A PSYCHOSOCIAL STUDY OF CARDIOVASCULAR DISEASES, HEALTH BEHAVIOURS AND RISK PERCEPTION AMONG RETAIL PHARMACY WORKERS IN JOHANNESBURG, SOUTH AFRICA

Priya Buldeo

A Doctoral dissertation submitted to the Faculty of Humanities and the School of Social Sciences in fulfilment of the requirements for the degree of

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DECLARATION

This thesis titled "*A psychosocial study of cardiovascular diseases, health behaviours and risk perception among retail pharmacy workers in Johannesburg, South Africa*" is my original work except where it has been acknowledged and cited by means of complete references. It is being submitted for the degree of Doctor of Philosophy in Health Sociology at the University of the Witwatersrand, Johannesburg. It has never before been submitted for any degree or examination at this or any other university or institution.

Priya Buldeo.

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Johannesburg, South Africa

DEDICATION

The most beautiful thing in this world is to see your parents happy and to know that you are the reason for their happiness.

THIS THESIS IS DEDICATED TO

My mother Romilla and father Baij

Mum and dad, I cannot begin to describe how Blessed I am to have such amazing parents. Thank you for teaching me the value of hard work, commitment, humbleness and perseverance. I am who I am through your unconditional love and immeasurable support.

The bonds we share go beyond the depths of parents and child but that of "forever friends", travel buddies and lifelong companions.

There is a saying that "good parents give their children Roots and Wings." – Jonas Salk

Thank you for giving me roots to grow and wings to fly:

Mum – You are my Angel.
Dad – You are my Hero.
Together, my horticulturists!

I love you both – always and forever.

IN LOVING MEMORY of my beloved grandfather

Mr. Chanderpersad Buldeo (1936 – 2013)

Aaja, I did it! I'm "Dr. Priya Buldeo"
You would have been so proud to see me reach this milestone.
With our surname – your legacy lives on.

"Neither the life of an individual nor the history of a society can be understood without understanding both."

— C. Wright Mills

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ATM	African Traditional Medicine
BMI	Body Mass Index
CAM	Complementary and Alternative Medicine
CHD	Coronary Heart Disease
CMD	Cardiometabolic Disease
COPD	Chronic Obstructive Pulmonary Disease
CRIBSA[*]	Cardiovascular Risk in Black South Africans
CVD	Cardiovascular Disease
DALY	Disability-Adjusted Life Years
EAP	Economically Active Population
FH	Familial Hypercholesterolemia
HIV	Human Immunodeficiency Virus
HSFSA	Heart and Stroke Foundation South Africa
HSRC	Human Sciences Research Council
IMBP	Integrative Model of Behavioural Prediction
HDL	High-Density Lipoprotein
IHD	Ischaemic Heart Disease
LMIC	Low and Middle-Income Country
LDL	Low-Density Lipoprotein
MetS	Metabolic Syndrome
MI	Myocardial Infarction
MRC	Medical Research Council
NCD	Non-Communicable Disease
OTC	Over-The-Counter
PA	Physical Activity
PI	Physical Inactivity
PURE[*]	Prospective Urban and Rural Epidemiology
QLFS	Quarterly Labour Force Survey
SADHS	South African Demographic and Health Survey
SANHANES-1[*]	South African National Health and Nutrition Examination Survey
Stats SA	Statistics South Africa
TB	Tuberculosis
TCAM	Traditional, Complementary and Alternative Medicine
TCM	Traditional Chinese Medicine
THM	Traditional Herbal Medicines
THUSA[*]	Transition and Health during Urbanisation in South Africa
UN	United Nations
WHO	World Health Organization

Note: *Large-scale studies on NCDs in South Africa

THESIS ORGANISATION

This thesis first presents the *Introduction,* which includes the background context of the unique non-communicable disease situation in South Africa. It highlights the assumption of individual responsibility for irrational health behaviour in decision-making which fails to account for underlying social factors. The research aim, objectives and rationale relating to the study are elucidated to reveal the theoretical and practical importance of this study. The main and subsidiary research questions are presented to provide a roadmap leading to the key focus areas. Each chapter then unfolds to answer the research questions and to provide a nuanced perspective on the research topic. The central purpose of the Introduction is to introduce the topic and provide a background to the importance of the nature of this study and to further set the boundaries to reveal its scope. It serves as an outline that directs the study towards the Literature Review by locating the study within a broader knowledge base while highlighting its local and global sociological significance.

A comprehensive *Literature review* covers literature gathered from interdisciplinary fields; mainly the sociology of health and illness (also known as medical sociology), psychology, anthropology, medicine, behavioural science, economics and demography. This is to demonstrate how the study is not only similar to the findings of other research in a local and global context but also different. A synthesis of the existing body of scholarly knowledge in the area of chronic diseases of lifestyle, health behaviours, risk, culture, consumerism, pharmaceuticalisation, medicalisation and embodiment then offers viewpoints about non-communicable diseases in Africa and whether or how one perceives their individual health and risk. It considers the meanings and knowledge embedded in cardiovascular disease perception and the social factors that shape health behaviours. Taking it further, it reveals the South African discourses of body image as it relates to the obesity epidemic. This chapter contains key themes and concepts[1] that fit the study aim and objectives highlighted in the Introduction – a fundamental aspect to answering the research questions as the chapters develop. The concepts add depth to the Integrative Model of Behavioural Prediction – the theoretical framework guiding this study.

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[1] Definitions for key concepts adopted from the literature are provided throughout the thesis and cited accordingly.
Where there are no definitions, concepts are operationalised to show its value in context of the arguments being presented.

The *Theoretical Framework* is positioned within a psychosocial context to meet the study aim and objectives. This chapter contains the most pertinent theoretical discussions that reflect psychosocial approaches to non-communicable diseases in the South African workplace, family and community to further recognise health, illness and disease outcomes. The tenets of this framework are useful for understanding *the intention* for health behaviours and *attitudes* such as individual beliefs and feelings towards health behaviours and decision-making. Additionally, *perceived norms* like the social (un)acceptance of certain health behaviours, *normative beliefs*, including the *motivations* to comply with recommended health behaviours and *self-efficacy* such as personal *agency*, serve as a situational analysis of the non-communicable disease situation in South Africa. This innovative study is one of the first attempts to utilise the Integrative Model of Behavioural Prediction as a framework for explaining chronic diseases in the South African context.

The methodological approaches and tools used in conducting research are thereafter explained in the *Methodology*. This chapter shows *what* was done, *why* it was done and *how* it was done. It governs the application of mixed methods to display the relevance of quantitative and qualitative data in answering the research questions. The research design, setting, sample population, data collection process, data management and analysis as well as the ethical considerations and credibility, validity and reliability are elucidated. These procedures clarify the aim and objectives of the study presented in the Introduction and set the backdrop for making sense of the Findings offered in the next chapter.

The *Analysis of Findings* provides details on the data received from the questionnaires and follow-up in-depth interviews. The main outcomes of the investigations undertaken include a thick description of the data collected. The chapter is organised thematically to integrate quantitative and qualitative material to best answer the research questions. Multifaceted psychosocial aspects of cardiovascular disease within a South African context are presented to show the interrelations and complexities embedded in knowledge, health behaviours and risk perception. For a clear snapshot of the findings, detailed quotes were incorporated to give participants a voice – which would not have been possible through reinterpretation. Culture, body image, and the use of traditional, complementary and alternative medicine to alleviate non-communicable disease outcomes were especially insightful – which merge traditional and contemporary understandings of urban South Africa.

In the *Discussion*, summative comments are provided to offer a nuanced consolidation of the study findings and the existing literature surrounding cardiovascular disease. It illustrates how this research contributes to current debates on non-communicable diseases and how the findings add newfound knowledge on various forms of healing, body image (mis)perceptions, culture and ageing in South Africa. It highlights what the data revealed and how the findings provide evidence for answering the research questions set out in the Introduction. As such, it elucidates how the aim and objectives are met and selects the issues that need further research.

The *Conclusions* arising from this study are emphasised to understand the complex and dynamic nature of the cardiovascular disease situation in South Africa. It echoes the interplay of multiple factors unfolding in the unique non-communicable disease discourse in Johannesburg to support the interpretation of key findings. This innovative research fills in the gaps in the under-researched area of cardiovascular disease risk perception in the workplace, in general, and among retail pharmacy workers more precisely.

Lastly, as a way forward, *Recommendations* are made based on the interpretations of some of the main findings. It considers the practical implications these findings have on the South African healthcare system and how it could engage behavioural policies, health promotion and public health initiatives. It shows how the study has potential in advancing health knowledge on non-communicable diseases in the Global South to integrate existing health policies or represent a platform for future policies and other research.

ABSTRACT

This thesis is based on a descriptive and exploratory psychosocial study which investigates the underlying factors that shape cardiovascular diseases, health behaviours and risk perception among retail pharmacy workers in Johannesburg, South Africa. It further examines help-seeking behaviours and the meanings attached to 'The Body', self and identity as related to symbolic interactionism. A review of literature presents a background to the local and global context and engages classic and contemporary discourses and debates on health, illness and chronic diseases. The unique context of non-communicable diseases in South Africa is interrogated by utilising the Integrative Model of Behavioural Prediction as a guiding theoretical framework. A mixed methods research design incorporated (i) a survey (N=400) and (ii) in-depth follow-up interviews (N=60). Data were analysed using descriptive statistics and thematic content analyses for deeper reflections on the topic. The findings revealed that cardiovascular disease knowledge and risk perception is shaped by one's family, community, workplace, colleagues and the media. It found that workers have an understanding of cardiovascular diseases, the problem, however, is that individual risk perception is overlooked. Social networks, cultural norms and gender contributed to the public framings of bodies and the sociocultural anxieties surrounding juxtapositions – thin/fat, healthy/unhealthy, acceptable/unacceptable, good/bad – prominent in 'Othering' deliberations. These illuminated the symbolic and material dimensions of how workers conceptualise their bodies. 'Good' health behaviours were associated with physical attractiveness, social acceptance and health improvement and maintenance. 'Bad' health behaviours were linked to time constraints, long working hours, financial stress and family responsibilities. The discussion and conclusion consolidate the study's sociological significance and the multi-layered aspects of health, illness and chronic diseases. This thesis challenges sociocultural expectations of 'The Body' in ways which contrast some of the available literature in Africa. It further contributes to the existing knowledge on non-communicable diseases while introducing innovative ways of (re)thinking about chronic conditions and the practical implications as related to the study. The pertinent issues raised regarding non-communicable disease diagnosis, management and treatment, as well as food consumption and body weight perceptions complicate an ever-changing South African risk society. This thesis, therefore, paves the way for further research on the perceived and actual cardiovascular disease risks in the South African context.

Keywords: non-communicable diseases, culture, help-seeking behaviour, eating habits, lifestyle, physical activity, Integrative Model of Behavioural Prediction, working age population, knowledge, risk

INTRODUCTION

This thesis is a lens to the psychosocial understanding of non-communicable diseases (NCD) and cardiovascular diseases (CVD) in the South African context. According to Steyn and Fourie (2007), CVD is "any disease of the heart and blood vessels … [such as] diseases of the heart muscle, strokes, heart attacks, heart failure and heart disease caused by high blood pressure" (p. 2) which make-up approximately 60% of all lifestyle-related chronic disease deaths globally (Yach, Hawkes, Gould *et al.* 2004). The seriousness of CVDs in South Africa cannot be overemphasised since it is responsible for approximately 200 deaths per day (Think Red 2012) due to lifestyle-related diseases like heart disease (Hitchcock 2015) and is also expected to be one of the key contributing factors of morbidity and mortality (Steyn & Fourie 2007; Butler 2011; Maredza, Hofman & Tollman 2011). It is estimated that by the year 2030, the number of CVD-related deaths will rise significantly (Abegunde, Mathers, Adam *et al.* 2007; Spires, Delobelle, Sanders *et al.* 2016). The South African situation is unlike other countries. Its significance lies in it being compounded by the rising prevalence of HIV, AIDS, tuberculosis (TB) and pre-existing or pregnancy-related conditions such as hypertension and diabetes that impact maternal mortality (Steyn, Bradshaw, Norman *et al.* 2006; 2007; Maredza *et al.* 2011). Adding to the complexity, urbanisation and globalisation spur factors such as obesity, tobacco use, physical inactivity, inappropriate alcohol consumption and unhealthy diets which pose further risks for CVD (Bourne, Lambert & Steyn 2002; Puoane, Fourie, Shapiro *et al.* 2005a; 2006; Maredza *et al.* 2011).

Identification and explanation of the research problem

The problem is that because CVD refers to a lifestyle-related condition, it becomes misleading by implying a purely individual responsibility for one's poor heart health and assumes that people intentionally make irrational choices (Stuckler, Basu & McKee 2011; Lagiou, Sandin, Lof *et al.* 2012). Another problem is that CVD is located within the dominant biomedical paradigm which often fails to fully account for the underlying psychological and social factors that lead to lifestyle-related diseases. The research offers insight into the research problem and raises questions that guided the research process. In so doing, it relates to the actual objectives of the study to demonstrate retail pharmacy workers' lived realities in South Africa. The research methods were designed to interrogate different understandings of 'health' and whether or not people perceive their risk for CVD. It is within this context that

the study finds relevance to explore CVD risk perception sociologically from a psychosocial perspective. The risk perception of CVD is thus of importance as people come from various social backgrounds which shape their health behaviours (Bandura 2000).

As pointed out by Mayosi, Flisher, Lalloo *et al.* (2009), South Africa is experiencing a rapid increase in the prevalence of CVD compared to developed countries, mainly due to urbanisation and the incidence of obesity and diabetes. For these reasons, it is predicted that mortality and morbidity rates will continue to rise if people continue to engage in negative lifestyle choices and 'bad' health behaviours without perceiving themselves to be at risk for CVD. The prevalence of CVDs among the working age population in South Africa is growing even though regular physical activity (PA) and healthy eating habits could prevent mortality and morbidity and reduce the risk of NCDs. An understanding of workers' knowledge about CVD and health behaviours is therefore necessary in the critical context of South Africa's quadruple burden of disease.

Against the existing burdens of HIV/AIDS, for example, emerging epidemics like CVD now represent a leading parallel threat to South Africa's health and development (Arie 2010). The convergences of NCDs with infectious diseases present greater challenges and new opportunities for changes in policy and future research. In an attempt to understand the South African CVD situation, this study explores chronic NCDs with the focus on the behavioural and social contexts linked to it. Understanding the patterns and processes associated with disparities in CVD in South Africa is valuable for exploring what contributes to people's risk perception, or lack thereof.

This exploratory study of CVD, health behaviours and risk perception of CVD among working adults employed in a retail pharmacy chain[2] in Johannesburg set out to explore *what* the CVD-related health and help-seeking behaviours of different social groups are, *how* these groups understand their behaviours and *why* they may regard themselves as at risk for CVD or not. The research carried out relates to the broader topic of NCDs and specific topics on CVDs including obesity, hypertension and diabetes. What is inherent in urban life are practical obstacles to adopting heart-healthy behaviours which may be attributed to vast inequalities in, for example, employment, healthcare and educational prospects (Vorster 2005; Steyn 2006). A broader focus on individual responsibility for health assumes that individuals

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[2] The term 'retail pharmacy' refers to a pharmacy in which medication, supplements, beauty, household and health products are sold. The name of the retail pharmacy chain is withheld for confidentiality.

know about CVD and are equipped to practice the 'correct' health behaviours and make 'good' lifestyle choices free of obstacles.

The emphasis on the individual does not take into account the social, economic, political, geographic and physical constraints that people and families may experience which pushes them to unhealthy behaviours or limits their choices of healthy ones. CVD among the working age population in South Africa is increasing despite evidence that positive health behaviours may prevent morbidity and mortality. Though positive health behaviours such as healthy eating habits and PA are encouraged in communities and via the media, little attention is paid to the constraints South African populations face.

Due to marked inequalities in, for example, employment, healthcare and educational opportunities, a characteristic of urban life is that people experience obstacles which prevent them from adopting heart-healthy behaviours (Vorster 2005; Steyn 2006). As such, the study explores the individual's responsibility for health amidst the context of social and societal factors. It further probes into and questions who and what is actually 'responsible' for 'health' and how the various aspects link together. In this study, *individual* "responsibilisation" (Brown 2013, p.1) shifts to what the researcher considers *social* responsibilisation suggesting that responsibility goes beyond the individual-level and is interwoven with multi-layered, dynamic and complex factors that shape health and help-seeking behaviours.

Unfortunately, interventions seem to target individual-level risk behaviours which often assumes individual responsibility, agency and autonomy to make rational and informed choices to change negative health behaviours to positive (Airhihenbuwa, Ford & Iwelunmor 2014). Clearly, the rise of CVD goes beyond the individual-level in a context of constrained choice in South Africa as will be explored in this thesis. There are fundamental relationships between social networks, social support systems and social norms that shape health and health behaviours. The body interacts with the environment to further shape material, social and cultural meanings which play vital roles in determining how an individual interprets and manage their dietary and lifestyle choices and risks (BeLue, Okoror, Iwelunmor *et al.* 2009).

Research aim and objectives

This study's intention is to explore and understand CVD, CVD-related health behaviours and risk perception among retail pharmacy workers. It interrogates the ways in which different factors impact on CVD risk perception and health behaviours as well as how urban living (and working)[3] conditions may not only increase one's agency over their health but also remove the autonomy of individuals to make healthy choices. To frame this psychosocial study, the Integrative Model of Behavioural Prediction (IMBP) is adopted. It looks at the underlying psychological and social aspects of CVD in ways that have not previously been done in the context of chronic conditions in South Africa. Since the study involves risk and perception, one cannot deviate away from the fact that risk is often perceived (and predicted) through psychological processes. This forms a basis to whether or not one intends to seek, or not seek, help. Against this backdrop, the framework links Psychology to Sociology. This is done through the modification of a psychological model to include the social aspects of health, illness and chronic disease outcomes.

In offering an exploration of the trajectories of NCDs and CVDs through a psychosocial study,

The *main aim* is:

♥ To situate CVD within a psychosocial framework.

The *objectives* of this study are as follows:

♥ Investigate the health behaviours, CVD knowledge and individual risk perception for CVD among a selected sample of working adults (non-health professionals) employed in a retail pharmacy chain.
♥ Unpack the underlying psychological and social factors that shape the lifestyle choices of working adults.
♥ Look at the context in which social and structural factors shape agency and autonomy in health and help-seeking behaviours.

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[3] Urban-living is used to refer to people who live in urban areas. The retail pharmacy chain is situated in urban areas, therefore, urban-working conditions become important to explore when considering health behaviours and CVD risk perception.

- Explore what the CVD-related health and help-seeking behaviours of different social groups within the study population are, how these groups understand their behaviours and why they may regard themselves as being 'at risk' for CVD or not.
- Discover *what* factors remove autonomy to make heart-healthy choices, *how* different contexts affect agency over health and *why* working adults may or may not perceive themselves to be at risk for CVD.
- Understand how workers aged 19–75 give meaning to their health.
- Examine what factors impact individual CVD risk perception among working adults.

Research questions

Following the objectives of the study, the *main research questions* are:

- What are the health behaviours of retail pharmacy workers from different social groups between the ages of 19 and 75?
- How do retail pharmacy workers understand CVD?
- How do retail pharmacy workers understand their health behaviours as related to CVD?
- How do retail pharmacy workers consider their health?
- Why do retail pharmacy workers engage in certain lifestyle choices?
- What are the factors that shape retail pharmacy workers risk perceptions and understandings of CVD?
- How do retail pharmacy workers perceive their individual risk for CVD?

Subsidiary questions:

- How do retail pharmacy workers understand 'health', 'illness' and disease?
- What factors shape retail pharmacy workers help-seeking behaviours?

In attempting to answer the research questions while simultaneously achieving the aim and objectives set out, the study has further developed the approaches already present in some literature in the wider local and global research contexts that interrogate the topic of NCDs. Although, the burgeoning literature on CVD tends to include quantitative, clinical and epidemiological studies that often omit acknowledgement of the underlying psychological and

social aspects of chronic diseases in South Africa. Recent studies are now attempting to look at these aspects in greater depth (Micklesfield, Lambert, Hume *et al.* 2013; Gitau, Micklesfield, Pettifor *et al.* 2014; Lopes Ibanez-Gonzalez, Mendenhall & Norris 2014; Lopes Ibanez-Gonzalez & Greenstein 2014; Lopes Ibanez-Gonzalez & Tollman 2015). These are important contributions, but, they do not cover the extent of CVDs in the workplace or the underlying psychological and social factors embedded in health behaviours, help-seeking behaviours and individual risk perceptions. While most existing studies concern the biological and clinical guidelines for NCD prevention, this study intends to fill in the gaps by offering a psychosocial perspective to the understanding of CVD-related health behaviour in South Africa.

Rationale

Due to South Africa's deeply rooted social, economic, political and cultural histories, there is a need to understand the social aspects of CVD and related NCDs in a more holistic manner. However, there is a scarcity of research that looks specifically at CVD among the working age population in South Africa and the opportunities and constraints they face in adopting improved health behaviours. This study goes beyond biological understandings of CVD to explore the social realities of a sample of working age population employed within a retail pharmacy workplace context – the only such study of this nature conducted in South Africa so far.

Older and newer literature highlights the fact that understandings of CVD and related health behaviours and chronic conditions are usually located in the West and associated with Western lifestyles (Burkitt 1982; Forrester, Cooper & Weatherall 1998; Kruger, Puoane, Senekal *et al.* 2005, Micklesfield *et al.* 2013; Legwegoh & Riley 2014). This Western perspective adds power to the dominant biomedical model as most 'lay people' assume that CVD is largely a disease of a 'Western' lifestyle that only affects the most affluent sectors of society. Gunnar, Vink, Ronquest-Ross *et al.* (2015) provide a historical analysis of the chronic disease situation that currently exists in contemporary South Africa and the dietary changes over the years. Their points of departure are the trends which illustrate the inaccuracy of thinking about CVD as a disease of the Western lifestyle. The reality is that its prevalence is rising among all population and age groups (Steyn *et al.* 2006; Steyn 2007; Maredza *et al.* 2011; Micklesfield *et al.* 2013; Gitau *et al.* 2014). Hence, having a holistic understanding of

CVD-related perceptions and behaviour can help others learn about contributing factors they probably would not have considered. Due to the dynamic and changing social contexts that facilitate the rise in CVD prevalence in South Africa, we do not know enough about CVD risk perception, NCD-related health behaviours and the factors contributing to this changing pattern at the theoretical and sociological level. Attempting to study these phenomena would potentially impact on the practical level and provide insight into further research that can help South Africa achieve its post-2015 development goals.

The NCD situation is of great concern as its burden affects ageing and the HIV/AIDS situation (Hofman 2014). CVD-related (mis)conceptions and (mis)perceptions continue to exist in all social contexts, even though the CVD profile is changing in many developing countries (Gaziano 2007). The lack of emphasis on the social aspects of health and disease is mostly apparent in the literature that uses epidemiological and clinical methods of inquiries as methodological approaches to examining NCDs in South Africa. In giving a unique insight into the experiences of a complex and dynamic nature of NCDs broadly and CVDs specifically in the context of South Africa, the research explored herein offers innovative psychological and sociological perspectives on the emerging NCD epidemic. The importance of adopting a psychosocial perspective allows one to identify various views in terms of the impact it has on health policy and society as a whole via the framework of a micro and macro sociological standpoint.

Furthermore, demographic and psychographic factors also determine the type of health treatments people utilise and why. Thus, dichotomies of health and medicine are inherent in the structure-agency debate which illustrates the key elements to understanding the ways in which health is a multi-dimensional and contested concept (Blaxter 2004a–b; Nettleton 2006). Therefore, in the South African healthcare system for example, such an analysis will prove useful in reflecting the role of different groups of people involved in policy making; government, doctors and patients which can all work together to plan the allocation of health resources (Gilbert, Selikow & Walker 2010). In effect then, the sociological meanings of health, illness and the experiences of chronic diseases are shaped in multiple ways to create connections between feelings, ideas, perceptions, social relationships and contexts that relate the self to social structures.

LITERATURE REVIEW

In undertaking a psychosocial study of CVD, health behaviours[4] and risk perception for CVD in the South African context, it was crucial to gather literature from a range of sources and studies that are multidisciplinary. Due to the psychosocial nature of this study, the thesis draws on literature from array of studies located in psychology, sociology, public health, medicine, epidemiology and anthropology to best explore the research topic and answer the research questions presented in the Introduction. The review of literature presented in this chapter examines research closely related to the thesis aim and objectives and goes beyond it to identify underlying issues and gaps in the literature on CVD in a South African context. It goes further to operationalise key concepts that relate to the major elements of this study before the theoretical framework is provided for situational analysis. It illuminates existing issues through the lens of the sociology of health and illness. The review of literature presented here considers previous studies that have been conducted on the topic of NCDs broadly and CVDs specifically in both the local and global contexts.

South African context of non-communicable diseases

Cardiovascular diseases

Background

The Medical Research Council (MRC) of South Africa stated that a chronic disease of lifestyle is an accumulation of a group of diseases that share similar risk factors due to years of, exposure to, for example, unhealthy diets and the lack of exercise, combined with stress and smoking. Clearly, these risk factors predispose people to various disease processes such as strokes and heart attacks as well as tobacco and nutrition-induced cancers (Maredza *et al.* 2011).

CVDs include some disorders and diseases relating to the cardiac muscles and the vascular system supplying the heart, brain and other vital organs (Mendis, Puska & Norrving 2011).

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[4] Health behaviour is commonly located in psychological models and theories. The concept of human behaviour is the result of the interaction of multiple factors that are universally adapted (Ramos *et al.* 2011). For purposes of this study, the concept health behaviour is chosen to meet the aim and objectives as discussed on page 16.

CVD morbidity and mortality are mainly due to coronary heart disease (CHD) and cerebrovascular diseases (stroke). The World Health Organization (WHO) *Global Status Report* emphasised that NCDs are fast becoming the leading cause of death across the globe (2014a). In an African context, the *NCD Country Profile* (2014b) reported that up to 44% of deaths in South Africa is attributed to CVD, other NCDs, diabetes, cancer and chronic respiratory diseases and that 27% of the population aged 30–70 suffer premature mortality due to NCDs.

South Africa is experiencing a rapid and complex health transition characterised by a quadruple burden of disease. This burden consists of communicable diseases, NCDs, injuries and HIV/AIDS (Econex 2009; Bradshaw, Pillay-van Wyk, Laubscher *et al.* 2010a; Gilbert *et al.* 2010) linked to poverty and deprivation (Ataguba, Day & McIntyre 2015). According to Sambo (2014), in 2005, 30% of all deaths in Africa were a result of NCDs and by 2010, this increased to 40% with the main NCDs being CVDs. The WHO predicted that by 2020, the prevalence of death from CVDs will have increased significantly by 77% globally (WHO 2010b–c). In 2012, it was expected to increase from 38 million to 52 million (WHO 2014a) and by 2030, deaths from multimorbidities in NCDs will account for five times as many deaths as communicable diseases (Mathers *et al.* 2004 cited in Hofman 2014). However, up to 80% of CVD, 90% of type II diabetes and 30% of cancers can be avoided through diet and lifestyle changes (Joint WHO/FAO 2002). Multimorbidities are posing a challenge to South Africa's already overburdened healthcare system (Lalkhen & Mash 2015). In South Africa, the rise in NCDs is an outcome of the epidemiological transition. Maredza *et al.* (2011) report that the uniqueness of South Africa is complicated by a high burden of HIV/AIDS and TB, maternal and perinatal conditions and an increase in road traffic injuries and other factors such as the demographic transition, urbanisation and globalisation.

Looking at the Local through the Global

Much of the CVD literature available draws extensively from the work of social and clinical epidemiologists and biomedical researchers to include randomised controlled trials or large-scale, cross-sectional, longitudinal and prospective community studies that examine biomarkers and pathophysiological pathways. Although the majority of the CVD risk factors in sub-Saharan Africa is similar to that identified in other regions of the world, complete data sets from the continent regarding the extent of the burden of CVD and CVD-related factors has been lacking (Celermajer, Chow, Marijon *et al.* 2012). For instance, the improved quality

13

and completeness of death registration for reliable NCDs results is needed as well as strengthened NCD monitoring and evaluation (Day, Groenewald, Laubscher *et al.* 2014).

The *Joint WHO/FAO Expert Consultation Report* on diet, nutrition and the prevention of chronic diseases showed that, in 2001, "chronic diseases contributed to approximately 60% of the 56.5 million total reported deaths in the world and almost 46% of the global burden of disease" (2002, p. 4). The report further predicted that, by 2020, chronic diseases will account for almost three-quarters of all deaths worldwide. Moreover, the report expected that up to 71% of deaths will be from ischaemic heart disease (IHD), 75% due to stroke and 70% of diabetes-related deaths will occur in developing countries. Most of the total chronic disease deaths will be owing to CVDs including obesity and diabetes (Kruger *et al.* 2005).

In 2010, Amuyunzu-Nyamongo argued that CVD and chronic diseases in sub-Saharan Africa account for 28% of morbidity and 35% of mortality and that a multi-sectoral intervention is needed to promote better health behaviours in Africa. Lins, Jones & Nilson (2010) added that the growing burdens of NCDs in sub-Saharan Africa show links between heart disease, cancer, type II diabetes and chronic obstructive pulmonary disease (COPD) with primary risk factors such as hypertension, high blood cholesterol, obesity and unhealthy diets. Ataguba *et al.* (2015) therefore presented the need to explore the role of social determinants of health that goes beyond the individual-level to address the complexities of health outcomes affecting population health in Africa. Since then, only a few country-specific studies have attempted to address the social aspects of CVD.

