
Social workers	6	0.7%	2
Psychologist	2	0.2%	1
Occupational Therapist	4	0.5%	1
Physiotherapist	3	0.3%	1
Speech and Language Therapist	3	0.3%	1
Audiologist	2	0.2%	1
Radiography	20	2.3%	6
Dentist	8	0.9%	2
Oral hygienist	1	0.1%	0
Optometrist	2	0.2%	1
Pharmacist	35	4.0%	11
Total	885	100.0%	275

The final sample size of the study population was 258. Two HCPs were excluded as they were lay counsellors who were not registered to a professional body, and fifteen HCPs were lost to follow up. The final sample size of the study population is presented in Table 3.2.

Table 3.2: The final sample size of the study population

Characteristics of the study population	Total Sample N=258	The proportion of total sample size of HCPs (expressed in %)
Medical Doctor	52	20.2%
Nurses	160	62%
Social workers	2	0.8%
Psychologist	1	0.4%
Occupational Therapist	4	1.6%
Physiotherapist	1	0.4%
Speech and Language Therapist	1	0.4%
Audiologist	1	0.4%
Radiography	8	3.1%
Dentist	2	0.8%
Oral hygienist	0	0 %
Optometrist	1	0.4%
Pharmacist	25	9.7%
Total	258	100%

3.5.2.2 Sampling

A probability sampling approach was used for this study, and a stratified sample was drawn from the original sampling frame. The public hospital's healthcare professionals' database was used as the original sampling frame. The total study population was divided into different strata according to different HCP groups. A proportional sample was drawn from each stratum. A probability sampling approach was used as it would allow for the researcher to draw conclusions that were generalisable to the whole study population, as the sample was representative of the chosen study population (Varkevisser, Pathmanathan & Brownlee, 1991). A proportional sample of each stratum was determined, and the HCPs were approached at their respective departments until the required number of HCPs in each stratum was achieved.

3.6 Exclusion criteria

The exclusion criteria were:

- Health sciences students who were doing block training at the hospital, as they were not employed by the hospital (student nurses, medical students, student occupational therapists,

student physiotherapists, student social workers, student audiologists, student speech, and language therapists and student pharmacists).

- Dieticians – due to their training and scope of practice, this cadre of health care professionals may possess a level of nutrition and health-related knowledge and awareness, which may introduce a bias in this study.
- Healthcare professionals who were not affiliated with any health professional council were not to participate in the study.

3.7 Data Collection

The study made use of a self-administered questionnaire to collect data required to answer the research question and sub-research questions. The use of self-administered questionnaires is a useful data collection tool for quantitative research studies (Varkevisser, Pathmanathan & Brownlee, 1991).

3.7.1 Data collection tool

The self-administered questionnaire used in this study consisted of two parts (Section A and Section B). Section A of the questionnaire looked at demographic factors such as age, gender, and occupation. Furthermore, it asked questions on whether or not HCPs received any form of nutrition education while studying for a degree, ever visited a dietician and an NCD profile where HCPs were asked if they had ever been diagnosed with any of the following NCD/s: diabetes mellitus, hypertension, high cholesterol and heart disease.

Section B of the questionnaire assessed attitudes towards healthy eating, a healthy lifestyle and physical activity, and enabling and barrier factors to following a healthy diet, a healthy lifestyle, and physical activity. The attitude section of the questionnaire made use of 5-point-Likert scales, which are highly recommended for attitudinal studies (Hearty et al., 2007). The attitude section for each health behaviour was developed with the help from the Food and Agriculture Organization of the United Nations' guidelines for assessing nutrition-related knowledge, attitudes, and practices (Macías & Glasauer, 2014). The section on barriers and enablers to healthy eating, a healthy lifestyle, and physical activity was developed using findings from similar studies, and the enablers and barriers were grouped in a list where HCPs had to choose from the list provided for each section (Eikenberry & Smith, 2004; Baruth, Sharpe, Parra-Medina & Wilcox, 2014; Shin, Lee & Belyea, 2018 Sandu, Chereches, Baba, Revnic, Mocean, 2018; Shin, Lee & Belyea, 2018). (See Appendix 1). Furthermore, Section B of the questionnaire included questions regarding how HCPs defined healthy eating, a healthy

lifestyle, physical activity, whether or not they were currently following healthy eating, a healthy lifestyle and physical activity, and how often they were engaging in physical activity.

3.7.1.1 Piloting of questionnaire

The self-administered questionnaire was piloted at a different hospital to ensure face and content validity. Before piloting the questionnaire, ethical clearance was applied for with the hospital and the Provincial Department of Health. Furthermore, once ethical approval was received, a date was arranged for an orientation around the facility before piloting the study. Ten healthcare professionals were involved in the piloting of the study. Healthcare professionals were approached randomly in the following departments: ante-natal ward, paediatric ward and allied health department and asked if they were interested in taking part in the study. The study was explained, and subjects were asked to sign the consent form before commencing with the study.

Subjects were given questionnaires and instructions on how to complete the questionnaires and were then left in a separate room to complete the questionnaire. Once the questionnaire was completed, their anthropometric measurements were taken. This process was done in this order to make sure that subjects would not feel the need to answer correctly due to feeling uncomfortable about their weight status.

3.7.2 Data collection procedure

Before commencing with data collection, ethical clearance was applied for with the hospital and the Provincial Department of Health, and once ethical approval was received, dates were arranged with the facility before starting data collection at the research setting. The researcher approached the managers of the different units within the hospital with approval letters from the chief executive officer and Department of Health to arrange for the most convenient time for data collection within the different units. Once times were given, the researcher conducted data collection during different times on different days and different shifts to ensure that most HCPs working different shifts were included in the study.

Healthcare professionals were randomly approached from the following units within the hospital: Intensive Care Unit, Ophthalmology, Burns Unit, ENT, Male Surgical, Family Medicine, Internal Medicine, Orthopaedics, Female Surgical, Family Medicine, Internal Medicine, Orthopaedics, Outpatient Clinics (Surgical, Family Medicine, Internal Medicine, Orthopaedics, Dermatology, Urology, Peritoneal Dialysis Unit, Dermatology, Urology,

Ophthalmology, TB And ARV Clinic), Dentistry, Radiology, Emergency Unit, Pharmacy, Occupational Therapy, Physiotherapy, Speech And Audiology, Social Services, Psychiatry, And Ophthalmology. Healthcare professionals from these units/departments were approached randomly at different times on different days, which the heads of the units felt were appropriate as they did not affect service delivery. Healthcare professionals were approached randomly at different days during the following times:

- After handover meetings before commencing with routine work in the morning and at night while the staff members were free
- At tea time and during lunchtime

Healthcare professionals were randomly approached in their respective departments during tea and lunchtime, and during their free time while waiting for their routine to start. In most cases during this time, HCPs were never in isolation and were generally in pairs or groups either sitting around the nurses' station, benches in the war room, doctors' rooms, or staff kitchen or standing by the entrances of the storeroom or cubicle. Healthcare professionals found in pairs were informed about the study, and questions about the study were addressed before commencement with the study. Once the study was explained, those interested were given a consent form to complete before completing the questionnaire and taking anthropometric measurements.

In some instances, more than the required number of HCPs in some departments were willing to participate in the study, and this provision was allowed, as it would have been unethical to refuse them the opportunity to participate in the study. In the case that a HCP declined to participate, the researcher randomly approached the next HCP or group or pair of HCPs until all the required number of HCP within each group was completed. Once consent was given, the questionnaire was explained, and when questions were asked, they were addressed accordingly. In some instances, some of the nurses and doctors requested to take the forms home to fill in during their leisure time as their schedules were hectic, and some thought it would take up too much, time after looking at the number of pages. For those who took the questionnaires home the majority had promised to return them the following day, but very few of those returned the questionnaires, and most were lost to follow up.

3.7.2.1 Anthropometric measurements procedure

Anthropometric measurements (weight and height) were taken by the main researcher after the subject had completed the questionnaire, to avoid evoking any emotions that could affect how

the HCPs would answer the questionnaire. The weight and height were measured in a closed private space using the same scale and portable SECA stadiometer and were used to calculate BMI, which is a risk factor for NCDs (Loef & Walach, 2012).

- *Weight measurement*

The weight was measured three times to the nearest 0.1kg using a digital scale, and the average was used to calculate the BMI.

Weight measurement procedure:

- i. Before measuring the weight of subjects, they were asked to remove their shoes and any objects like phones, notebooks, and any other objects that would add on additional weight.
- ii. The scale was zeroed
- iii. Subjects were asked to step onto the scale, making sure that both feet were centred on the scale.
- iv. Once the weight reflected and was stable, they were asked to step off and wait for the scale to return to zero before repeating the process three times.

- *Height measurement*

The height measurement was measured twice using a portable SECA stadiometer, and if the two measurements differed, a third measurement was taken to the nearest millimetre, and an average was used (Madden & Smith, 2016).

The height measurement procedure:

- i. The portable SECA stadiometer was assembled in a private room against the wall to ensure that it was stable.
- ii. Once the portable SECA stadiometer was ready for use, the HCP was asked to step on the stadiometer with the feet placed on the demarcated area on the stadiometer, buttocks against the stadiometer stick.
- iii. The HCPs' faces were adjusted to ensure that it was on the Frankfort plane before starting with the measurements.
- iv. They were asked to breathe in and out to try and correct their posture
- v. The height reading was taken.
- vi. The procedure was repeated twice, and if there was a difference, another reading was taken following the same procedure.

3.7.3 Data analysis

All statistical analysis was done using the latest version of Epi.info version 7.2.2.6. Descriptive statistics were conducted for socio-demographic and lifestyle factors, BMI, enabling factors, and barriers to healthy eating, PA, and a healthy lifestyle. These categorical variables were expressed as proportions and percentages accordingly. Descriptive cross-tabulations were conducted to describe differences in attitude regarding healthy eating, a healthy lifestyle, and physical activity between different variables. The descriptive cross-tabulations were performed to identify the proportion of respondents from different BMI groups, HCPs groups, HCPs diagnosed with NCDs, and genders regarding the different attitudinal questions. Means were calculated for continuous variables and were expressed as mean \pm SD. Differences in BMI, time spent during PA per week, frequency of engagement in PA weekly across genders were evaluated, and statistically significant was defined by a P-value < 0.05 .

3.8 Validity and Reliability

3.8.1 Validity

Face validity

For face validity, the sample questionnaire was given to Dieticians from the hospital to ensure that the questionnaire addresses the purpose for which it was developed.

Content validity

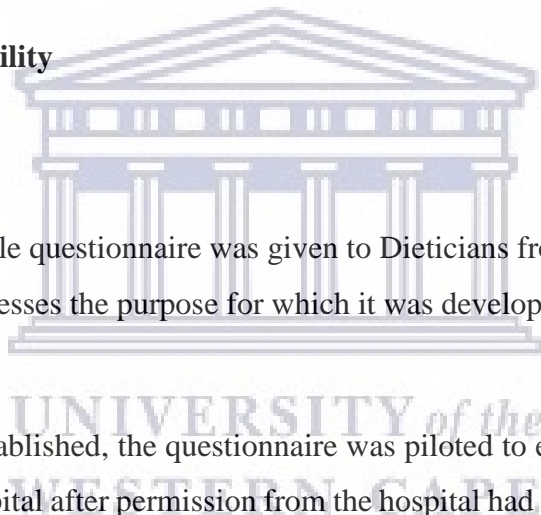
Once face validity was established, the questionnaire was piloted to ensure content validity at a neighbouring public hospital after permission from the hospital had been obtained to conduct a pilot study on healthcare professionals, i.e., nurses, allied healthcare professionals, and medical doctors and the results obtained from the pilot study were not used as part of the study.

Selectivity

Selectivity was addressed by approaching HCPs from different shifts to ensure that selection of the research subjects was not only limited to those HCPs who were only available during day shifts.

Measurement bias when measuring weight

The weight measuring procedure of each healthcare professional was repeated three times, and an average of the three was taken to ensure the validity of the measurement.



Measurement bias when measuring height

The height measuring procedure was repeated twice, and if there was a difference, another reading was taken following the same procedure to ensure the validity of the measurement.

3.8.2 Reliability

Internal consistency

The internal consistency of the scales regarding measures of attitude towards healthy eating, a healthy lifestyle and physical activity, was done by calculating the Cronbach's alpha. The Cronbach's alpha was calculated using the following equation on Excel:

$$\alpha = 1 - \frac{kr}{(1 + (k - 1)r)}$$

The Cronbach's alpha of the 5-point Likert scale questions regarding healthy eating, a healthy lifestyle and physical activity was 0.72 which means that the scale is reliable in measuring what it intended to measure (Mondal & Mondal, 2017; Tavakol & Dennick, 2011).

Measurement reliability

All weight and height measurements were conducted using the same scale and portable stadiometer and following a standardised procedure to ensure reliability. The equipment used for weight and height measurements were also calibrated to ensure reliability.