Chronic diseases have numerous preventable risk factors which operate at different levels and are classified as 'modifiable' or 'non-modifiable'. Modifiable factors can be changed. These include individual and community influences, living and working conditions and sociocultural aspects. Non-modifiable factors refer to biological components that cannot be altered (WHO 2014a–b). Even though age, sex and genetic susceptibility are non-modifiable, many of the risks associated with these factors are modifiable. These include behavioural factors (diet, tobacco use, PI and alcohol consumption), genetic predisposition (hypertension, obesity) and societal factors comprising a complex interaction of socio-economic and cultural considerations. Chronic diseases have a significant economic impact on individuals, families, health systems and society as a whole (Kahn 2011; Thorogood, Connor, Tollman *et al.* 2007; Maredza *et al.* 2011).

Since chronic diseases affect people in their productive years, they reduce productive labour and earning capacity at a household level (World Economic Forum 2011). According to the Heart and Stroke Foundation of South Africa (HSFSA), these are showing worrying trends because NCDs are fast affecting large populations and starting to appear earlier in life (2014). Most concerning is that chronic disease treatment has put much strain on the already overburdened health system because of the additional resources required (Tsolekile, Abrahams-Gessel & Puoane 2015). Therefore, interventions to prevent and control the burden of chronic diseases can be a fertile ground for the socio-economic development of the country (Ooms, Stuckler, Basu *et al.* 2010; Maredza *et al.* 2011).

Efficient management of diseases should include promotive and preventive aspects as well as an interdisciplinary action which comprises personal and behavioural modification and curative services focusing on the prevention of chronic illnesses (Gochman 1997; Tudor Hart & Carter 2000; Glanz, Rimer & Lewis 2002) such as CVD. Other preventive and promotive aspects of NCDs include, but are not confined by cultural and social interventions to educate and encourage good health behaviours (Airhihenbuwa *et al.* 2014). However, this must be more persuasively integrated into South Africa's overall healthcare system in order to strengthen its current framework. In general, chronic disease risks occur at all ages (WHO 2014a; HSFSA 2014). More precisely, all ages are part of the continuum of health. Taken together, effective targeting should delve into the constraints and opportunities present in the management, prevention and control of ill-health and chronic diseases (Henderson & Petersen 2002).

The United Nation (UN) noted that in South Africa, the percentage of people above 60 years will more than double between 1999 and 2050, with CVD predicted to be a primary contributor to total morbidity and mortality in the 50s and above age group (cited in Butler 2011). Sadly, though, CVD is now affecting the younger age groups with death rates projected to rise by over 40% in the 35 to 64 year age group by 2030 (Maredza *et al*. 2011). Latest data also reveal that NCDs will further pose financial burdens to economies, with one-third attributed to CVD (World Economic Forum 2011). Despite the rising burden of NCDs such as CVD and the related financial burden, there has been a limited health system response to these particular issues in South Africa (Clarke 2010; Maredza *et al.* 2011). Attention has been focused primarily on HIV/AIDS and TB. The changes of NCD profiles, then, are likely to present additional responsibilities for health personnel in an overburdened healthcare system (Tsolekile *et al.* 2015). Nonetheless, recent initiatives are gradually

beginning to target chronic disease more broadly across the globe (Butler 2011; WHO 2014a; HSFSA 2014). According to the WHO (2014b), chronic NCDs are a set of conditions that include CVD, cancers, diabetes and chronic respiratory disease. These conditions are of long duration, slow to progress and not passed on from one person to another but which can be prevented if people engage in 'good' health behaviours (Lupton 1996).

Health behaviour[5] refers to an activity, or activities, undertaken by individuals for the purpose of maintaining their health, enhancing their health status, preventing health problems or achieving a positive body image (Cockerham 2000, p. 159). The concept of body image translates to "a multifaceted construct composed of the perceptions, thoughts and feelings that individuals hold about their physical being" (Heatherton & Hebl 1998, p. 257). Health behaviours are engaged in by persons who believe they are healthy but want to prevent or detect disease in an asymptomatic stage (Gilbert *et al.* 2010, p. 13). So, regardless of whether or not people are ill, or perceive themselves to be ill, they adopt certain health behaviours to ensure good health and avoid the possibility of getting ill. Health and illness can, therefore, be understood as self-surveillance (Lupton 2012b) where for example:

> Illness leads to a state of 'dys-embodiment or the 'resurrection of dualism', wherein bodies become negatively conscious of themselves and taken for granted relationships between body, self and society become problematised

> (Williams 1996 cited in Pickard & Rogers 2012, p. 106)

From a CVD perspective, this means that regardless of whether or not people are ill, they may or may not adopt certain health behaviours such as consuming a healthy diet, avoiding inappropriate alcohol and tobacco use and going for regular medical check-ups to ensure 'good health'. *Help-seeking behaviour*, therefore, is "the decision-making process leading people to seek professional healthcare. It is not 'triggered' simply by the onset of symptoms, or by how severe these are. What is more significant is how the symptoms are perceived and interpreted" (Harding *et al.* 1990 cited in Gilbert *et al.* 2010, p. 13). Seeking medical help is a form of empowerment whereby one recognises that something is wrong and realises that further work needs to be done, however, not everyone has access to resources (Gaziano 2007).

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[5] The term health behaviour is challenged by Cohen, S. (2014) in his work 'From health behaviours to health practices: An introduction' In: *Sociology of Health & Illness*, 36(2), 157–162. Cohen critiqued that 'health behaviour' is contextualised within health psychology and therefore advocates for a newer, inclusive and sociological concept of 'health practices'. For the purposes of this psychosocial research, the thesis utilises the conceptual definition for 'health behaviours' provided by Cockerham (2000, p. 159).

Help-seeking behaviour is thus "the decision-making process leading people to seek professional healthcare ... [as a result of] how symptoms are perceived and interpreted" (Gilbert *et al.* 2010, p. 13). In this context, the IMBP, later explained in the Theoretical Framework, has a tremendous consequence on how people attach meanings to their health and illness experience as related to symbolic interactionism. In her book *Cartographies of Knowledge*, Celine-Marie Pascale (2011) explores qualitative epistemologies used to explain the workings of the social world. She was broadly concerned about the aspects of macro sociology such as society, institutions and social groups that shape everyday lives. More specifically, she focuses the lens on micro sociology regarding the psychological, social dynamics of individuals – the levels of sociological analyses where symbolic interactionism is rooted. Pascale (2011) traced the roots of symbolic interaction to Max Weber to argue that symbolic interaction is based on "the premise that the individual and society are interdependent and inseparable – both are constituted through shared meanings" (Pascale 2011, p. 78). Symbolic interaction thus emphasises that human behaviour plays a role in the meanings that are created through social interactions – in this thesis, the meanings attached to CVD and its health-related behaviours.

'Meaning' is conceptualised in this thesis as social products established through a developmental process of (re)interpretation. With this in mind, individuals' experiences of health and illness and sociocultural definitions of situations and circumstances were fundamental guides to understanding their CVD-related health behaviours and risk perception and how they experience and give subjective meanings to their health and experience of illness. This is important since "very few studies have qualitatively explored the perceived risk factors of CVD" (Awah, Kengne, Fezeu *et al.* 2008, p. 619). Therefore the meaning of chronic illness and context provide practical consequences for individuals and families and holds symbolic significance as different conditions have different symbolic meanings to the individual who experiences it (Bury 1982 cited in Williams 2000).

The concept of *illness experience*, Peter Conrad argues, "must consider people's everyday lives living with and in spite of illness" (1987 cited in Conrad & Barker 2010, p. S71). This definition focuses on social settings and coping strategies of everyday life, regardless of whether or not one is considered ill. Also, illness experience, according to Gabe, Bury and Elston (2004) involves the biophysical effect of symptoms. These symptoms are shaped by biology, society, culture, environmental and social conditions as well as the type of illness, duration of illness, visibility of illness and subjective interpretations of illness (McElroy &

Jezewski 2000). Another closely related concept of illness experience is *'illness narratives'* which refers to "the story-telling and accounting practices that occur in the face of illness" (Gabe *et al.* 2004, p. 82). This alludes to the fact that the meanings of illness experiences are socially produced by explaining the symptoms and healthcare practices during the time of being ill. Illness narratives are critical in examining the multiple dimensions and meanings that accompany the illness experience (Kurtz & Chalfant 1984; Blaxter 2004a–b). It may affect how one regards themselves during the illness which has moral and social competence (Wainwright 2008) as an illness is understood as a social problem (Illich 1977). These factors all work together to shape experiences of health, illness and disease and, therefore, there is a constant change in illness behaviour.

Illness behaviour refers to how people define and interpret their symptoms and the actions they take to seek help (Gabe *et al.* 2004). In one study, Herzlich (1973), cited in Gabe *et al.* (2004) found that illness behaviour also depends on the extent of which symptoms of diseases interfere with a person's life. Put simply, "the term *'disease'* is used to refer to objective conditions in which the internal functioning of the body as a biological organism is impaired …" (Gilbert *et al.* 2010, p. 13). Diseases are connected with professional views as part of the *biomedical model*, whereas health and illness are given biological or clinical meanings, rather than social. Adding to this definition, Mechanic and Volkart describe the concept of illness behaviour as "the ways in which given symptoms may be differentially perceived, evaluated and acted (or not acted) upon by different persons" (cited in Gabe *et al.* 2004, p. 64). For example, those who are already diagnosed with CVD may alter another person's health behaviour in a positive way which may be a motivating factor for them to adopt heart-healthy choices and seek medical assistance.

Consequently, there is a continuous transformation of people from consumers to producers of health information and care which poses a different kind of public health problem (Carlisle & Hanlon 2007). As stipulated by Kirk, "[b]odies in consumer societies need to be regulated in order to be useful to the process of economic productivity" (2002, p. 86). Among the perspectives analysed is Parsons' view of the sick role; which is a social role with individual rights and obligations for those who are labelled (Turner 1995; Cockerham 1995; Annandale 1998a). Timmermans and Haas (2008) traced the historical roots of this concept to elucidate why Parsons viewed illness as deviant behaviour. They posited that, regarding the sociology of disease, the sick role acts as a means to regulate individuals to 'normal' societal functioning. Other studies illustrate how health is understood as a functional ability whereby

people express that they are ill only when they cannot perform certain duties (Bandura 2000; Cockerham 2000). Physical and social restrictions lead to a loss of self and social isolation and dependence on others (Charmaz 1983a).

The concept of *illness* is important to highlight as it refers to "the lived experience of culturally constructed categories" (McElroy & Jezewski 2000, p. 191) and how physical health is commodified. Lopes Ibanez-Gonzalez and Tollman (2015) studied help-seeking practices of older women in Agincourt, a rural district in South Africa to show how bodily disruption is brought about by NCDs, which brings focus on the individual. The authors used the term 'body narratives' (p. 10) to explain the use of informal medicine as a process of creating control over the subjective interpretation of bodily change. They related this to the modernisation of spaces and lifestyles in rural settings in South Africa to show how NCDs are attributed to occupational, dietary and social causes developed since youth. "Parsons viewed health as a valued social commodity, an essential resource for individual achievement and the smooth running of society" (Annandale 1998a, p. 10). This means that the relationship between society, health, illness and disease are quite intricate. Hence, social changes in health and illness and the challenges they pose to doctor-patient relationships are shifting the roles of medicine in late modernity and altering the ways in which society functions (Bury 2000; Rutter & Quine 2002; Lupton 2003; Bury 2005; Scambler & Scambler 2010).

The concept of *health consumerism* thereby highlights how patients have agency over their health behaviours as they work to maintain and achieve greater self-improvement (Henderson & Petersen 2002). This means that the desire for health and the avoidance of illness are universal which bridges the gap between people of different social backgrounds (Kleinman & Seeman 2002). Consumer societies thus offer a sense of self in relation to society made possible through decision-making and lifestyle choices. It also implies that culture too is a product of social constructions along the line of learned and shared behaviour that allows for a subjective understanding of The Self in relation to The Other and the environment which is often hierarchical, complex and ambiguous (Bauman 1999). *Culture* is "a system of learned and shared codes ... for perceiving, interpreting, and interacting with others and the environment" (McElroy & Jezewski 2000, p. 191).

Anderson-Fye (2012) added that culture refers to the "shared patterns of thoughts, beliefs, behaviours and habits in both material and symbolic realms" (p. 15). Culture shapes the way in which people understand their body, how they govern norms, health behaviours and their

overall well-being. Culture too is a social construction as learned and shared behaviour that allows for a subjective understanding of The Self to society and the environment[6]. This illustrates that ideas of health are embedded in cultural beliefs, societal norms and practices which emphasise the relationship between these issues in treating and preventing illnesses. Iwelunmor, Newsome and Airhihenbuwa (2013) added that understanding the cultural contexts that form and encourage health behaviours and decision-making is vital since it has potential to guide efforts to address problems associated with hypertension, diabetes, food choices and smoking.

Michel Foucault wrote about 'practices' or 'technologies' of The Self and how individuals construct their behaviours and emotions to adapt to their environment according to time and space (1988 cited in Lupton 1996). It was further explained that "[i]n contemporary Western societies, individual's physical appearance is highly important in the way they perceive themselves and how others perceive them" (Lupton 1996, p. 16) and their outward appearance and health status in Othering deliberations. One's culture, then, is an "integral component in defining and achieving a state of health, maintaining health and treating illness" (McElroy & Jezewski 2002, p. 191). Foucault's analysis of the regulation of the body in relation to time and space is therefore a useful approach to consider in the process of self-surveillance (Lupton 2012b).

In his earlier work, Williams (1995) drew extensively on Bourdieu's theory of *social practice* to research healthy lifestyles and point out Bourdieu's three central claims. First, practices move and are located in time and space. Second, practices are not consciously organised and therefore highlights the role of the body and habits. Third, practices can be understood as a result of an individual's past experience of reality and the constraints of habits. An additional claim, made by Bauman (1999), is that culture is a social practice that is a more contextualised means of understanding health and well-being. He explained that culture influences the individual at various levels; individual, social, societal, global. Therefore, one cannot discuss health without making reference to the body and the way in which social, cultural and societal factors shape its meaning and govern its practices.

Williams (1984) noted that "[t]he individual's narrative has to be reconstructed both in order to understand the illness in terms of past social experience and to reaffirm the impression that

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[6] 'Culture' is fluid and heterogeneous in nature and is not a synonym for 'race'. The concept of race, however, is used as an explanatory tool to understanding CVD against the backdrop of apartheid. Race is more homogeneous than 'culture'.

life has a course and the self has a purpose or *telos*" (p. 179). Thus, Radley (1994, p. 37) noted that "[h]ealth and illness are not wholly separate categories; nor are they merely opposites that are mutually exclusive" because it includes a range of factors that shape meanings as to how people experience their health, illness and disease.

Timmermans and Haas (2008) draw on the example of hypertensive patients to show the sociological relevance of disease formation and how it is understood in society. The authors suggest that at the micro level, the risk of CVDs is patterned along socio-demographic characteristics and that there are disparities in risk by income, education and race. Moreover, lifestyle and behavioural factors are products of the social environment – which the authors draw heavily on in their study. The common thread that runs throughout the literature demonstrates an ever-changing debate on the relationship between society, health and illness (Kurtz & Chalfant 1984; Rutter & Quine 2002; Nettleton 2006; Petersen & Wilkinson 2008).

This relationship sometimes contributes to an identity crisis and leads to misperceptions of The Self (Illich 1977). Indeed, social interaction shapes identity or sense of self in society. Pascale (2011) explained that social life arises from history and daily interactions with others who shape perceptions, interpretations and agency in different contextual situations. This implies a narratively reconstructed reference to the unfolding of the historical relationship between the body, the self and society (Williams 1984). For instance, 'health' is a multifaceted concept embedded in an ever-changing social context (Aggleton 1990; Radley 1994; Rutter & Quine 2002).

Blaxter (2004a, p. 3) stated that "the meaning of health is neither simple nor unchanging", put simply, health is a complex topic because the definitions "of people as diseased, ill or sick, as healthy or unhealthy and of health as state or status, are woven" (Blaxter 2004b, p. 22). Since bodies are continually problematised and pathologised, *'health'* is understood as a multifaceted and contested concept embedded in an ever-changing social context. With regards to CVD and risk perception, 'health' can be broadly defined. Aggleton (1990), for example, defined health into two types; official definitions and lay beliefs about health. He argues that official definitions are the views of health professionals that are regarded as 'objective' whereas lay beliefs are more 'subjective' based on popular perceptions of the health of those who are not professionally involved in health issues.

To understand this, Nettleton, Burrows and O'Malley (2005) articulated how lay people use multiple sources in choosing information that relates to certain experiences of health. In so doing, the authors highlight how beliefs, norms, values and practices associated with health are interrelated and form part of a social order. This is important because the way in which *lay people* internalise information and make decisions about lifestyle choices depict their mental ability to utilise information to prevent negative heart-related healthy choices. Lay beliefs are equally important as official definitions because they both shape the ways in which people understand and react to their experiences of health, illness and disease. This may be because such perceptions exist in all social contexts and are usually the product of socialisation.

As stated by Turner (1995; 2003), health is an aspect of social action and problematic on three levels; the individual, the social, and the societal. These levels help examine inequalities in power that exist in the social system in South Africa, which adds to the complexity of the relationship between health and risk perception to CVD. Hence, meanings of health vary across time, space and place because it is perceived differently based on array of factors among different social groups (Aggleton 1990; Bury 1998; Bandura 2000). Turner (1995) examined health as an aspect of social action and looked at the problem of health on three levels (1) the individual, (2) the social, and (3) the societal – all of which are critical to a nuanced psychosocial study of CVD. The levels help examine inequalities in power that exist in the social system which adds to the complexity of the relationship between society, health and illness (Scambler & Scambler). Therefore, from a sociological perspective, health can be described as a relative concept regarding the surroundings and circumstances people find themselves in (Aggleton 1990; Nettleton 2006).

CVD health-related behaviour is then complicated, which might play a role in increasing its prevalence. The growing body of literature suggests that, contrary to common belief, the burden of morbidity and mortality from CVDs is not restricted to affluent, high-income countries (Maredza *et al.* 2011; Mensah 2013; Peer, Lombard, Steyn *et al*. 2014; Naik & Kaneda 2015). As stated by Gaziano (2007), CVD is the leading cause of death in low and middle-income countries (LMICs) which increases the financial and practical costs due to a larger amount of people being at risk for CVD. Some of the other major risk factors for CVD include high blood pressure, obesity, PI, stress, high cholesterol and diabetes (Adeboye, Bermano & Rolland 2012). Despite the fact that these risk factors can be prevented, the rise of CVD in LMICs has been linked to progressive urbanisation and the coinciding globalised world shaped by the modern cultures of urban life (Celermajer *et al.* 2012). This is

problematic if an individual neither practices recommended 'good' health behaviours nor considered themselves to be at risk for CVD. Needless to say, the growing epidemic of chronic diseases affecting developed and developing countries is related to dietary and lifestyle changes as a result of one's environment.

Psychosocial environment

Siegrist and Marmot (2004, p. 1465) draw on Emile Durkheim to make a distinction between psychology and sociology and its role in shaping health, they say:

> In psychology, the basic experiential reality is the one created and reflected by interacting individual persons. Thus, individual behaviour has been and continues to be, the explanatory aim of psychological theories … the social world constitutes a reality of its own, above and beyond the lives and experiences of individual persons. Accordingly, macro-sociological theories have been interested in explaining collective rather than individual behaviour.

Social structures go beyond constraints and personal agency. It is influencing and enabling. Though the primary interest in sociology is collective, it also includes the individual-level factors embedded in behaviours. These help understand how health and disease unfold in different contexts. Constrained choice systematically examines the interplay between social structures and individual health. Siegrist and Marmot (2004) defined the term *psychosocial environment* as the "sociostructural range of opportunities that is available to an individual person to meet his or her needs of well-being, productivity and positive self-experience" (p. 1465). Health-related decision-making and actions usually interact on different levels of society and with individual biology. The existing literature on health in sub-Saharan Africa lacks psychosocial studies that attempt to address the nuances rooted in the outcomes of health. One of the only studies that attempted to explain how health is influenced beyond (and including) biological explanations was conducted by Neil Schneiderman in 2004 who looked explicitly into the psychosocial, behavioural and biological aspects of chronic diseases in the United States (U.S.).

Future research into the NCD epidemic needs to consider obesity and diet-related chronic conditions in a similar manner in order to understand the factors outside the individual-level that spurs chronic diseases. The increased availability of junk food and fast food, larger portion sizes, unhealthy snacking and emotional eating can, therefore, be linked to the obesity epidemic in South Africa. For instance, fast food is now a poor man's alternative to quick and

convenient meals (Baleta & Mitchell 2014) which often have very little nutritional value. Hence, there is a profound question concerning the nature of how structure and agency shape health-related decision-making, which is lacking in the literature on the chronic disease burden.

Burden of chronic diseases

Globally, 82% of NCDs consist of CVDs, cancers and diabetes (WHO 2014a) – the leading causes of morbidity and mortality worldwide (De Villiers, Senekal & Fourie 2011). NCDs are now responsible for more than 80% of this disease burden occurring in low-income and middle-income countries (WHO 2014a) among people younger than 70 in the working age population. South Africa, as a middle-income country, is no exemption to this global trend as "it has health outcomes that are worse than those in many lower-income countries" (Coovadia, Jewkes, Barron *et al.* 2009, p. 817) which poses a health and development challenge to contemporary South Africa. Although NCDs are showing burdens on the social, economic and financial situation in South Africa, it is largely preventable since the four main behavioural risk factors (tobacco use, unhealthy diet, PI, harmful use of alcohol) is avoidable and modifiable (Tsolekile *et al.* 2015). However, effective preventive interventions are now beginning to challenge shared behavioural risk factors; albeit rather gradually.

CVD is the major contributor to the global burden of disease and it is expected to continue to be among the world's leading killers in the next few years. CVD is also projected to rank in the top ten leading causes of disability-adjusted life years (DALY) by 2030 (Mathers & Loncar 2006). Schneider, Bradshaw, Norman *et al.* (2009) concluded that NCDs affect both poor and wealthy South Africans but mortality trends differ. They found that the poor are likely to die from COPD, asthma, strokes and obesity-related deaths while wealthier individuals suffer from IHD, lung cancer and breast cancer but both, poor and wealthy nations are likely to suffer from CHDs. This is not unusual as Beaglehole *et al.* (2002 cited in Schneider *et al.* 2009) similarly found that 75% of CHDs are due to high blood cholesterol and hypertension. Other literature confirms that the pathways of risk are not adequately identified or addressed within the South African context.

The prevalence of NCDs in these countries is attributed to rapid urbanisation (Vorster 2005), globalisation and population ageing which result in changes in sedentary lifestyles, dietary patterns, high levels of work-related and financial stress (Bradshaw, Steyn, Levitt *et al.*

2010b; Phaswana-Mafuya & Tassiopoulos 2011; Mayosi, Lawn, van Niekerk *et al*. 2012) and a deep-seated outcome of South Africa's historical-political past.

South Africa's historical past

Against the historical-political backdrop in South Africa, health issues remain problematic due to the shortcomings of the existing healthcare system in dealing effectively with the growing burdens of its population (Phaswana-Mafuya & Tassiopoulos 2011; Sambo 2014). South Africa has, however, undergone progressive shifts in health, social, political and economic capacities that have resulted in positive changes in health service provision and the promotion of good health behaviours among different population groups (Lambert & Kolbe-Alexander 2006; Puoane, Tsolekile, Caldbick *et al.* 2012). 'Good' health behaviour is understood as the corrective measures taken to ensure the best individual well-being regarding health – such as PA and healthy eating habits.

Still, there is a greater need to further understand the increasing prevalence of NCDs and the complex dynamics among South Africans to prevent CVD. The costs related to chronic lifestyle conditions impact on the individual, family and the workplace in profound ways which adds to the burden of disease in countries that are not entirely economically equipped (Gilbert *et al*. 2010; Kahn 2011). This further impacts the healthcare system as demands for chronic medication and medical costs increase (Puoane *et al.* 2012). The roots of a dysfunctional health system play a role in understanding emerging epidemics like infectious and non-infectious diseases. Racial and gender discrimination, income inequalities, the migrant labour system and family dislocation characterised South Africa's troubled past and paved the way for the post-apartheid health situation and state of health services – which still shapes health, service delivery and resource inequities (Coovadia *et al*. 2009). Harris, Goudge, Ataguba *et al.* (2011) revealed the inequities in access to healthcare in South Africa by exploring the affordability, availability and acceptability of services through a nationally representative household survey. The authors pointed out some key barriers to healthcare such as uneven social and power relationships, racial and rural-urban geographical divisions in health outcomes and socio-economic inequalities between public and private health sectors which remain a challenge.

Exploring the historical context of South Africa contributes to understanding how the modern-day CVD situation exists. It further reveals how the epidemic has been shaped by

social, biological, behavioural, sociocultural and political factors. Many South Africans were deprived and faced diseases of poverty such as malnutrition. By trying to understand the dynamic context of NCDs in South Africa, the literature suggests the need to look at the "specific interaction of historical, social, political and cultural factors which shaped the nature of the epidemic" (Marks 2008, p. 41). Going back to South Africa's history helps locate present health-related issues in the context of the past by providing data to answer contemporary questions.

Legacy of Apartheid

The financial stress of healthcare costs negatively affects those in developing countries where health disparities continue to exist (Abegunde *et al*. 2007). In one study, Ataguba *et al*. (2015) showed that inequality exists in accessing good healthcare. This advantages the wealthy but negatively influences the health status of South Africa. As CVD prevalence rates increase, it is likely to pose greater challenges to healthcare provision in South Africa at a later stage (Phaswana-Mafuya & Tassiopoulos 2011). The apartheid system highlighted issues of social, spatial and health inequalities and poor governmental responses.

Unfortunately, "South Africa is still grappling with the legacy of apartheid and the challenges of transforming institutions and promoting equity in development" (Coovadia *et al.* 2009, p. 817) which presents dangers for the future of NCDs in the country. Clearly, social injustices are mirrored in the state of health of the country's people and the services available to them. In essence then, health promotion and health services are spatially patterned which affects health and disease prevalence. *Health promotion* is a complex notion of which its conceptual, theoretical and operational meanings are multi-layered and dynamic (Parker, Steyn, Levitt *et al*. 2012). This means that there is no one definition as it has an elastic quality (Clarke 2010). There have been many debates in the literature within health promotion stating that health education is embedded in health promotion, but the two are neither mutually exclusive nor interchangeable (Naidoo & Wills 1994). One the one hand, *health promotion* is "the process of enabling people to increase control over and to improve their health" (Clarke 2010, p. 357). On the other hand, *health education* is to "acquaint people with the facts of what health is in explicit and identifiable terms" (MacDonald 2008, p. 11). Both help understand the levels of inequalities and inequities that continue to exist in a South African context.

Health and social inequalities

South Africa's historical past conditions such as the changing political economy; neoliberal policies and deteriorating economy have impacted negatively on NCD policy-making and implementation and complicated the ways in which the epidemic has unfolded. Carlisle and Hanlon (2007) explained that sociocultural patterns of overconsumption within neoliberal economies threaten an individual, social and global well-being. Farrell, Warin, Moore and Street (2016) went further to explain that markets are usually premised on rational choice which often 'normalises' self-interests. In this way, the neoliberal perspective does little to acknowledge factors beyond individual causes of ill-health. NCDs such as CVD are a complex result of modernity, political instability and the departure of social and cultural norms, economic and environmental factors – some of the upstream drivers of the NCD situation in South Africa. Social inequalities, for example, arose during the apartheid era and are still deeply entrenched in South Africa's social (dis)order – this is evident in current health promotion debates on NCDs.

Against this backdrop, social disempowerment, lack of access to healthcare, information, resources and treatment for chronic diseases has prevented people from seeking medical assistance among different social groups (Kruger *et al*. 2005). Understanding the dimensions of this is multi-layered and uneven as there is the interplay of factors such as age, sex, race[7], education level, culture, politics and social class that impact on the health of individuals. In South Africa, the movements of Black population were restricted which led to social divisions that affected the health status of this social group (Durrheim, Mtose & Brown 2011). Population health in South Africa was impacted by the institutionalised racial discrimination that led to disparities in morbidity and mortality. This led to educational and occupational disparities resulting in the co-existence of distinct mortality profiles by population group, with Black people more susceptible to diseases of poverty (Digby 2013). The social stratifications that emerge in the context of the rise in NCDs in South Africa reveal the inequalities that continue to exist among ethnic groups (Spires *et al*. 2016; Moshabela, Zuma & Gaede 2016).

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[7] The meaning, significance and use of the concept of 'race' are historically rooted in South Africa's legacy of apartheid. The current health status of the country, especially in context of the rise in NCD prevalence, cannot be understood in its entirety without considering its practical implications on individuals and societies.

'Race' is contingent upon other underlying factors such as social, political, economic and cultural influences – which has shaped racialised identities and lived experiences of South African citizens during apartheid and in post-apartheid society and contemporary South Africa.

Ethnicity, or an ethnic group, can belong to the same race, but is identified based on culture. *Culture*, according to Bauman (1999), is a key concept in the social sciences and humanities to explain the knowledge, beliefs, values and systems of symbolic meanings that individuals associate with in everyday lives – going beyond race and ethnicity. Chris Smaje (2005) suggested that, from a purely sociological viewpoint, "race and ethnicity describe the way that distinctive and often hierarchically ranked human collectivities are defined and invested with social significance" (cited in Cockerham 2007, p. 140) – both are social constructs and not a biological fact. From a social underpinning, *race* is "a proxy for sociocultural, economic, and particular historical processes and experiences" (Lee 2009, p. 1184). Although, race is commonly tainted by outward appearances to refer "to a person's observed physical characteristics, with skin color the single most important determinant of an individual's racial status" (Cockerham 2007, p. 140). 'Race' is now considered a socially and politically constructed concept. *Ethnicity*, according to Cornell and Hartmann (cited in Lee 2009), is collective action with a cultural heritage such as practices, diet, values and norms. The concepts; race and ethnicity, therefore, are dynamic and fluid as explained in the literature.

Some believe social inequality is a measure of development to track progress which creates wealth, political, social, technological and medical advancement. Some associate social inequality with a sense of social hierarchy. Social inequalities offer a useful entry point for assessing the negative health outcomes of unhealthy behaviours and lifestyle choices in a country such as South Africa to understand further human and social developments. However, all health-related issues cannot be explained by social inequality. The difficulty arises when proximate determinants such as gender, class, employment status and culture affects health.

Culture shapes perceptions and interpretations of experiences of health and illness. Cultural patterning in health sheds light on the social context in which, for example, cultural ideologies of disease causation persist in Africa, and South Africa, specifically, which contours ideas about individual risk and 'normal' death. One's geographical environment (urban/rural) determines the quality of health messages and treatment available to different sectors of society (Gallagher & Updegraff 2011). Geographic location, such as urban areas, then affects how chronic diseases like CVD unfold. South Africa is a transitional social space where different behavioural and economic forms clash, coexist and interpenetrate and where gender roles and hierarchies of power are constantly questioned and negotiated. Patterns of

chronic diseases are changing as the world is fast becoming globalised which function to establish coping strategies during stressful life situations and illness management.

Mike Bury's (1982) work on chronic illness as biographical disruption is critical in this context where illness disrupts the life experience of those suffering. Bury (1982) spoke about how chronic illness sufferers need to develop coping mechanisms to manage biographical disruptions – which often lead to destabilisation of identity, particularly at the onset of the condition leading to social inclusion or exclusion in 'Othering' discourses. Williams (1984) spoke explicitly about this when he pioneered the notion of 'narrative reconstruction' and how chronic disease sufferers develop coping mechanisms to come to terms with their conditions – often through narrating their experiences.

Pickard and Rogers (2012, p. 106) recently built on this to suggest that:

> Illness disrupts the usual phenomenological anatomy. One becomes conscious of one's body or part(s) of one's body in a way that Ledger terms "dys-appearance" (defined as the appearance of the body in a 'dys' – bad, hard, ill – state) and which disrupts practices, roles and relationships with others in everyday life.

Williams (2000) critically evaluated Bury's (1982) key concept to question whether chronic illness is a biological disruption or biological disruption is chronic disease. He states that either way, biological disruption is an important point of reference in the sociology of chronic conditions.

Modern public health problems like CVDs are widening social inequalities and leading to morbidity, mortality and dependence. Literature shows that adverse environments shape health and disease outcomes. Inequalities in health continue to play a role in the health status of South Africa. Due to urbanisation and globalisation, there is a social gradient in morbidity and mortality prevalence due to NCDs such as CHD and stroke.

Nutrition transition

Nutrition transition is characterised by rapid urbanisation, economic growth and improving incomes, technological change, increased processed foods (refined starch, high fat and high sugar) and emerging obesity (Popkin & Gordon-Larsen 2004). This transition is conducive to overweight and obesity associated with urban life (Ginsburg, Griffiths, Richter *et al.* 2013). Other evidence of the nutrition transition and CVD risk factors in, for example, North African

countries has reported a steady and consistent increase in energy, protein, and fat per capita, and a decrease in fruit and vegetables and PA (Mehio, Nasreddine, Mokdad *et al.* 2010). Abrha, Shiferaw and Ahmed (2016) pointed out that the burden of overweight and obesity in developing countries is especially high among urban women. For example, they provide evidence to show that the prevalence of overweight and obesity among urban Ethiopian women is 14.9% which is much higher than the country's national average but significantly lower than South Africa (56.6%). They suggest that the difference in numbers may be attributed to disparity with dietary patterns and lifestyle choices introduced by urbanisation. Other studies reveal that with urbanisation, the uncertainty of employment, death and societal factors produce stress and exhaustion and lead to other conditions such as depression and anxiety which further pose a threat to heart health (Sheps & Sheffield 2001; Thorogood *et al.* 2007). As such, the socio-economic position, or class, of people is affected which may lead to the development of some form of heart diseases such as hypertension, IHD or other stress-induced illnesses (Thorogood *et al.* 2007).

Chronic exposure to stressful situations is associated with primary hypertension (Björntorp 2001) which may contribute to chronic inflammatory processes and add to the seriousness and the burden of CVD. The nutrition transition is also evident in urban settings of sub-Saharan Africa countries. For instance, obesity is associated with high energy intake in Cameroonian men (Jackson, Walker, Cruickshank *et al.* 2006), body image in Gambia (Siervo, Grey, Nyan *et al.* 2005) and high socio-economic status and low PA in South Africa (Bourne *et al.* 2002). This is important as '… unhealthy diets and physical inactivity are "cultured" by social and physical environmental factors' (Airhihenbuwa *et al.* 2014, p. 78). In their study of overweight and obesity among women in sub-Saharan Africa, Neupane, Prakash and Doku (2016) found that women in urban residents who are classified as financially 'rich' were more likely to be overweight or obese as well as those who were more educated. Consistent with this finding, Abrha *et al.* (2016) explain why, in developing countries, the wealthier are more likely to consume energy dense foods and follow sedentary lifestyles that lead to overweight and obesity.

A *Body Image Report* by WhyFive conducted online among 1210 people in 2013 provided deeper insight into a nationwide study in South Africa. It found that Black people are more comfortable with their physical appearance and that White people have the least healthy body self-image. This reiterates the need to explore risk perception about health behaviours within a more nuanced psychosocial perspective rather than a purely biomedical viewpoint. Thus, if

the incidence of CVD is to be understood holistically, people need to learn how to manage conditions or cope with the psychological and physical stresses that modern society inevitably exerts on them. This can only be done if people understand health behaviours and whether or not they perceive or consider themselves to be at risk for CVD. Moreover, the literature confirms differences in health-related behaviours which may be attributed to differences in social and physical environments (Zhang & Wang 2004; Zenk, Schulz, Israel *et al*. 2005). For example, household income and urban residential areas are associated with increased intake of take-away meals and a reduced intake of micronutrients (Zenk *et al*. 2005) which impact on heart health. Also, inverse relationships have been established between social classes which lead to smoking or alcohol use as a response to stressful life situations associated with economic hardship (Tudor Hart & Carter 2000).

The lifestyle factors associated with CVD mentioned thus far represent the psychosocial stresses of modern society and were reflected in feelings of tension and alienation which may be as distressing as physiological stresses. Since they "exert their effects on the body through various mechanisms, depending on the person's ... disposition, coping and habituation ... challenge and gratification [which] arise from the societal interrelationships experienced in familial relationships, social relationships, work and work-related problems ... and other social pressures associated with ageing and the cultural attitudes of society" (Reiffel, DeBellis, Mark *et al*. 1980, p. 51).

Urbanisation and globalisation

The *NCDs Fact Sheet* (WHO 2011) states that more than half of the NCD conditions which occur are taking place in LMICs. Moreover, in line with the urbanisation process, changes in food consumption and lifestyle behaviours, Stewart de Ramirez, Enquobahrie, Nyadzi *et al*. (2010) have shown that vascular risk factors such as hypertension, obesity and diabetes have increased. Adding to this, McNaughton (2013) stated that obesity leads to diabetes. Therefore, the term 'diabesity' was then coined to reflect the confluence of these conditions. A similar term, 'globesity', is understood as the result of globalisation, which is contributing to the rising rates of obesity (Eli & Ulijaszek 2014). These modern terms reflect the changes that impact on the health and nutritional status of different social groups, particularly in countries undergoing transition and leading to a global health disaster.

Other studies have shown that urbanisation plays a role in increasing the burden of CVD. For example, a study by Vorster, Kruger, Venter *et al*. (2007) showed that South Africans in transition face profound CVD-related risk factors. Several other related studies highlighted that individuals who reside in urban areas are more likely to be hypertensive due to their change in lifestyle (Vorster *et al*. 2005; 2007). The WHO NCD Country Profile (2014b) showed that 62% of South Africa's population reside in urban areas and that 38.3% are aged 30–70 years. The obesity epidemic, according to McNaughton (2013), crystalizes broader assumptions about the dangers of fat and the notion that poor health is the result of individual-level and irresponsible behaviours – which is becoming problematic.

Connor, Thorogood, Casserly *et al*. (2004) pointed out that dietary changes coupled with lifestyle and occupational changes among adults increased labour migration to urban centres and aggravated the epidemic through hypertension, obesity and stroke that goes beyond the individual. In 2008, Sliwa, Wilkinson, Hansen *et al*. presented one of the first reports on the *Heart of Soweto Study* – a cross-sectional study in an urban South African township in Johannesburg – to show the characteristics and burden arising from heart disease in an urban Black community. They revealed similar findings where over 50% of CVD patients present with hypertension were obese and that Black South Africans are more likely to be diagnosed with heart failure but less likely to be diagnosed with coronary artery disease[8]. The authors detailed the effect of the epidemiological transition of this population to explain the present and the future of the cardiac health of Black South Africans specifically. This provides insight into the CVD health situation of South Africa given that Black people comprise the majority of South Africa's total population yet are not in the position to 'buy health' because of the social inequalities that continue to exist.

Health consumerism

People engage in unhealthy activities not directly because they lack personal agency and autonomy, but also because they are placed in a social and economic situation which constrains the choices they can make, encourages unhealthy behaviour and prevents them from disengaging from those activities. In the advent of the health transition and

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[8] Coronary artery disease occurs when the arteries that supply blood to the heart muscle (coronary arteries) becomes hardened and narrowed due to the build-up of fatty deposits (called atherosclerosis) in the cells lining the wall of the coronary arteries. Large amounts of fatty deposits in the coronary arteries lead to narrowed coronary arteries and reduced blood flow to the heart muscle which may lead to IHD (Steyn & Fourie 2007).

globalisation, there is a constant transformation of people from consumers to producers of health information and care.

A considerable proportion of the total population in South Africa now lives in urban centres, with the urbanisation of the Black population increasing (Bourne *et al*. 2002; Thorogood *et al*. 2007). This trend is accompanied by large shifts in the health patterns of South Africans, in particular, the increasing prevalence of NCDs (Thorogood *et al*. 2007). Urbanisation is a major risk factor in the NCDs epidemic as economies grow and become 'modernised' which further challenge health promotion initiatives (Gupta, Agrawal, Misra *et al*. 2010; Maredza *et al*. 2011). For instance, increasing urbanisation will distance more people from primary food production and will have an adverse impact on the availability of a varied and nutritious diet.

The *inverse care law* − a term coined by Julian Tudor Hart in 1971 explains how the availability of proper medical care varies inversely with the population health needs to expedite the achievement of other goals (Tudor Hart & Carter 2000). For instance, Black people continue to engage in negative heart-healthy choices even though they often require medical care the most but cannot afford it (Thorogood *et al*. 2007). Also because those who can afford better healthcare usually have better access to a diverse and varied lifestyle (Labadarios, Steyn & Nel 2011). Embedded in this concept is the stratification of social class which implies that those who form part of the lower class are usually more vulnerable and disadvantaged regarding access and availability of resources (O'Flaherty & Capewell 2012). As such, they tend to get ill more often than those in higher socio-economic positions as help-seeking behaviour is usually embedded within the community and societal norms where constructions of illness and perceptions of health differ (Harris *et al*. 2011). This may be attributed to the fact that those who are disadvantaged are more at risk of exposure to harmful products such as tobacco and unhealthy diets that lack nutrition and limited or no access to healthcare services (DiClemente, Crosby & Kegler 2002). The complex nature of one's social context in which they make choices relating to their health behaviours is an important indicator of their risk of ill-health and diseases (Ajzen 2005).

To better understand the unique South African context, this study was informed by a mixed methods research design guided by the IMBP (see Methodology). This design helped better situate the NCD situation among a sample of working age population in Johannesburg within

a holistic psychosocial framework to best interpret the findings of the study as will be later discussed in the Analysis of Findings chapter.

Risk

Not many studies explored CVD beyond the biomedical realm in Africa. One of the earliest attempts was by BeLue *et al*. (2009) who advocated for a sociocultural understanding of CVD risk in the sub-Saharan African context. Airhihenbuwa *et al*. (2014) used the PEN-3 model (Figure 1) as a tool to address the positive aspects of culture and other pertinent issues in diverse African contexts and cultural settings. This was done to possibly inform interventions and policies for CVD risk treatment and prevention in countries such as Cameroon, Ghana, South Africa, Uganda and Zambia. It found that cultural identity and community values played a key role in shaping health-related decision-making. In the context of this thesis, the PEN-3 model is a cultural lens for exploring the rise of chronic diseases in the South African context and how the sociocultural factors influence perceptions of risk.

The role of culture in risk
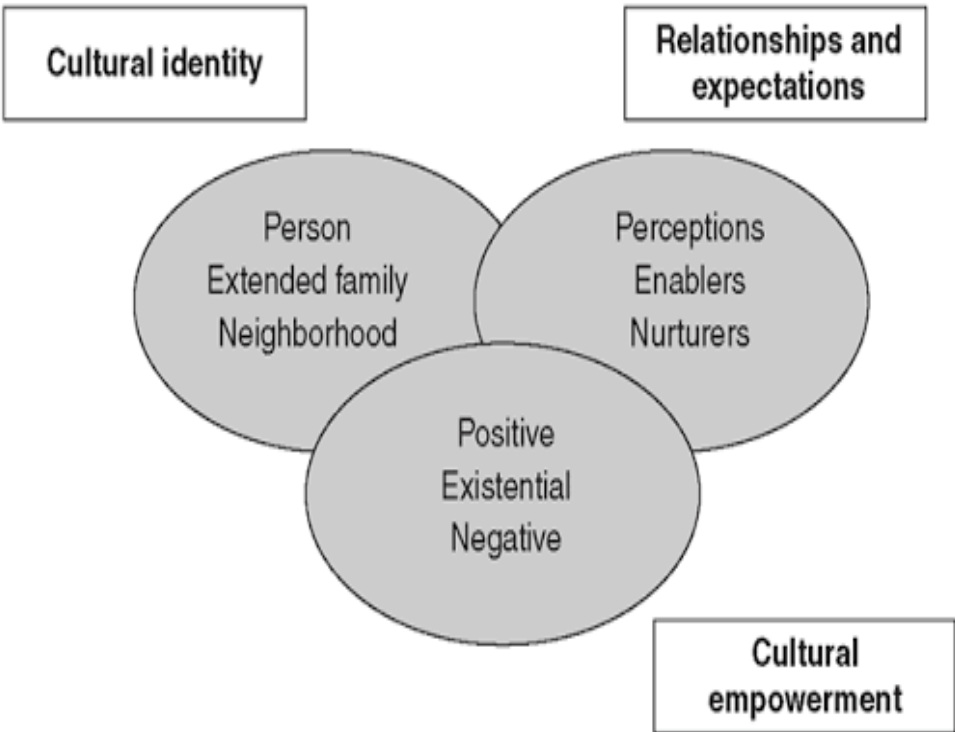
Figure 1 Airhihenbuwa's (1989) PEN-3 model
Source: **BeLue *et al*. (2009, p. 9)**

Therefore, understanding CVD purely on an individual-based level does not adequately capture the nuances embedded in its prevalence (Airhihenbuwa & Iwelunmor 2012). The study suggested that future research aimed at understanding CVD risk should consider the role of factors beyond the individual.

Dating back to the 1980s, Renn (1984, p. 557) examined the psychological and sociological approaches to risk perception. He suggested that, within the social context; '*risk*' has a functional meaning of one's behaviour, but the psychosocial environment focuses on the psychological aspects, social norms, values, roles and personal and societal judgement. Ever since *risk perception* has come to be understood as a process of social values and personal attributes that link to a particular risk situation. Renn (1981 cited in 1984, p. 561) further added how:

> Risk perception describes the process of mentally representing and assimilating the likelihood of adverse events that are connected with certain objects or activities and that might occur in the future.

Since this proposition, other studies only partially addressed this gap in knowledge. Sociological research, Renn (1984) noted, addresses the problem of group responses to risk concentrating on the role of social values, structural constraints and the interplay of power relations in the macro, micro and meso societies. Against this backdrop, then, risk perception assumes that individuals can and will maximise their individual agency in decision-making based on objective measures identified among certain individuals or groups for improved health behaviours (Ataguba *et al*. 2015).

This thesis is, therefore, an attempt to address the nuances and complexities embedded in the unfolding of CVD and its health-related behaviours in the South African context. It goes beyond the individual-level as the country is faced with one of the most striking CVD-related mortality and morbidity trends in the world. Some social analyses of risk relating to health take risk as one conceptual segment within a broader spectrum of interrelated issues (see BeLue 2009; Braun, Glassman, Jiunn-Jye *et al*. 2014; van der Riet & Nicholson 2014; Surka, Steyn, Everett-Murphy *et al*. 2015). Other studies such as the one conducted by Scott, Ejikeme, Clottey and Thomas (2012) explore risk directly related to obesity in sub-Saharan Africa by using an innovative ecological theoretical framework to conceptualise some of the factors that are contributing to overweight and obesity and contributing to the rise of NCDs. The researchers looked at the distal ('upstream'), intermediate and distant

('downstream') factors that increase one's risk for heart disease, hypertension and cancer. Using the sociological imagination on the micro level, Mills (1959) calls these outcomes "personal troubles of milieu" (p. 4) which concerns the individual's self and social life she or he is directly or personally aware of. On the macro level, Mills (1959, p. 3) calls it "public issues of social structure" to explain factors beyond the individual control. These factors can also be used to explain the continuum of CVD causality, but a similar approach is lacking in the South African context.

Many frameworks and models have been used to inform NCD-related research in the past. However, these were mainly located in psychology and focused on individual behaviours in developed countries – which showed little progress in slowing down the epidemic. The literature in sub-Saharan Africa shows gaps in its approach to NCDs like CVD. Developing countries need studies that focus on factors beyond the individual-level to concentrate on more integrative psychological, social and cultural factors. Recent studies in South Africa are slowly attempting to delve into these pertinent issues (Puoane *et al*. 2012; Micklesfield *et al*. 2013; Peltzer & Phaswana-Mafuya 2013; Duncan, Howe, Manukusa *et al*. 2014; Lopes Ibanez-Gonzalez & Greenstein 2014; Lopes Ibanez-Gonzalez *et al*. 2014; Lopes Ibanez-Gonzalez & Tollman 2015; Surka *et al*. 2015; Ataguba *et al*. 2015). However, other studies are mostly cross-sectional and concerned with the rural population; therefore, wider and preferably longitudinal research in the urban South African context is needed as it is relevant but largely missing in the available literature. A good start requires frameworks that focus on these underlying factors to inform multi-layered and context appropriate interventions (Scott *et al*. 2012). There is also an absence of sociological research on the subjective experience of health in a country like South Africa that is currently undergoing a quadruple burden of disease. This thesis will therefore later present the Theoretical Framework it adopted to explore the rise of NCDs, particularly CVD, in South Africa.

The relationships between CVDs and risk factors have been widely explored in the existing body of literature in South Africa (Steyn *et al*. 2006; Phaswana-Mafuya & Tassiopoulos, 2011; Maredza *et al*. 2011; Puoane *et al*. 2012; Mayosi *et al*. 2012; Shisana, Labadarios, Rehle *et al*. 2013). However, fewer studies have documented CVD risk perception among the working age population. There is evidence to prove that the standards of living have considerably improved over the years and food availability and access to services has become more prominent; there have been concerns as a result of this progress, such as inappropriate dietary patterns, increased tobacco use, decreased PA and an increase in diet-related chronic

diseases. Lifestyle changes are certainly resulting in greater NCD prevalence due to individual's personal and genetic exposure to risk. This is then linked to an individual's perceived risk for CVD as "the social contexts … act as predictors and precursors to health behaviour" (Taylor, Bury, Campling *et al*. 2006, p. 19) and "influences behaviour by shaping norms, enforcing patterns of social control … reducing or producing stress and placing constraints on individual choice" (Institute of Medicine 2003 cited in McNeill, Kreuter & Subramanian 2006, p. 1011). In this critical context, risk can be 'good' or 'bad' and is understood as the exposure to dangers or health threats (Lupton 1999 cited in Gabe *et al*. 2004, p. 87).

To understand risk perception one has to understand the objective and subjective meanings people attach to health as it is a binary concept to illness and disease. 'Health' then, is regarded as something desirable whereas illness is something undesirable. With regards to CVD, lay beliefs about health are equally important as official definitions because they shape risk perception and the ways in which people understand and react to their body – which can only be done by examining how people make sense of their behaviours. Subjectivity and the body are therefore interrelated as bodies are dynamic and not static (Lupton 1996). Hence, illness and disease are two further concepts that will help shed light on these issues.

Several studies have reported that the general population mainly receives their information regarding CVD risk from the media (Nurka 2013; Eli & Ulijaszek 2014; Tiggemann & Zaccardo 2015; Ghaznavi & Taylor 2015). However, media sources of risk are selective and can only provide partial information about CVD risk. To make an informed decision about one's health, the individual needs to consider their health behaviours and their likeliness of ill-health and disease. Many studies lack a focus on individual risk perception of rising diseases such as CVDs and other NCDs – which is one of the primary motivations for this study. An individual's perception of CVD risk is important in understanding emerging health problems in a country.

In addressing perceptions of risk for understanding CVD, Webster and Heeley (2010) provided a hypothetical scenario regarding the value of individual perceived risk. They supposed that the general population should be presented with information relating to their risk of developing CVD and suggested including the risk factors. This approach assumes that the individual would make a rational and logical decision about their current health and CVD risk and implement relevant risk reduction strategies. Risk perception and reduction is

associated with changes in psychosocial responses, for example, changes in health beliefs and perceiving the benefits of 'good' health behaviours to predict behavioural pathways (McNeill *et al*. 2006; Gay & Trevarthen 2013). In reality, however, Webster and Heeley (2010) admit that this often does not happen as this scenario is a lot more complicated. The factors that shape individual understanding of healthcare information and how they use health promotion messages in real life decision-making are dynamic and complex (Illich 1977). Therefore, theories are developed to try and explain how people make decisions and why.

Although it is unlikely that a theory will explain decision-making due to the complexity embedded in human behaviour, theories are useful in understanding why individuals do not always make rational health-related choices or adopt healthy behaviours about prevention and treatment. It is within this context that perception of CVD risk fits into health-related decision-making and health habits – as displayed in the Theoretical Framework. In discussing the unique challenges and opportunities in the context of CVDs in Africa, Wood (2005) explained that other situations also play a key role in shaping the occurrences of modifiable and non-modifiable CVD risk factors.

Modifiable risk factors

Behavioural (modifiable) risk factors for CVD include unhealthy diets, PI, harmful use of alcohol and smoking.

Unhealthy diets

Food behaviours such as dietary intake and nutrition are modifiable factors of chronic NCDs with evidence supporting the view that a change in diets has positive effects on health throughout life (Meng, Maskarinec & Lee 1999; Bourne *et al*. 2002; Bourne *et al*. 2002; Key *et al*. 2002; Jinabhai, Taylor & Sullivan 2005; Kruger *et al*. 2005; WHO 2008; WHO 2010a; WHO 2011). The problem is that South Africans seem to be consuming diets rich in saturated fats, which further add to the burden of disease (Mayosi *et al*. 2009; Labadarios *et al*. 2011). Saturated fats are found in meat (processed and unprocessed), sausage, egg yolk, full cream dairy products, fried food, chicken skin and pork, which significantly raises Low-Density Lipoprotein (LDL) levels (Crawford & Paden 2006; Lichtenstein, Appel, Brands *et al*. 2006; Mosca, Banka, Benjamin *et al*. 2007), or what is commonly referred to as 'bad' cholesterol. This in turn significantly affects their heart health in a negative way.

Positive heart-healthy behaviours include options, such as eating skinless chicken, grilling (chicken, meat or fish) instead of frying, eating lean meat, fat-free or low-fat dairy products and boiled or poached eggs rather than fried (Mosca *et al*. 2007).

Studies on CVD in South Africa and sub-Saharan Africa show that; fibre, protein, starch and antioxidants, are not included as often in diets and this proves problematic with regards to nutritional risk factors for CVD (Puoane, Bradley & Hughes 2005b; Steyn 2006; Steyn *et al*. 2006; Mayosi *et al*. 2009; Spires *et al*. 2016). Also, diets now include a greater amount of salt which is a major risk factor for CVD as it raises one's blood pressure (Steyn *et al*. 2006a; Maredza *et al*. 2011). Dietary changes that characterise what is usually referred to as the 'nutritional transition' include, both, the amount of food portions and servings per day as well as the quality of food consumed in the diet (Steyn *et al*. 2006). The first *South African National Health and Nutrition Examination Survey*[9] (Shisana *et al*. 2013) also known as SANHANES-1 highlighted how unhealthy eating habits are mostly affecting the urban Black population and fast becoming the biggest challenge for South Africa in light of the obesity epidemic (Health24 2012). Fast food and meals loaded with starchy carbohydrates, salt, processed and fatty meat and sweetened products are some of the causes of an increasing waistline and decreasing vitamin and nutrient intake (The Guardian 2014). The South African Department of Health is currently considering taxing sugar-sweetened beverages to decrease obesity given that the cigarette smoking and alcohol tax was effective (Talbot & Pienaar 2012).

A study by Feeley and Norris (2014) aimed to determine the consumption of purchased foods and drinks including fast food, sweetened beverages, confectionery and snacks to estimate the sugar and sodium intake from these foods among adolescents in Soweto. They found that urban adolescents are consuming large intakes of fast food and sugar-sweetened beverages that are contributing to the rise of obesity among the younger age groups. The authors advocated for the introduction of sin tax on sugar-sweetened beverages to possibly halt the rise of NCDs – which is subject to much controversy in a developing setting.

To elaborate on what has been mentioned earlier, the undesirable dietary changes include shifts in the structure of the diet towards a higher energy dense diet with a greater role in fat

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[9] SANHANES-1 is a cross-sectional, biobehavioural survey in South Africa conducted by the Human Sciences Research Council (HSRC). It reported the latest findings on the health and nutritional status of the country. The findings provide baseline data for future longitudinal studies.

and added sugars in foods, greater saturated fat intake, reduced intakes of carbohydrates and dietary fibre, and reduced fruit and vegetable consumption (Puoane *et al*. 2005a; 2005b; Steyn *et al*. 2006). This change in diet may be attributed to multiple factors that shape negative heart health behaviours. The increase in food prices, personal beliefs and cultural traditions as well as geographical, environmental, social and economic factors interact in complex ways to shape dietary consumption patterns and individual preferences for fatty and 'tastier' convenient food (Bury 1998; Cockerham 2000; Henderson & Petersen 2002; Gupta *et al*. 2010). Moreover, cultural perceptions of weight gain and weight loss further complicate the obesity crisis (Arojo & Osungbade 2013) – discussed later in this chapter.

In her work on the social meanings attached to food, Lupton (1994; 1996) explored how food contributed to social relationships and cultural practices. She evaluates adherence to 'good' food behaviours and avoidance of 'bad' foods. Consumption, therefore, is more than food; it is about the morality embedded in food.

For instance:

> 'Good' food is often described as nourishing and 'good for you', but is also indicative of self-control and concern for one's health, while 'bad' food is bad for one's health and on a deeper level of meaning is a sign of moral weakness
>
> (Lupton 1996, p. 27)

These distinctions of food are shaped by society and culture which create boundaries between acceptable and unacceptable eating behaviours. The sociological understanding of food and eating, Lupton (1994; 1996) discusses, relates to what Emma-Jayne Abbots and Anna Lavis (2013) wrote about in *Why We Eat, How We Eat: Contemporary Encounters between Foods and Bodies*. The authors question not what we eat, but why and how we eat and explore how individuals become what they eat as related to concepts of culture, self and identity in the context of the symbolic meanings attached to food behaviours. There is a connection between bodily aspects of self and identity that shapes everyday experiences of health and illness (Kelly & Field 1996) such as food consumption and lifestyle behaviours.

Lupton (1996) and Abbots and Lavis (2013) explicitly go beyond theoretical perspectives to show how food plays a practical and symbolic role in defining the boundaries between, not just the Self and 'Other' but what food is acceptable and unacceptable. This then becomes a

fundamental aspect of the social order of food as understandings of 'good' and 'bad' food is ever-changing (Lupton 1994, p. 680).