3.9 Ethics

Ethical principles were taken into consideration during the duration of the study. Before commencing with the study, the proposal was submitted for ethical approval the Biomedical Research Ethics of the University of the Western Cape (BM19/4/14), (Appendix 2), the Provincial Health Research and Ethics Committee (PHREC) of Department of Health KwaZulu-Natal (Appendix 3) and the hospital where the questionnaire was piloted (Appendix 5) and the hospital where the study took place (Appendix 4). The steps taken to address ethical principles in the study are presented in the next sub-section.

The following ethical principles were addressed:

Confidentiality

The confidentiality of the HCPs was maintained at all times during the entire study. All the subjects were assigned identification code numbers that were used at all times. Anonymity was ensured by not using names when publishing or when entering data. Data generated from the

study, the computer password, and the identification codes were stored in a manner that maintains subjects' confidentiality. Data will be securely stored for five years. The anonymised and aggregated study findings were disseminated to subjects and critical stakeholders in the form of suitable presentations.

Autonomy

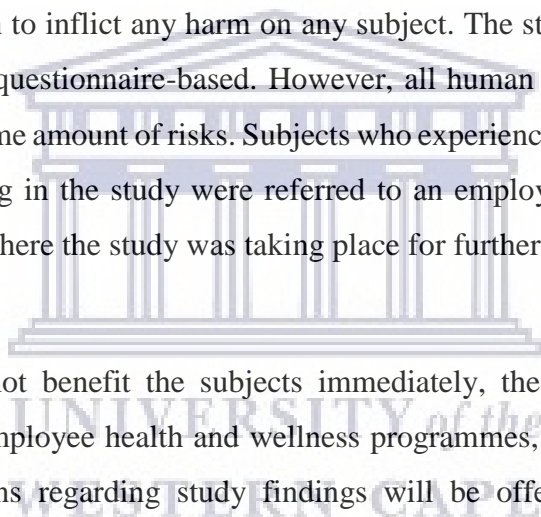
Autonomy was addressed by ensuring the provision of written informed consent together with a participant information sheet to all subjects before commencing with the study (See Appendix 1.8). No subjects were forced to participate in the study; if the subject said they were not interested in participating in the study, they were not forced, and no incentive was used to entice HCPs into participating in the study.

Non-maleficence

The study had no intention to inflict any harm on any subject. The study posed minimal risks for the subjects as it was questionnaire-based. However, all human interactions that involve talking about self carry some amount of risks. Subjects who experienced any discomfort during the process of participating in the study were referred to an employee wellness practitioner within the same hospital where the study was taking place for further assistance.

Beneficence

Although the study did not benefit the subjects immediately, the results will assist with planning and amending employee health and wellness programmes, which will benefit them directly. Feedback sessions regarding study findings will be offered, and any questions regarding healthy eating, a healthy lifestyle, and physical activity will also be addressed in this session.



CHAPTER 4: RESULTS

4.1 Introduction

The results of the study are presented in this chapter. The aim of the study was to determine the attitudes of healthcare professionals (HCPs) towards healthy eating, a healthy lifestyle and physical activity in a public hospital on the northern coast of KwaZulu-Natal, and the specific objectives of the study were:

- To describe the demographic, lifestyle factors and non-communicable disease profile of healthcare professionals;
- To determine the body mass index of healthcare professionals;
- To determine the attitudes of healthcare professionals towards healthy eating;
- To determine the attitudes of healthcare professionals towards a healthy lifestyle;
- To determine the attitudes of healthcare professionals towards physical activity;
- To determine enabling factors to achieve a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals;
- To determine barriers that inhibit following a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals.

4.2 Results

The overall study sample size was n=258 HCPs. The results from the study include demographic and lifestyle factors, non-communicable disease profile, anthropometric measurements, responses from questions regarding attitudes towards healthy eating, a healthy lifestyle and physical activity, and responses regarding enablers and barriers to following a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals.

4.2.1 Demographic factors, lifestyle factors and NCD profile of the study population

Overall the study population consisted of n=58 (22.5%) males and n=200 (77.5%) females. The average age of the sample group was 37.1 ± 9.5 years, while the average age amongst male HCPs was 37.9 ± 9.7 years, and 34.2 ± 8.1 years amongst female HCPs. The majority of the sample size consisted of nurses (62%, n=160) and doctors (20%, n=52). Additionally, the majority of the different HCPs groups consisted mainly of females, except for doctors who had the highest percentage of males (see Table 4.1). A total of 54.3% (n=140) of the HCPs in the study reported that they received nutrition education during training for their profession's degree and a small percentage (10.5%) of the HCPs reported that they had visited a dietician.

The health profession profile and gender distribution of the study population are presented below in Table 4.1.

Table 4.1: Health profession profile and gender distribution of the study population (N=258)

	Total Sample N=258		Male n=58		Female n=200	
	n	%	n	%	n	%
Medical Doctor	52	20	27	47	25	12.5
Nurses	160	62	22	38	138	69
Social workers	2	0.8	0	0	2	1
Psychologist	1	0.4	0	0	1	0.5
Occupational Therapist	4	1.6	2	3	2	1
Physiotherapist	1	0.4	0	0	1	0.5
Speech and Language Therapist	1	0.4	0	0	1	0.5
Audiologist	1	0.4	0	0	1	0.5
Radiography	8	3.1	2		6	3
Dentist	2	0.8	0	0	2	1
Oral hygienist	0	0	0	0	0	0
Optometrist	1	0.4	0	0	1	0.5
Pharmacist	25	9.7	5	9	20	10

4.2.1.1 Lifestyle factors of healthcare professionals

A total of 48 % (n=124) healthcare professionals reported that they were following a healthy lifestyle. Amongst the total number of males, 52 % (n=30) of them reported to be currently following a healthy lifestyle; meanwhile only 47% (n=94) of females reported that they were currently following a healthy lifestyle. A total of 87% of the HCPs reported that they did not smoke, and 80% reported that they do use tobacco products, while a total of 57% of the HCPs within the study population reported that they did not consume any alcohol. A total of 37% (n=96) of the healthcare professionals reported that they were currently eating healthily at the time of the research and a total of 59.3% (n=153) healthcare professionals reported that they were engaging in physical activity.

Healthcare professionals were active 1.8 ± 2.1 times per week, with an average duration of physical activity (PA) of 24.5 ± 33.3 minutes per session. The majority of male HCPs were more active than female HCPs. The average duration per week was 79.3 ± 135.5 minutes. There was a statistically significant difference (P-value = 0.0001) in the total time spent per week between the different genders, as the majority of the male HCPs spent on average 152.5 ± 179.8 minutes per week on PA, while female HCPs spent on average 58.1 ± 111.5 minutes per week on PA. Overall, only 21 % of HCPs were meeting international recommendations for physical activity. The majority of the HCPs meeting the international recommendations for physical were of overweight BMI, while those not meeting requirements were of obese BMI, and there was a statistical difference (P-value = 0.0035) between meeting PA recommendations amongst BMI groups.

4.2.1.2 Non-communicable disease profile

Non-communicable disease (NCD) profile of healthcare professionals stratified according to gender is presented below in Table 4.2. The figures presented are the total percentages of HCPs who reported that they had been diagnosed with a NCD.

Table 4.2: Non-communicable disease profile of healthcare professionals

	Total Sample N=258		Male n=58		Female n=200	
	n	%	n	%	n	%
Diabetes	13	5	2	3.5	11	5.5
Hypertension	31	12	2	3.5	29	14.5
Heart disease	6	2	2	3.5	4	2
High Cholesterol	11	4	5	8.6	6	3

A total of 20% of the HCPs in the study reported that had been diagnosed with an NCD. The majority of HCPs in this study population who had been diagnosed with a NCD were females. The majority of the female HCPs who had been diagnosed with a NCD reported that they were diagnosed with diabetes and hypertension, while most male HCPs had been diagnosed with heart disease and high cholesterol.

4.2.2 Anthropometric measurements of Healthcare professionals

The study results showed that the majority of the healthcare professionals in this study population were obese with a mean BMI = $31.0 \pm 7.2 \text{ kg.m}^{-2}$. The body mass index (BMI) classifications of the healthcare professionals are presented below in Table 4.3.

Table 4.3: Body Mass Index classifications of the study population

BMI (kg.m ⁻²)	Total sample N=258		Males n=58		Females n=200	
	n	%	n	%	n	%
Underweight < 18.5 kg.m ⁻²	1	1	0	0	1	1
Normal ≥18 – 24.9 kg.m ⁻²	60	23	22	38	38	19
Overweight 25-29.9 kg.m ⁻²	63	24	22	38	41	21
Obese ≥30 kg.m ⁻²	134	52	14	24	120	60

*BMI= Body Mass Index

Sixty percent of female HCPs in the study were obese with a mean BMI of $32.1 \pm 7.4 \text{ kg.m}^{-2}$, while 38% of males were either of healthy BMI or overweight with a mean BMI of $27.1 \pm 4.8 \text{ kg.m}^{-2}$. There was a statistically significant difference in BMI across female HCPs and male HCPs (P = 0.0000).

4.2.3 Attitudes towards healthy eating, a healthy lifestyle and physical activity

The terms attitude, beliefs, and perceptions have been used interchangeably in the literature; however, for this study, attitudes were defined as emotions, motivation, and beliefs that positively or negatively influence the behaviour or practice of an individual (Macias & Glasauer, 2014).

4.2.3.1 Attitudes of healthcare professionals towards healthy eating

- *Healthy eating definitions*

Several definitions were given for healthy eating, and the majority of the HCPs defined healthy eating as “eating and maintaining a healthy balanced diet” (29.8%, n=77) and “eating a balanced diet with lots vegetables, fruits, water and a small portion of meat, starch, fats, salt

and sugars” (17.1%, n=44). Only 37.2 % (n=96) of HCPs reported that they were following a healthy diet. The different definitions for healthy eating given by HCPs were grouped and are presented below in Table 4.4.

Table 4.4: Healthy eating definition groups

Healthy eating definitions that were given in the study	Total sample size N=258	Percentage %
1. A balanced diet with all food groups in correct portions	27	10.5
2. Three small meals a day	5	1.9
3. Eating healthy and less processed foods	27	10.5
4. Three small meals and two snacks	6	2.3
5. Diet with a variety of foods with necessary nutrients	23	8.9
6. Eating fruits and vegetables and drinking much water	10	3.9
7. Eating a balanced diet with lots of vegetables, fruits, water and a small portion of meat, starch, fats, salt, and sugars	44	17.1
8. Eating a healthy diet and lots of water	13	5
9. Eating food that builds the body and does not harm the body	16	6.2
10. Eating and maintaining a healthy balanced diet	77	29.8
11. Low carbohydrate diet	10	3.9

- *Responses from HCPs on attitudinal questions on healthy eating*

The responses given by HCPs regarding attitudes towards healthy eating is summarised in Table 4.5 and 4.6 below.

Table 4.5: Responses to attitudinal questions on healthy eating

	Total sample size N=258		Male n=58		Female n=200	
	n	%	N	%	n	%
Importance of healthy eating						
Did not answer	1	0.4	0	0	1	0.5
Not important	2	0.8	0	0	2	1
Not sure	12	4.7	5	8.6	7	3.5
Important	243	94.1	53	91.4	190	95
Difficulty in eating healthily						
Did not answer	2	0.78	0	0	2	1
Not so difficult	64	24.81	13	22.4	51	25.5
Somewhat difficult	125	48.45	32	55.2	93	46.5
Difficult	67	25.97	13	22.4	54	27
Feelings about current eating habits						
Very unhappy	21	8.1	4	6.9	17	8.5
Unhappy	102	39.5	20	34.5	82	41
Somewhat happy	75	29.1	22	37.9	53	26.5
Happy	49	19	10	17.2	39	19.5
Very happy	11	4.3	2	3.5	9	4.5
Feeling about changing current eating habits						
Did not answer	1	0.39	0	0	1	0.5
Strongly felt a need to change	66	25.58	13	22.41	53	26.5
Felt need to change	125	48.45	28	48.28	97	48.5
Unsure	18	6.98	4	6.9	14	7
No need to be change	38	14.73	11	18.97	27	13.5
Strongly felt a need not to change	10	3.88	2	3.45	8	4

A continuation of responses to attitudinal questions is presented below in Table 4.6.

Table 4.6: Responses to attitudinal questions on healthy eating

	Total sample size N=258		Male n=58		Female n=200	
	n	%	N	N	%	n
Confidence in eating healthy regularly						
Did not answer	1	0.39	0	0	1	0.5
Not confident	59	22.87	8	13.8	51	25.5
Unsure	59	22.87	18	31.0	41	20.5
Confident	139	53.88	32	55.2	107	53.5
Confidence in preparing healthy food						
Not confident at all	19	7.4	4	6.9	15	7.50
Not confident	53	20.5	13	22.4	40	20
Unsure	47	18.2	10	17.2	37	18.5
Confident	111	43	27	46.6	84	42
Very confident	28	10.9	4	6.9	24	12
Readiness for practising healthy eating						
Not thinking of starting	8	3.1	4	6.9	4	2
Thinking of starting	117	45.35	26	44.83	91	45.5
Planning to start in the next six months	35	13.57	9	15.52	26	13
Definitely planning to start in the next month	34	13.18	5	8.62	29	14.5
Already eating healthily	64	24.81	14	24.14	50	25

- *Attitudes towards healthy eating*

The majority of the HCPs (94.19%, n=243) reported that they regarded healthy eating as important for them. When the results were stratified according to different factors, healthy eating was regarded as vital amongst all HCPs groups of all BMI classes, genders and HCPs

who had been diagnosed with NCD/s. Despite HCPs regarding healthy eating as significant for them, the majority of HCPs (48.5%, n=125) reported that eating a healthy diet was somewhat difficult, while only 26% of HCPs reported that they found eating healthily to be difficult. Difficulty in healthy eating was stratified according to different factors and the most common response across these factors was that healthy eating was somewhat difficult, and this trend was found amongst nurses and doctors, pharmacists, radiographers, and amongst both genders.