Kimoto, Ronquillo, Caamaño *et al*. (2014) discussed how women in Mexico perceived and reacted to their obesogenic environment to show how cultural values of 'good' and 'bad' reinforce certain behaviours. Women in their study experienced constraints to healthy eating habits and felt ashamed for engaging in unhealthy lifestyle behaviours. This forms a level of food morality whereby consuming 'good' food like fruits and vegetables is 'good' behaviour and accepted in society and the indulgence of 'bad' foods such as junk food and soda is 'bad' behaviour and unacceptable in society (Talbot & Pienaar 2012; Farrell *et al*. 2016).

Lupton (1994, p. 681) articulated that:

> The cultural prescriptions for what is considered 'good' or 'bad' food and the latent emotional and social meanings associated with these categories have enormous implications for attempts on the part of health educators and public health promoters to change the dietary habits of individuals by appealing to rational, common sense arguments and explain why 'bad' food habits persist despite these efforts.

Similarly, Derkatch and Spoel (2015) distinguish between 'good' and 'bad' living where a 'good' health citizen is someone who takes responsibility for their personal health and accepts their roles and responsibilities in society. This relates to what Spoel, Harris and Henwood (2012) call the "civic-moral imperative of healthy living" (p. 620) where 'good' foods are locally sourced, fresh, seasonal and expensive and 'bad' foods are globally travelled, highly processed and cheap (p. 3). Although the work by Lupton (1994; 1996), Spoel *et al*. (2012), Abbots and Lavis (2013) and Derkatch and Spoel (2015) is situated in a Western context, it can be transferred to all parts of the world. This is especially true in an African context where food and its related behaviours hold social and cultural meanings. Health behaviours in Africa are particularly framed in hegemonic masculinities where men are expected to be served food before women and are often the deciders of their daily patterns of consumption and larger portion sizes. Bourdieu contextualises this by suggesting that "[i]t behooves a man to eat and drink more, and to eat and drink stronger things" (1987, p. 192) as it is socially acceptable for men to do so.

Food behaviours are important in understanding health, particularly because of its association with illnesses and diseases such as diabetes and cancer. Ristovski-Slijepcevic, Bell, Chapman

et al. (2010), like Lupton (1996), highlight the medico-moral assumptions about the properties of food and what we should and should not eat. Cultural beliefs and values are important in influencing eating practices which explain the rise of obesity in South Africa. For example, in the family unit, the dominance of men's food preferences over women's is an expression of power that has profound implications for the agency women have in preparing healthier meals for their family, usually in a context where:

> … Dietary beliefs and behaviours are not only biologically and economically determined, but are formed as a process of socialisation … culturally reproduced from generation to generation and are also the product of individual's experiences with the social relations connected with food …

> (Lupton 1994, p. 682)

Moreover, research points out that food high in salt, sugar and fats are often cheaper and more readily available than fresh fruit and vegetables (Puoane, Matwa, Bradley *et al*. 2006; Mayosi *et al*. 2009; Muzingaba & Puoane 2014). According to a Marxist perspective, food products have become commodities produced and traded in the market that has expanded from a local to a global base. Changes in the world food economy are reflected in shifting patterns of dietary consumption, which affect the relationship between capitalism and health. Thus, the types of food people consume, in all cultural and religious groups, define to a large extent people's health, growth and development as well as susceptibility to illness and disease (Lau 1997; Mvo, Dick & Steyn 1999). With regards to CVD, this becomes valuable and, even more, problematic about health behaviours and risk perception in South Africa when unhealthy diets are combined with PI (Joubert, Norman, Lambert *et al*. 2007; Malhotra, Noakes & Phinney 2015). For example, in South Africa, the increase in the consumption of energy-dense diets high in fat, especially saturated fat, and low in unrefined carbohydrates is being combined with a decline in energy expenditure usually associated with a sedentary lifestyle – such as leisure time devoted to physically undemanding activities.

Physical (in)activity

The term PI is used to commonly identify people who do not get the recommended level of regular PA. To elaborate, PA includes moderate activities such as walking, stair climbing, moderate-to-heavy housework and at-home exercise, whereas more vigorous aerobic activities like brisk walking or running, swimming and bicycling are considered best for

improving heart health (Brownson, Baker, Housemann *et al*. 2001; Kolbe-Alexander, Lambert & Charlton 2006; WHO 2010c). The WHO *Global Recommendations on PA for Health* report (2010c) suggests that PA includes recreational or leisure time PA, transport such as walking or cycling, household chores, sporting activities, planned exercise and occupational work. The report recommends up to 150 minutes of moderate-intensity or at least 75 minutes of vigorous-intensity aerobic PA throughout the week for people aged 18–64. The report adds that regular moderate-intensity PA for 300 minutes a week has substantial benefits for health such as improving cardiorespiratory and muscular fitness and bone health as well as a decrease in NCDs and depression. It has been shown that moderate amounts of PA such as frequency, duration and intensity are associated with health benefits, and can help reduce various chronic diseases related to lifestyle (Kolbe-Alexander *et al*. 2006; Joubert *et al*. 2007). Also, PA can reduce 'bad' cholesterol levels in the blood as well as total cholesterol and can raise the high-density lipoprotein level (HDL) or what may be regarded as 'good' cholesterol.

There is agreement in the literature that regular PA reduces the risk of dying prematurely from CVD and has a favourable effect on many established risk factors. Moreover, exercise promotes weight reduction and can help reduce blood pressure, helps prevent the development of diabetes and reduces hypertension, which are all independent risk factors for CVD (Kolbe-Alexander *et al*. 2006). Similarly, past studies on weight conducted in the U.S. by Meisler and St Jeor (1996) demonstrated that "relatively small amounts of weight loss may lead to meaningful improvements in blood pressure, blood lipids, glucose control and insulin levels" (cited in Awah *et al*. 2008, p. 619). However, these are issues that need to be studied in-depth in South Africa because it is usually not within the scope of health priorities. Efforts at addressing these issues are mainly made by individual researchers rather than governments because the double burden of disease prevalence diverts the scarce resources to the heavily financed infectious diseases rather than the unprioritised CVD and diabetes (Poole-Wilson 2005).

PA is an important protective factor for NCDs (Lee, Shiroma, Lobelo *et al*. 2012) yet most of the South African population, mainly Black people, do not engage in PA (Kruger, Venter, Vorster *et al*. 2002). As a protective factor, PA for CVD may be negatively influenced by conditions in both the physical and social environment (Brownson *et al*. 2001). This is because the structural environment may act as a barrier to engaging in PA due to, for

example, the lack of parks, proper sidewalks and exercise facilities, as well as the presence of crime and violence (Kruger *et al*. 2005; Puoane *et al*. 2005; 2006).

The *INTERHEART* study included 27 098 participants from 52 countries. It reported that PA was one of the modifiable risk factors associated with reduced risk of myocardial infarction (MI) in women and men (Teo, Ounpuu, Hawken *et al*. 2006; Anand, Islam, Rosengren *et al*. 2008). Data from the *INTERHEART* Africa and the *INTERSTROKE* showed that the levels of risk by the risk factor profile for acute MI are independent of race, ethnicity and geography (Ntsekhe & Damasceno 2013). Another study, the *Framingham Heart study* was centred in the U.S. and context specific. It suggested that current or past exposure to specific factors increase the risk of future CVD (Mensah 2013). This is true for the data from the *INTERHEART* Africa study – which represents the largest comprehensive study carried out in sub-Saharan Africa (Celermajer *et al*. 2012).

Worldwide, 31% of adults are physically inactive (Hallal, Anderson, Bull *et al*. 2012). PI is one of the leading global public health issues in developing countries (Tamers, Allen, Yang *et al*. 2014). Several studies have shown that sedentary behaviour is associated with an increase in mortality and chronic diseases such as CVD (Lambert & Kolbe-Alexander 2006; Hallal *et al*. 2012; Lee *et al*. 2012; Shisana *et al*. 2013). Even so, PA participation has declined across the world and deaths from chronic diseases are occurring in developing countries (Abegunde *et al*. 2007; Maredza *et al*. 2011; Phaswana-Mafuya & Tassiopoulos 2011) which add financial strains in the family realm and within the workplace.

Joubert *et al*. (2007) demonstrate the increased burden of disease attributable to PI in South Africa in the year 2000 and argue that unhealthy diets and nutrition combined with PI proves to be key reasons why CVDs are on a rise. Further, lack of PA is associated with increased levels of obesity, breast cancer, colon cancer, osteoporosis, stress, anxiety and depression (Brownson *et al*. 2001). As such, PI is one of the major underlying causes of mortality in the world. In post-apartheid South Africa, the legacies of colonialism and apartheid continue to influence exercise engagements and access to sport; especially among Black women as it is embedded in a cultural and traditional patriarchal society (Walter & Du Rand 2011). The SANHANES-1 revealed that 27.9% of males and 45.2% of females were physically unfit and that most of the urban residents were likely to be unfit compared to those in other geographical areas (Shisana *et al*. 2013) where simultaneous unhealthy food behaviours are demanding urgent attention.

Food policies in many developing countries tend to be focused on under-nutrition and not sufficiently on addressing the prevention of chronic disease. In South Africa, this represents a problem regarding the policies on diet and chronic diseases. There is a need to develop recommendations for diet and nutrition in the prevention of chronic diseases and the need for sufficient PA. This emphasis is consistent with the trend to consider PA alongside the complex diet, nutrition and health status of the country. This is because, for example, a decrease in energy expenditure due to decreased PA is likely to be one of the major factors contributing to the global epidemic of overweight and obesity.

In sum, then, PI is an important risk factor for CVD itself and ranks equally to high blood pressure, elevated cholesterol and smoking (Kolbe-Alexander *et al*. 2006; Maredza *et al*. 2011). However, even though the effect of an exercise programme on any single risk factor may be small, the effect of continued moderate exercise on overall CVD risk, when combined with other lifestyle modifications such as proper nutrition and smoking cessation can be dramatic.

There is a consensus in the literature that individuals are more likely to engage in PA and maintain a healthy goal weight if they consider themselves at risk for diseases associated with leading a sedentary lifestyle (Tamers *et al*. 2014; Hayden 2014). This assumes that individuals possess the agency, means and autonomy to make the 'correct' lifestyle choices free from constraints. However, if risk perception is lacking, chances of changing negative health behaviours to positive are unlikely.

Alcohol

According to the *National Institute for Health and Clinical Excellence*, too much alcohol is associated with many health problems, including CVD, cancers and liver disease and psychosocial problems such as injuries and violence (NICE 2010). Peer *et al*. (2014) presented a quantitative study on the *Cardiovascular Risk in Black South Africans* (CRIBSA) to show the rising alcohol consumption and the prevalence of problem drinking among Black men and women. Given that Black people comprise 80% of the total population; their drinking behaviour was studied in Cape Town – home to the highest prevalence of alcohol intake and problem drinking in South Africa. In South Africa, alcohol consumers in the *Transition and Health during Urbanisation in South Africa* (THUSA) study were reported to have higher cholesterol and blood pressure levels compared to non-consumers (Gopane, Pisa,

Vorster *et al*. 2010). In the context of South Africa's high CVD prevalence and a dwindling health status of its population where alcohol consumption is linked to notions of social and financial wealth, it is no wonder that its consumption is regarded as a desirable lifestyle (Peer *et al*. 2014). It found that men are more likely to engage in alcohol consumption than women, but both were more likely to engage in problematic behaviour due to alcohol consumption.

The *Prospective Urban and Rural Epidemiology* (PURE) study in South Africa shows how modernisation, urbanisation and globalisation increase obesity and other risk factors for CVD and how alcohol consumption is positively associated with blood pressure, triglycerides and total cholesterol (Pisa, Kruger, Vorster *et al*. 2010). According to Grigorakis, Bountziouka and Kalogeropoulous (2011), red wine is a cardioprotective alcoholic beverage compared to vodka, beer, liquor and other spirits – which have adverse health outcomes such as CHD, hypertension, heart failure and stroke. However, additional factors such as lifestyle choices, dietary behaviours, age, race and sex must be considered alongside the quantity and frequency of alcohol intake as CVD biomarkers of individual risk. Alcohol increases one's risk of alcohol-related morbidity and mortality among different social groups; especially in developing countries as it creates alcohol dependence (Leslie, Ahern, Pettifor *et al*. 2015). In South Africa, excessive alcohol consumption poses a risk to public health; therefore, social and physical environmental factors need to be considered in the context of harmful alcohol drinking as well as tobacco use.

Smoking

The latest SANHANES-1 shows that as many as 17.6% of adults in South Africa smoke tobacco (Reddy, Zuma, Shisana *et al*. 2015). A review of the literature on tobacco use among adults ≥15 years in sub-Saharan Africa reported a high prevalence between Coloured males in South Africa (79%); tobacco use was also high in middle-aged men (30–49 years) compared to women (Townsend, Flisher, Gilreath *et al*. 2006). There are variations in tobacco use among provinces and race groups which reflect the sociocultural and geographical difference of demographic determinants. Reddy *et al*. (2015) showed that smoking is a preventable cause of disease and premature mortality, yet tobacco use in LMICs is rising among the poorly educated and urban individuals with low-income. Notably, however, the national smoking prevalence rates decreased from 32% in 1994 to 16.4% in 2011. During this time the government introduced the tobacco control legislation (Shisana *et al*. 2013). The South

African Government has made significant progress in formulating and implementing policies to address NCDs, such as salt and tobacco control, policies to decrease alcohol use and regulations surrounding the consumption of food (Puoane *et al.* 2012). Unfortunately, not much can be done for the contributing factors that cannot be altered.

Non-modifiable risk factors

Other (non-modifiable) risk factors comprise age, sex, race, genetic and familial predisposition and psychological factors (Mendis *et al.* 2011). One study in Africa observed a higher prevalence of CVD risk factors, including obesity, abdominal obesity, dyslipidaemia, diabetes mellitus and metabolic syndrome (MetS) in women than in men in urban Tanzania (Njelekela, Mpembeni, Muhihi *et al.* 2009). Devanathan, Esterhuizen and Govender (2013) noted that South Africa, in particular, can anticipate an increase in MetS and other NCDs due to the shift to obesogenic society with the advent of the pursuit of a fuller figured Black body. Likewise, The *Heart of Soweto Study* reported that Black men were less likely than women to have one or more risk factors for heart disease as men mostly denied having a pre-existing risk factor for heart disease (Sliwa *et al.* 2008). This is because, as Arojo and Osungbade (2013) show, the rise of the obesity epidemic in Africa is attributed to urbanisation and globalisation and cultural (mis)perceptions of an ideal body weight. Micklesfield *et al.* (2013) build on this notion by exploring the sociocultural, environmental and behavioural factors of obesity in Black South African women to tackle the obesity epidemic and related NCDs.

Sociocultural context of cardiovascular disease risks in South Africa

South Africa is currently undergoing shifts in its health, social, political and economic capacities that have slowly resulted in positive changes in health service provision (Puoane *et al.* 2012). However, since NCDs are triggered by lifestyle and behavioural choices, there is greater potential for change as these risk factors are modifiable (Sambo 2014). Heart disease, stroke, and type II diabetes can be prevented by eliminating shared lifestyle-related risk factors such as PI and unhealthy diets (Shisana *et al.* 2013; Airhihenbuwa *et al.* 2014).

Over the past decades, rapid expansion in epidemiological studies helped explain the role of diet in preventing and controlling morbidity and premature mortality after NCDs, however, it has not tackled the underlying social aspects of NCD risk. Locally, CVD incidence is rising

with more people becoming at risk on a daily basis (Steyn 2006; Steyn & Fourie 2007; Maredza *et al*. 2011). Globally, like in the U.S., CVD accounts for the excess mortality experienced by particular ethnic groups such as non-Hispanic Blacks compared to non-Hispanic White Americans (Lang & Bird 2015). Using this as a basis for understanding these patterns in South Africa, it becomes evident that some racial/ethnic groups are particularly more affected by NCDs. This is due to the social and political legacy behind the disparities in health (Clarke 2010; Dahl & Malmberg-Heimonen 2010) since the prevalence of CVD is strongly linked to lifestyle-related social settings and biological risk factors (WHO 2008).

Micklesfield *et al*. (2013) provide a schematic representation of the interrelated relationships between sociocultural, behavioural and environmental determinants of obesity in South Africa – which is indeed apt for a situational analysis for the rise of CVD in South Africa.
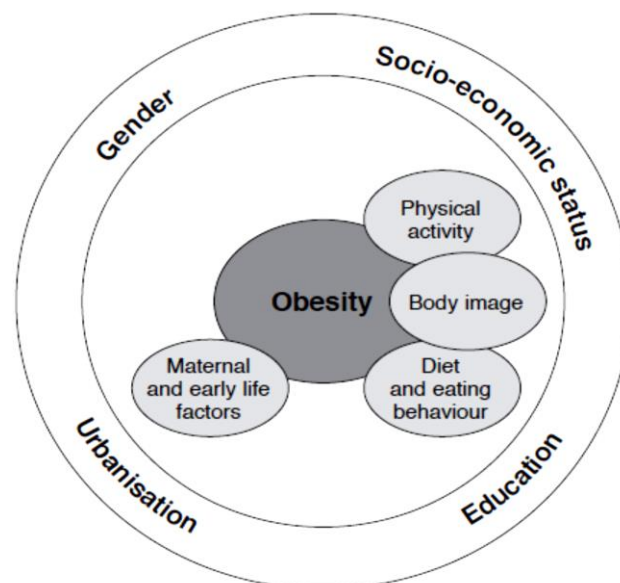
Figure 2 Schematic representations of the interrelationships between the sociocultural, behavioural and environmental determinants of obesity in Black South African women
Source: **Micklesfield *et al*. (2013, p. 370)**

As can be expected, these multi-layered factors provide insight into the factors associated with lived embodied experiences of one's body which is expected to shape perceptions of health and risk for diseases. Embodiment, then, becomes a key theme to discuss.

Embodiment

In health, the body is taken for granted as we "both feel and are embodied" (Williams 1996, p. 25) and one's relationships with their body are not likely to be static. This is because the experience of embodiment is socially produced as food and eating practices are mediated through social and cultural relations (Lupton 1996). Embodied practices like these actively shape the lived bodily experiences. Anderson-Fye (2012) went further to argue that embodiment is "the relationship of how sociocultural dynamics become translated into biological realities in the body" (p. 15). In this context, the social meanings attached to the body help understand appearance and body image (Anderson-Fye 2012) as well as structural inequalities such as racism and poverty in context of obesity and chronic disease rates or how gender inequalities affect eating patterns and body image disorders (Scambler & Scambler). Kirk (2002) drew on Finkelstein (1991) to suggest "that character is reflected in appearance, is widespread and is a powerful force in our daily interactions with others" (p. 82) as the body transmits and receives social meanings and messages through everyday behaviours and practices. This implies that embodied practices are located within the social world of interconnected social actors whereby the process of being and becoming a body is the (re)making of the self and identity in the context of habitus (Bourdieu 1987). In this way, the social world is controlled, corrected, stratified and perceived (Brubaker 1993).

Writing about the intimate connection between the self and identity, Kelly and Field (1996, p. 251) underlined the ways in which:

> The interplay between self and identity provides a theoretical bridge to manage sociologically the relation between biological and social facts. The biological and physical facts are significant sociologically because (a) they impinge directly on self, (b) they provide the signals for identity construction, and (c) they act as limiting factors on social action for the sufferer.

In one of his earliest work on the *Phenomenology of Perception*, Merleau-Ponty (1962) questioned how individuals experience the reality of the world and how perceptions of it are shaped. He noted the intimacy between bodies, everyday practices and experiences in the (re)creation of oneself and identities through psychology and culture. Pickard and Rogers (2012) highlighted that patients' lived reality demonstrates that knowledge is not something that is acquired; rather, it is something that can be done in a social, biographical and clinical context. Becker (1997) explained the relationship between the body, metaphors and personal

identities to show how identities are embodied and that the self is never stable but changes with disruptions of illness and ageing. For instance, as Kirk (2002) noted, body shape has cultural significance in that "physical appearance of bodies conveys ideas and values" (p. 82).

Lupton (1996) spoke explicitly on this when she expressed that:

> The appearance of the body may therefore be a source of great pride and a sense of accomplishment, particularly if it conforms to the accepted norms of attractiveness and social acceptability, but also may be a site of anxiety and shame.

The 'civilized body' is a concept that situates and explains how the bodies are given meaning and how the body is experienced (p. 16). Lupton (1996) then drew on Bakhtin (1984) to explain how "[t]he 'civilized' body is constructed as the body that is self-contained, that is highly socially managed and conforms to dominant norms of behaviour and appearance" (p. 19). For example, "notions of adult [dietary] self-control and morality are strongly linked with body shape and food consumption" (Lupton 1994, p. 681) as a social process. Although most significant studies are framed within the individual-level, Kruger *et al*. (2005) and Birrell (2014) showed how body weight and size is associated with morality and how perceptions of body image is ever-changing and located in dynamic settings between the individual, social and cultural contexts.

Culture, like health, is contested and subjective. Culturally, within a unique South African context, beliefs and attitudes about body image have been found to increase the risk of developing NCDs. For example, studies in Africa showed that although a large percentage of African women are overweight and obese, few perceived themselves so (Mvo *et al*. 1999; Puoane *et al*. 2006). This is problematic in the context of CVDs because it shapes the lack of risk perception for CVDs.

Accompanying beliefs about body weight and sociocultural factors are related to food intake, which partly contributes to obesity in some individuals and the desire to 'fit in' and conform to social and cultural norms (Puoane *et al*. 2005a–b). Illness behaviour is thereby also culturally patterned which is an intervening factor in determining the type of help an individual seeks. Thus, decisions to consult a doctor depend on; the type of illness, individual, cultural, social and economic circumstances as well as the size and quality of social networks (Becker & Maiman 1975; Fabrega 1997; Lupton 2003; O'Flaherty & Capewell 2012). For example, on a social level, familial communication about the illness may contribute to

illness behaviour whereby greater support systems among families reduce the need for medical support which shapes risk perception in positive or negative ways.

Perceptions of weight gain and weight loss complicate the issue further. In the South African context weight loss and thinness is associated with negative meanings such as HIV/AIDS; therefore, even if someone is overweight, they fear that if they lose weight, it could indicate that they are HIV positive (Birrell 2014). The fat-thin binary of "diseased body" (McNaughton 2013, p. 282) is subjected to, in Foucault's terms; the clinical gaze (Lupton 1997). In the African context, thinness is associated with disease whereas in the Western context, a fat body is considered diseased.

In her book *Fat*, Lupton (2012a) explores the social and medical dimensions of weight and the lived experience of fat embodiment and how society and the media accept and rejects different bodies. She writes that "fat is a cultural artefact" (2012, p. 3) and is regarded as something that is in need of treatment. This suggests the medicalisation of body weight – discussed later in this chapter. Going further, Lupton pointed out that fat does not exist on its own, rather, it is socially constructed in a society where there is a relationship between fatness and (im)morality and loss of control. The Western social reaction to fat shaming is an attempt to bring body weight under control by regulating and punishing the fat body (Eli & Ulijaszek 2014) – which is the opposite in the African context where thinness is shamed as diseased and in need of treatment (Birrell 2014).

On the topic of CVD and environmental and lifestyle factors, it is important to focus on the "diseased body" (McNaughton 2013, p. 282) as it is seen as problematic and in need of medical intervention. This sheds light on the power society has on the social interpretation of 'health' and the accepted body (Annandale 1998a–b; Ballard & Elston 2005). Hence, there is a need to understand the power dynamics embedded in risk perception of CVD and how this impacts health and help-seeking behaviour.

In South Africa, it is also a cultural belief that being overweight is a sign of affluence and wealth. In the SANHANES-1, most South Africans surveyed agreed they were overweight, but the majority were happy with their 'fat' body image (Shisana *et al*. 2013). This is explained in terms of identity reconstruction whereby body ideals are continuously changing as individuals embody and give meaning to their practices (Williams 2000). Clearly,

meaning and context cannot be separated when trying to understand the body and health-related practices.

Body (mis)maintenance and the (un)disciplined body

Foucault (1977, p. 25) mentions the dual process of docility-utility in that "discipline produces subjected and practiced bodies, docile bodies. Discipline increases the forces of the body … and diminishes the same forces" (cited in Kirk 2002, p. 86). Bodies are (un)disciplined in ways that conform to cultural norms and expectations. This disciplining process is also enabling as it facilitates the achievement of acceptable social interaction. In their study, Ghaznavi and Taylor (2015) analysed #thinspiration images on popular social media and showed how it affects beliefs, attitudes and behaviour relating to food consumption, eating habits and desirable weight. They added that social media encourages the sexualisation of women's bodies and self-objectification which mirrors Păunescu's (2014) study on the biology and social construction of women's bodies. This was further captured by Nguyen (2011) who wrote about the biopower and biopolitics of beauty. These discourses about beauty are embedded in feminist theory to challenge power and body politics in the subjectification and (de)objectification of women's bodies (Rabinow & Rose 2006). Subjectification in this sense broadly refers to the process when an individual works on themselves in the quest for better individual or collective health.

In another study, the effect of fitspiration imagery on women's body image in a social media platform like Instagram, Tiggemann and Zaccardo (2015) explored the online trend of bodies being used to inspire people towards a healthier lifestyle by promoting exercise and healthy food. The authors contrast the term 'fitspiration' and 'thinspiration' where exercising to be fit, rather than thin, are advocated for as a desired goal.

In the context of health, individuals learn from model behaviours and create unrealistic expectations of the body; socially, morally or personally. Working-class people are believed to be more likely to seek medical assistance and advice online or on social media because of the lack of time for help-seeking behaviours. In her work on digital technologies and health, Lupton (2012b) explained how technological advances like social media disseminate health and illness prevention messages to a wider audience. Consumers of social media are encouraged to monitor their exercise, eating habits and other health behaviours to improve

their health and lose weight to adhere to social norms and expectations. In applying the concept of normality and deviance to society, Gabe *et al*. (2004) discuss *stigma*.

Stigma

According to Goffman (1963), as cited by Gabe *et al*., stigma is a "negatively defined condition, attribute, trait or behaviour conferring 'deviant' status, which is social, culturally and historically variable" (2004, p. 68). The concept applies to any condition that symbolically categorises a person as inferior, indicating the idea of shame, rejection and blame which in turn alters an individual's identity (Nettleton 2006; Scambler 2009). From a CVD standpoint, this means that, for example, obese people, those who consume unhealthy diets and those who smoke and participate in inappropriate alcohol use are considered inferior and are 'unaccepted' in society and blamed for chronic NCDs like CVD. This leads to their social suffering as the gap between physical and existential suffering widens (Frank 2015).

However, it is clear that people do not function in a vacuum and the sum of internal and external pressures will exert itself on the individual's body because 'health' is socially constructed and operates within power structures (Blaxter 2004a). Scambler (2004), as cited by Gilbert and Walker (2009), highlights two types of stigma; felt and enacted. Felt stigma is the fear of being discriminated against due to the label of inferiority imposed by society and enacted stigma is the actual enactments of discrimination. Iwelunmor *et al*. (2013) showed how NCD-related stigma such as that experienced by cancer sufferers arises from social norms when society attaches a negative identity to those considered a social outcast. The concept is useful to examine social order and public health initiatives as it stems from the fact that in some cases, stigma can improve the health of stigmatised individuals and may be a useful tool for social control to prevent unhealthy behaviours (Parker & Aggleton 2003).

However, Scambler (2009) warned that although it is theoretically possible to distinguish between felt and enacted stigma, it is more difficult to distinguish their impact on the experiences of patients. For example, Adeboye *et al*. (2012) exposed that discrimination arising from obesity-related stigma is a response to the fears and prejudices of individuals and communities where manifestations of stigma vary according to time and place. This is socially constructed along the fault lines of society such as age, sex, race, geographical local and socio-economic status (Gilbert & Walker 2009). Parker and Aggleton (2003) highlighted the role of social context in the construction of stigma by suggesting that stigma operates at

the intersection of culture, power and difference – which is central to establishing and maintaining social order. This means that stigma is not static, but a constantly changing social process which operates through the reproduction and regulation of labels concealed through health behaviour surveillance. In South Africa, there is a greater chance of being stigmatised due to cancer and mental illness than obesity or HIV/AIDS which is being considered 'normal'.

This is important to discuss as it shows how experiences of health and illness unfold under varying circumstances when society attaches a negative identity to those considered a social outcast (Kelleher & Leavey 2004). As such, the consequences of ill-health make the affected person feel socially and intellectually inferior. Due to power dynamics, understanding health behaviour and the reasons why people may or may not seek medical help is complex when trying to explore the reasons why people may or may not suspect themselves to be at risk for CVD. The wider social contexts of health become important to discuss.

Cardiometabolic diseases

Metabolic risk factors are overweight and obesity, diabetes, hypertension and raised blood lipids. Cardiometabolic disease (CMD) is a term that encompasses CVD, diabetes and MetS. These include obesity, insulin resistance, hypertension and dyslipidaemia (Sattar 2007 cited in Mutowo, Own, Billah *et al*. 2015, p. 2) – which are major risk factors for diabetes and vascular diseases including MI and stroke. Mutowo *et al*. (2015) showed that CMD is the result of a Western lifestyle and diet confounded by PI, urbanisation and abdominal obesity. The risk of CMD is multifaceted and includes HIV/AIDS treatment, pulmonary heart disease and CVDs more specifically – which are both the largest contributors to CMD mortality in Africa.

Dalal, Beunza, Volmink *et al*. (2011) showed that sub-Saharan Africa is disproportionately burdened with communicable diseases and NCDs and that the prevalence of NCDs and risk factors are high in some African countries like South Africa, more than others. Rising epidemics of NCDs include CVD, cancer and metabolic diseases such as diabetes and obesity (Steyn & Fourie 2007). It is not just a disease of the wealthy but burdens the poorest population groups. The burgeoning epidemic, as they state, is due to many root causes such as the decrease in communicable diseases leading to the greater survival of the elderly and

making them more at risk for NCDs. Additional drivers are urbanisation, lifestyle changes associated with economic development, such as a change in diets, PI, smoking and alcohol use (Spires *et al.* 2016). Thus, behavioural and social determinants of CVD risk factors are important for health (Mendis *et al.* 2011) and health outcomes in the context of social inequality (Ataguba *et al.* 2015). The South African context is a unique breeding ground for NCDs due to the simultaneous increase in the prevalence of communicable diseases and NCDs, lifestyle, culture, genetic predisposition and overweight and obesity.

Overweight and obesity

Overweight and obesity is understood as abnormal or excessive fat accumulation that presents a health risk to individuals and is the fifth leading risk for global deaths (Stevens *et al.* 2012 cited in Neupane *et al.* 2016). In South Africa and the globe, overweight and obesity are risk factors for heart disease, hypertension, and diabetes or associated conditions like osteoarthritis[10] and cancers (Mehio *et al.* 2010). An exploration of the national survey on food consumption (Steyn, Labadarios, Maunder *et al.* 2005) reported that people 30 years or older died per day as a result of a very high body mass index (BMI). According to Steyn and Fourie (2007, p. 17), BMI "reflects a person's weight in terms of his/her height. This is defined as the weight in kilogrammes divided by height in metres squared (kg/m^2). They explained that overweight refers to a person whose "BMI is between 25 kg/m^2 and below 30 kg/m^2" whereas an obese person's "BMI is 30 kg/m^2 or higher" (2007, p. 17). The recent SANHANES-1 reported that South African males had a BMI of 23.6 kg/m^2 – which was significantly lower than females (28.9 kg/m^2). The study further showed that the prevalence of overweight and obesity were higher in females (24.8% and 39.2%) than males.

This reflects earlier findings by Ginsburg *et al.* (2013) who found in their study of urban South African adolescents that BMI is higher among women. Compared to the *South African Demographic and Health Survey* (SADHS) in 2003 (Department of Health, Medical Research Council & OrcMacro 2007), the SANHANES-1 displayed that the number of people who had a normal weight or who were underweight had decreased while overweight and obesity increased (Shisana *et al.* 2013). Moreover, there was a stark rise in obesity among females from 27% in 2003 to 39.2% in 2012.

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[10] Osteoporosis is a disease that weakens the bones making them fragile and more prone to breakage. It is usually caused by a loss or deficiency in calcium and is most often associated with post-menopausal women (Steyn & Fourie 2007).

A study of the psychosocial factors related to overweight and obesity among 325 women aged 20–54 in India found similar results along with body image dissatisfaction (Agrawal, Gupta, Misra *et al.* 2015). Puoane *et al.* (2002) reported that women are more likely to be overweight and obese. In LMIC countries, women have twice the obesity prevalence of men (WHO 2011). South Africa has the highest overweight and obesity rate in sub-Saharan Africa. Statistics show that up to 70% of women and a third of men are classified as overweight or obese. Obesity is associated with some diseases, including type II diabetes, heart disease, stroke, hypertension, joint pain and cancers. An overwhelming 40% of women in South Africa are obese. However, aside from it being an adult problem, 1 in 4 girls and 1 in 5 boys between the ages of 2–14 years are overweight or obese.

Neupane *et al.* (2016) drew on Demographic and Health Survey data from 32 sub-Saharan Africa countries to explain overweight and obesity trends and to argue that it is a major risk factor for many diseases globally. In an African context, Muhihi, Njelekela, Mpembeni *et al.* (2012) found that obesity is increasing among 36% of women than men in Tanzania. Men (78%) in their study, however, were more likely to underestimate their body weight, but in general, Tanzanians withhold false beliefs that overweight and obese people are healthier (Muhihi *et al.* 2012) – as in the case of South Africa. In a Western context, Robinson and Hogenkamp (2015) found that men in the U.S., UK and Sweden usually misjudge their body weight as obesity has become normalised and is harder to visually identify perceptions of excess weight.

The SANHANES-1 found that 76.4% of South African's perceived that they had a 'fat' body image while 22.7% thought they had a 'normal' body image. Furthermore, 87.9% of all South Africans indicated that their ideal body image, or the body image they most wanted to have, was 'fat'. Weight gain, in South Africa, is associated with a sense of achievement, material wealth, beauty and a good life (BeLue *et al.* 2009) whereas weight loss is associated with diseases such as TB and HIV/AIDS and unhappiness (IOL lifestyle 2014). Black women, therefore, are more accepting of their larger body image and experience less social pressure to be thin (Walter & Du Randt 2011).

In their study on body image satisfaction among a sample of Black female students, Mwaba and Roman (2009) found low levels of body dissatisfaction and higher unhealthy weight control behaviours. Participants in their study did not perceive that being thinner would be beneficial to their lives as they believed that different cultural standards accept 'beauty'

differently. In a more recent study, Draper, Davidowitz and Goedecke (2015) examined the perceptions relating to body size, weight loss and weight reduction interventions in Black South African women. They similarly found that Black women were aware of the negative outcomes of obesity, but were satisfied with their weight due to the cultural associations of thinness to disease and ill-health. Most Black women in the study revealed that a fuller figure is desirable in their culture. These findings on body size are consistent with findings of other South African studies.

Puoane, Tsolekile and Steyn (2010) conducted a study on weight issues among Black women and found that the prevalence of overweight and obesity in Black South Africans is fast becoming a public health concern. Obese people are seen as victims of obesogenic environments which undervalue people's resistance to body norms and spurs fat shaming and stigmatising behaviours as fatness is considered "a discredited bodily state that should be fixed" (Monaghan 2007, p. 68). This exposes how fat is subject to discourses of medicalisation. Similar studies conducted in the past link to these findings. For example, Mvo (1999) found that overweight and obese women were aware of obesity-related risk factors yet considered themselves attractive. Ristovski-Slijepcevic *et al*. (2010) had similar findings in Canada, where individual's believed that being 'thick' signifies good health and physical attractiveness. A similar study found that women in Mexico perceived excess weight as a signifier of a full and healthy life, happiness and without any food shortage (Kimoto *et al*. 2014). Moreover, women were aware of the negative health consequences of obesity but had no intention of losing weight due to the accepted cultural meanings attached to excess weight.

In general, studies in Africa documented that Black women prefer a heavier body weight and are more satisfied with their larger size (Puoane *et al*. 2012; Robinson & Hogenkamp 2015). 'Thick' or voluptuous according to Ogana & Ojong (2013), has social meaning associated with positive cultural symbolism in Black feminist discourses. Participants in their study reinforced the Zulu way of thinking about bodies while others exercised agency in pursuit of control over their bodies. These studies elucidate the gendered ways in which people engage with obesity discourses and (mis)manage their weight (Chesler, Ho & Ramkissoon 2014). Once considered a problem in developed nations, overweight and obesity are now on the rise in LMICs, particularly in urban settings (Puoane, Steyn, Bradshaw *et al*. 2002) which contribute to other health conditions. Overweight and obesity thereby act as powerful cultural signifiers for ill-health and diseases.

In a South African context, this provides a lens through which cultural understandings of the body and one's identity come under scrutiny as the perception of an ideal body weight is influenced by multiple factors (The Guardian 2014). A study conducted by Legwegoh and Riley (2014) in urban African regions such as Gaborone and Blantyre showed that the NCD environment, political economy and cultural meanings associated with food and body weight reflect much of the current situation that is spurring NCDs in South Africa.

In the Western context, overweight people are thought to lack personal control. A larger body size is considered overindulgence whereby greed overcomes the powers of rationality (Eli & Ulijaszek 2014). In contrast, a thin body represents the owner's ability to maintain strict discipline over the consumption of food. The perception of "diseased body" (McNaughton 2013, p. 282) differs in the African and Western contexts. Clearly, notions of health and physical attractiveness and moral assumptions of control of the body become intertwined. Mike Featherstone (1991), cited in Lupton (2005), described the term 'body maintenance' (p. 182) to refer to the mechanical metaphor for understanding the human body. Discourses of body maintenance draw on medical and public health, culture and commodity culture to understand how health is commodified and how chronic diseases are a lived and metaphorical experience.

Metaphors play a unique role in health and illness as it shapes understandings that extend meaning and create new ideas and prevents unwanted discontinuities (Lupton 1996; Becker 1997). The body is in itself a metaphorical site, for example, representations of the body as a 'machine' and a 'temple' are commonly understood metaphors. Moreover, illness and disease are often regarded as the body in war. The war metaphor, Sontag (1989) explained "are envisaged as an alien 'other', as enemies are in modern war" (p. 11). She further argued that the "move from the demonization of illness to the attribution of fault to the patient is an inevitable one" (ibid.) where individuals experience a sense of guilt and shame – as in the case of cancer. Sontag's (1989) notion of the war metaphor elucidates Bury's (1982) 'biographical disruption' and William's (1996) 'dys-embodiment'. Speaking exactly on the experience of chronic illness, Gareth Williams' (1984) presented the genesis of 'narrative reconstruction'. This important notion explained that chronic disease sufferers reclaim their place of worth by adopting coping strategies through the narration of illness which highlights their desire to be independent and not to be a burden to significant others or feel guilty about their chronic conditions.

Hypertension

In terms of hypertension in sub-Saharan Africa, a systematic review of studies on hypertension conducted by Addo, Smeeth and Leon (2007) reported a higher prevalence of hypertension in urban (47%) compared to rural (11%) areas. The review also displayed a steady increase in the prevalence of hypertension from the youngest to the oldest age group. The *Heart of Soweto Study* reported that of the 1691 volunteers (99% Black) who were screened, one-third of both men and women had either systolic ($\geq$ 140 mmHg) or diastolic ($\geq$ 90mmHg) blood pressure[11] (Alberts, Urdal, Steyn *et al*. 2005; Sliwa *et al*. 2008). The *South African Stroke Prevention Initiative*, similar to the Heart of Soweto Study, confirmed that hypertension was a major risk factor for CVD and reported that only 57% had normal blood pressure (Thorogood *et al*. 2007). Moreover, hypertension occurs more frequently in older people and is more common among those who are overweight or obese, consume a large amount of alcohol and have higher blood pressure levels (Seedat, Croasdale, Milne *et al*. 2006).

Diabetes mellitus

Worldwide, 10% of people aged $\geq$ 25 years have diabetes (WHO 2011). It is estimated that by 2030 about 7.7% of people worldwide will have diabetes, and the sub-Saharan Africa region is expected to have the largest increase of 98% in adult type II diabetes numbers (Shaw, Sicree & Zimmet 2010). Type II diabetes usually begins with the onset of middle age and among people who are overweight and obese – which puts the individual at a greater risk for heart disease (Steyn & Fourie 2007). Data on type II diabetes prevalence in sub-Saharan Africa propose that there has been a steady increase in diabetes with higher rates observed in urban compared to rural areas (Mbanya, Motala, Sobngwi *et al*. 2010). Data from the *INTERHEART* Africa study suggests that diabetes is one of five risk factors that accounts for approximately 90% of MI (Teo *et al*. 2006). Hence, uncontrolled CVD risk factors are expected to have a larger impact on the burden of CVD in Africa than elsewhere in the world (Steyn, Sliwa, Hawken *et al*. 2005). Many people with diabetes are undiagnosed or treated inadequately in South Africa, which leads to further health complications. People with diabetes have an increased risk of atherosclerosis.

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[11] See footnote on systolic and diastolic blood pressure in the Analysis of Findings (page 114).

Hyperlipidaemia and hypercholesterolaemia

Hyperlipidaemia is a high concentration of various blood fats, also known as lipids, in the blood. Hypercholesterolaemia refers to the high level of cholesterol in the blood and is one of the major risk factors for heart disease which leads to atherosclerosis, heart attacks and strokes (Steyn & Fourie 2007). Cholesterol appears in different forms in the blood, but for purposes of understanding the rise of CVD in South Africa, a focus is on LDL or the 'bad' cholesterol and HDL which is the 'good' cholesterol. A high level of LDL cholesterol increases the risk of heart diseases and, therefore, lower LDL cholesterol is desired for good health which ensures a lower risk of heart attacks and strokes (Steyn & Fourie 2007). High blood cholesterol is caused by an unhealthy lifestyle such as diets containing too many unhealthy fats or oils. These include saturated animal fats like butter, greasy foods and fatty cuts of meat or trans-fatty acids in margarine and some processed foods (Feeley & Norris 2014; Legwegoh & Riley 2014). Also, high levels of cholesterol-rich foods such as red meat and eggs raise blood cholesterol levels (Steyn *et al*. 2005; Puoane *et al*. 2006).

Cardiovascular-related diseases, cancers, chronic respiratory diseases and diabetes, are the four most prevalent NCDs, and the four biggest risk factors are unhealthy diets, PI, alcohol and smoking (Maredza *et al*. 2011). These behaviours are modifiable yet individuals lack the personal agency to change their health habits or face constrained choices in making heart-healthy decisions. Constrained choice for good health behaviour is vital to understanding the NCD situation but remains an unexplored area of research in the South African context.

Help-seeking behaviour

Biomedicine

Individual decisions to seek, or not to seek, medical help for health conditions, illness and symptoms are not straightforward. The literature points out that certain health problems may often be recognised as clues to disease and ill-health, but medical assistance, advice and treatment might also not immediately be sought. Irving Zola (1973) explained how individuals managed symptoms of ill-health before seeking medical treatment. Zola found that decisions to consult a medical doctor were most connected to a social-psychological situation in what he identified as 'triggers' that push people to take the necessary actions

about their health. He noted that without 'triggers', there would be less of a chance of an individual seeking medical assistance and an increase in risk for other health-related conditions and medication non-adherence. The decision to seek care is complex and involves much interaction of a person's beliefs, attitudes, values and cultural norms. The individual must first perceive the personal costs and benefits of seeking care and treatment before deciding to make a medical appointment to get screened for hypertension, diabetes or cholesterol.

Some studies have investigated the role of lay people in creating and preventing illness and disease and argue that attitudes and perception shape the legitimacy of the social order by serving as a means of control (Cockerham 1995; Cockerham 2000; Nettleton 2006). Using Foucault's concept of *medical power* to emphasise the social power doctors have over their patients' bodies (Turner 1995), this study explores whether this is the case with CVD as doctors may control their patients' attitudes and behaviour. In terms of CVD, this implies that health promotion messages are means of controlling the body by shaping ideas of what is 'acceptable' and 'good' for the body if it is to be 'healthy' (Hochbaum, Sorenson & Loring 1992; Segall 1997; Bandura 2000; Lucas & Lloyd 2005; Petersen & Wilkinson 2008).

As such, deviance from these social expectations of acceptability means that the diseased body is frowned upon and considered 'bad' (Scambler 2009). Thus, obesity, for example, is regarded as a disease of which health promotion strategies aim to create a leaner and socially accepted body against 'Western ideals' where everything pertaining to the body requires treatment for everyday conditions which become medicalised and deprives patients of power over themselves (Lupton 1997).

Within an African context, Puoane *et al*. (2005a–b) show that urban Black women in South Africa characterise 'big' as beautiful. Therefore, risk perception for CVD is low and good health behaviour is not a priority since fuller figures are laden with cultural meanings and social acceptance (Mvo *et al*. 1999). However, in social contexts where obesity is regarded as a 'disease', the person is blamed for lacking agency over their bodies and, therefore, they may or may not seek medical treatment for their condition.

Medicalisation

Zola (1983, p. 295) suggests that medicalisation is a multi-dimensional concept, but is defined as a "process whereby more and more of everyday life has come under medical dominion, influence and supervision" (cited in Ballard & Elston 2005, p. 230). This means that all aspects of life are fast becoming reliant on the biomedical model. Ivan Illich traces the roots of medicalisation in his work on *Healthism and Disabling Medicalization* to argue that power is embedded in medicine for social control which is contributing to the "medicalizing of society" (1977, p. 51). The body then becomes a site of great interest as individuals are faced with decisions regarding their health and disease in terms of prevention and treatment. In the advent of the increasing prevalence of CVD and the triple burden of disease in South Africa, there appears to be a mismatch between healthcare needs and resources which is becoming durable and widening the gap between 'rich' and 'poor'. CVD prevention initiatives thus need to be implemented strongly by first starting with individual risk factors. However, prevention and health promotion must also take account of the wider social, political and economic environment.

With regard to CVD, power operates in the medical realm as disciplinary power that guides how patients should "understand, regulate and experience their bodies" (Lupton 1997, p. 99) such as what types of foods they should consume, how often they should exercise and how much weight they should lose if they are obese or overweight according to the medical definition. Further, in most societies the Western ideas of attractiveness remain, whereby people desire to be slim and lean not because of health reasons but because of social acceptance (Turner 1995; Gochman 1997; Blaxter 2004). This emphasises how societal norms shape people's use of medicine and pharmaceuticals such as weight loss products and medical procedures in order to be considered 'normal'.

Kelly and Field (1996) therefore argued that "the neglect of the physical or 'lived' body by medical sociologists reflects the widespread lack of attention to normal bodily experiences in everyday life by sociology more generally" (p. 243). In this instance, deviance away from the norms, such as the link between obesity and overeating are negatively labelled in a context where 'diseased' people are regarded as 'abnormal' (Kurtz & Chalfant 1984; Turner 1995). In their work on masculinities and the experience of dieting, Mallyon, Holmes, Coveney and Zadorozny (2010) note that men understand and practice diet in different ways compared to women. Bennett and Gough (2012) picked up on this to elaborate that masculine body's need

manly support. Earlier notions by Bordo (1993) suggested that men and women tend to monitor and shape their bodies towards slender ideals attributed to discourses and gendered strategies such as feminine = weight loss and getting toned whereby masculine = muscularity and getting rid of their 'bellies', reflecting the commodification of body parts (Sharp 2000). The concept of 'aesthetic health', according to Crawshaw (2007), fits this context well whereby women and men express the desire to maintain a disciplined, healthy and attractive physical body deemed acceptable in society through the purchasing of diet pills and weight loss products.

There is no doubt that the gendered nature of embodiment, food consumption and health has been subject to sociological interrogation over the years by classic and contemporary researchers in the field (see Bury 1982; Bourdieu 1987; Featherstone 1991; Turner 2003; Lupton 2005). In essence, these sociologists show that binaries exist in health behaviours and identities that act as sociocultural markers such as good/bad, healthy/unhealthy, masculine/feminine. The body then becomes a site of further interrogation by pharmaceutical industries as it is subjected to the process of pharmaceuticalisation.

Pharmaceuticalisation

In their critical analysis of the nature and status of pharmaceuticalisation, Simon Williams, Paul Martin and Jonathan Gabe (2011) present six dimensions to analyse the context of health status. Two of the dimensions are elaborated on here: (i) redefining or reconfiguring health 'problems' as having a pharmaceutical solution and (ii) the creation of new techno-social identities and the mobilisation of the patient or consumer groups around drugs (2011, p. 1). The authors recognise the emerging importance of the pharmaceutical industry in practices such as the unhealthy reliance and overuse of medicines to argue that pharmaceuticalisation transforms individual conditions that shape agency and capacities into opportunities for improved health. Conrad (2007) adds to this by suggesting that these occurrences extend beyond the medical realm to include non-medical uses for lifestyle even among 'healthy' individuals.

In the context of this study's research setting, aim and objectives (see Introduction), the dimensions highlight "upstream (macro) level processes concerning the development, testing and regulation of pharmaceuticals and downstream (micro) processes pertaining to the meaning and use of pharmaceuticals in medical practice and everyday life" (Williams *et al*.

2011, p. 2–3). There is a need to refocus the 'upstream' approach that centres on the social and physical environments that either promotes or hampers good health behaviours. In the context of CVD environmental risk factors, this becomes important to explore with regards to negative health behaviour. Based on the literature, risk behaviours such as tobacco use and PI are being recognised as happening further 'upstream' in the chain of events that predispose people to chronic NCDs such as CVD. For example, alcohol use is labelled as a warning and harmful use of alcohol is a driving force to injuries and road traffic deaths. Thus, trends in risk factors are 'upwards', especially those for obesity, PI and smoking.

With regards to health promotion, there is continuity in the influences contributing to chronic disease development. Thus, embedded in it are also opportunities for prevention. As such, the 'upstream' approach emphasises the promotion of health; to change the aspects that are harmful and prevent disease/s in larger groups in society (MacDonald 2008; Gilbert 2012). To emphasise the shift in responsibility for 'health', a nuanced exploration of prevention and control of NCDs includes many factors at the individual, societal and community level as well as personal, interpersonal, cultural and structural factors that point out efforts to prevent disease.

Theoretical and practical understandings of health promotion as an umbrella term are useful as it offers insights into how and why disease prevention efforts are developed and maintained in different social contexts (Bandura 2000). Hence, understanding the factors that shape efforts to prevent NCDs in South Africa provides information on the social epidemiological context of health promotion and health education. Health promotion, therefore, acts as an important strategy to address the factors influencing risk perception, health behaviour and CVD prevalence. It is therefore worthwhile discussing the conceptual-theoretical models of health in understanding these aspects about health behaviours and risk perception.

It explains the commodification of health where health problems are reconstructed as having pharmaceutical solutions. This is problematic as it implies the reliance on medication in a context where different social groups experience economic challenges. In some parts of the world, chronic health problems require long-term medication and pharmaceutical companies begin "marketing diseases, not just drugs" (Conrad 2007, p. 19). It is a well-known fact that health is commodified (Henderson & Petersen 2002) and that pharmacies sell health to society in different forms; biomedically, psychologically and socially (Williams *et al*. 2011). Even though people who are employed at pharmacies have vast access to information about

'good' health behaviours, it should not be assumed that workers employed in a retail pharmacy are leading a lifestyle that is beneficial to them. To a large extent, the media has played an influential role in shaping ideas about health and disease, mediated through marketing. Unlike developed nations where pharmaceuticalisation is treated as a magic bullet for everyday life problems (Williams *et al*. 2011), to a lesser extent, this scenario hides from studies conducted in sub-Saharan Africa.

People in sub-Saharan Africa face consumer constraints and are coerced into seeking other forms of healing such as traditional, complementary and alternative medicine (TCAM) mobilised through lay referral systems, community and significant others. TCAM "broadly comprises herbal remedies, spiritual practices and prayer, traditional Chinese medicines [and] acupuncture …" (Peltzer, Friend-du Preez, Ramlagan *et al*. 2010, p. 125). Unlike the acronym 'CAM' which is a complementary and alternative system that often "refers to a broad set of healthcare practices that are not part of a country's tradition and are not integrated into the dominant healthcare system" (WHO 2000, p. 3 cited in Peltzer & Pengpid 2015, p. 209). Hollenburg, Lytle, Walji and Cooley (2013) added to this conceptual understanding to explain that TCAM is a newer concept commonly referred to by the WHO to include African traditional medicines, Traditional Chinese medicines (TCM), Ayurveda, indigenous, complementary and alternative care and medicine including homeopathy, massage therapy, chiropractic, naturopathy and acupuncture. This was later echoed by Pan, Litscher, Chan *et al*. in 2014 who questioned the use of traditional medicines from a worldwide perspective. TCAM exists in Western and non-Western healthcare systems which are more nuanced and integrated into the local and global context (Hollenburg *et al*. 2013; Stanifer, Patel, Francis *et al*. 2015; Peltzer & Pengpid 2015).

Traditional, complementary and alternative medicine

The role of traditional healing practices and practitioners in the African context must be considered. Studies reveal that due to the high costs of biomedical treatment, traditional and faith healers are often a channel for more accessible and affordable services and are therefore the most utilised form of healthcare (BeLue *et al*. 2009; Hughes, Aboyade, Beauclair *et al*. 2015a). These alternative healing practices represent a dominance of cultural beliefs which ultimately shape CVD-related health behaviours as it serves as a background for making sense of chronic disease conditions.

Lopes Ibanez-Gonzalez *et al.* (2014) examined the perceptions of help-seeking behaviours and NCD-care in urban South Africa. They argued that very little is known about how people who are living in urban settings, manage their NCD illnesses and engage with the biomedical healthcare system. In the light of a rising NCD epidemic and simultaneous low healthcare utilisation, the authors noted that concerns are raised in terms of the medical system. They mentioned that low healthcare utilisation for NCD-related illnesses were attributed to the treatment of symptoms, not the causes, little expectations of healthcare providers, mistrust of medicine, frustration with government clinics and past negative experiences. TCAM is differently perceived and experienced in diverse sociocultural and economic contexts. Dating back to 2003, the WHO reported that 80% of the world population, especially people in developing countries rely on traditional and herbal medications for their primary healthcare needs and for chronic conditions – occurring across all cultures. This notion is evident even in contemporary time, especially in sub-Saharan Africa.

In their recent study of CAM use, Hughes *et al.* (2015a-b) questioned the utilisation of herbal medicines for NCDs in contemporary urban South Africa. They found that many patients have increased dependence on traditional herbal medicines (THMs) for NCDs due to the economic challenges they face and sociocultural beliefs. The researchers conducted a cross-sectional descriptive study that was designed to determine the prevalence of and reasons for THM use in the management of NCDs among South African adults in an urban, economically disadvantaged area of Cape Town. They found that the general use of THM was 27% and 61% was used for NCD-related conditions. Participants in their study reported using THM because of a family history (49%) and sociocultural beliefs (33%). Most striking was the finding that hypertensive medication from a medical practitioner was concurrently being used with THM.

In another study, Olorunnisola, Adetutu and Afolayan (2015) identified medicinal plant use to treat and manage CVDs like hypertension, stroke, heart attack and inflammatory diseases such as rheumatism in Nigeria. Their study documented indigenous knowledge in the locality to show that even though most participants did not have a formal education; diseases were described in ways that suggest they do have knowledge of the diseases and experiences. Many of the participants claimed knowledge from their forefathers. Hughes, Blouws, Aboyade *et al.* (2015b) conducted a study on the use of traditional health practitioners in South Africa. They found that people are turning to the use of traditional medicines as the country faces the burden of HIV and other epidemics and rising costs of healthcare.

Beaglehole and Yach (2003) warned that this reality poses a public health problem in Africa in the context of the increase of morbidity and mortality attributed to obesity, diabetes, hypertension and hypercholesterolaemia and a decrease in allopathic[12] care. Lulebo, Mutombo, Mapatano *et al.* (2015), in their study of non-adherence to antihypertensive medicine in Congo, explained that CAM use is often the result of poor knowledge of the risk factors relating to hypertension and the negative side-effects of conventional medicine.

The primary focus of TCAM in Africa is a matter of importance as it is currently where CAM sociology is being concentrated. This section explores TCAM from a sociological perspective to examine the rise of NCDs in the critical milieu of South Africa's quadruple burden of disease. It demonstrates TCAM use constituted through broader social developments, cultural norms and gendered ideologies to elucidate the conceptualisations of NCDs. Recent literature shows that most people with debilitating chronic conditions such as diabetes, hypertension, cancer and chronic pain like arthritis are the biggest users of TCAM practices (Nlooto & Naidoo 2014; Atwine, Hultsjö, Albin *et al.* 2015; Mutowo *et al.* 2015) which often require newly learned lifestyle to control and manage the disease.

In discussing CAM use in the UK, Bishop and Lewith (2010) reported that people with more than one medical condition are more likely to seek CAM use, particularly women. They further argued that CAM use was common among well-educated and wealthy individuals who are middle-aged. In the African context, this picture is painted very differently. As noted thus far, accessibility, affordability, convenience, medical negligence, mistrust of staff training and competence are all factors that shape CAM use in Africa. CAM is also accessed among, both, men and women, educated and uneducated and people of all socio-economic status and age.

In other contexts, for example, in Trinidad, through these therapies cardiac patients are seeking to alleviate their conditions, improve the quality of life and potentially cure the disease as patients recognised the inadequacy of health systems including the pharmacy and cardiology services (Bahall & Edwards 2015). Brahmi, El M'rabet, Benbrahim *et al.* (2011) also found that there is an increase in CAM use in Morocco among patients suffering from chronic diseases such as cancer. Some 46% of participants in their study reported making use

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[12] For purposes of this study, the term 'allopathic medicine' is used interchangeably with conventional medicine, biomedicine and Western medicine.

of CAM with the main reason to cure the disease. This finding is therefore similar to that of Bahall and Edwards (2015) on cardiac patients' CAM use in Trinidad.

In a study of the conditions self-treated with herbal remedies by patients in Gauteng, Marais, Steenkamp and Du Plooy (2015) found that respiratory tract infections account for up to 34% of the most treated conditions through herbal medicines followed by hypertension (18%). They argued that 30% to 40% of patients use traditional and herbal remedies for diagnosing acute or chronic medical diseases which are usually based on traditional or cultural uses determined by beliefs people place on traditions, customs and values. Stanifer *et al*. (2015) found similar results where participants in their study in Tanzania made use of traditional medicine for symptomatic ailments (42%) and chronic diseases (15%). Some of the reasons for participants using CAM in their study were structural barriers to receiving medical treatment such as long waiting time and the lack of experience and training of healthcare providers.