Most HCPs (39.5%, n=102) in this hospital were unhappy about their current eating habits, while 29.07% of HCPs were somewhat happy about their current eating habits. Less than 20% of HCPs were happy about their eating habits, and less than 10 % very happy about their eating habits. Discontent regarding current eating habits was commonly reported by HCPs who had not been diagnosed with NCDs (41.55%), most nurses (44.38%), radiographers (50%), social workers (50%), occupational therapist (50%), and pharmacists (40%). Moreover, female HCPs, obese HCPs (44.03%), underweight HCPs (100%), and overweight HCPs (39.68%) expressed discontent with their eating habits. However, some of the HCPs who have been diagnosed with NCDs (33.3%), physiotherapist (100%) doctors (42.3%), speech and language therapist (100%), audiologist (100%), male HCPs (37.9%), HCPs of healthy BMI (43.3%) were somewhat happy about their current eating habits.

Most healthcare professionals (48.5%) reported that they felt they needed to change their current eating habits, and 25.58% strongly felt that they needed to change their current eating habits. The need to change current eating habits was shared amongst all genders, different HCP groups, and HCPs of all BMI classes. Furthermore, HCPs who had not been diagnosed with NCDs strongly felt that they needed to change their current eating habits.

The majority of the HCPs (53.9%) were confident in being able to eat healthily regularly, and this trend was commonly seen in both male and female HCPs across all BMI categories. There was a noticeable difference in the confidence to eat healthily regularly amongst the different healthcare professional. The majority of radiographers (62.5%) reported that they were not confident in being able to eat healthily regularly.

Overall, most HCPs (45.4%, n=117) reported that they were thinking of starting to eat healthily. The majority of healthcare professionals of all genders and all BMI classes, mostly being nurses (50.6%), radiographers (75%) and pharmacists (52%) reported that they were thinking of starting to eat healthily. Very few of the HCPs reported that they were already eating healthily

(24.8%) and this was common amongst psychologist (100%), optometrist (100%), doctors (36.5%), and audiologist (100%).

4.2.3.2 Attitudes of healthcare professionals towards a healthy lifestyle

- *Healthy lifestyle definitions*

A total of 48.1 % (n=124) of healthcare professionals reported that they were following a healthy lifestyle. Amongst the total number of males, 51.7 % (n=30) of them reported to be currently following a healthy lifestyle, and only 47% (n=94) of females reported that they were currently following a healthy lifestyle. The majority of the HCPs defined a healthy lifestyle as “a lifestyle characterised by healthy eating and exercise” (41.9%, n=108), and all the other different definitions of healthy lifestyle reported by different HCPs are presented below in Table 4.7.

Table 4.7: Healthy lifestyle definition groups

Healthy lifestyle definitions that were given in the study	Total sample size N=258	Percentage %
0. A healthy lifestyle not defined	2	0.8
1. Diet exercise and sleep	9	3.5
2. Healthy eating and exercise	108	41.9
3. Eating healthy, water and exercise	17	6.6
4. Good physical, emotional, spiritual and social well being	15	5.8
5. Balanced diet, good physical, emotional and social well being	3	1
6. Everything in moderation	2	0.8
7. Healthy eating /balanced diet and drinking enough water	24	9.3
8. Healthy living	24	9.3
9. Eating healthy food, exercising and mental health	11	4.3
10. Eating healthy, physical activities, not using substances, avoiding harm to the body and minimizing diseases	42	16.3
11. Being active	1	0.4

- *Responses to attitudinal questions on healthy lifestyle*

A summarised table of Healthcare professionals’ responses regarding their attitudes towards a healthy lifestyle is illustrated in Table 4.8, Table 4.9 and Table 4.10 below.

Table 4.8: Responses to attitudinal questions on healthy lifestyle

	Total sample size N=258		Male n=58		Female n=200	
	n	%	n	%	n	%
Meaning of healthy life						
Not important	0	0	0	0	0	0
Not sure	21	8.1	10	17.2	11	5.5
Important	237	91.9	48	82.8	189	94.5
Importance of following a healthy lifestyle						
Did not answer	1	0.4	1	1.7	0	0
Not important	1	0.4	1	1.7	0	0
Not sure	11	4.2	7	12.1	4	2
Important	245	95	49	84.5	196	98
Importance for HCP to reduce tobacco use						
Not important	3	1.2	0	0	3	1.5
Not Sure	5	1.9	2	3.5	3	1.5
Important	43	16.7	14	24.1	29	14.5
Do not use tobacco products	207	80.2	42	72.4	165	82.5
Importance for HCP to reduce smoking						
Not important	1	0.4	0	0	1	0.5
Not Sure	3	1.2	1	1.7	2	1
Important	30	11.6	13	22.4	17	8.5
Do not smoke	224	86.8	44	75.9	180	90

A continuation of healthcare professionals' responses to attitudinal questions on a healthy lifestyle is presented below in Table 4.9.

Table 4.9: Responses to attitudinal questions on healthy lifestyle

	Total sample size N=258		Male n=58		Female n=200	
	n	%	n	%	n	%
Importance to reduce alcohol intake						
Not important	17	6.6	8	13.8	9	4.5
Not Sure	17	6.6	2	3.5	15	7.5
Important	77	29.8	26	44.8	51	25.5
Do not consume alcohol	147	57	22	37.9	125	62.5
Difficulty in maintaining a healthy lifestyle						
Not difficult at all	53	20.5	14	24.1	39	19.5
Somewhat difficult	100	38.8	27	46.6	73	36.5
Difficult	69	26.7	11	19	58	29
Very difficult	36	14	6	10.3	30	15
Confidence in following a healthy lifestyle						
Did not answer	1	0.4	0	0	1	0.5
Not confident	63	24.4	11	19	52	26
Confident	137	53.1	37	63.8	199	50
Very confident	57	22.1	10	17.2	27	23.5
Feeling about HCPs' current lifestyle						
Strongly felt not living a healthy lifestyle	35	13.6	5	8.6	30	15
Felt not living a healthy lifestyle	107	41.4	24	41.4	83	41.5
Unsure	28	10.9	4	6.9	24	12
Felt that living a healthy lifestyle	75	29.1	20	34.5	28	27.5
Strongly felt that living a healthy lifestyle	13	5	5	8.6	75	4

Table 4.10: Responses to attitudinal questions on healthy lifestyle

	Total sample size N=258		Male n=58		Female n=200	
	n	%	n		n	
Feeling about changing the current lifestyle						
Strongly felt no need to change	12	4.7	3	5.2	9	4.50
Felt no need to change	37	14.3	1	1	2	1
Unsure	16	6.2	1	1.7	15	7.5
Felt need to change	136	52.7	31	53.4	105	52.5
Strongly felt the need to change	5	22.1	12	20.7	45	22.5
Readiness to start practising a healthy lifestyle						
Did not answer	1	0.39	0	0	1	0.5
Not considering starting	11	4.26	2	3.5	9	4.5
Thinking of starting	87	33.72	16	27.6	71	35.5
Planning to start in the next six months	31	12.02	9	15.5	22	11
Definitely planning to start in the next month	52	20.16	10	17.2	42	21
Already practising a healthy lifestyle	76	29.46	21	36.2	55	27.50

- *Attitude towards a healthy lifestyle*

Difficulty and extreme difficulty regarding being able to maintain a healthy lifestyle were reported by few HCPs (26.7% and 13.95% respectively), while the majority of HCPs reported that maintaining a healthy lifestyle was somewhat difficult (38.8%, n=100). The majority of the different HCP groups, HCPs of normal, obese, and overweight BMI, and HCPs of all genders reported that maintaining a healthy lifestyle was somewhat difficult. Moreover, HCPs without NCDs, also reported that it was somewhat difficult to maintain a healthy lifestyle.

Despite HCPs reporting that they found it somewhat difficult to maintain a healthy lifestyle, the majority of HCPs were confident in being able to maintain a healthy lifestyle (53.10%, n=137). The majority of healthcare professionals of all BMI classes and HCPs of all genders reported that they were confident in maintaining a healthy lifestyle.

When HCPs were further asked about their current lifestyle, the majority of HCPs felt that they were not living a healthy lifestyle (41.5%, n=107). Very few HCPs showed extreme satisfaction regarding their current lifestyle (5.0%, n=13). Dissatisfaction regarding current lifestyle was commonly seen amongst obese (48.5%), underweight (100%) and overweight (33.3%) HCPs. Furthermore, the majority of females and males, and HCPs who had been diagnosed with NCDs also reported dissatisfaction regarding their current lifestyle. Similarly, the majority of radiographers (62.5%), nurses (45.6%), and pharmacists (36%) felt that they were not living a healthy lifestyle. On the other hand, HCPs of healthy BMI (38.3%), doctors (38.5%), psychologist (100%), optometrist (100%), audiologist (100%), physiotherapist (100%) and occupational therapists (75%) reported that they felt they were living a healthy lifestyle.

When HCPs were asked about their readiness to practise a healthy lifestyle, most HCPs reported that they were thinking of practising a healthy lifestyle (33.7%, n=87). Amongst the different healthcare professional groups, the majority of these were nurses (35%), social workers (100%), speech and language therapists (100%), and radiographers (62.5%). Furthermore, this was also common amongst most female HCPs (35.5%), obese HCPs (36.6%), and overweight HCPs (33.3%). The majority of male HCPs (36.21%), doctors (36.5%), psychologist (100%), audiologist (100%), dentist (100%) physiotherapist (100%), underweight HCPs (100%), and HCPs who have been diagnosed with NCDs (39.2%) reported that they were already practising a healthy lifestyle.

4.2.3.3 Attitudes of healthcare professionals towards physical activity

- *Physical activity definitions*

Various definitions were given for physical activity, and they were categorised into different groups for ease of analysis. The most common reported definition of PA was “engaging in exercise” (28.7%, n=74), and only 59.3% (n=153) reported that they did engage in physical activity. The various definitions given by HCPs in the study are presented below in Table 4.11.

Table 4.11: Physical activity definition groups

Physical activity definitions that were given in the study	Total sample size N=258	Percentage %
0. Physical activity not defined	3	1.1
1. Physical activity/ being active	13	5.0
2. Engaging in exercise to maintain and body function, physical and muscular fitness	19	7.4
3. Activities that encourage the body to move and use energy	23	8.9
4. Engaging in exercise for at least 20 minutes for a minimum of 2 days	17	6.6
5. Activities that promote good health, good circulation in the body and prevent diseases	12	4.7
6. Doing anything physical such as gardening, house chores, dancing, walking, sports, playing with children	24	9.3
7. Being able to exercise at least three times a week	16	6.2
8. Activity that makes one sweat and increases the heart rate	14	5.4
9. Engaging in exercise regularly	18	7.0
10. Engaging in exercise	74	28.7
11. Engaging in exercise and sports	18	7.0
12. Going to the gym	7	2.7

- *Responses on attitudinal questions on physical activity*

A summary of the responses given by HCPs on attitudes towards physical activities stratified by gender is presented in Table 4.12 and Table 4.13.

Table 4.12: Responses to attitudinal questions on physical activity

	Total sample size N=258		Male n=58		Female n=200	
	n	%	n	%	n	%
Importance of exercising regularly						
Did not answer	1	0.4	0	0	1	0.5
Not important	6	2.3	1	1.7	5	2.5
Not sure	24	9.3	3	5.2	21	10.5
Important	228	88	54	93.1	173	86.5
Importance for HCPs' health to exercise regularly						
Did not answer	1	0.39	0	0	1	0.5
Not important	4	1.55	1	1.7	3	1.5
Unsure	10	3.88	1	1.7	9	4.5
Important	243	94.19	56	96.6	187	93.5
Feeling about HCPs' current fitness level						
Did not answer	2	0.8	1	1.7	1	0.5
Not happy	164	63.6	29	50	135	67.5
Not concerned	21	8.1	8	13.8	13	6.5
Happy	71	27.5	20	34.5	51	25.5

A continuation of healthcare professionals' responses to attitudinal questions on physical activity is presented below in Table 4.13.