Osamor and Owumi (2010) studied CAM use among 440 hypertensive patients in urban Nigeria as part of a larger community-based study of the sociological aspects of hypertension. They found similar barriers in terms of the costs of medicines and the lack of time to access treatment. Strazdins, Welsh, Korda *et al*. (2015) argue that time is a resource for good health and that healthy behaviour such as PA, medical check-ups and cooking requires time. Offer and Schneider (2011) highlighted that people with heavy workloads are more likely to have less time, especially women, single parents and people with health-related restrictions as there is a higher chance of work-family conflict and less autonomy to make better lifestyle choices.

Chesler *et al*. (2014) suggest that society has moved past the belief that CVD is a "man's disease" (p. 2791). They posit that CVD affects both genders, but it does so in different ways due to several features, among women concerning disease prevention, including risk factors and symptoms. The authors state that women have a higher CVD mortality rate and suffer more from related morbidity compared to men. Moreover, their study advocates that little can be done about genetics, but the risk factor lifestyle modification would be of central importance for primary prevention. The authors go further to unpack the gendered nature of time use to show that time-health relationships are relevant to men and women in different ways and different dimensions. Time is a multifaceted and complex concept; therefore, Strazdins *et al*. (2015) recently questioned whether time is the new social determinant of health. This is of particular interest as there is an upward trend of chronic illness in the

working age population. McQuoid, Welsh, Strazdins *et al*. (2015) unpack the space-time binary and draws on the OECD (2010) to argue that, globally, populations are now living longer with higher rates of chronic illness which are anticipated to continue increasing as people are expected to work until later in life.

Literature suggests that conventional medicine that is disease-centered would benefit from traditional knowledge, which Nlooto and Naidoo (2014) suggests is a more holistic approach that will facilitate pharmaceutical innovations. Their study in South Africa and Africa explored the treatment modalities based on CAM with clinical relevance to HIV management between 1989 and 2014 to report that due to the poor accessibility to conventional medicine, 70% to 95% of the general population in Africa rely on traditional medicines to fulfil their healthcare needs and concerns. They, therefore, advocate for the need to promote collaboration between traditional healers and clinically trained healthcare workers.

Atwine *et al*. (2015) similarly argue that help-seeking in Uganda is sought in different sectors in society such as through family, friends, and traditional healers and in rare cases, public hospitals and medical professionals. In this challenging situation, one's personal decision-making in search for convenient healthcare is usually herbalists and spiritual healers who are regarded as a more accessible and feasible option. Atwine *et al*. (2015) also highlighted that acute or chronic conditions are attributed to few people who medically test for conditions such as diabetes. They added that this is because most people in sub-Saharan Africa only seek treatment when illness progresses and complications develop. However, their study found that those who used traditional herbal therapies still experience physical health problems related to diabetes complications. Bahall and Edwards (2015) found similar results in Trinidad. Their study further reported other factors favouring CAM use such as electronic and print media and the positive experience of CAM among other cardiac patients. Brahmi *et al*. (2011) also reported similar findings where 80% of the main information source for CAM use came from the media.

This proposition will stand in good stead for other diseases like CVD. Help-seeking behaviour is important because of the factors determining the acceptance of healthcare and outcomes for chronic conditions but is investigated with limited extent among people suffering from CVD-related conditions in South Africa. Sociological perspectives discern the impact of macro-societal forces on individuals' motivations to seek traditional, complementary or alternative care. Its scope lies in the sociological dimensions and processes associated with lay

knowledge production within NCD-related help-seeking behaviours. The high self-reported use of TCAM and the perceived deprofessionalism of biomedical healthcare providers found in some studies in Africa delivered insight into the current NCD situation in South Africa (see Peltzer *et al*. 2008; 2010; Mbeh *et al*. 2010; Hollenburg *et al*. 2013; Nlooto & Naidoo 2014; Sobiecki 2014; Atwine *et al*. 2015; Hughes *et al*. 2015a-b; Peltzer & Pengpid 2015; Stanifer *et al*. 2015). The fact that individuals are avoiding medical treatments for NCD-related conditions is a cause for concern given that the prevalence of NCDs is on the rise.

This section illustrates nuanced contemporary sociological perspectives to understand TCAM use in sub-Saharan Africa, South Africa and other parts of the world to show the importance of micro and macro forces in shaping individuals' decisions to utilise (or not utilise) biomedical treatments.

Traditional healers

Interestingly, the previously mentioned studies did not look into the low healthcare utilisation alongside low-risk perception. The studies did, however, find that those who believed in TCAM thought that a traditional healer could heal NCD illnesses relating to the social, spiritual and emotional world. Other studies such as those by Peltzer and Mngqundaniso (2008) and Peltzer, Friend-du Preez, Ramlagan & Fomundam (2008) showed that the use of TCAM was associated with poor adherence to biomedical treatments.

TCAM, on the one hand, includes care beyond biomedicine to prevent ill-health and maintain good health. It includes knowledge-based practices used to promote holistic health and well-being which are outside the realm of biomedicine. Such forms of healing include TCM and acupuncture, naturopathy, homeopathy, reiki, African traditional medicines and Ayurveda.

The role of TCAM in health and help-seeking behaviours are an underestimated part of healthcare service delivery. In 2005, South Africa adopted the Traditional Healers Act, which provided a platform for the legal recognition of traditional healers including herbalists, diviners, prophets and traditional birth attendants (SA 2005). This legitimised the role of health-related practices beyond the biomedical realm which gave power to other forms of healing from different modalities.

Medical and healthcare pluralism, on the other hand, is the "co-existence and availability of different ways of perceiving, explaining and treating illness" (Gilbert *et al*. 2010, p. 82). It is the use of healthcare from more than one medical modality which can either be complementary or alternative to biomedicine through public or private health facilities or self-medication. As a result, medical power is challenged.

In Habermasian terms, processes of pharmaceuticalisation such as consumer driven engagement with pharmacists regarding over-the-counter (OTC) medicines can be referred to as the "colonisation of the life world" (Williams *et al*. 2011, p. 8). In South Africa, the options for self-treatment are widespread, but due to the accessibility and affordability of traditional healers to manage and treat illnesses and diseases thought to be caused by the physical and spiritual world (Tais & Zoberg 2013), many seek these forms of treatment. In effect, the boundaries between conventional and alternative forms of care are porous and shifting thereby making way for the acceptance of different types of healthcare and healing practices. However, there are challenges faced by medical and healthcare pluralism, due to the difference in knowledge, practices, attitudes and beliefs in the prevention and treatment of, for example, chronic illnesses, by traditional healers.

TCAM is further complicated by micro- and macro level approaches that question the reasons for help-seeking behaviours outside of biomedicine which present challenges for TCAM use. Allopathic medicine is subjected to many criticisms such as iatrogenic effects of medications, but at the same time, it is considered a superior form of treatment, unlike traditional medicine which is often regarded as inferior. This contests medical and healthcare pluralism in South Africa.

Therefore, understanding the sociocultural aspects of CVD is critical for compiling strategies to promote heart-healthy messages and encourage positive health behaviours. Mbeh, Edwards, Ngufor *et al*. (2010) studied the role of traditional healing in Cameroon in the screening of diabetes. They advocate for the collaboration between biomedicine and traditional medicine to promote better cardiovascular health of patients and fight diseases and illnesses. They suggest that traditional healers have the potential to identify diabetes patients and refer them to health facilities and encourage peer education among patients and communities.

Other studies such as those by Peltzer and Mngqundaniso (2008) and Hughes, Aboyade, Clarke and Puoane (2013) reveal that South Africans make use of traditional forms of healing

for hypertension, chronic pain like arthritis and HIV/AIDS. The complexity of these aspects is embedded in CVD risk perception as they interlink to shape decisions about health and help-seeking behaviours (Annandale 1998a; Blaxter 2004a–b; Wainwright 2008) – a result of one's social capital (Dahl & Malmberg-Heimonen 2010). South Africa, as an example of medical pluralism, illuminates interactions of global forces on health whereby the impacts of globalisation have allowed for the existence of pluralism in healthcare. These global forces add to the complexities embedded in medical pluralism and present a need to adopt different paradigms within an integrative environment.

Death and dying

To explore the social representations of chronic health and illness, the meanings attached to beliefs and behaviours cannot be ignored as it provides insights into the contemporary context of CVD. 'Acceptable' and 'unacceptable' health behaviours are shaped by society as "it is a characteristic of human existence and all societies have developed social arrangements for containing its impact" (Cockerham 1978, p. 275). Death is an individual phenomenon and a social process that affects the way in which society is structured.

According to Blacher (1980), most thanatological research focuses on chronic illness whereby the concept of dying is associated with the slowly deteriorating patient. Thanatological is understood as the study of death and dying and the psychological, sociological and medical aspects of it (Delaney 2004). In patients with heart disease, acute dying is often a central issue as there is a close connection between death and the heart (Molzahn, Shields, Bruce *et al*. 2012). This connection is attributed to the fact that the heart has been considered the most fundamental "organ of the body, the seat of emotions, feeling, and even intelligence and the end of life has been measured by cessation of its beat (Blacher 1980, p. 129). Death is a sensitive topic and there are various ways in which a person deals with death – it has both short-term and long-term effects on behavioural and lifestyle patterns.

Deconstructing death from preventable causes such as lifestyle-related diseases that can be modified by avoiding 'unhealthy' behaviours and societal influences that push individual's into making 'bad' lifestyle choices is neglected in much of the literature on NCDs in Africa. In South Africa, there is a lesser focus on the meanings attached to health behaviours and whether or if individuals consider their risk for particular conditions like CVDs.

This fragmentation of public discourse through private experience is shaped by numerous underlying social factors, often missing in much of the literature in sub-Saharan Africa. The individual is then faced with a paradox of (mis)control and (inter)dependence which creates multiple realities across cultures (Pickard & Rogers 2012).

Beyond the general and personal understanding of death, there is also much speculation about "the mode of dying that is conceived as appropriate and desirable" (Van Eys 1980, p. 203). With this in mind, it seems that culture is again an important concept as taboos around death and dying is valuable to understand within the context of maintaining social order (Szabo 2009). For example, when one discusses death, depending on the social context, the audience begins to imagine a death due to HIV/AIDS, not a chronic NCD like CVD. Clearly, there is a protracted dying involved in CVD and HIV/AIDS as it is not always a sudden, permanent end (van Eys 1980). Death also affects the lives of one's social network and family. Death, therefore, is an inevitable biological and social experience that has serious effects on one's social environment (Molzahn *et al.* 2012) such as; depression, alcohol addiction, smoking, and a negative change in eating and sleeping patterns which interlinks with the ideas of health and illness based on the ways in which people govern their health behaviours (Radley 1994; Curtis & Taket 1996; Nettleton 2006).

In the context of HIV/AIDS and the increase in the prevalence of CVD, it is valuable to explore attitudes towards death and dying and how it plays a role in CVD risk perception and help-seeking behaviour. Clearly, the threat of death is present as a backdrop to individuals suffering chronic diseases such as CVD. As such, previous studies have focused on what one may regard as 'chronic dying' (Burch, Depasquale & Phillips 1968; Blacher 1980; van Eys 1980) and the later adaptations to 'acute dying' are just as important as it impacts on help-seeking behaviour. Death thereby represents the end of a lifetime and is socially marked by the way in which it is conceptualised and dealt with and reveals a lot about beliefs concerning the constitution of the human being (Cockerham 1978; Delaney 2004). As Cockerham (1978) notes, "like individuals, societies develop attitudes toward death which are reflected in the establishment of normative practices designed to contain death's presence" (p. 285) which allows for social norms and expectations about death to be passed on to others.

Earlier studies have shown the societal concern of whether to die from cancer or from a heart attack (van Eys 1980); however, this thesis shows the concern of South Africans on whether to die from CVDs or HIV/AIDS. No doubt, "[w]here once death was considered under the

auspices of fate or God's will, contemporary understandings tend to suggest that early death is preventable and therefore, in many cases, subject to the individual's control" (Lupton 2003, p. 53). This is clearly the instance with prevention for an NCD like CVD. Hence, thanatology is an important subject, like birth, it involves everyone from all walks of life. The phenomenon of chronic diseases and risk perception about death as a social entity needs more research as it has to do with social, political, familial, physiological and political problems – further contributing to the burdens of society. Thus, the prevention and control of NCDs become a starting point to delve into such psychosocial aspects of 'health' and disease.

Recent sociological studies are applying structural perspectives to chronic illness by using a life course perspective to show how life chances are impacted. Unlike other studies, Lopes Ibanez-Gonzalez and Greenstein (2014) conducted a study in Soweto to frame chronic illness. They used the term *'healthworld'* as a means to understanding complex health beliefs and behaviours of individuals which located the experience of disease within a social and autobiographical context. The term was positioned in their study within the sociology of health and illness to focus on illness narratives, disease causation and alternative healing practices. They suggested that the healthworld is:

> … characterised by background knowledge about interactions with Western biomedical healthcare systems that come to the foreground of consciousness in the acute situation of bodily pain and social impairment.

> (Lopes Ibanez-Gonzalez & Greenstein 2014, p. 104)

Their study described the social nature of chronic illness outcomes and the complex patterns of encountering the condition and healthcare access via 'body narratives'. The combined use of healthcare practices for chronic illness was explicitly examined in light of the sufferers' experiences of the chronic condition as a disruption of the bodily experience. Bury (1991) spoke explicitly on this in his work on *The Sociology of Chronic Illness* to suggest that a sociological approach to chronic illness is fundamental to experiences of health and disease. He argued that "the onset of chronic illness represents an assault not only on the person's physical self but also on the person's sense of identity …" (1991, p. 453).

Kelly and Field (1996) added that a "sociological conceptualisation of chronic illness requires a sociology which indicates the physicality of the body theoretically" (p. 241). Hence, similar to Lopes Ibanez-Gonzalez and Greenstein's (2014) use of the concept *healthworld*, Moore, Frost and Britten (2015) explained the process of self-management for older adults with a

chronic condition such as heart disease in the context of their *lifeworld*. The authors positioned self-discipline alongside Foucault's notion of 'care for the self' to present a wide range of patients experiences related to coping with a heart condition or managing their condition or symptoms. They suggest that coping is a defence mechanism that prevents those in the sufferer's social milieu, even themselves, to be 'burdened' by physical and emotional conflict (p. 1259).

Going further, Dustin Duncan (2015), in his recent work on behavioural health, provides a situational backdrop to how health and behaviour must be understood in context. He argues that past research mainly focused on biomedical and individual-level factors. However, there is a resurgence of interest in the social aspects of health and disease that stems from macro-sociological factors that contribute to health. Morris and Halkitis (2015) similarly advocate for a deeper understanding of how social factors and norms shape health behaviours by attempting to show the interplay between health and context which Golden and Earp (2012) picked up on in their earlier study on the social, ecological approach to individuals and the contexts they find themselves in. For purposes of this research as highlighted in the Introduction, one such context is the workplace.

CVD in the workplace

It is not uncommon that job strain contributes to adverse health outcomes, including psychological strain, exhaustion and depression (Schnall, Landsbergis & Baker 1994). Boccio and Macari (2014) in the U.S. explicitly showed in their study how managers can mitigate risk for employee health. On the downside, they argue that the workplace is conducive to unhealthy behaviours and mental health. On the upside, the workplace provides a foundational context for managers to address some of the psychosocial stressors that influence the health of employees. In South Africa, this is starkly relevant in a workplace setting as the economically active population (EAP) is most likely to engage in poor health behaviours such as unhealthy food purchasing behaviour (Kempen, Bosman, Bouwer *et al*. 2011) due to perceived and actual barriers.

According to the mid-year population report for 2013 compiled by Statistics South Africa (Stats SA), most (9,457,595) people in South Africa aged 15–69 live in Gauteng (2013) – a province in which Johannesburg, the most populous city, is situated. Gauteng is home to

12, 91 million (23.9%) of South Africa's total population – the highest across all provinces (Stats SA 2013). This is significant as the working age population includes all people aged between 15 and 65 years of age. The SADHS reported the findings of 2003 to highlight that NCDs accounted for most deaths among men and women (Department of Health 2007). The most common NCDs included stroke, diabetes mellitus, IHD, hypertensive heart disease and COPD among physically inactive populations. This has important implications for working adults since PI and unhealthy eating habits are associated with an increased risk of CVD.

The NCD epidemic is negatively affecting the workplace settings because of the implications of human costs to the workforce and losses in profits and productivity which results in greater challenges for employers (McQuoid *et al*. 2015). In the workplace context, employers face the challenge to manage the consequences of NCDs, which include reduced productivity because of employee absenteeism and death (Boccio & Macari 2014). Employers also decide on healthcare benefits, training of staff and replacement staff training programmes for those employees who are too ill to work any longer. Hence, the loss of skills and knowledge among employees is an underlying reason as to why some companies are choosing to respond to health promotion initiatives within the workplace (Flood & Moen 2015).

Across the globe, CVDs continue to adversely affect those in the workplace, the functioning of society and the economy (De Villiers *et al*. 2011; McQuoid *et al*. 2015). The scope of business action has expanded as a result of applying healthcare services for free to staff and the public. For example, within the retail pharmacy setting, hypertension and cholesterol screening and blood tests are done during Heart Awareness month in September to raise awareness and promote better health. Because of the public health pressures that arise in the context of a high prevalence of NCDs, it becomes a corporate social responsibility to address health issues by communicating with the public, providing information to staff and their families about the NCD-related best practices. However, literature points out that best practice in a corporate environment are missing. For instance, unlike best practices for HIV/AIDS within the workplace such as risk assessment, de-stigmatisation, provision of prevention, education programmes and workshops (Dickinson & Marion 2005), NCD awareness and knowledge is largely lacking.

Economically Active Population

The *Quarterly Labour Force Survey* (QLFS) released by Stats SA (2015b) revealed that the most EAP of persons between the age of 15 and 64 reside in Gauteng (54.6% men; 45.4% female). When this percentage was categorised by population groups in Gauteng province, it showed that 76.2% of the EAP were Black, 17.7% White, 3.3% Coloured and 2.8% Indian. In 2015, the second QLFS highlighted that 43.2% were employed between January and March and 43.5% between April and June. The mid-year population estimate in 2015 showed that most (24%) of South Africa's population were living and working in Gauteng. Given that mortality trends report the decline in HIV-related deaths and an increase in deaths due to NCDs (Stats SA 2013) among the EAP, the health status of the working population in South Africa is a cause for concern. In general, Gauteng also showed the highest numbers of deaths (20.4%) compared to all other provinces.

The 2014 population pyramid in South Africa (Figure 3) illustrates the age and sex structure and distribution of the country's population. According to the Central Intelligence Agency, this provides insight into the socio-economic, healthcare and political stability of the country amid the trend in urban growth (CIA 2015).
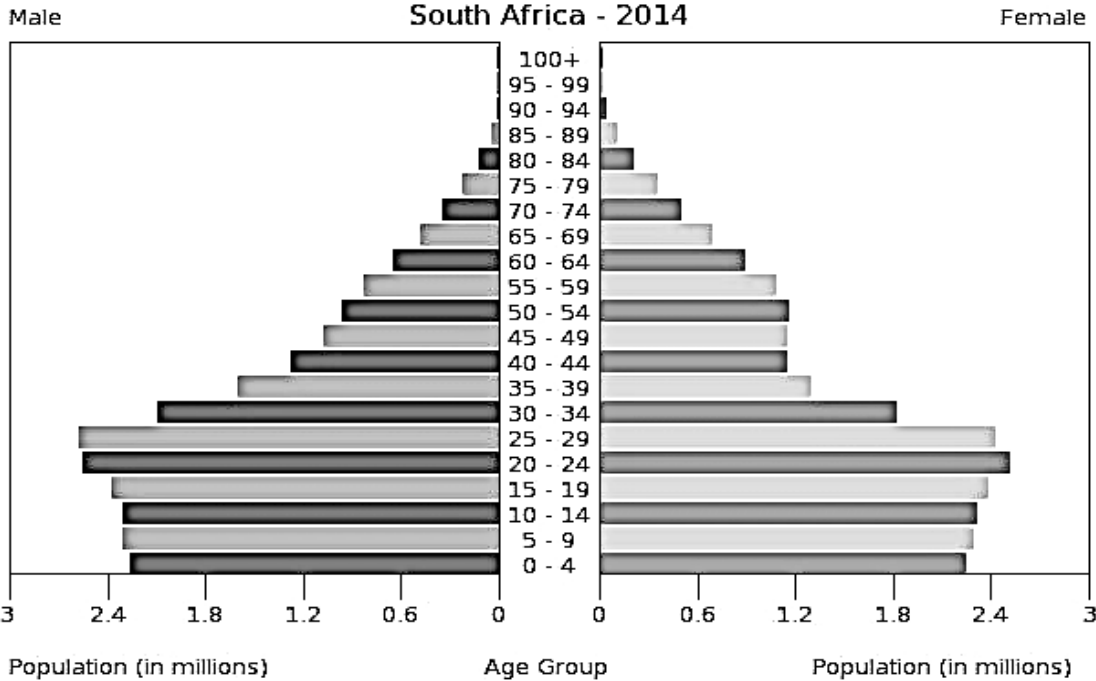
Figure 3 Population Pyramid of South Africa, 2014
Source: **The World Fact Book, CIA 2015**

As CVD prevalence rates increase, it is likely to pose greater challenges to healthcare provision in South Africa at a later stage (Phaswana-Mafuya & Tassiopoulos 2011). Hence, greater financial resources are required to meet the challenge of NCDs in South Africa as it could mean a future loss in productivity within the workplace.

The main causes of death in South Africa in 2013 were due to diseases of the circulatory system (16.7%) and diseases of the respiratory system (10.4%). Some of the major causes of death among EAP as per the *Global Burden of Disease* were due to NCDs such as heart disease, diabetes, cancer and stroke (Stats SA 2013). Recent findings show that South Africa is undergoing an epidemiological change with most deaths resulting from NCDs rather than communicable diseases like HIV/AIDS. The proportions of deaths among older ages are also rising significantly due to CVD and IHD. Stats SA (2013) stated that death among South African men aged 50–54 were on the rise as well as among women aged 45–49; mostly due to hypertensive diseases and diabetes. CVD is affecting most adults in their economically active age groups and therefore it becomes vital to focus CVD prevention initiatives on this group of South African society. Steyn and Fourie (2007) explain that the economic impact is twofold. Firstly, the direct cost of the increased healthcare attributable to a person having the condition and, secondly, the indirect costs because the person with the condition cannot be optimally productive at work merged with psychosocial stress – which further complicates disease outcomes.

Stress

Stress "occurs when stimulation raises the activity of an organism more rapidly than its adaptation response can lower it [whereas] a 'stressor' is a change in the internal or external environment of such magnitude that it requires from the organism more than the usual adaptation and defence reactions to maintain its life" (Selye 1976 cited in Reiffel *et al*. 1980, p. 50). As such, stresses may be physical, biological or interpersonal. The importance of this is attributed to the fact that much stress results from a conflict between an individual's genetic make-up and the demands of the modern psychosocial environment (Björntorp 2001). As will be revealed in the Analysis of Findings, the IMBP helps understand how and why CVD occurrence is beyond biomedical explanations and how it is influenced by the ways in which people live their lives. For example, retail pharmacy workers might experience higher levels of stresses related to job insecurity or financial instability (Nielsen, Kristensen, Prescott

et al. 2006). Unhealthy behaviours of individuals or groups and negative emotions may result in increased levels of stress in the context of adverse living and working conditions. In this context, there is a need for workplace social support and population-based prospective studies of CVD in the workplace (Schnall *et al*. 1994).

Since NCDs are triggered by lifestyle and behavioural choices, there is potential for change as these risk factors are modifiable (Sambo 2014). Heart disease, stroke, and type II diabetes can be prevented by eliminating shared lifestyle-related risk factors such as PI and unhealthy diets (Bradshaw *et al*. 2010b; Maredza *et al*. 2011; Shisana *et al*. 2013; Airhihenbuwa *et al*. 2014). In this context, decisions regarding lifestyle choices, healthcare options and help-seeking behaviours then become a key focus.

Healthcare decision-making

Much of the literature investigates the role of Western medicine in creating and preventing illness. Many argue that medicine patterns the authenticity of the dominant social order by serving as a means of social control (Cockerham 1995; Lupton 1997; Bury 1998; 2000; Rutter & Quine 2002; Nettleton 2006). Therefore, sociologists of health and illness have criticised medicine for depriving patients of power over themselves by medicalising their problems. This means that all aspects of life are fast becoming reliant on the biomedical model which may have both positive and negative effects.

Depending on the extent and type of medicine utilised, the biomedical model is challenged because patients may suffer from iatrogenic effects. The iatrogenic effect of medicine refers to the notion that rather than healing, medicine contributes to illness through side-effects (Nettleton 2006) which further complicates the relationship between health, illness and medicine. Adding to the debate on medicine, Foucault critiques the medical model by highlighting what he coined medical power to emphasise the social power that doctors have over their patients' bodies (Lupton 1997). This illustrates the sociology of the body, medicine and health within the societal context of power in accounting for the ways in which health, illness and disease have taken on particular meanings in society (Cockerham 1995; Turner 1995).

From this perspective, power operates in the medical realm as disciplinary power that guides how patients should "understand, regulate and experience their bodies" (Lupton 1997, p. 99).

This emphasises how societal norms play a role in health and people's use of medicine to be considered 'normal' whereby deviance away from the norms are labelled as abnormal (Kurtz & Chalfant 1984; Turner 1995; Henderson & Petersen 2002). As an application of the concept of normality and deviance, stigma is applied to any condition that symbolically categorises a person as inferior which indicates the idea of shame, rejection and blame which in turn alters an individual's identity in society (Nettleton 2006; Scambler 2009; Scambler & Scambler 2010).

Kelly and Field (1996, p. 251) provided a succinct summary of the body's role in chronic illness as threefold:

> First, it is the point at which self is in touch with itself; it is the point of immediate salience for self. Second, the body is an obvious, though sometimes ambiguous, point of reference for external labels. It is an important and an easily available cue to the nature of the appropriate public identities which may be bestowed. Third, labelling and identification feed back directly to self-conception as the chronically ill person constructs and reconstructs the meaning of their bodily mal-functioning and the responses of others to this.

This is important to discuss as it shows how experiences of health and illness unfolds under varying circumstances whereby society attaches a negative identity to those considered a social outcast. In as much as the meanings attached to health may cause social disintegration, it also integrates people across boundaries (Cockerham 1978). This highlights how different people respond to illness differently, which ultimately impacts on illness behaviour and decisions to seek medical help (Cockerham 1978; Blaxter 2004b). The concept of illness behaviour includes macro-sociological aspects such as sociocultural, psychological, physiological, structural, geographic and demographic factors. Clearly, illness behaviour unfolds in multiple ways influenced by array of factors. Therefore, in order to adequately deal with such experiences it is vital to conduct future research into the ways in which macro, meso and micro-sociological factors affect society's functioning capacity that unfolds under different circumstances (Bury 2005; Nettleton 2006) which shape help-seeking behaviours.

In Africa, individuals blame profit motives, careless medical practices, negligence and poor healthcare staff training on their decisions not to seek medical treatments. These issues impact personal choice over treatment options for symptoms, conditions, diseases and health maintenance. Brown (2013) explained that individuals have a moral responsibility for their own (un)healthy behaviours and other decisions regarding their lifestyle choices.

Brown explored the concept of "responsibilisation" (2013, p. 1) to suggest that people can and should be morally responsible for their own health. This perspective assumes that the individual is free from constraints and that s/he possesses agency and autonomy to make the 'right' choices about their health. Moreover, it shifts the responsibility back to the individual. The notion of social and moral responsibility for individual health and that of others was examined by Buldeo and Gilbert (2015) in their work on HIV/AIDS. With regards to chronic conditions like CVD, there is a sense of moral responsibility to make correct heart-healthy choices. Although, there is a lesser focus on the constraints of decision-making for individual's suffering a condition. This tension negatively shapes experiences of health, illness, disease (mis)management and healthcare. Personal responsibility can play a critical role in the NCD context, but it is clear in the literature that good health is shaped by factors beyond individual control.

Social capital

A study by Hughes *et al*. (2015a) found that individuals with good and not so good health seek alternative treatment for their conditions. Information on CAM is usually attained from a lay referral network such as family members or significant others in a context where self-medication is common. The concept of *social capital* becomes important when discussing health and help-seeking behaviours. "Social capital refers to the rules that reflect community values and norms and which provide for various coping strategies, durable networks ... kinship networks, extra-familial support structures and secular and religious community institutions" (Kelleher & Leavey 2004, p. 142). With this definition in mind, it is understood that social capital has implications that are important to health and life chances as it shapes ideas about what 'health' is and whether or not one perceives themselves to be at risk for CVD. As a backdrop, social capital shapes attitudes towards health-related issues and is limited by discourses of control (McElroy & Jezewski 2000). These conditions provide a platform for considering how structure and agency shape CVD health behaviour which underlines the existence of power relations that work through a range of mechanisms to determine access to resources and material goods (Siegrist & Marmot 2004).