Table 4.13: Responses to attitudinal questions on physical activity

	Total sample size N=258		Male n=58		Female n=200	
	n	%	n	%	n	%
Difficulty to engage in physical activity/exercise						
Not difficult at all	30	11.6	9	15.5	21	10.5
Not so difficult	96	37.2	28	48.3	68	34
Difficult	99	38.4	15	25.9	84	42
Very Difficult	33	12.8	6	10.3	27	13.5
Confidence in engaging in physical activity/exercise						
Did not answer	2	0.78	0	0	2	1
Not confident at all	17	6.59	0	0	17	8.5
Not confident	50	19.38	11	19	39	19.5
I am not concerned	20	7.75	7	12	13	6.5
Confident	139	53.88	33	57	106	53
Very confident	30	11.63	7	12	23	11.5
Readiness for engaging in physical activity/exercise						
Did not answer	2	0.78	0	0	2	1
Currently not considering starting	20	7.75	1	1.72	19	9.5
Thinking of starting	98	37.98	15	25.86	83	41.5
Planning to start in the next six months	22	8.53	2	3.45	20	10
Definitely planning to start in the next month	31	12.02	9	15.52	22	11
Already engaging in physical activity/exercise	85	32.95	31	53.45	54	27

- *Attitudes towards physical activity*

The majority of the HCPs within the hospital reported that engaging in regular physical activity was vital for them, and that exercise was significant for their health. All HCPs groups of all BMI classes, gender, HCPs diagnosed and not diagnosed with NCDs reported that engaging in regular physical activity was vital for them, and that exercise was significant for their health. The majority of the healthcare professionals reported that they were not happy with their current fitness level, and this was common amongst the majority of HCPs across all BMI categories. Moreover, although there was no major difference between the genders regarding how they felt about their current fitness level, more female (67.5%) than male (50%) HCPs were not happy about their current fitness level.

The majority of HCPs found it challenging to engage in PA (38.4%, n=99) and 37.2% reported that it is not so difficult to engage in PA. Very few HCPs found it extremely easy to engage in PA (11.6%, n=30). Difficulty in engaging in PA was commonly reported by obese HCPs (41.8%), underweight HCPs (100%), and overweight (42.9%) HCPs, radiographers (50%) and nurses (41.9%). Furthermore, most female HCPs (42.0%) reported that it was challenging to engage in PA while their male counterparts (48.3%) mostly reported that engaging in PA was not so challenging. In contrast, pharmacists, doctors, optometrist, dentist, audiologist, and doctors reported that it was not so difficult to engage in PA. Although the majority of the HCPs reported being confident about engaging in physical activity, most HCPs were not happy about their current fitness level (63.6%, n=164).

Overall, most HCPs (38%, n=98) were thinking of starting to engage in physical activity, and this was commonly reported by the majority of female HCPs (41.5%), obese HCPs (43.3%), overweight HCPs (39.7%), and HCPs who had not been diagnosed with NCDs (44.9%). Furthermore, the majority of pharmacists (44%), nurses (41.3%) and radiographers (62.0%) reported that they were thinking of starting to engage in physical activity. The majority of male HCPs (53.5%), HCPs of healthy BMI (43.3%), and HCPs who had been diagnosed with NCDs (45.10%) were already engaging in PA. This trend was also commonly seen in doctors (53.9%), optometrist (100%), occupational therapist (75%), audiologist (100%), physiotherapist (100%) and dentist (100%).

4.2.4 *Enabling factors to achieve a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals*

For this study, barriers were defined as factors that make it challenging to practice healthy eating, a healthy lifestyle, and engage in physical activity. Enablers were defined as factors that empower one to be able to practice healthy eating, a healthy lifestyle and engage in physical activity (Eikenberry & Smith, 2004).

4.2.4.1 *Enablers to healthy eating*

Enablers to healthy eating were regarded as factors that empower one to eat healthily (Eikenberry & Smith, 2004). Responses regarding what HCPs reported as enablers to healthy eating is presented in Table 4.14.

Table 4.14: Enablers to healthy eating

Enabler	Total sample size n=258	% of those that reported this factor as an enabler
Family	94	36.4
Potential health benefits	134	51.9
Owning a garden	47	18.2
Will power	59	22.9
Want to be a role model for children	85	33.0
Education	76	29.5
Friends	31	12.0

Potential health benefits associated with healthy eating was reported by most HCPs as an enabler to healthy eating, followed by family and wanting to be a role model for children. Other reported enablers to healthy eating were colleagues (0.4%), wanting a right body image (0.4%), getting married next year (0.4%), a goal to be able to exercise well (0.4%), how food makes me feel (0.4%), illness (0.4%), and partner (0.4%).

4.2.4.2 *Enablers to a healthy lifestyle*

Enablers to a healthy lifestyle were regarded as factors that empower one to practice a healthy lifestyle (Eikenberry & Smith, 2004). Table 4.15 presents the enablers to a healthy lifestyle reported by HCPs.

Table 4.15: Enablers to a healthy lifestyle

Enabler	Total sample size n=258	% of those that reported this factor as an enabler
Family	88	34.1
Want to be a good role model	80	31.0
Health benefits	152	58.9
Availability of resources	71	27.5
Food stamps or vouchers	12	4.7
Education	80	31.0
Friends	50	19.4

The most commonly reported enablers to a healthy lifestyle were health benefits, family, education, wanting to be a good role model and the availability of resources. Other reported enablers to healthy lifestyle were colleagues (0.4%), getting to be fit for sporting races (0.4%), myself (0.4%), nature (0.4%), and personal trainer (0.4%).

4.2.4.3 Enablers to physical activity

Enablers to physical activity were regarded as factors that empower one to engage in physical activity (Eikenberry & Smith, 2004). Table 4.16 presents the enablers to physical activity reported by HCPs.

Table 4.16: Enablers to physical activity

Enabler	Total sample size n=258	% of those that reported this factor as an enabler
Family and friends	100	38.8
Health benefits	167	65.0
Availability of recreational facilities	84	32.7
Fun and enjoyment	102	39.5
Safe neighbourhood	50	19.4

The most commonly reported enablers for PA were health benefits, fun and enjoyment, family and friends, and the availability of recreational facilities. Other enablers to PA reported by HCPs were that physical activity has the potential of physical activity to reduce anxiety (0.4%),

having fitness goals (0.4%), motivation (0.4%), having a partner (0.4%), and psychological benefits (0.4%).

4.2.5 Barriers that prohibit following a healthy diet, a healthy lifestyle, and physical activity in healthcare professionals

4.2.5.1 Barriers to healthy eating

Barriers to healthy eating were defined as factors that make it challenging to practice healthy eating (Eikenberry & Smith, 2004). Barriers to healthy eating given by healthcare professionals are presented below in Table 4.17.

Table 4.17: Barriers to healthy eating

Barrier	Total sample size n=258	% of those that reported this factor as a barrier
Time	145	56.2
Cost	72	27.9
Laziness	101	39.2
Taste	46	17.8
Lack of discipline	98	38
Picky	27	10.5
Food preparation	92	35.7
Availability of food	37	14.3
Knowledge	37	14.3

The most commonly reported barriers to healthy eating were time, laziness, lack of discipline, food preparation, and cost of food. Other reported barriers to healthy eating were allergies (0.4%), cravings (0.4%), family (0.4%), friends (0.4%), the monotony of eating the same thing (0.4%) and working long hours and shifts (0.4%).

4.2.5.2 Barriers to a healthy lifestyle

Barriers to practising a healthy lifestyle were defined as factors that make it difficult to practice a healthy lifestyle (Eikenberry & Smith, 2004). Barriers to a healthy lifestyle are presented below in Table 4.18.

Table 4.18: Barriers to a healthy lifestyle

Barrier	Total sample size n=258	% of those that reported this factor as a barrier
Time	147	57.0
Laziness	111	43.0
Lack of discipline	99	38.4
Availability of resources	50	19.4
How HCP was raised	14	5.4
Knowledge	38	14.7

The most commonly reported barriers to practising a healthy lifestyle amongst HCPs were time, laziness, lack of discipline, and availability of resources. Other reported barriers to practising a healthy lifestyle were burnout from work (0.4%), cravings (0.4%), illness (0.4%), lack of motivation (0.4%); social life encourages smoking and eating sugar (0.4%), work demands (0.8%), and work stress and long working hours (1.6%).

4.2.5.3 Barriers to physical activity

Barriers to physical activity were defined as factors that make it difficult to engage in physical activity (Eikenberry & Smith, 2004). The barriers to engaging in PA amongst HCPs are presented below in Table 4.19.

Table 4.19: Barriers to physical activity

Barrier	Total sample size n=258	% of those that reported this factor as a barrier
Time	183	70.9
Heavy traffic	14	5.4
Laziness	142	55.0
Safety	61	23.6
Lack of free recreational facilities	78	30.2

The commonly reported barriers amongst HCPs were time, lack of time, lack of free recreational facilities, and safety. Other reported barriers to physical activity amongst HCPs were exhaustion (0.4%), illness (0.8%), lack of consistency (0.4%), lack of discipline (0.4%),

lack of exercise buddy (0.4%), self-control (0.4%), tiredness from working overtime (0.4%), and travelling too much (0.4%).

4.2.6 Conclusion

The majority of HCPs in the study were obese, and more female HCPs were found to be obese than male HCPs. Healthcare professionals in the study had different understanding and definitions of healthy eating, a healthy lifestyle, and physical activity. Furthermore, the majority of HCPs are thinking of starting to eat healthily, living a healthy lifestyle and engaging in physical activity. Most healthcare professionals in the study were not meeting the 150 minutes international recommendation for physical activity. Time and laziness were the two most commonly reported barriers to healthy eating, a healthy lifestyle and physical activity. Furthermore, potential health benefits were reported at the most common enabler to healthy eating, a healthy lifestyle, and physical activity.



CHAPTER 5: DISCUSSION

5.1 Non-communicable disease profile and lifestyle factors of healthcare professionals

In this study, the majority of healthcare professionals had been diagnosed with hypertension, diabetes and high cholesterol and the majority of the HCPs were obese, and this was common amongst female HCPs and HCPs who had reported being diagnosed with NCD. Similarly, in other parts of South Africa (Phiri, Draper, Lambert & Kolbe-Alexander, 2014) and internationally, the majority of female HCPs and older HCPs above the age of 40 years are obese or overweight (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Skaal & Pengpid, 2011; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Kunene & Taukobong, 2015). Moreover, the majority of the female obese HCPs and older HCPs lead unhealthy lifestyles which have been found to negatively impact HCPs in engaging in health promotion with patients (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Skaal & Pengpid, 2011; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Kunene & Taukobong, 2015). The higher prevalence of obesity amongst females than males implies that female HCPs are at a higher risk for developing NCDs compared to male HCPs (Skaal & Pengpid, 2011; Kolbe-Alexander, Proper, Lambert, van Wier, Pillay, Nosse, Adonis & Van Mechelen, 2012; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017). Obesity amongst HCPs and the general population has become a global public health concern in both developing and developed countries (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013; Kelly, Wills & Sykes, 2017). It is one of the most significant risk factors for the major non-communicable diseases that are responsible for deaths in Kwazulu-Natal and South Africa (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Department of Health KwaZulu-Natal, 2016; Phetla & Skaal, 2017; Simfukwe, Van Wyk & Swart, 2017).

The high rate of obesity amongst HCPs has been linked to the unhealthy lifestyles that the majority of HCPs lead (Zapka, Lemon, Magner & Hale, 2009; Blake, Malik, Mo & Pisano, 2011; Skaal & Pengpid, 2011; Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013; Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Kunene & Taukobong, 2015; Perry, Gallagher & Duffield, 2015). These lifestyles not only expose them to higher risks of obesity but also increase the risk for development of NCDs (Skaal & Pengpid, 2011; Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Hidalgo, Mielke, Parra, Lobelo, Simões, Gomes, Florindo, Bracco, Moura, Brownson, Pratt, Ramos & Hallal, 2016; Kelly, Wills & Sykes, 2017). Furthermore, the high rate of obesity

amongst HCPs, but more specifically nurses, has also been linked to the nature of the work environment and shifts that often cause them to skip meals. As a result, they tend to resort to overeating when they get a chance to eat, and unfortunately, they opt for unhealthy energy-dense foods (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013). Moreover, age, gender, and marital status are believed to have an impact on the level of obesity amongst nurses (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013). In a study by Aryee et al. (2013), female nurses of older age who were married were more likely to be obese than the male nurses of younger age, who have never married (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013).

5.2 Attitude towards healthy eating

Healthy eating is defined in literature as consuming a diet which includes the consumption of foods low in fat, sugar, salt, and processed foods but high in fruits, vegetables, whole grains, nuts and seeds. Such a diet contributes towards the reduction of NCDs such as coronary heart disease, type 2 diabetes, and cancer (de Mestral, Stringhini & Marques-Vidal, 2016; Hiza, et al., 2018). In this study, healthy eating was mostly defined as “maintaining a healthy balanced diet “and “eating a balanced diet with lots of vegetables, fruits, water and a small portion of meat, starch, fats, salt, and sugars.” Very few of the HCPs correctly understood what healthy eating was, which might have contributed towards their attitudes towards healthy eating and whether or not it is something they find difficult to do (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001). This gap regarding what healthy eating consists of should be a focus area when planning interventions, to ensure that individuals fully understand the concept of healthy eating and find it easy to develop good habits as well as develop self-efficacy to maintain this health behaviour (Albert, Butler & Sorrell, 2014; Skaal, 2013).

Internationally, healthy eating habits amongst healthcare professionals are poor, mainly consisting of foods high in fats and processed foods (Blake, Malik, Mo & Pisano, 2011; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqas & Ghaffar, 2015; Perry, Gallagher & Duffield, 2015; Power, Kiezebrink, Allan & Campbell, 2017). In this study, few healthcare professionals reported that they were currently eating healthily at the time of the research, however, when asked about their readiness to start practising healthy eating, a lesser percentage reported that they were already eating healthily which did not correlate with the previous question asked about “currently eating healthy.” The discrepancy in their responses suggests that some of the HCPs could have reported that they are eating healthily

initially because of fear of judgment, or they felt that they did not want to be seen as not doing the right thing. Furthermore, some HCPs perhaps thought that they were already following a healthy diet based on what they believed healthy eating is, which could have been influenced by many different factors (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001; Akamatsu, Maeda, Hagihara & Shirakawa, 2005). Nonetheless, the majority of HCPs in this study considered healthy eating was important for them and felt confident in preparing healthy food or meals and being able to eat healthily regularly. However, despite valuing the importance of healthy eating and having confidence in being able to prepare healthy food or meals and being able to eat healthily regularly, the majority of HCPs still reported that maintaining healthy eating was somewhat difficult for them. Likewise, the majority of HCPs internationally have also reported positive attitudes towards healthy eating, which did not translate to maintaining healthy diets (Hearty, McCarthy, Kearney & Gibney, 2007; Albert, Butler & Sorrell, 2014; Simfukwe, Van Wyk & Swart, 2017).

Despite positive attitudes towards healthy eating, the majority of the HCPs in this study still felt unhappy about their current eating habits; meanwhile, some of the HCPs were somewhat happy to very happy about their eating habits. The lack of satisfaction regarding one's eating habits could be because some of these HCPs might just be happy about a certain aspect of a healthy eating life and might feel that if they change that aspect, they would be very content about their eating habits. However, the majority found maintaining eating healthy regularly to be difficult. Literature has reported the difficulty in maintaining healthy eating regularly could be caused by the very reason that the majority of people are usually slow to change lifelong habits that they have been accustomed to (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001). Overall, the majority of the HCPs at this stage reported that they felt that they did not have to change their current eating habits. However, some of them were thinking of starting to practise healthy eating but not in the next month or the next six months. This could explain why most HCPs within this setting are not motivated enough to consult with a dietician as they are currently not ready for change despite them valuing the importance of healthy eating for their health. This lack of interest in trying to adopt new healthy ways of eating might also imply that most HCPs might not have much interest in matters relating to eating well for good health (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001).

5.3 Attitude towards a healthy lifestyle

In this study, the definitions of a healthy lifestyle varied tremendously, and the majority of the HCPs defined a healthy lifestyle as “A lifestyle that includes healthy eating and exercise,” and as “Eating healthy, physical activities, not using substances, avoiding harm to the body and minimizing diseases.” Less than 50% of the HCPs in the current study population reported that they were following a healthy lifestyle. The lifestyle of most of the HCPs in this study consisted of physical inactivity and unhealthy eating habits. However, although this study population was physically inactive and had unhealthy eating habits, the majority of them did not use tobacco products, smoke or consume alcohol. Similarly, the majority of HCPs across the globe are leading unhealthy lifestyles also characterised by unhealthy eating habits and physical inactivity which predisposes them to obesity and a number non-communicable diseases (NCDs) (Zapka, Lemon, Magner & Hale, 2009; Blake, Malik, Mo & Pisano, 2011; Skaal & Pengpid, 2011; Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqas & Ghaffar, 2015; Kunene & Taukobong, 2015; Perry, Gallagher & Duffield, 2015; Power, Kiezebrink, Allan & Campbell, 2017).

Despite several HCPs being obese, not meeting the international recommendations for PA and eating unhealthily, some of the HCPs in this study reported that they were practising a healthy lifestyle. Remarkably, the majority of HCPs who reported that they were following a healthy lifestyle were thinking of starting to practise a healthy lifestyle when they were asked about their readiness for practising a healthy lifestyle. The discrepancy could be due to the HCPs’ definition or understanding of what a healthy lifestyle is which could have influenced the way they answered the question “Are you currently following a healthy lifestyle?” or maybe they felt ashamed of their current lifestyle practice as suggested by Kearney et al. 2001.

With such a low percentage of HCPs leading a healthy lifestyle, HCPs must be educated more on the direct and indirect health benefits of following a healthy lifestyle (Derman, Patel, Nossel & Schwellnus, 2008; Shahar, Henkin, Rozen, Adler, Levy, Safra, Shai, Itzhak, Golan, & Shai, 2009; Albert, Butler & Sorrell, 2014; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqas & Ghaffar, 2015). Furthermore, HCPs need to be enlightened about the indirect benefits of maintaining a healthy lifestyle, which includes gaining the ability to engage confidently in health promotion with patients and acquiring an improved sense of professional adequacy and self-efficacy (Derman, Patel, Nossel & Schwellnus, 2008; Shahar, Henkin,

Rozen, Adler, Levy, Safra, Shai, Itzhak, Golan, & Shai, 2009; Albert, Butler & Sorrell, 2014; Ahmad, Taggart, Shafique, Muzafar, Abidi, Ghani, Malik, Zahid, Waqas & Ghaffar, 2015).

Overall, HCPs in this hospital setting seem to be mindful of the importance of following a healthy lifestyle, and they value a healthy life; however, this positive attitude towards a healthy life and lifestyle did not translate into a majority of them engaging in a healthy lifestyle. The majority of the healthcare professionals in this study felt the need to change their current lifestyle however most of them were only just contemplating about starting to practise a healthy lifestyle with no specific time frame given. Furthermore, most HCP felt that they were confident in being able to follow a healthy lifestyle despite finding following a healthy lifestyle somewhat difficult. These findings suggest that HCPs in the setting do have positive attitudes towards practising a healthy lifestyle; however, some barriers are currently making it difficult for them to practise healthy lifestyles.

5.4 Attitude towards physical activity

In this study, most HCPs reported that they were engaging in regular physical activity; however, when asked about readiness to engage in PA, a low percentage of them reported that they were already engaging in PA. This discrepancy could imply that there is an overall lower level of physical activity amongst this group than initially reported when asked if they are engaging in PA/ exercise. Moreover, this discrepancy could also be because HCPs would have felt the need to respond 'yes' due to fear of judgment, which is a trend that was seen in the healthy eating and healthy lifestyle section. The low level of physical activity amongst this group of HCPs is similar to that of HCPs from a different part of KwaZulu-Natal (Kunene & Taukobong, 2015), South-West Nigeria (Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015), and Pakistan (Ahmad et al., 2015) where more than 50% of HCPs were physically inactive (Ahmad et al., 2015; Blake, Malik, Mo & Pisano, 2011; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Kunene & Taukobong, 2015). In this study, physical inactivity was commonly found amongst obese and female HCPs which compares well with the results from similar studies of other women from other parts of South Africa and women from South-West Nigeria (Walter & Du Randt, 2011; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Kunene & Taukobong, 2015).

Although some HCPs within the study reported that they were engaging in PA, a large percentage of them did not meet the international recommendation for PA, which suggests that there are low PA levels amongst this population in spite of the majority of them reporting that

they engage in PA. The majority of healthcare professionals in this study did not meet the 150 minutes of PA recommendation. Similarly, this trend has been seen amongst most HCPs internationally, and as a result, HCPs are seen as bad examples to their patients and the general public, as such a sedentary lifestyle further increases the risks for NCDs development which has the potential to affect job productivity (Aryee, Helegbe, Baah, Sarfo-Asante & Quist-Therson, 2013; Iwuala, Sekoni, Olamoyegun, Akanbi, Sabir & Ayankogbe, 2015; Kunene & Taukobong, 2015).

Despite low levels of PA amongst the HCPs in this study, most HCPs valued the importance of engaging in regular physical activity for their health. The same results were found amongst nurses from the United Kingdom and HCPs from other parts of South Africa where most HCPs had positive attitudes towards PA which did not translate into a change in exercise behaviour (Skaal, 2011; Albert, Butler & Sorrell, 2014; Simfukwe, Van Wyk & Swart, 2017). Most HCPs within this study felt confident about engaging in PA, but the majority still found it somewhat difficult to engage in PA. The difficulty could either be due to a lack of motivation or to laziness, which was also reported as the most common barrier to PA. A study by Simfukwe et al. (2017) reported similar findings; however, difficulty in engaging in PA was only found in obese South Africans as they reported that engaging in PA was not their strongest point and they did not have the patience for engaging in PA as it felt like it was punishment (Simfukwe, Van Wyk & Swart, 2017).

Despite more than half of the study population reporting that they engaged in PA, most of the HCPs were not happy about their current fitness level. The study revealed that the majority of HCPs were thinking of starting to engage in PA. There was a small percentage of HCPs already engaging in PA. Similar results were found in a previous study in South Africa (Skaal, 2011). Overall, despite the numerous known benefits of engaging in PA, physical inactivity remains a primary global concern amongst most HCPs and the general population, and it has been reported as a contributing factor towards the development of obesity amongst people (Skaal, 2013; Sandu, Chereches, Baba, Revnic, Mocean, 2018).

5.5 Enablers to healthy eating, a healthy lifestyle, and physical activity

In this study, enablers were defined as factors that assist, or promote participation in healthy eating, practising a healthy lifestyle, and engaging in physical activity (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013).

5.5.1 Enablers to healthy eating

In this study, the most commonly reported enablers to healthy eating were potential health benefits, family, wanting to be a role model for children, and education received during training. In this study, the health benefits associated with healthy eating was the most reported enabler for healthy eating in this population. This finding is similar to that of Eikenberry & Smith (2004), which found that most Americans reported that potential health benefits were enablers to healthy eating. Although they reported the potential health benefits associated with healthy eating as an enabler to healthy eating, the majority of the HCPs in this study were not practising healthy eating but were still thinking of starting to practise healthy eating. The study findings were similar to most studies conducted internationally as the majority of HCPs struggled with implementing healthy eating practices despite knowing about the benefits of healthy eating. The challenge in maintaining and/or starting with healthy eating can be attributed to specific barriers unique to each individual (Reeves & Rafferty, 2000; Eikenberry & Smith, 2004; James, 2004; de Mestral, Stringhini & Marques-Vidal, 2016; Hiza et al., 2018).

Apart from potential health benefits, most HCPs in the study also reported that wanting to be a role model for children was an enabler to them for healthy eating. This factor has been reported in several studies internationally amongst the general population and HCPs (Dibsdall, Lambert, Bobbin & Frewer, 2003; Eikenberry & Smith, 2004; James 2004; Power, Kiezebrink, Allan & Campbell, 2017). The majority of these studies did not only focus on being a role model to children as the only enabler, but some went as far as reporting wanting to be a good role model to friends and family as an enabler to healthy eating (Dibsdall, Lambert, Bobbin & Frewer, 2003; Eikenberry & Smith, 2004; James 2004; Power, Kiezebrink, Allan & Campbell, 2017).

Willpower and owning a food garden were also reported as enablers to healthy eating; however, this was found for very few HCPs within this study. Having the ability to grow and produce food has been reported as an enabler to healthy eating amongst women from rural communities in the United States of America (USA) (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). A study by Seguin et al. (2014) found that the ability to grow food made it easier for individuals to maintain healthy eating as it increased access to a constant supply of fresh foods that they had control over (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014). Overall, the potential health benefits and wanting to be a role model were the most common enablers reported in this study.

5.5.2 Enablers to a healthy lifestyle

In this study, the commonly reported healthy lifestyle enablers were health benefits, family, wanting to be a good role model, education received during training and availability of resources. Most international studies have reported self-efficacy, friends, family, and family support, easy access to and from healthy lifestyle programmes, and availability of healthy lifestyle programmes as the main enablers to practising a healthy lifestyle (Withall, Jago & Fox, 2011; Smith, Straker, McManus & Fenner, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017).

In this study, the majority of the HCPs reported the health benefits associated with practising a healthy lifestyle was an enabler to practising a healthy lifestyle. These results were similar to those of other HCPs from a study by Simfukwe et al. (2017). Healthcare professionals reported that the benefits of leading a healthy lifestyle motivated South African HCPs to lead healthy lifestyles, which helped them maintain productivity at work, and minimise absenteeism due to sickness (Simfukwe, Van Wyk & Swart, 2017). The benefits of leading a healthy lifestyle have been found to help promote good physical, social and psychological wellbeing of an individual, and also reduce the risk of developing NCDs, decrease mortality caused by NCDs and ultimately increase the life expectancy of individuals (Loef & Walach, 2012; Kurnat-Thoma, El-Banna, Oakcrum & Tyroler, 2017).

Furthermore, family and wanting to be a role model was also reported as an enabler for leading a healthy lifestyle amongst most HCPs in the study. Similarly, nurses from different parts of the world have reported this as an enabler to living a healthy lifestyle (Kloosterboer, van den Brekel, Rengers, Peek, & de Wit, 2015; de Mestral, Stringhini & Marques-Vidal, 2016; Power, Kiezebrink, Allan & Campbell, 2017). Healthcare professionals who lead by example are good role models to patients as they can positively engage and promote health messages to their patients, which makes patients more likely to trust the advice given by HCPs (Simfukwe, Van Wyk & Swart, 2017).