Ferlander (2007) focused on the potential effects of different forms of social capital on health, individual or public. She concluded that social capital plays an important role in disseminating information, which may, in turn, promote healthier behaviours and control

unhealthy behaviours. However, she warns that the impacts on health are likely to vary depending on bonding ties like the emotional support that positively affect health by shaping personal agency and stress management. This is reflected in a study by Umberson and Montez (2010) who explored the advantages and disadvantages of the influence of social relationships on health outcomes. Their research revealed how social capital works in three ways to influence health: (i) behavioural (health behaviours), (ii) psychosocial (social support, personal control, symbolic meanings and norms) and (iii) physiological (physical bodily processes). These categories may either promote health and prevent illness or further perpetuate unhealthy habits and behaviours (Kassel *et al*. 2003, cited in Umberson & Montez 2010, p. S57). They particularly emphasised how social ties, such as one's family or spouse, may influence health habits by monitoring, inhibiting, regulating or facilitating health behaviours to encourage better health and how relationship stress can discourage individual's from attaining their health goals.

Similarly, and to further emphasise the contestations embedded in social ties, Siegrist and Marmot (2004) and Dahl and Malmberg-Heimonen (2010) highlight the positive and negative influences of social capital. In a positive light, access to 'good' social capital enhances life chances and longevity which is important for self-rated 'good' health outcomes because social capital acts as a shield against diseases such as CVD. In a negative light, where the quality of social capital is poor, there is deterioration in health and the rise in disease prevalence due to increased participation in unhealthy behaviour such as excessive and inappropriate alcohol consumption, foods rich in fats and lack of nutrient-rich meals, tobacco use and PI.

Prevention and control of cardiovascular diseases

Medical research and health policies in sub-Saharan Africa has principally focused on efforts to tackle communicable diseases such as the HIV pandemic in the region, with strategies to prevent and control chronic diseases, including CVD, being largely neglected. Although rates of CVD in sub-Saharan Africa appear to be increasing rapidly, there is little evidence about the potential determinants of CVD in the region, especially among Black populations. It has been suggested that populations in sub-Saharan Africa is in economic and cultural transition (Vorster *et al*. 2005), with suspected increases in rates of obesity and hypertension, possibly reflecting changes in diet and lifestyle.

Prevention and control of NCDs require all sectors such as public health, finance, education and foreign affairs to work together to reduce the risks associated with NCDs and to promote interventions to prevent and control them (Bourne *et al*. 2002; Mayosi *et al*. 2009; Maredza *et al*. 2011). Against the backdrop of risk perception for CVD, this is useful to discuss because preventing disease "emphasises the importance of helping people, either as individuals or in groups, to gain control over their health and adapt to the environments in which they find themselves" (Clarke 2010, p. 357). It recognises that people's health is not just an individual responsibility and is not based purely on society because social, cultural, political, economic and environmental factors can affect health too (Bandura 2000; Bury 2005).

Addressing cardiovascular diseases

Despite the rising burden of CVD and its numerous consequences, literature points out the gaps in health system response. This may be partial because attention has been focused on HIV/AIDS for many years and the government is only now starting to recognise and target the seriousness of chronic diseases more broadly. Several NCD-related guidelines have emerged since then that deal with hypertension, type II diabetes mellitus and other chronic diseases of lifestyle. However, the literature shows that primary prevention and management of common cardiac conditions are limited even with the advent of these guidelines. This is because the "[p]rioritisation of interventions for the prevention of chronic diseases is minimal" (Maredza *et al*. 2011, p. 49). While the focus on CVD has been slight, the first SANHANES-1 (Shisana *et al*. 2013) conducted by the HSRC is a noteworthy step in addressing the unfolding of various health conditions including chronic and lifestyle diseases. This population health study was conducted in 2012 and spans across all main aspects of health in South Africa and reports the situational findings of each province to address the changing health needs while providing a platform for studying the health and nutritional status of the country. The survey maps the emerging NCD epidemic by considering the underlying social, behavioural, environmental and economic factors that contribute to South Africa's health status – one of the first large-scale studies to tackle the national rise of NCDs.

Dahlgren and Whitehead (1991) proposed a nuanced graphical representation of the spheres of the influence of health in their earlier work on the policies and strategies for promoting social equity in health. It contextualises the available literature on NCDs discussed in this chapter by locating the CVD situation in South Africa in the broader macro and micro-

sociological contexts. The spheres of health proposed by Dahlgren and Whitehead (1991) are therefore a useful platform to address the NCD epidemic, not just in South Africa, but in other sub-Saharan African and global contexts.
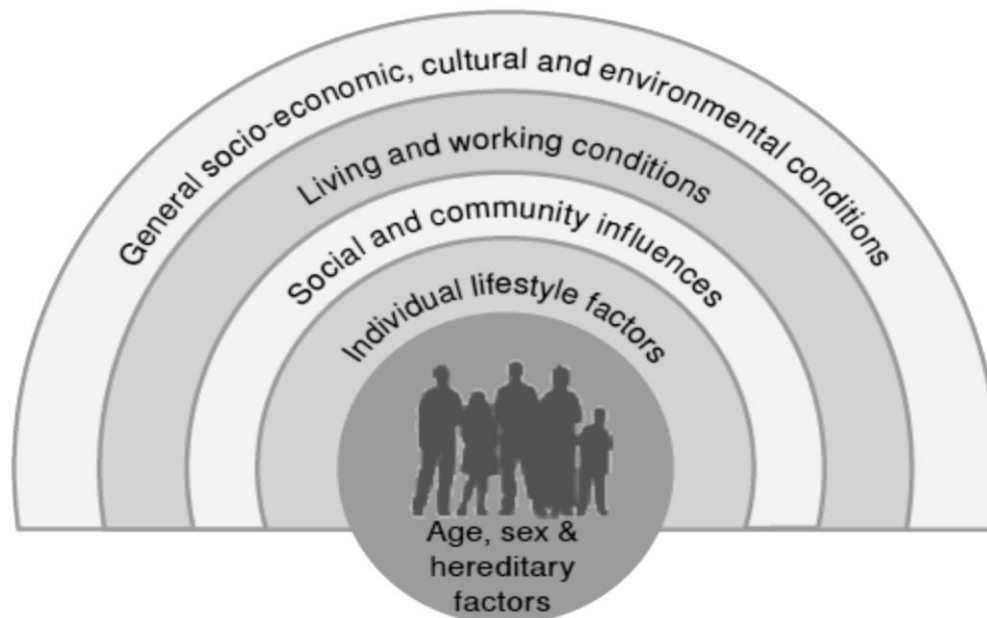
Figure 4 Spheres of influence of health as related to the literature on the rise of NCDs in South Africa
Source: **adapted from Dahlgren & Whitehead (1991)**

Considering that the sociological and theoretical understanding of CVD is not well formed in the local context, these spheres are a fruitful area of research. The next chapter presents the Theoretical Framework that guided this thesis. It links to the spheres proposed by Dahlgren and Whitehead (1991) to demonstrate the complexities embedded in CVD-related health behaviours that shape risk perception among different social groups in Johannesburg, South Africa.

As will be discussed in the next chapter, the framework adopted in this study has potential to fill in five main gaps in the literature on NCDs in the sub-Saharan African context. First, the area of CVD risk perception in the workplace context remains under-researched. Second, while existing studies concern the biological and clinical aspects of NCD prevention, this study offers a psychosocial perspective to the understanding of CVD-related health behaviour in South Africa. Third, literature in sub-Saharan Africa shows gaps in its approach to NCDs. Developing countries therefore require studies that focus on factors beyond the individual-level – which means concentrating on psychological, social and cultural aspects. Fourth, the study has potential to strengthen health system response – which has largely been missing in the literature in Africa. Fifth, there are fundamental complexities embedded in the

sociocultural and environmental factors of obesity among the working age population. This needs to be at the focal point in future research and workplace health and policy initiatives. Overall, the innovative framework offered in the next chapter serves as a useful framework to analysing the current NCD situation in South Africa so as to add to the body of knowledge that is currently unavailable. In so doing, it attempts to bridge the gaps between clinical and social understandings of CVD and related NCDs.

THEORETICAL FRAMEWORK

Integrative Model of Behavioural Prediction

The IMBP is a theoretical framework that is based on several social cognitive theories. It includes the theory of reasoned action, theory of planned behaviour, social cognitive theory and the health belief model (Fishbein & Yzer 2003; Fishbein 2008). The framework is a commonly used tool for designing and evaluating health behaviours and behaviour change interventions. It identifies distal, demographic and other background factors that explain, predict and help understand behaviours (Yzer 2012). These factors together interpret normative beliefs, attitudes, perceived norms, self-efficacy and intention or behavioural beliefs for performing or not performing behaviours. The focus of this thesis is therefore an attempt to understand the "complex psychological and social concepts ... such as attitudes, beliefs and subjective or descriptive norms contained in health behaviour change" (Taylor *et al.* 2006, p. 18). It emphasises the meanings, knowledge, beliefs, perceptions and social factors that shape CVD and risk. It further addresses the ways in which social and contextual factors characterise health, health behaviour and CVD risk to build a better understanding of health, chronic diseases and related behaviours and illnesses.

In many ways, the framework presented in this chapter serves as, in Bourdieu's term, *habitus* or what is better understood as "a cognitive map or set of perceptions in the mind that routinely guides and evaluates a person's choice and options. It provides enduring dispositions toward acting deemed appropriate by a person in particular social situations and settings" (Cockerham 2007, p. 70). This concept sheds light on the structure-agency debate highlighted throughout the thesis to demonstrate the important elements of understanding how health, behaviours and perceptions are multi-layered products of socialisation. *Social practice* is useful to draw upon as it further helps understand the relationships between structure, agency, health, behaviour and beliefs (Maller *et al.* 2015).

According to Fishbein and Yzer (2003), the IMBP postulates that *behavioural beliefs* guide decisions for recommended health behaviour. It is based on outcome evaluation, subjective norms, perceived self-efficacy and motivations to comply with recommended behaviours. In other words, individuals must hold behavioural beliefs about the positive or negative consequences they might experience if they performed certain behaviours (Fishbein & Ajzen

2010). To exemplify this, Fishbein and Ajzen (1975) succinctly explain that, first, behavioural beliefs must regulate one's attitude toward performing the behaviour owing to positive or negative evaluations of performing the behaviour. Second, individuals must hold similar behavioural beliefs about behaviours that significant others in their living, working or social environment would approve or disapprove of. It must include perceptions about whether those individuals themselves perform certain behaviours. Such injunctive (subjective) and descriptive normative beliefs in society therefore shapes perceived norms and perceived social pressure to engage or not engage in behaviours. Lastly, individuals must consider that personal and environmental factors can either facilitate or constrain their attempts to perform the behaviours (Yzer 2012). These control beliefs would then result in a higher or lower self-efficacy or personal agency.

Motivations for behavioural intentions are important in health behaviour change as it is dependent on an individual's attitudes about certain health behaviour while accounting for the social influences and norms that govern those behaviours (Ajzen 1991). Individuals must also perceive that the severity of CVD is worth avoiding in order for them to take a recommended action by adopting responsible health and help-seeking behaviours (Redding, Rossi, Velicer *et al*. 2000). In this case it would be to seek screening for CVD-related conditions such as diabetes, cholesterol and hypertension. However, it found that workers' perceive important barriers to engaging in 'good' health behaviours. Keeping in mind the complexities of human behaviour, the aforementioned are not "specified to offer insight into how behavioural change can most effectively be facilitated" (Taylor *et al*. 2006, p. 77). Nonetheless, it could reflect the situations that increase working people's motivation to maintain good health, prevent CVD and know their risk factors.

This study was guided by the IMBP to elucidate the rationale, frame CVD-related behaviours and beliefs in the South African context and attempt to fill in some of the gaps in the literature. The IMBP is a useful framework to understand disease outcomes and health behaviours (Robbins & Niederdeppe 2015) as it can explain and predict health behaviour and can also be applied to any other behaviour (Fishbein 2008). For these reasons it has been suitably adopted in this study. As will be seen on the next page, Figure 5 reflects the constructs of the IMBP to recognise the key factors that play a role in shaping individual's help-seeking and health behaviours. It establishes the parameters of the study by identifying and defining the scope of psychosocial theory and everyday practicalities. This framework relates to the theoretical foundations the study builds upon in order to explore and explain the

research problem. It helps to focus on the research topic and to answer the research questions presented in the Introduction.

The constructs and background factors of the IMBP (Figure 5)[13] operate to shape attitudes, perceptions and self-efficacy. This in turn impacts on health knowledge, practices and behaviour which play a role in maintaining and creating social order. The IMBP is offered here to theorise attitudes towards CVD, its related health behaviours and how it might impact CVD risk perception. It reveals the importance of the theoretical approach; its applicability to practical problems and how it relates to existing knowledge.
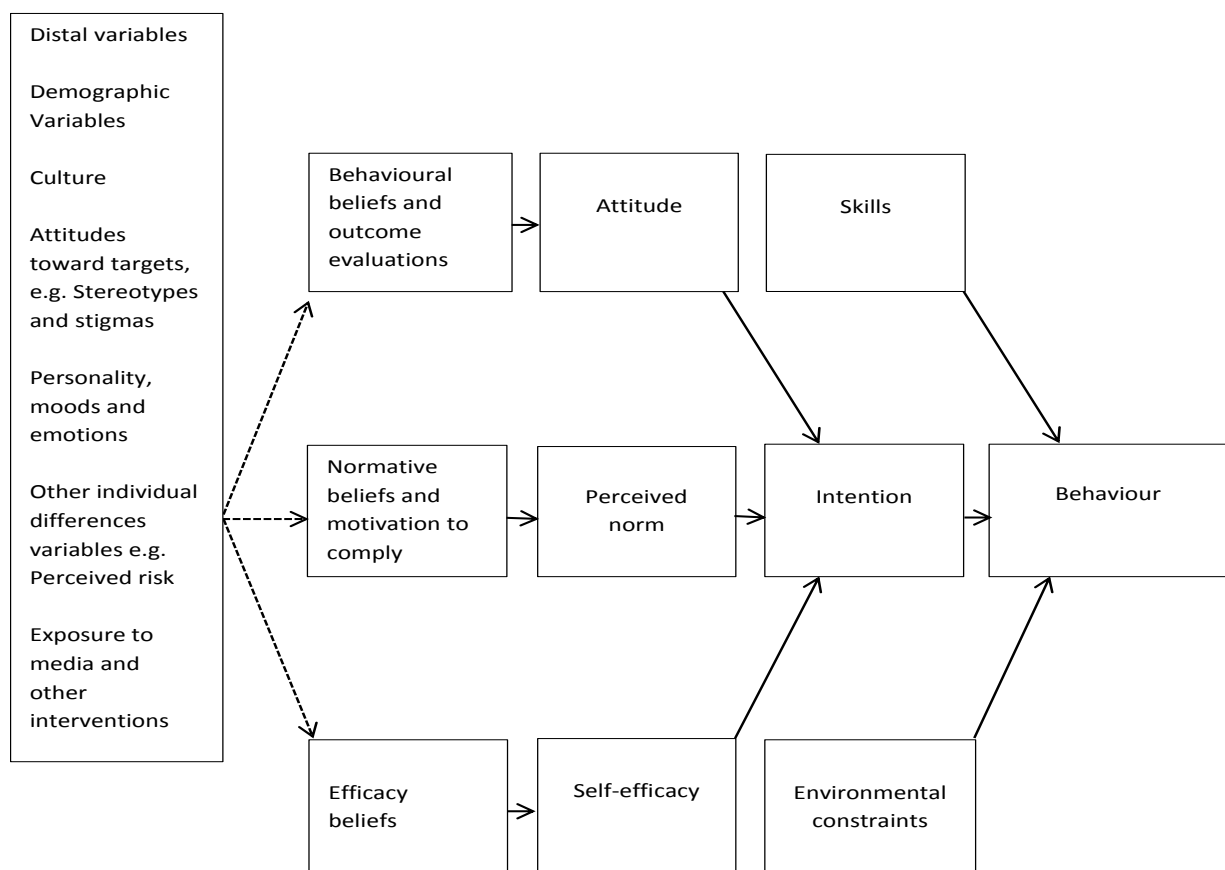
Figure 5 Integrative Model of Behavioural Prediction
Source: **Fishbein & Yzer (2003, p. 167)**

This thesis adopts an inductive approach that uses theory and a theoretical framework for exploratory and explanatory reasoning and a systematic interpretation of the research topic. The theoretical aspects of the IMBP link to the realities of everyday life voiced by the study participants and the epistemologies underpinning the value of this research.

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[13] A more detailed account of the situation is offered in Figure 9 where the IMBP has been modified to include the findings of this study.

There are a number of psychological and social theories that can explicate the psychosocial factors relating to CVD but the IMBP was chosen as it best characterises this study.

The following three main constructs were considered:

- ♥ Attitudes (experiential and instrumental)
- ♥ Perceived norms (injunctive and descriptive)
- ♥ Perceived self-efficacy (personal agency, perceived control)

The overarching aim of the study was to situate CVD within a more nuanced psychosocial framework to understand the individual, social, cultural and behavioural factors embedded in CVD-related health behaviours and individual risk perception for CVD among a sample of working age population. The IMBP is therefore used to meet the objectives of the study and explain the intent for CVD-related health behaviours and its impact on risk perception. This helps gain a bigger picture of the research topic. According to Smith-McLallen and Fishbein (2009), the IMBP is valuable in order to explore the psychosocial factors that contribute to decisions to engage in health behaviours or to seek health information and treatment.

Intention is the most important element of the IMBP. Without intention, the individual will be less likely to adopt recommended health behaviours (Ajzen & Fishbein 1980; Fishbein & Yzer 2003). Behavioural intention is determined by knowledge, skills, attitude, perceived norms, personal agency or self-efficacy (Fishbein & Ajzen 2010). This means that health knowledge and skills are needed to perform positive health behaviours and to seek health information and care. The behavioural beliefs must be considered very important, or salient, by the individual and prioritised to feel a sense of achievement (Robbins & Niederdeppe 2015). To accomplish this, there should be little or no environmental constraints that will pose a threat to behavioural performance or make the behaviour difficult to perform (Yzer 2012). With experience in performing the behaviour, the behaviour will become habitual for the individual thereby empowering the person or groups to pursue the behaviour long-term. In order to do this, the three important constructs mentioned earlier; (i) attitude, (ii) perceived norm and (iii) personal agency, must be considered. An individual must have an accepting attitude towards behaviour, perceive that the behaviour is worth undertaking and believe that s/he has the personal agency to perform the recommended behaviour (Fishbein & Yzer 2003).

Attitude measures the individual's beliefs and feelings towards performing the behaviour and helps in the decision-making processes regarding whether or not the action is favourable (Fishbein & Ajzen 1975; Wang 2013). According to the IMBP, *experiential attitudes* are based on the respondent's feelings about the behaviour or how the behaviour affects the individual. In this context, if the individual perceived a favourable response in the past to performing behaviour then s/he is or will be likely to perform that behaviour in the future (Yzer 2012). An essential component of experiential attitude is past behaviour in helping to dictate future behaviour (Fishbein & Yzer 2003). Similarly, one's attitude towards behaviour, or *instrumental attitude*, is based on behavioural beliefs. This may be knowledge-based to account for an individual's beliefs and perceived norms about the benefits or outcomes of performing behaviour.

Perceived norm is based on social acceptance whereby approval of certain behaviours can be encouraged by a family member, work colleague, close friend or community member. Injunctive norms, or subjective norms, measure what the beliefs of the significant other are while descriptive norms take into account what their behaviours are. The importance is in knowing what behaviours significant others participate in and the extent to which it motivates the individual to change their behaviour.

Normative beliefs, then, are opinions and beliefs about the expectations of significant others in one's direct environment which motivate people to comply – which could exert social pressures upon individuals to meet certain behavioural expectations (Yzer 2012). For instance, if an individual is positive about undergoing screening for hypertension or cholesterol, eating healthy meals or exercising and believes that people in their social environment consider these health behaviours to be good and that others are motivated to do the same, that individual will be less likely to feel social pressure. The intention to engage in better health behaviours is consequently reinforced if one perceives themselves to possess personal agency in performing behaviour. It is based on the skills and knowledge about 'correct' health behaviour an individual possesses in a context without environmental constraints such as stigma and the fear of being shamed.

While there may be a strong intention to perform a specific behaviour, there is no assurance that the individual will act on their intention because of other persuading factors that prevent an individual from engaging in positive health behaviours (Fishbein 2000; Fishbein & Ajzen 2010). For example, the likelihood of the individual practising positive CVD-related health

behaviours such as healthy eating habits and PA is expected to increase when s/he has more knowledge about CVD, other NCDs and chronic conditions and when s/he has access to better health information and care. However, the stigmatisation of body weight raises the likelihood of a person participating or not participating in PA or weight management behaviours such as dieting. The major assumption of the IMBP is that behaviours are under volitional control and can be, in a complex manner, predicted by attitudes, norms and efficacy (Wang 2013).

Personal agency will then lead to perceived control and *self-efficacy* which in turn leads to the perceived ease or difficulty of adopting behaviours. The greater the perceived control, the more likely a participant will believe that s/he can adopt behaviour without environmental influences affecting them. Self-efficacy then, reflects the internal belief in their ability to adopt particular behaviours within a specific setting; work, home, community. *Efficacy beliefs* are the beliefs about the presence of influencing factors that may facilitate or constrain the performance of recommended health behaviours or help-seeking behaviours. These beliefs are context specific and can differ in different social and workplace situations. For example, if a person feels that it is possible to participate in PA or engage in healthier eating habits, their feelings of control are strengthened and the intention to perform improved health behaviours is enhanced.

Usefulness

The IMBP has been tested in over 50 developed and developing countries (Fishbein & Yzer 2003). It has commonly been applied in many studies within public health, media psychology, health communication, nursing, social epidemiology, psychology and related disciplines. To demonstrate the interdisciplinary applicability of the IMBP, it was used in studies on monitoring sugar-sweetened beverages (Housely, Branscum, Cheney & Hofford 2015), infants' and toddlers' TV and video viewing (Vaala 2014), HIV testing (Bekalu & Eggermont 2015), influenza breakout (Kim & Niederdeppe 2013), breast cancer prevention (Smith-McLallen & Fishbein 2009), smoking cessation (Yzer & van den Putte 2006) and childhood obesity (Lewis-Persky 2010). Recent studies such as those on healthy sleep behaviour (Robbins & Niederdeppe 2015), high-risk alcohol drinking (Braun *et al*. 2014), AIDS awareness and VCT behaviour (Diteweg, van Oostwaard, Tempelman, Vermeer *et al*. 2013) and the use of technology (Admiraal, Lockhorst, Smit & Weijers 2013) applied the IMBP in

statistical methodologies to test significance, measure variables and identify causation and difference in behaviours. Clearly, the IMBP has theoretical importance for understanding the psychosocial factors relating to the performance or non-performance of health-related behaviours and prevention of illnesses and disease.

Unlike most studies, this study modifies and uses the IMBP in a unique way to explore CVD-related health behaviours in the South African context. In its attempts, it focused on the attitudinal, normative and perceived control that drives intention to perform health behaviours and seek information and care and to further consider how one's social environment shapes this. The *Health Belief Model*, the *Theory of Reasoned Action* and the *Locus of Control* might have been useful in this study, but, due to its recognised limitations (Taylor *et al*. 2006; Montano & Kasprzyk 2008), it would have yielded a partial and unsatisfactory explanation of the topic.

The study, therefore, used the IMBP as an overarching framework to explore the multi-layered and dynamic factors that work together to explain the topic in a nuanced manner and illuminate the meanings attached to health behaviours in the context of *symbolic interactionism*. The scope and relevance as applied to this psychosocial study lies in its nuanced integrative constructs. The main purpose is to demonstrate how theory can help understand the CVD situation in South Africa in terms of health behaviours and risk perception for CVD. It is also useful in explaining how it can possibly inform policy and population specific interventions aimed at different social groups to raise awareness on NCDs.

As discussed earlier, The IMBP was previously used in other studies but to a lesser extent used to understand chronic conditions. Previous studies have attempted to explain causal relationships between salient beliefs and attitude, subjective norm and self-efficacy. This thesis is one of the first attempts to situate NCDs within the IMBP. An exploration of the IMBP in the context of this study includes the theoretical constructs of the IMBP to identify categories that shape behavioural beliefs and intention for CVD-related health behaviours.

There is full agreement that exploring and understanding health behaviour through a theoretical lens is not only of importance in research. Its significance extends to the development of interventions with the prospect to achieve desired public health outcomes and informed health promotion initiatives (Fishbein & Cappella 2006).

Limitations

A critical review of the IMBP suggests that, although useful and widely adopted, it is limited to a certain extent. Despite the fact that the IMBP considers the internal and external factors and structural conditions that might play a role in shaping behaviours or lifestyles, it does not fully explain individual *intention* when faced with constraints. Also, it suggests that individuals must first *perceive* or evaluate a positive outcome before adopting a recommended action (Fishbein & Yzer 2003) – in this case, 'good' or 'accepted' health behaviours. It is common that models of prediction and change include norms and values to predict behavioural change; however, these are often informed by social processes – which are not always adequately incorporated in behavioural prediction models (Taylor *et al.* 2009). Although the IMBP includes these aspects,   it assumes that *behavioural beliefs* and *outcome evaluations* are generic across populations. While behavioural beliefs are expected to guide decision-making, it does not guarantee that individuals will comply with the recommended behaviours. This is often not simple or straightforward because not all behaviours are performed through willingness. Rather, they require facilitating structures, opportunities, *skills* and resources that are sometimes beyond individual control (Ajzen 2005) since "… not all beliefs are equally amenable to change, and relatively little will be accomplished by attacking a belief that is very difficult, if not impossible, to change" (Fishbein & Yzer 2003, p. 175). Many health behaviour models suggest that choices are rationalised through individual control. However, they ignore the limiting effects of social and economic disadvantages and other constraints that shape (un)healthy behaviours (Montano & Kasprzyk 2008). In essence then, just because an individual might be knowledgeable about 'good' health behaviours and lifestyle choices, does not necessarily mean that they will practice the recommended behaviours.

Furthermore, *efficacy beliefs* might not always result in a higher personal agency or *self-efficacy*, especially in situations that pose barriers to adopting improved health behaviours such as *environmental constraints*, lack of time, financial burdens, family and work-related stress and other associated barriers – as discussed in the Analysis of Findings. Similarly, multiple factors influence *normative beliefs* and *motivation to comply* with behaviours – which ultimately shape behavioural (un)intentions. An additional limitation is the fact that the IMBP accepts that attitudes have a direct influence on intention and goals such as decision-making surrounding 'good' health behaviours. Since attitudes are never fixed but

ever-changing, the weighing of positive and negative outcome evaluations must also be considered – this is something that the IMBP lacks.

The IMBP, because based on other Western or Eurocentric models such as the health belief model, theory of reasoned action, theory of planned behaviour, locus of control and social cognitive theory (Fishbein & Yzer 2003; Fishbein 2008), has to be tailored to fit the context of sub-Saharan Africa and other developing countries. This is because the element of 'culture' is differently known and experienced in different countries. Plus, the IMBP does not distinguish between behaviours or behavioural categories per se nor does it categorise outcome evaluations – which is problematic. This is because the IMBP does not consider the possibility that behaviour change can occur without necessarily changing beliefs. Therefore, the IMBP poses practical limitations depending on the nature and context of the study it is being adopted in.

There are fundamental strengths and weaknesses to adopting the IMBP in this study. As will be discussed in the Analysis of Findings, using the constructs of the IMBP has potential for understanding chronic and lifestyle-related health knowledge, NCD education in South Africa and health promotion and communication messages about CVD. Moreover, it explains how background socio-demographic factors, beliefs and attitudes impact one's perception of individual health and risk for CVD. These then shape the individual's intention to make the necessary lifestyle choices or engage in positive health and help-seeking behaviours. As will be shown, the findings are situated within the broader IMBP framework to better understand the rise of CVD in Johannesburg as well as the psychosocial aspects of CVD, health behaviours and individual risk perception for CVD in the South African context.

The research draws on symbolic interactionism to explore the meanings attached to 'The African Body'. Perspectives on the contours of eating and its relationship to the body, self and identity explain how Black women and men recognise gendered discourses. It considers the decision-making and regulation of food as a form of weight (mis)management and whether or how risk (mis)perception shapes lifestyle choices in the era of neoliberal consumerism.

Table 1 on the next page serves as a graphical representation that contextualises this study within the sociology of health and illness to address some of the broader underlying issues pertaining to the research topic on different levels.

Level	Topic	Perspective
Individual (*Micro*)	Illness experience	Phenomenology
Social (*Meso*)	Cultural categories of sickness	Sociology of roles, norms and deviance
Societal (*Macro*)	Healthcare systems and politics of health	Political economy of illness

Table 1 Sociology of health and illness
 Source: **Adapted from Turner (1995, p. 5)**

Due to the changing social contexts that facilitate the rise in CVD prevalence in South Africa, there is a need to understand CVD risk perception and health behaviours. Attempting a study on the psychosocial, societal, cultural, theoretical and sociological levels (micro, meso, macro) of health and illness may have a potential impact on the practical level in order to address the research topic about CVD, health behaviours and risk perception. In so doing, it reveals the manifestations in specific social realities in the everyday lives of workers employed within a retail pharmacy setting. Moreover, it may help further understand the factors contributing to the changing patterns of NCDs in Africa.