The availability of resources was also a common enabler for living a healthy lifestyle amongst this study population. In most studies, resources for a healthy lifestyle include healthy lifestyle programmes at work and home, which are easily accessible and available for individuals to utilise. Smith et al. (2014) reported that some people were more willing to engage in healthy lifestyle programmes if the programme allowed for an easy commute back home, as safety was one of the main concerns for most participants (Smith, Straker, McManus & Fenner, 2014).

Moreover, if the programmes were cost- and time-efficient, and allowed the involvement of family and friends in healthy lifestyle programmes, they were more effective at motivating individuals to engage in physical activity (Smith, Straker, McManus & Fenner, 2014; Kloosterboer, van den Brekel, Rengers, Peek, & de Wit, 2015). Furthermore, the availability of resources at work such as healthy lifestyle programmes in the workplace has been reported to be an enabler to some HCPs. Such programmes have been found to encourage and motivate HCPs to engage in healthy lifestyle behaviours effortlessly as they are conveniently located and easily accessible during work hours. However, this has been reported as an enabler to those HCPs who were physically active compared to those who were not physically active regularly (Albert, Butler & Sorrell, 2014).

5.5.3 Enablers to physical activity

In this study, the most commonly reported enablers to physical activity were health benefits, fun, and enjoyment, availability of recreational facilities, friends, and family. The commonly reported enablers to PA in literature are self-efficacy/self-motivation, social support and environmental factors (Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Albert, Butler & Sorrell, 2014; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016; Simfukwe, Van Wyk & Swart, 2017).

Health benefits associated with engaging in physical activity was the most commonly reported enabler for PA. This factor has also been reported as an enabler amongst doctors and nurses from the United Kingdom (Albert, Butler & Sorrell, 2014). Although the majority of HCPs within this study seem to know about and value the importance of PA for their health, many of them still struggle to maintain active lifestyles. Similarly, this has also been reported amongst the majority of HCPs across the world (Haskell, Lee, Pate, Powell, Blair, Franklin, Macera, Heath, Thompson & Bauman, 2007; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016; Shin, Lee & Belyea, 2018; Zafiroopoulos, Alison & Heard, 2019).

The availability of accessible recreational facilities was reported as a major enabler to PA amongst most HCPs within this study. This factor has also been commonly reported in the literature as a common enabler of PA amongst the general population and HCPs internationally (Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Sandu, Chereches, Baba, Revnic, Mocean, 2018; Zafiroopoulos, Alison & Heard, 2019). Amongst several HCPs in South Africa, having access

to workplace gymnasium has been reported as an enabler to PA (Skaal, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017). Access to a workplace gymnasium for HCPs to use for recreational purposes is believed to motivate HCPs to engage in PA. It is a more convenient, affordable and time-effective option for HCPs as many HCPs reported that they often arrived home so late and tired and had no time to go to recreational facilities (Skaal, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017).

Friends and family were reported as enablers to PA amongst HCPs within this study. Literature has reported that social support from family, friends and life partners plays a very critical role for most HCPs, as their support helped them to stay motivated and made the whole process of engaging in PA enjoyable and less stressful (Albert, Butler & Sorrell, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Furthermore, engaging in PA with friends and family members were reported to play a significant role in retaining individuals for longer in PA programmes (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Skaal, 2013; Sandu, Chereches, Baba, Revnic, Mocean, 2018).

5.6 Barriers to healthy eating, a healthy lifestyle, and physical activity

Barriers were defined as factors that make it difficult to practice healthy eating, a healthy lifestyle, and physical activity (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013).

5.6.1 Barriers to healthy eating

The most commonly reported barriers to healthy eating amongst this group of HCPs were time, laziness, lack of discipline, food preparation and cost, availability of food, and knowledge. Similarly, it was reported in the literature that time, and the cost of food are common barriers to healthy eating (Zapka, Lemon, Magner & Hale, 2009; Eikenberry & Smith, 2004; Albert, Butler & Sorrell, 2014; Bukman, Teuscher, Feskens, van Baak, Meershoek & Renes, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Furthermore, barriers to healthy eating such as cost, time, lack of willpower, and being picky about food have been associated with age, obesity, income, and education (de Mestral, Stringhini & Marques-Vidal, 2016).

In this study, time was the most common barrier amongst most HCPs. Time has not only been reported in the literature as a barrier for HCPs, but the general population has also reported time as a barrier to healthy eating (Eikenberry & Smith, 2004; James, 2004; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Nicholls, Perry, Duffield, Gallagher & Pierce, 2017; Simfukwe, Van Wyk & Swart, 2017). In some studies, time was commonly reported as a barrier by females as they felt that they had other family and household priorities which competed with the time to prepare something healthy and eating healthy (James, 2004; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017). In literature, long working hours have been reported as the biggest cause of HCPs not having enough time to eat healthily, or even think about healthy eating, let alone being able to prepare healthy meals (James, 2004; Zapka, Lemon, Magner & Hale, 2009; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Simfukwe, Van Wyk & Swart, 2017). Eikenberry & Smith, (2004) suggested that healthy eating messages, programs and counselling advise should be more focussed on empowering individuals with practical skills and knowledge that will ensure that healthy eating is achievable with the least time and cost as possible (Eikenberry & Smith, 2004).

Laziness and the lack of discipline were also reported as barriers to healthy eating by most HCPs. This finding was not unique to this study population as some Americans, and South African HCPs from other parts of South Africa have also reported this as a barrier (Eikenberry & Smith, 2004; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017). Simfukwe, Van Wyk & Swart (2017) reported that high levels of laziness could contribute to a lack of self-management skills such as self-discipline and willpower (Boyington, Carter-Edwards, Piehl, Hutson, Langdon & McManus, 2008; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017). Self-discipline has been reported as an essential self-management skill required for one to become more self-efficient in practising and maintaining any health behaviour (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017).

Although not many HCPs in this study population reported the availability of food as a barrier, most studies on HCPs and the general population have reported this as a major barrier to healthy eating, particularly availability of the right food at workplaces and places of residence (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Power, Kiezebrink,

Allan & Campbell, 2017). The majority of the studies on HCPs revealed that the availability of food and workplace food environment plays a crucial role in enabling unhealthy eating habits (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Internationally, most HCPs have reported the lack of availability of healthy food within the hospital as a major barrier to healthy eating. Most of the hospital tuck shops or cafeterias sold oily and overly processed foods at a lower price compared to healthier alternatives such as fruits and vegetables, leaving them susceptible to indulging in such unhealthy foods (Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Poor management with a lack of health awareness is believed to be the main contributing cause of the lack of good tuck shop and cafeteria policies and implementation of these policies (Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017).

The availability of food in this study was not commonly reported as a barrier to healthy eating; however, the cost of food was reported by most of the HCPs as a barrier to healthy eating. The cost of food as a barrier to healthy eating has also been reported in most international studies amongst people of middle to low socioeconomic status (Eikenberry & Smith, 2004; Bukman, Teuscher, Feskens, van Baak, Meershoek & Renes, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016; Simfukwe, Van Wyk & Swart, 2017). Internationally, the high cost of healthy food is a major barrier, which makes healthy food unaffordable and inaccessible to HCPs and the general population (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; de Mestral, Stringhini & Marques-Vidal, 2016). Similarly, some HCPs in a small town in Kwazulu-Natal reported that pre-packed health foods, fruits, and vegetables were unaffordable, thus resulting in them not being to purchase and eat healthy food regularly (Simfukwe, Van Wyk & Swart, 2017).

5.6.2 Barriers to a healthy lifestyle

The most commonly reported barriers towards a healthy lifestyle were time, laziness, lack of discipline, and knowledge. In literature, low self-efficacy and self-esteem, financial constraints, lack of social support, lack of time, poor implementation and support of work-based healthy lifestyle programmes have been reported as the most common barriers to practising a healthy lifestyle (Zapka, Lemon, Magner & Hale, 2009; McGuire, Anderson & Fulbrook, 2011; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Simfukwe, Van Wyk & Swart, 2017).

The lack of time was the most commonly reported barrier to practising a healthy lifestyle amongst this study population. Internationally, the lack of time has been commonly reported by the majority of HCPs to be a barrier to leading a healthy lifestyle (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017). Healthcare professionals in the United Kingdom and other parts of South Africa have attributed their lack of time to long working hours, stressful shift work, and also the continually changing work environment which prevents them from adopting healthy lifestyle behaviours (Albert, Butler & Sorrell, 2014; Phiri, Draper, Lambert & Kolbe-Alexander, 2014; Simfukwe, Van Wyk & Swart, 2017). McGuire, Anderson & Fulbrook, (2011) and Skaal (2011) suggested that lack of time could just be a perceived barrier but can also be translated to poor time management and/or the lack of discipline which has been seen amongst most individuals (McGuire, Anderson & Fulbrook, 2011, Skaal, 2011). The majority of the HCPs in this study lacked discipline and were lazy. The lack of discipline, lack of motivation, and laziness are often associated with a lack of interest regarding particular health behaviour and often result in low self-efficacy amongst individuals (McGuire, Anderson & Fulbrook, 2011).

5.6.3 Barriers to physical activity

In this study, time, laziness, lack of free recreational facilities, and safety were the most commonly reported barriers to physical activity amongst the HCPs. In other international studies, time, shift work, work schedule, and work conflicts have been reported as the most common barriers to physical activity amongst healthcare professionals (Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Albert, Butler & Sorrell, 2014; Baruth, Sharpe, Parra-Medina & Wilcox, 2014; Shin, Lee & Belyea, 2018). Additionally, Skaal (2011) reported that lack of motivation as a major influencing factor for HCPs' participation in physical activity (PA) in South Africa (Skaal, 2011).

The majority of HCPs reported time as a barrier to PA. This finding was similar to what most international studies have reported (Blake, Malik, Mo & Pisano, 2011; Skaal, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Albert, Butler & Sorrell, 2014; Baruth, Sharpe, Parra-Medina & Wilcox, 2014; Shin, Lee & Belyea, 2018). The lack of time as a barrier to PA amongst most HCPs has been largely attributed to shift work that consists of long working hours work and tiredness from hectic work schedules that most HCPs work (Skaal, 2011; Albert, Butler & Sorrell, 2014; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). However,

some female nurses in the United Kingdom and South Africa have attributed their lack of time to family responsibilities and roles they assume in their households (Skaal, 2011; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). These women further elaborated that their responsibilities often left them with less time to engage in physical activity. They often felt that they had to trade physical activity with family time and also sacrifice some of their sleep time to be able to engage in PA (Skaal, 2011; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Power, Kiezebrink, Allan & Campbell, 2017; Simfukwe, Van Wyk & Swart, 2017). Skaal (2011), however, argued that the lack of time to engage in PA could also be interpreted as a lack of time management for leisure activities, or that they are overworked (Skaal, 2011).

Although most HCPs within the study have reported that they felt confident about engaging in PA, the majority of HCPs still reported that they were lazy, and this was a barrier to engaging in physical activity. The lack of motivation, willpower and interest in PA, as well as laziness, are believed to result in low self-efficacy which can ultimately result in low levels of PA (Skaal, 2011; Albert, Butler & Sorrell, 2014; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016; Simfukwe, Van Wyk & Swart, 2017). Furthermore, laziness amongst HCPs in some parts of South Africa has been associated with the view that is engaging in PA as a tiring activity more than a fun, stress-relieving activity (Simfukwe, Van Wyk & Swart, 2017).

The lack of free recreational facilities and personal safety were reported as barriers to PA by the majority of the HCPs in this study. Without a doubt, one's socioeconomic status does affect accessibility to recreational or fitness facilities (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Jamil, Ismail, Idris, Soo, Teng, Bahaman, & Fadzil, 2016). The cost of gym memberships has been reported as an inhibiting factor amongst some nurses and the general population in engaging in physical activity (Blake, Malik, Mo & Pisano, 2011; Albert, Butler & Sorrell, 2014; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017). On the other hand, gyms were reported to be more safe and convenient places to go to for PA as the majority felt that they could not exercise in their own homes due to lack of space (Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017). The lack of free recreational facilities means that some of the people in the lower to middle SES were not able to engage in PA as they were unable to afford gymnasium fees, thus acting as a hindrance to engaging in PA (Albert, Butler & Sorrell, 2014; Blake, Malik, Mo & Pisano,

2011; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Simfukwe, Van Wyk & Swart, 2017).

Most studies have reported the lack of accessible work-based gymnasium as a contributing factor to physical inactivity amongst most HCPs (Skaal, 2011; Nea, Kearney, Livingstone, Pourshahidi & Corish, 2015; Simfukwe, Van Wyk & Swart, 2017). The lack of access to a work-based gymnasium for personal use is believed to be due to the lack of support from management, which makes it very difficult for some HCPs to incorporate PA into their busy work and life schedules (Simfukwe, Van Wyk & Swart, 2017; Skaal, 2011). Access to free recreational facilities was seen as one barrier; safety was also one of the concerns of the majority of most HCPs within this study. Being able to easily and safely commute to these recreational facilities means that one does not have to stress about safety and how one would get there and back, which makes engaging in PA easy and stress-free (Boyington, Carter-Edwards, Piehl, Hutson, Langdon & McManus, 2008; Withall, Jago & Fox, 2011; Rosenkranz, Kolt, Brown, & Berentson-Shaw, 2013; Seguin, Connor, Nelson, LaCroix & Eldridge, 2014; Sandu, Chereches, Baba, Revnic, Mocean, 2018; Zafiropoulos, Alison & Heard, 2019).



CHAPTER 6: CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

6.1 Conclusions

The study has revealed that the majority of the healthcare professionals (HCPs) in the study hold somewhat positive attitudes towards healthy eating, a healthy lifestyle and physical activity. The majority of them were only just thinking about healthy eating, physical activity and leading a healthy lifestyle but not ready to start implementing healthy eating, a healthy lifestyle and engaging in physical activity (PA) within the next month or six months. Furthermore, the majority of healthcare professionals in this health setting were not living up to the role model status to their patients, as the majority of them were found to be obese or overweight and a low percentage of them were already engaging in PA, eating healthy and living a healthy lifestyle. The majority of HCPs within this study reported a lack of time and laziness as the most significant barriers to healthy eating, a healthy lifestyle, and physical activity.

In conclusion, the majority of the HCPs within this study require more than just motivation to get them to start implementing healthy eating, a healthy lifestyle and physical activity (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001; Hearty, McCarthy, Kearney & Gibney, 2007; Skaal, 2013; Power, Kiezebrink, Allan & Campbell, 2017). The majority of the HCPs were only thinking of changing their behaviour. However, the majority of them did not indicate whether they wanted to start within the next month or six months. This finding suggests that programme and policymakers need to really look at ways of motivating healthcare professionals and also find ways to address the immediate work and living environment as well as the personal factors which have a potential to influence health and exercise behaviour (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001; Hearty, McCarthy, Kearney & Gibney, 2007; Skaal, 2013; Power, Kiezebrink, Allan & Campbell, 2017). Additionally, an individual's perceived need to change health behaviour is crucial when planning and developing intervention programmes and policies to ensure that these are responsive to the various needs of individuals, (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001; Hearty, McCarthy, Kearney & Gibney, 2007; Hearty, McCarthy, Kearney & Gibney, 2007; Skaal, 2013; Power, Kiezebrink, Allan & Campbell, 2017). All these factors have the potential to increase personal responsibility, self-discipline, and self-efficacy for healthy lifestyle habits, and address various barriers to eating healthily, physical activity and leading a healthy lifestyle at workplaces (Kearney, Gibney, Livingstone, Robson, Kiely &

Harrington, 2001; Hearty, McCarthy, Kearney & Gibney, 2007; Skaal, 2013; Power, Kiezebrink, Allan & Campbell, 2017).

6.2 Limitations and recommendation for future studies

This research had some limitations. The study took on a descriptive cross-sectional study design which only allows for a researcher to describe variables. In addition, the study did not make use of a diet recall questionnaire to explore healthcare professionals' diets. This would have allowed the researcher to understand in greater depth what the HCPs refer to when they say they are following a healthy diet and how their current eating habits affect their attitudes towards healthy eating (Kearney, Gibney, Livingstone, Robson, Kiely & Harrington, 2001, Hearty, McCarthy, Kearney & Gibney, 2007).

The lengthy questionnaire could have contributed towards the lower than expected number of responses from HCPs. The majority of the HCPs who preferred to take the questionnaires home due to time and fatigue did not return the questionnaires and were lost to follow up. The length of the questionnaire could have demotivated the HCPs and made them think it would be time-consuming to complete the questionnaire. The results of this study may not be generalisable to other healthcare professionals working in other hospitals located in different regions of the province as the study used a proportional sampling method, and the population from other healthcare facilities in the different parts of Kwazulu-Natal might have different socio-demographic and lifestyle factors compared to this study population. Furthermore, the hospital dietician being the primary administrator of the questionnaire could have also introduced another element of interview bias within the study results as some of the HCPs could have answered untruthfully due to fear of judgement and some would have felt obligated to participate in the study because they knew the administrator of the questions.

The study looked at barriers and enablers subjectively, which did not allow HCPs to fully elaborate on each chosen barrier, which would have provided more insight regarding the barriers and enablers to implementing healthy eating, a healthy lifestyle, and physical activity. Future studies can look more into exploring the barriers and enablers to healthy eating, a healthy lifestyle and physical activity using a qualitative approach such as in-depth interviews, which will give a deeper understanding of these specific barriers and enablers. An in-depth understanding will help inform the employee health and wellness programme and policymakers to better tailor and focus work-based programmes and/or policies to address the specific barriers and enablers at a deeper level.

6.3 Recommendations

Recommendations for hospital

Currently, the hospital lacks nutrition interventions aimed at educating and empowering healthcare professionals on nutrition-related matters. Such an intervention targeted at educating healthcare professionals on healthy eating, affordable lunch packs and affordable healthy cooking ideas can assist in improving the health and nutritional status of HCPs within the hospital. The nutrition education intervention should be coupled with individual counselling for those HCPs in need of disease-specific nutrition management. Moreover, the hospital lacks a proper gymnasium for staff members to utilise any time of the day when possible. Ensuring that this facility is available at any time for the use of HCPs will enable most HCPs to engage in PA easily and ensure that they do not compromise on other family responsibilities when they get home, as time was their most significant barrier for engaging in PA and leading a healthy lifestyle. Such an environment conducive to engaging in PA is crucial as studies have shown that such an environment has the potential to continuously stimulate and motivate HCPs to lead healthy and active lives (Skaal, 2013).

In addition, several research studies have also recommended introducing a healthy tuck-shop food policy for patients and HCPs to address accessibility and availability of healthy foods at workplaces (Fitzgerald & Spaccarotella, 2009; Power, Kiezebrink, Allan & Campbell, 2017; Skaal, 2013). Such policies have been proven to be useful to a certain extent at reducing barriers to eating healthily at work. Addressing these current problems will ensure improved access to free recreational activities and access to healthy foods at work, thus promoting new healthy work habits, which could potentially translate to improved healthy habits for their families at their respective homes.

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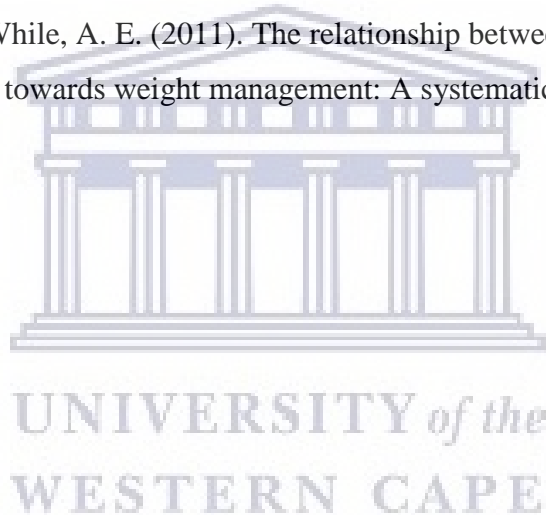
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APPENDICES

APPENDIX 1: QUESTIONNAIRE

**FOR OFFICE USE ONLY:
CODE**

QUESTIONNAIRE

Dear Participant. Thank you for taking the time to participate in this research. This questionnaire is designed to assess attitudes towards healthy eating, a healthy lifestyle, and physical activity as well as barriers and enablers of these individual components in Healthcare professionals. Please note that your responses will be anonymous and will not be linked to your identity. Instructions on how to complete the questionnaire are specified below.

Instructions:

- Please DO NOT write your name on the questionnaire
- Please answer all questions in English
- Please mark your answers with a “ X ” or “ ✓ ” where applicable
- If you make a mistake when filling in, please do this: ~~mistake~~
- Some sections allow for you to tick more than one option, please tick all the options that are applicable to you.

SECTION A: SOCIO-DEMOGRAPHICS AND LIFESTYLE

1. Age in _____
years

2. Gender **Female** **Male**

3. Occupation *Please specify:* _____
Please specify Professional Board of registration:

4. Did you receive any form of nutrition education while studying for your degree? **Yes** **No**

5. Do you ever visit a dietician? **Yes** **No**

If Yes, please specify how often _____

6. Have you been diagnosed with any of these diseases (Diabetes, Hypertension, Heart disease, High Cholesterol)? **Yes** **No**

	Diabetes	High blood pressure	Heart disease	High Cholesterol
7. If yes, Specify the disease/s	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



SECTION B: ATTITUDES, ENABLERS AND BARRIERS

1. How would you define healthy lifestyle?

2. Are you currently following a healthy lifestyle?

Yes

No

3. What does a healthy life mean to you?

It does not mean anything

Not Sure

A healthy life is important for me

4. How important is it for you to follow a healthy lifestyle?

Not important

Not Sure

Important

5. How important is it for you to reduce tobacco use?

Not important

Not Sure

Important

Do not use tobacco products

6. How important is it for you to reduce smoking?

Not important

Not Sure

Important

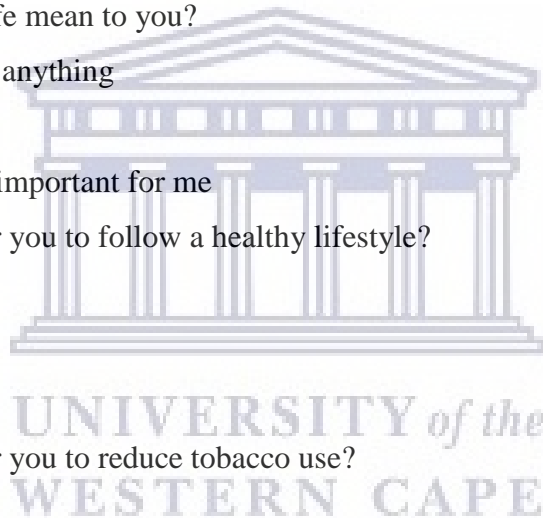
Do not smoke

7. How important is it for you to reduce alcohol intake?

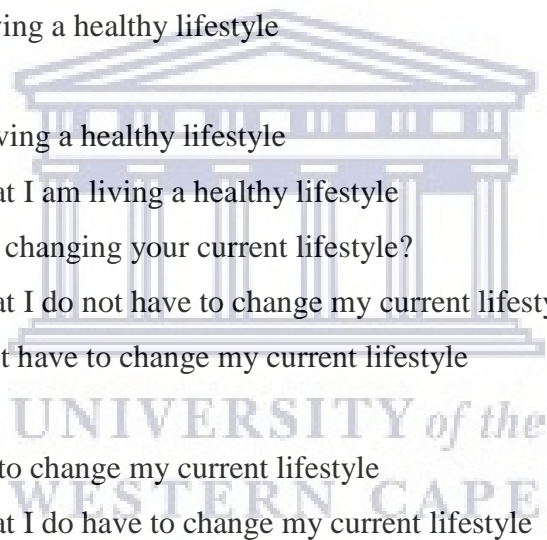
Not important

Not Sure

Important



- Do not consume alcohol
8. How difficult is it for you to maintain a healthy lifestyle?
- Not difficult
- Somewhat difficult
- Difficult
- Very difficult
9. How confident do you feel about following a healthy lifestyle?
- Not confident
- Confident
- Very confident
10. How do you feel about your current lifestyle?
- I strongly feel that I am not living a healthy lifestyle
- I feel I am not living a healthy lifestyle
- Unsure
- I feel that I am living a healthy lifestyle
- I strongly feel that I am living a healthy lifestyle
11. How do you feel about changing your current lifestyle?
- I strongly feel that I do not have to change my current lifestyle
- I feel that I do not have to change my current lifestyle
- Unsure
- I feel that I have to change my current lifestyle
- I strongly feel that I do have to change my current lifestyle
12. How ready are you to start practicing a healthy lifestyle?
- I am not considering starting to practice a healthy lifestyle
- I am thinking of starting to practice a healthy lifestyle
- I am planning to start practicing a healthy lifestyle in the next six months
- I am definitely planning to start practicing a healthy lifestyle in the next month
- I am already practicing a healthy lifestyle



13. Healthy lifestyle enablers

(Enabler= makes it easy for you to live a healthy lifestyle)

please mark any that applies to you

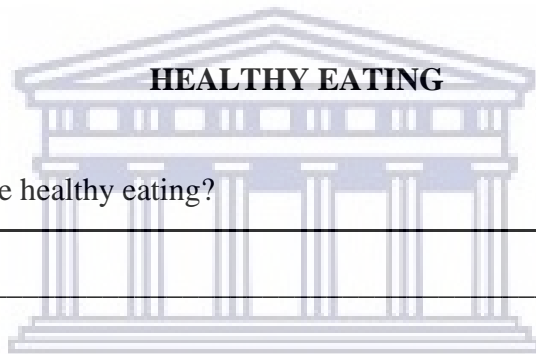
- Family
- Want to be a good role model
- Health benefits
- Availability of resources
- Food stamps or vouchers
- Education
- Friends
- other _____

Healthy lifestyle barriers

(barrier=makes it difficult for you to live a healthy lifestyle)

please mark any that applies to you

- Time
- Laziness
- Lack of discipline
- Availability of resources
- How I was raised
- Knowledge
- other _____



1. How would you define healthy eating?

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2. Are you currently following a healthy diet?

- Yes
- No

3. How important is eating healthily to you?

- Not important
- Not Sure
- Important

4. How difficult is it for you to eat healthily?

- Not so difficult
- Somewhat difficult
- Difficult

5. How do you feel about your current eating habits?

- Very unhappy
- Unhappy
- Somewhat happy
- Happy
- Very happy

6. How do you feel about changing your current eating habits?

- I strongly feel that I need to change my current eating habits
- I feel I need to change my current eating habits
- unsure
- My current eating habits are fine and do not need to be changed
- I strongly feel that my current eating habits are fine and do not need to be changed

7. How confident do you feel in being able to eat healthily regularly?

- Not confident
- Unsure
- Confident

8. How confident are you in preparing healthy food/meals?

- Not confident at all
- Not confident
- Unsure
- Confident
- Very confident



9. How ready do you feel to start eating healthily?

- I am currently not thinking of starting to eat healthily
- I am thinking of starting to eat healthily
- I am planning to start eating healthily in the next six months
- I am definitely planning to start eating healthily in the next month
- I am already eating healthily

10. Healthy eating enablers

(Enabler= makes it easy for you to eat healthily)

please mark any that applies to you

- Family
- Potential health benefits

Healthy eating barriers

(barrier=makes it difficult for you to eat healthily)

please mark any that applies to you

- Time

- My own garden*
- Will power*
- Want to be a role model for children*
- Education*
- Friends*
- other* _____

- Cost*
- Laziness*
- Taste*
- Lack of discipline*
- Picky*
- Food preparation*
- Availability of food*
- Knowledge*
- other* _____

PHYSICAL ACTIVITY

1. How would you define physical activity?

2. Do you do any physical activity such as walking, running, aerobics or formal sports such as soccer, netball, hockey etc?

- Yes
- No

If yes, please specify duration per session _____ and frequency per week

3. How important is exercising regularly to you?

- Not important
- Unsure
- Important

4. How important do you think it is for your health to exercise regularly?

- Not important
- Unsure
- Important

5. How do you feel about your current fitness level?

- I am not happy
- I am not concerned

I am happy

6. How difficult is it for you to engage in physical activity/exercise?

Not difficult at all

Not so difficult

Difficult

Very Difficult

7. How confident do you feel in engaging in physical activity/exercise?

Not confident at all

Not confident

I am not concerned

Confident

Very confident

8. How ready do you feel about engaging in physical activity/exercise?

I am currently not considering starting to engage in physical activity/exercise

I am thinking of starting to engage in physical activity/exercise

I am planning to start engaging in physical activity/exercise in the next six months

I am definitely planning to start engaging in physical activity/exercise in the next month

I am already engaging in physical activity/exercise

9. Enablers to physical activity

(Enabler=makes it easy for you to engage in physical activity)

please mark any that applies to you

Family and friends

Health benefits

Availability of recreational facilities

Fun and enjoyment

Safe neighbourhood

other _____

Barriers to physical activity

(barrier=makes it difficult for you to engage in physical activity)

please mark any that applies

Time

Heavy traffic

Laziness

Safety

lack of free recreational facilities

other _____

Thank you for taking the time to complete this questionnaire. ☺

APPENDIX 2: UNIVERSITY OF THE WESTERN CAPE APPROVAL LETTER



OFFICE OF THE DIRECTOR: RESEARCH RESEARCH AND INNOVATION DIVISION

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South Africa
T: +27 21 959 4111/2948
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20 June 2019

Ms MT Mukhodobwane
Nutrition and Dietetics
Faculty of Community and Health Sciences

Ethics Reference Number: BM19/4/14

Project Title: Attitudes towards healthy eating, a healthy lifestyle and physical activity of Healthcare professionals: A descriptive cross-sectional study in a public hospital in KwaZulu-Natal.

Approval Period: 20 June 2019 – 20 June 2020

I hereby certify that the Biomedical Science Research Ethics Committee of the University of the Western Cape approved the scientific methodology and ethics of the above mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember to submit a progress report in good time for annual renewal.

The Committee must be informed of any serious adverse event and/or termination of the study.

A handwritten signature in black ink, appearing to read 'Patricia Josias'.

*Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape*

BMREC REGISTRATION NUMBER -130416-050

FROM HOPE TO ACTION THROUGH KNOWLEDGE.

APPENDIX 3: DEPARTMENT OF HEALTH APPROVAL LETTER



health
Department:
Health
PROVINCE OF KWAZULU-NATAL

Physical Address: 330 Langalibalele Street, Pietermaritzburg
Postal Address: Private Bag X9051
Tel: 033 395 2805/ 3189/ 3123 Fax: 033 394 3782
Email: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

DIRECTORATE:
Health Research & Knowledge
Management

Ref: KZ_201907_018

Dear M T Mukhodobwane
(UWC)

Subject: Approval of a Research Proposal:

1. The research proposal titled '**Attitudes towards healthy eating, a healthy lifestyle and physical activity of Healthcare professionals: A descriptive cross-sectional study in a public hospital in KwaZulu-Natal.**' was reviewed by the KwaZulu-Natal Department of Health (KZN-DoH).

The proposal is hereby **approved** for research to be undertaken at Queen Nandi and Ngwelezana Hospitals.

2. You are requested to take note of the following:
 - a. *Kindly liaise with the facility manager BEFORE your research begins in order to ensure that conditions in the facility are conducive to the conduct of your research. These include, but are not limited to, an assurance that the numbers of patients attending the facility are sufficient to support your sample size requirements, and that the space and physical infrastructure of the facility can accommodate the research team and any additional equipment required for the research.*
 - b. *Please ensure that you provide your letter of ethics re-certification to this unit, when the current approval expires.*
 - c. *Provide an interim progress report and final report (electronic and hard copies) when your research is complete.*
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Ms G Khumalo on 033-395 3189.

Yours Sincerely

Dr E Lutge

Chairperson, Health Research Committee

Date: 16/07/19

APPENDIX 4: NGWELEZANA HOSPITAL APPROVAL LETTER



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE:

Ngwelezana Hospital, Thanduyise Road, Ngwelezana Township
Private Bag X 20021, Empangeni 3880
Tel: 035 901 7105 Fax: 035 794 1883 Email: ceosecretary.ngwelezana@kznhealth.gov.za
www.kznhealth.gov.za

Office of the Chief Executive Officer
NGWELEZANA TERTIARY HOSPITAL

Enquiries: Ms. N. Sibiya
Telephone: 035 901 7105

01 July 2019

Dear Ms MT Mukhobobwane

PERMISSION TO CONDUCT RESEARCH ON ATTITUDE TOWARDS HEALTHY EATING, HEALTHY LIFESTYLE AND PHYSICAL ACTIVITY OF HEALTHCARE PROFESSIONALS: A DESCRIPTIVE CROSS SECTIONAL STUDY IN A PUBLIC HOSPITAL IN KWAZULU NATAL

I have pleasure in informing you that permission has been granted to you by Ngwelezana Tertiary Hospital to conduct research on: "*Attitude towards healthy eating, healthy lifestyle and physical activity of healthcare professionals: A descriptive cross sectional study in a public hospital in KwaZulu Natal*"

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. Please ensure that the office of the Medical Manager is informed before you commence your research.
3. The District Office/Facility will not provide any resources for this research.
4. You will be expected to provide feedback on your findings to the District office/Facility.

Thanking you.

Sincerely

Dr BS Madlala
Chief Executive Officer
Ngwelezana Tertiary Hospital

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Fighting Disease, Fighting Poverty, Giving Hope

APPENDIX 5: QUEEN NANDI REGIONAL HOSPITAL APPROVAL LETTER



Department:
Health
PROVINCE OF KWAZULU-NATAL

DIRECTORATE: QUEEN NANDI REGIONAL
HOSPITAL

29 Union Street – Empangeni - 3880
Private Bag X20005 - Empangeni - 3880
Tel: 0359077000 Fax: 0866292075 Email: MenithaSamjowan@kznhealth.gov.za

2 July 2019

To: Mukondeleli Talelani Mukhodobwane

RE: PERMISSION TO CONDUCT RESEARCH AT QUEEN NANDI REGIONAL HOSPITAL

Dear Miss Mukhodobwane

I wish to inform you that permission has been granted to you by Queen Nandi Regional Hospital Ethics Committee to conduct research on Attitudes towards healthy eating, a healthy lifestyle and physical activity of Healthcare Professionals: A descriptive cross-sectional study in a public hospital in Kwa-Zulu Natal"

Please note the following:

1. Please ensure that you adhere to all the policies, protocols and guidelines of the Department of Health with regards to this research.
2. Please ensure this office is informed before you commence your research.
3. QNRH will not provide any resources for this research.
4. You will be expected to provide feedback on your findings to our institution.

Sincerely

Dr. M. Samjowan
Chairperson
Ethics Committee

UNIVERSITY of the
WESTERN CAPE

Approved by:

Mrs CNN Mkhwanazi
Chief Executive Officer QNRH

APPENDIX 6: PARTICIPANT INFORMATION SHEET



UNIVERSITY OF THE WESTERN CAPE
Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21 959 2809 Fax: 27 21 959 2872
E-mail: soph-comm@uwc.ac.za

INFORMATION SHEET

Project Title: Attitudes towards healthy eating, a healthy lifestyle, and physical activity of Healthcare professionals: A descriptive cross-sectional study in a public hospital in KwaZulu-Natal.

What is this study about?

This research project is being conducted by Mukondeleli Talelani Mukhodobwane at the University of the Western Cape in partial fulfilment of a Master's Degree in Public Health Nutrition. We are inviting you to participate in this study because you are a potential research participant as you are a healthcare professional working in Ngwelezana Hospital and the study is on healthcare professionals. The purpose of this study is to describe the current attitudes of healthcare professionals of Ngwelezana Hospital towards healthy eating, physical activity, and a healthy lifestyle. This study is necessary as it will help design and improve employee wellness policies and programs aimed at improving the health and nutritional status of the hospital staff members.

What will I be asked to do if I agree to participate?

You will be asked to complete a two-part questionnaire which will ask questions on healthy eating, a healthy lifestyle, and physical activity, and barriers and enablers to healthy eating, a healthy lifestyle and physical activity. You will also be asked questions about socio-demographics, chronic diseases such as diabetes, hypertension, heart disease, and high cholesterol. You will also be required to have your weight and height taken. The study will take part in the hospital premises. Completing the questionnaire will require a maximum of 10-20 minutes of your time.

Would my participation in this study be kept confidential?

The researchers undertake to protect your identity and the nature of your contribution. To ensure your anonymity, (1) no names will be published or used when entering data provided; (2) the participant will be assigned a number which will serve as a code to identify the participant; (3) through the use of an identification key, the researcher will be able to link your survey to your identity; and (4) only the researcher will have access to the identification key. To ensure your confidentiality, the researcher will store all the questionnaires in a locked locker, identification codes will be used on data forms, and data will be entered into a password-protected computer. If we write a report or article about this research project, your identity will be protected.

What are the risks of this research?

There may be some risks from participating in this research study. All human interactions and talking about self or others carry some amount of risks. We will nevertheless minimize such risks and act promptly to assist you if you experience any discomfort, psychologically or otherwise during the process of your participation in this study. Where necessary, an appropriate referral will be made to a suitable professional for further assistance or intervention.

What are the benefits of this research?

This research is designed to help you directly and the results may help the researcher to learn more about the attitudes of healthcare professionals towards healthy eating, a healthy lifestyle, and physical activity and the enablers and barriers thereof. We hope that in the future, other people might benefit from the study through improved awareness and attitudes towards healthy eating; healthy lifestyle, and physical activity. The study will also increase the pool of knowledge on this topic. The participants will be offered a free counselling session which will not be charged by the hospital after completion of the study which should somewhat help improve the participants' lifestyle.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop participating at any time. If you decide not to participate in this study or if you stop participating at any time, you will not be penalized or lose any benefits to which you otherwise qualify.

What if I have questions?

This research is being conducted by Mukondeleli Talelani Mukhodobwane, Department of Dietetics and Nutrition at the University of the Western Cape. If you have any questions regarding the study, please feel free to contact Mukondeleli T Mukhodobwane (Ngwelezana Hospital Dietetics Department on 0798665778 or Email address: 3000779@myuwc.ac.za).

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

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WESTERN CAPE

This research has been approved by the University of the Western Cape's Biomedical Research Ethics Committee.

Biomedical Research Ethics Committee

University of the Western Cape

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7535

Tel: 021 959 4111

E-mail: research-ethics@uwc.ac.za

REFERENCE NUMBER: **BM19/4/14**

APPENDIX 7: CONSENT FORM



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E-mail: soph-comm@uwc.ac.za

CONSENT FORM

Title of Research Project: **Attitudes towards healthy eating, a healthy lifestyle and physical activity of Healthcare professionals: A descriptive cross-sectional study in a public hospital in KwaZulu-Natal.**

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits.

Participant's name.....
Participant's signature.....
Date.....

Biomedical Research Ethics Committee
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