METHODOLOGY

This is a psychosocial, exploratory and descriptive mixed methods study that maps the underlying psychological and social aspects to CVD in a South African context. The study takes a sociological interest in health behaviours and risk perception for CVD and delves into the everyday lived experiences of retail pharmacy workers' beliefs about health and chronic illness. It is not epidemiological or clinical in nature. It neither explains causal pathways of CVD nor does it test for statistical relationships, significance or regression as it is not the purpose of this study.

It focuses on the broader psychological, social, cultural and societal forces that shape CVD-related health and help-seeking behaviours in the context of CVD risk among a sample of working age population. By addressing these factors, the sociological significance widens to extend discussions on social control, agency, autonomy, power and hegemonic patriarchal discourses around health and chronic disease of lifestyle.

Research methods

The methods applied to the topic conveyed "the techniques or procedures used to gather and analyse data related to [the] research question[s]" (Crotty 1998, p. 3). To answer the complex questions posed in the Introduction, a combination of quantitative and qualitative methods were chosen for a more comprehensive picture of the problem that goes beyond the individual-level of responsibility for health and disease. Quantitative research refers to a "broad area of investigation and application which uses data with a distinctive quantitative nature" (Greenstein, Roberts & Sitas 2003, p. 10). Qualitative research refers not only to "research about persons' lives, stories [and] behaviour" (Strauss & Corbin 1990, p. 17) but also about the organisational functioning, interactions and relationships in society (Punch 2006). As such, one's demographics and psychographics[14] were investigated to probe deeper into the topic using a mixed methods design.

This design helped collect, analyse, and integrate quantitative and qualitative methods to support a better understanding of the research problem when one type of method was inadequate to answer the questions (Bryman 2006; Creswell 2012). A "[r]esearch design is a

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[14] The Analysis of Findings chapter contains detailed information on demographics and psychographics.

plan that outlines the elements of the research, and how they are related to each other"
(Greenstein *et al.* 2003, p. 14) which must be done before data collection and analysis.
DeVaus (2001) added that "[t]he function of a research design is to ensure that the evidence
obtained enables us to answer the initial question as unambiguously as possible" (p. 9) to
ensure internal validity. In this study, validity concerned the truth value of responses and
whether the methods and approaches used in this study relate to the topic explored (O'Leary
2004). Hence, validity stemmed more from the appropriateness, thoroughness and
effectiveness with which mixed methods were applied and utilised (Bazeley 2002).

A mixed methods design was used to enrich understandings of an issue through the
corroboration of conclusions, an extension of knowledge and by initiating new ways of
thinking about the subject of the research (Bazeley 2002). It was also useful to generate
comprehensive understandings of the identified themes. The methods were designed to
interrogate different understandings of 'health' and chronic conditions and whether or not
people perceive themselves to be at risk for CVD[15]. The methods helped explore and describe
working individuals' health behaviours as related to CVD via a more holistic psychosocial
perspective. The questions helped understand various risk factors that present itself in
contemporary South Africa.

This study incorporated: (i) a survey that questioned socio-demographic characteristics and
(ii) in-depth follow-up interviews. Utilising a mixed method design further helped understand
the meanings people attach to CVD (Bryman 2006). *Meaning* is conceptualised in this study
to refer to the participants' behaviours which indicate the (in)correct association from seeking
medical assistance when participating in certain health behaviours. With this understanding, it
can be said that (re)interpretations of health behaviour and CVD risk perceptions are
(re)inforcing. As such, 'meaning' is known to be social products that are created through a
formative process of socialisation and interpretation in which a mixed methods study is best
suitable for investigation of the phenomena (Bryman 2004; 2006).

Beyond quantifiable socio-demographic factors, the use of semi-structured, in-depth, face-to-
face interviews allowed the researcher to explore and describe the foundation of

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[15] The study is aware that CVD may not be understood by 'lay' people since CVD is a biomedical term. It therefore took into
account the literary barriers when compiling the questionnaires and interview questions. CVD as an umbrella term for heart-
related diseases was used to probe into cultural perceptions and how different social groups may understand or perceive it.

participants'[16] perceptions. The approach adopted in this thesis is within an interpretive paradigm (Charmaz 1983b). The interpretive model centres on the ways in which individuals make sense of their subjective reality and attach meanings to it. In Weberian sociology, the *Verstehen* approach – understanding something in its context – is reflective of reconstruction and interpretations of actions (Cockerham 2007). Weber suggested that meanings are found in the intention and goals of individuals which can best be understood through social interactions. In this sense, grounded theory, originating from symbolic interactionism, posits that meaning is (re)created through the interactions with others in everyday social processes (Starks & Brown Trinidad 2007). In this study, the participants' health behaviours and perceptions of CVD risk proved valuable in examining the ways in which people attach subjective meaning to their health. This links to the literature regarding the social facts and sociological imaginations brought forward by Durkheim (1895) and Mills (1959). In this context, individuals' understand 'health' and chronic diseases in different ways – which then become important cues to participating in 'good' health behaviours and preventative actions.

Questionnaires sought to understand the meanings participants attach to statements related to CVD. The interviews provided a platform to probe further into pertinent issues about CVD and its related conditions, risk perception, individual health behaviours and how workers understand their health.

Research design and procedures

Since the main research questions were interested in the *how*, *what* and *why*, the nature of this study is exploratory and descriptive. In essence, "[t]o explore is to attempt to develop an initial, rough description or, possibly, an understanding of some social phenomenon … to describe is to provide a detailed account or the reporting of the characteristics of some population [or] group …" (Blaikie 2000, p. 72). This study found relevance in exploring how people employed at a retail pharmacy perceived CVD and why they may or may not have perceived their risk. It then described how they understood their health behaviours. Since the study was exploratory, probes were used to clarify answers and to obtain detailed information on particular topics closely related to sub-themes set out for the

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[16] The terminology used as reference for participants in this study is categorised into the following:
(a) 'Interviewees' refer to those who participated in follow-up interviews.
(b) 'Respondents' refer to those who completed questionnaires.
Where both, interviewees and respondents, are being referred to and when referring to other studies, the general term 'participants' is adopted.

study. The shift away from health practitioners (nurses and pharmacists) meant that the views of 'lay' people (cleaners, security guards, merchandisers, cashiers, cosmetic consultants and managers) were accounted for using a bottom-up, mixed methods approach within a retail pharmacy workplace context.

A mixed methods approach was thus feasible, especially when "… the focus of the study is on *how* … questions" (Awah *et al*. 2008, p. 613). Descriptive research helped obtain information regarding what the current status of the topic under study is and the related issues to describe what exists within the conditions of the situation (Blaikie 2000). The research instruments utilised in this exploratory study was a questionnaire and an interview schedule. The research yielded information to explain problems such as the contemporary situation of NCDs that are not yet clearly defined in the sub-Saharan African context. The researcher made use of existing literature to verify this study and justify the answers to the research questions. Its theoretical and practical grounding allowed for a stronger explanatory power of the topic. This offered a wider exploration of the research topic and better situated the findings within existing debates on the research methods and procedures undertaken in past and previous studies.

Site selection, sampling and generalisability

The research carried out among retail pharmacy workers superseded the initial intention to survey 10 retail pharmacy stores. Initially deciding to select 10 retail pharmacy stores in the South and East areas would have been based on geographical convenience and a smaller intended sample size. The reason for increasing the number of stores to 23 was to gain a wider audience of employed workers, which extends to geographical locations in the urban North, East, South and West areas in Johannesburg[17]. The sampling strategy meant purposefully choosing a range of variations of age, gender, race[18] and geographic location. These variations are clues to health behaviours and risk perception and proved useful to identify patterns across different social groups. The issue of race cannot be ignored in the context of the rise of NCD in South Africa as it provides a useful background to the constraints and freedoms people of different social groups' experience. Although the population classification act was repealed before the new dispensation came to power, its social impact is still evident today.

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[17] A map of Johannesburg appears in the Appendix.

[18] The concept 'race' is utilised in this study, not as a biological construct, but a social construct to understand the socio-political identities, cultural and health behavioural practices pertaining to the rise of chronic diseases in South Africa.

South Africa's racial categorisations somewhat maintains the country's unequal social order and reinforces the superior/inferior divide in terms of socio-economic status and accessing proper healthcare. Nonetheless, as per the recognised accepted categories, the terms 'Black', 'White', 'Coloured', and 'Indian' is used to distinguish between social groups in this study and other studies in South Africa.

The sample was drawn using purposive sampling methods with a convenient sample of retail pharmacy workers, but participation was voluntary. This sampling method is used to target particular individuals and categories of people for investigation (Greenstein *et al.* 2003) based on the characteristics of inclusion most relevant to the research questions (Swartz, de La Rey, Duncan & Townsend 2011). The survey sample size seems gender biased; however, the researcher had no control over the sample regarding the gender ratio employed at the retail pharmacy chain or how many were on duty on the day the questionnaire was administered. The findings – as will be discussed later – can therefore, be ascertained to the gendered ratio of the pharmacy regarding the gender dynamics employed. It is well-known that women are the primary caregivers (Oakley 2015). Since this study included mostly female workers, it helps understand the reported health behaviours and CVD knowledge among female employees in a workplace context in South Africa. The difference in women and men is not unusual. A study conducted on the prevalence of CVDs and associated risk factors in a rural Black population of South Africa included stark differences in response ratios (Alberts *et al.* 2005). In that study, 1608 women and 498 men participated. The authors agreed that the findings were therefore not generalisable.

Generalisability is whether the findings and/or the conclusions from a selected sample population or setting are directly applicable to a larger population outside the study sample and setting (O'Leary 2004). Clearly the sample of this study is not representative of the working population in South Africa and does not allow for generalisations to be made outside of the study sample. While inviting retail pharmacy workers to participate in a study of this nature sheds light into the health workplace context, their (mis)perceptions of risk and knowledge related to CVD does not necessarily map out the wider population in South Africa. Greenstein *et al.* (2003) pointed out that qualitative research requires that the data collected is rich in the description rather than wholly representative of the population under study. Against this backdrop, the results of the study can neither be generalisable to that of the entire retail pharmacy chain cohort in the Johannesburg region or other regions in South Africa nor can it be generalisable beyond those who participated in this study. Selecting participants

from a retail pharmacy chain meant gaining access to a sub-section of the working age population within a health setting. Nevertheless, the findings are transferable to a population that has similar characteristics to this sample, for instance, other workplace settings and retail pharmacy chains.

Retail pharmacy setting

The hierarchical workforce structure (Figure 6) demonstrates the stratification of retail pharmacy workers in different sub-categories. Retail pharmacy workers were categorised as health professionals (skilled) and non-health professionals ('lay'). As seen in Figure 6, 'lay workers' within a retail pharmacy setting are further down the pyramid while knowledgeable health professionals are higher up the pyramid and pharmacists are at the top. The study chose a bottom-up approach from cleaners, security guards, merchandisers, cashiers and cosmetic consultants to the managers (non-health professionals). It did not include the knowledge and experiences of health consultants, nurses and pharmacists (health professionals) as the study intended to focus on the social and lived experiences of those on the ground. Figure 6 serves as a graphical representation of the retail pharmacy workforce structure and does not delve into the differences among the sub-categories of workers as it was not the purpose of this study. The sub-categories are, however, useful for future investigation.
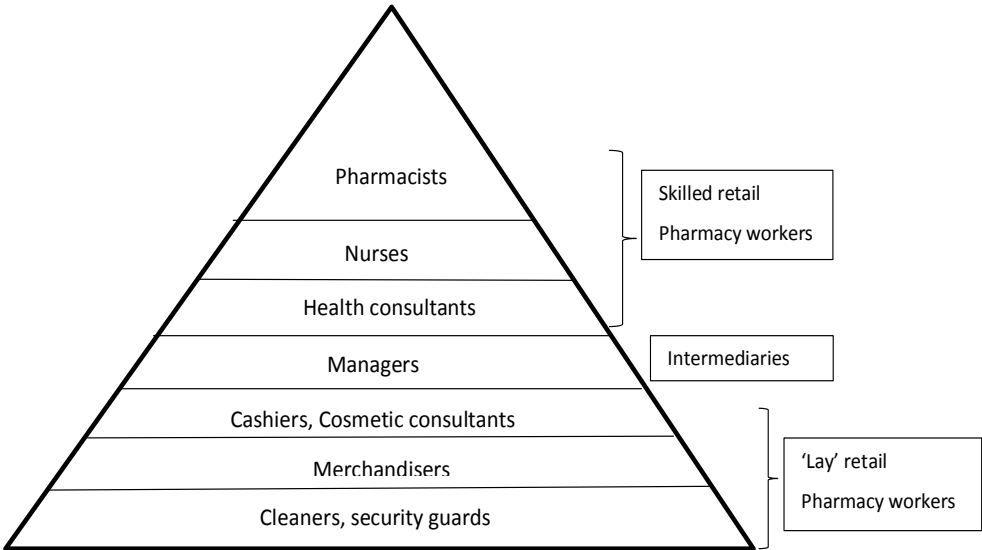
Figure 6 Stratified retail pharmacy workforce structure

Research instruments

The data gathering instruments consisted of an anonymous self-administered structured questionnaire (closed and open questions) and a semi-structured interview schedule for in-depth follow-up interviews. Through the administration of questionnaires and in-depth interviews, the researcher gained a deeper understanding of the research problem.

Questionnaire

Questionnaires included close-ended and open-ended questions that provided useful qualitative data. The closed-ended questions focused mainly on demographic questions while the open-ended questions related to the workers' psychographics. Open-ended questions intended to encourage workers to express their views of CVD and individual health behaviours. The questions probed further into their health behaviours, past illnesses and specific questions about individual health risk.

Close-ended questions consisted of a list of predetermined answers for selection. There was an option of "Other – please specify" so that respondents may include individual responses. This made it less structured to ensure an open platform for freedom of expression and a better response rate.

The questionnaire consisted of four sections. First, participants' social contextual characteristics (age, gender, race, marital status, living arrangements) were explored. Second, participants' lifestyle habits and self-reported health behaviours (cigarette smoking, alcohol consumption, eating habits, engagement in PA, help-seeking behaviours) were questioned. Third, participants' psychographics (perceptions of health, body weight, self-reported illnesses and diseases) were investigated. Fourth, questions on CVD-related issues (knowledge and help-seeking behaviours, individual risk perception, perceived awareness of CVD) were considered. The close-ended questions included 3 to 5 options pertaining to a question while others were 'Yes' or 'No'.

According to Babbie and Mouton (2001) surveys are useful when used for descriptive and exploratory research. Punch (2006) advanced this by highlighting that surveys may involve the collecting of data from a range of participants which may be quantitative, qualitative, or mixed method depending on the type of questions asked and the nature of the data.

Interview schedule

An interview schedule was created one month after the initial quantitative analyses of the questionnaires were conducted. The researcher created the questionnaire with the research problem, aim, objectives, research questions and preliminary survey findings in mind as well as the gaps in the literature. This was done to probe into some of the pertinent issues arising from the questionnaires and to gain an additional perspective.

Similar to the questionnaires, interview participants were recruited from the North, East, South and West regions in Johannesburg. The interview schedule was designed to draw detailed analyses from perspectives on CVD offered in the questionnaires. Since the interview schedule was semi-structured in nature, it allowed for flexibility in probing. This was done through the inclusion of thematic sub-questions since "[t]he purpose of interviewing is to find out what is in and on someone else's mind … [and] access the perspective of the person being interviewed" (Patton 1990, p. 178). The interviews revealed workers' experience and narrative accounts about CVD, their experiences and the everyday lived social realities within the workplace, home and community contexts.

Piloting

The questionnaire was first piloted with a sample of thirty working adults employed in one of the retail pharmacy chains not included in the twenty-three stores surveyed. This was done to test the instrument before its application. After a few minor changes to the instrument, a convenient sample of workers aged 19–75 was invited to participate in this study. This invitation was based on workers availability and willingness. Surveying the responses of retail pharmacy workers meant that the researcher was able to reach a larger sample simultaneously.

The interview schedule was piloted with five volunteers, not included in the sample population, to test the reliability of the questions. Reliability is concerned with internal consistency, such as, whether the data collected are the same under repeated data collection (O'Leary 2004). No changes were needed to the interview schedule as the questions were understood and well-answered. After that, face-to-face follow-up interviews were set up with willing participants at a time and place that was best suitable for them.

Data collection

Data collection took place between 2013 and 2015. During this period, questionnaires were self-administered from May 2013 to December 2014 and follow-up interviews took place from January 2015 to September 2015. Twenty-three out of twenty-five retail pharmacy chains in the Johannesburg area were surveyed. This allowed a diverse inclusion of workers from different social backgrounds in different urban settings.

The first stage of data collection involved the researcher collecting and analysing quantitative data from 400 out of 500 workers employed in the retail pharmacy chain. There was an 80% response rate [females: $n=297$ (74%), males: $n=103$ (26%)] from those who voluntarily took part in the study by completing questionnaires. A line manager then collected the completed questionnaires from the workers and placed it in a sealed envelope before requesting the researcher to come in to collect it. Quantitative data (closed-ended responses) led to descriptive statistical analyses (frequencies and cross-tabulations) using IBM SPSS 22 for deeper identifications of the symbolic and material dimensions of health behaviour.

The demographic ratio of females to males who volunteered to participate in the study is reflective of the overall workforce demographics employed within the retail pharmacy setting in general. To contextualise this, the retail pharmacy company in the Gauteng region employs 60% females and 40% males. Female cashiers make up the bulk of the ratio whilst male merchandisers constitute the remainder of the percentage employed within the company. There could have also been a possibility that women were more willing to participate in the study compared to men. This might be because women are usually the caregivers and are often more open to engaging in discussions on health (Buldeo & Gilbert 2015). The feedback from the questionnaires provided sufficient data worthy of being probed further. Willing participants who provided their name and contact details in the interest of a follow-up interview were contacted to set up an interview.

The second stage involved collecting and analysing qualitative data from in-depth follow-up interviews with sixty retail pharmacy workers[19] (females: $N=30$; males: $N=30$) to corroborate the survey findings. Some of the issues probed in the interviews covered themes such as culture, gender, embodiment, digital health, and media in shaping self-perception and

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[19] Details regarding interviewee demographics can be found in Appendix 8. Pseudonyms were given to each respondent to respect their decision to remain anonymous.

help-seeking behaviours. Data was then coded using QSR NVivo 10 software and manual thematic content analyses were used to check and compare the output.

Reflexive considerations

One of the main considerations included the difference in the gender ratio of the retail pharmacies. However, the responses can provide the basic knowledge that could inform future studies within the workplace contexts. In considering some of the unforeseen impediments to progress, the researcher reflects on her research experience in this sub-section.

Reflexivity, according to Charmaz (2006 p. 188–189) as cited by Moon (2008, p. 77) is:

> The researcher's scrutiny of his or her research experience, decisions and interpretations in ways that bring the researcher into the process and allow the reader to assess how and to what extent the researcher's interest, position and assumptions influenced inquiry. A reflexive stance informs how the researcher conducts his or her research, relates to the research participants and represents them in written reports.

This sub-section therefore intends to reflect on the research experience with the retail pharmacy workers, the Director of the pharmacy chain and the store managers involved. Before research was undertaken, written permission was obtained from one of the Directors of the retail pharmacy chain to conduct research at the various stores. The anonymity of the retail pharmacy chain is safeguarded due to the Director's request to conceal all identifying information in this thesis. A synopsis of the study, as well as an information sheet was then provided to the relevant key individuals in each store; the front shop manager, assistant manager or administration manager. Permission to conduct research at each store was attained from each manager either in person, telephonically or via e-mail. However, there was a level of non-co-operation of some store managers and line managers. The researcher then decided to surmount this by contacting the non-cooperating managers telephonically and following-up electronically to address their concerns. Some managers were not keen for staff to complete the questionnaires during work hours and allowed them to take the surveys home to complete. This might have meant that they searched for health information on CVD on the internet. Moreover, taking home a survey to complete, amidst family responsibilities and household demands could have prevented them from completing or returning the questionnaires.

As a research instrument, the questionnaire delved into some of the most pertinent themes[20] that allowed for thematic analysis and interpretation through the interpretive paradigm – discussed earlier in the research methods – to understand the meanings attached to 'The Body', self and identity. To decipher how and to what extent the researcher's interests, position and assumptions influenced inquiry, the researcher understood that although employees in a pharmacy may be more exposed to health knowledge than the average 'lay person', it is often assumed that employees in a pharmacy setting would know and practice the acceptable health discourse. The retail pharmacy was a preferred choice for the study due to the researcher's interest in health knowledge among people from different social backgrounds employed within a health setting. Through a mixed methods research design consisting of a self-administered questionnaire and in-depth follow-up interviews with participants employed at a retail pharmacy, this study was able to get a broader picture of the NCD situation within the retail pharmacy workplace context. For a detailed understanding of the findings, narrative accounts (interviews) and verbatim written responses (questionnaire) were incorporated in this thesis to best represent and give participants a voice which would not have been possible through reinterpretation.

Interviewing pharmacy workers was an interesting experience as they were from different social and cultural backgrounds. In particular, finding out about individual lifestyle choices, consumption habits and help-seeking behaviour as it pertains to religion and culture was particularly fascinating. The dimensions of gender and race in the community, work and home context were also quite remarkable. Although the researcher was unknown to the sample, she was able to build rapport with the interviewees – which allowed them to open up about their everyday experiences and lived social realities. Still, the issue of social desirability cannot be ignored. Since the study entailed the use of self-reported data, the impact of social desirability could mean that some workers may have been selective of the information they chose to share.

Social desirability occurs when social norms govern behaviours and attitudes that trigger a 'desire' to present oneself in a positive light (Kreuter, Presser & Tourangeau 2008). The research design took into account two main methods presented by Podsakoff, Mackenzie, Lee and Podsakoff (2003) to guard against social desirability status and reduce the possibility of its effects; evaluation apprehension and social distance. Evaluation apprehension aims to

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[20] Detailed descriptions of the themes appear in the sub-heading 'Questionnaire' at the beginning of the Methodology chapter.

reduce the pressure felt by participants to present a positive self-image. The researcher requested the answering of questions as honestly as possible by reassuring participants that their answers would not be traceable. Social distance was accounted for by ensuring that the relationship between employees and researcher was not too friendly and that employees did not write any identifying details on the questionnaire unless willing to participate in a follow-up interview. The researcher's professional judgement was not influenced as she maintained a level of distance from the employees.

Plus, the sample was unknown to the researcher and she was unknown to them. Cues such as the behaviour of others as well as cultural and societal norms affect self-reported responses (Podsakoff *et al*. 2003). However, self-reports are an essential tool in the social sciences as they offer a different perspective on human behaviour (Fleming 2012). Furthermore, studies such as the one conducted by Gallagher, Wilkie, Cordner, Hudgens *et al*. (2016) have shown that self-reported health can be used to delineate and explore relationships between modifiable factors that explain lifestyle diseases, habits and health status. This ensures validity and value which surpasses clinical or medical assessments and measures in predictive power (Bomback 2013 cited in Gallagher *et al*. 2016). To record a true picture of the situation, triangulation (see Figure 7) involved the use of different research instruments for data collection to enhance the quality of data from different sources. The tactics to ensure honesty in informants included anonymity, confidentiality and the option to refuse participation and withdraw from the study. Triangulation helped to ensure credibility and reliability of this study (Punch 2006).

However, non-response bias might have compromised the study due to time constraints during work hours. On the upside, only a small percentage of respondents chose not to answer some questions in the questionnaire. On the downside, face-to-face interviews were not long in duration and lasted 45 minutes while others went on to 80 minutes if workers combined their lunch hour and tea break to converse with the researcher. The advantage of this was that the meeting was less formal because those who had a meal while being interviewed were comfortable and discussed their eating habits in greater depth by explaining some of the choices and constraints they faced at work. The interviews that took place during the workers' off days lasted a little longer (between 85 minutes and 95 minutes). These were conducted in open public spaces which meant more noise interference. Still, this did not compromise the quality of data collected. Considering that the questionnaire and interview schedule was

piloted before administration, a higher response rate brought with it greater internal validity of results which reflected an understanding of the questions asked.

Data analysis

Data analysis involved the recognition of categories and themes emerging from the data, patterns, meanings and associations. Seeking meaning offered a detailed analysis of the participants' account of situations and circumstances of everyday life, health and lifestyle as related to CVD. The data applicable to each code or theme that emerged was descriptively compared to the demographic factors. Direct quotes were extracted from verbatim interview transcripts and written open-ended responses which were used to illustrate the views of the informants as related to the different themes of health behaviour and risk perception for CVD.

Once data was collected, the open-ended survey responses were coded to allow for data management. Both, age in years and age range, were input in two different data files in IBM SPSS 22. However, due to the vast amount of data, the researcher felt the need to conduct data analyses on the age range as it provided a broader picture of the CVD situation when age range was represented in percentages. IBM SPSS 22 and QSR NVivo 10 software was used for descriptive statistics and thematic analyses respectively, and to further support the organisation and analysis of the data.

Qualitative data (open-ended responses) allowed for descriptive thematic analyses using QSR NVivo 10 for the identification of core themes related to the study. Thematic content analysis is a systematic analytic approach that is valuable in (re)analysis and synthesis of qualitative data to identify themes and patterned responses as data analyses unfold (Braun & Clarke 2013). This analytical approach has the power to yield insightful interpretations that are grounded in context (Mills, Durepos & Wiebe 2013). The "reflexive turn" thereby contributed towards a greater understanding of theoretically and empirically based knowledge construction processes (Mauthner & Doucet 2003, p. 416). An iterative process was thus undertaken to compare the qualitative data against codes and thematic categories to reveal fundamental patterns. Data analysis, then, is a reflexive and iterative process.

Exploring the patterned responses helped organise and interpret the data without losing the context in which the study is situated (Mills *et al*. 2013). The process of thematic analysis

entailed reading and re-reading transcripts, grouping similar ideas, noting areas of convergence and divergence and verifying that all themes and concepts were captured for purposes of description and to best reflect the data collected (Terre Blanche, Durrheim & Kelly 2006). Thematic analyses helped better understand retail pharmacy workers' perceptions and experiences of chronic conditions like hypertension, arthritis and diabetes while highlighting the practices and factors underlying and embedded in this psychosocial study.

The quantitative and qualitative analyses were done separately. First, quantitative analyses were conducted which helped develop the interview schedule. The interview questions probed into deeper themes relating to individual health, chronic diseases and health behaviours. This allowed for thick description and a closer analysis of the lived experiences of workers in order to understand how meaning is created through embodied perception (Starks & Brown Trinidad 2007). Second, the qualitative data from the open-ended survey responses and follow-up interviews were analysed using thematic content analysis. It was used to amplify and illustrate the perspectives of the informants and participants, relating to the different themes identified. The qualitative material (written responses) extracted from open-ended survey responses revealed pertinent issues and themes. The IMBP was then used to situationally analyse and explain the findings – as later discussed in the Analysis chapter.

Data organisation, integration and management
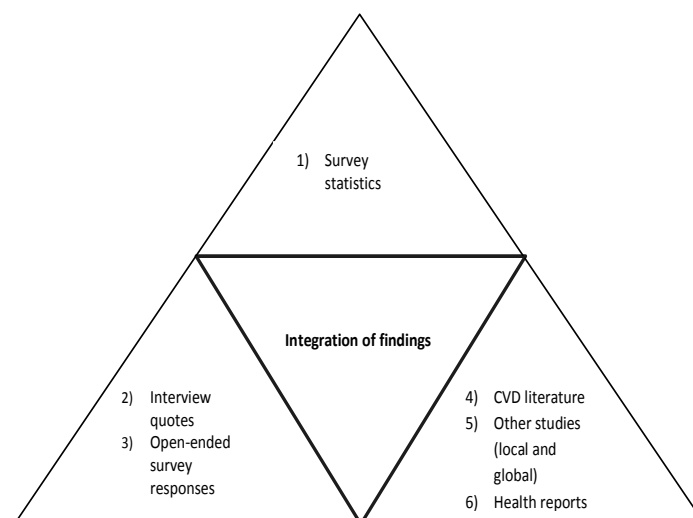
Figure 7 Data analysis through triangulation

The researcher found it necessary to supplement narratives (verbatim interview quotes and written survey responses to open-ended questions) with descriptive statistical findings to better contextualise the study. This assisted in making sense of the findings as it relates to the body of data as a whole. She was selective in choosing appropriate (i) quotes based on thematic analyses and (ii) descriptive statistics based on frequencies and cross-tabulations. In addition to quotations and percentages, the Analysis of Findings chapter also drew upon a wider body of literature to explain the value of the data presented in the local and global context. The writing up of the findings entailed the inclusion of overarching themes and sub-sections that relate to the thesis as a whole. Basically, data is presented in one extensive chapter broken down into a number of   sub-sections. As the analysis of findings extends, each section blends together to answer the research questions.

Study scope

The research scope lies in the qualitative psychosocial aspects of an exploratory description of the CVD situation among a sample of working age population employed in a retail pharmacy chain in Johannesburg. In so doing, it covers the psychological and social aspects embedded in everyday social realities of those employed in the study sample. Although it also uses quantitative data, this study is not purely quantitative in nature; therefore, it does not delve into statistical explanations as it was beyond the intention and scope of this study. The qualitative data allowed for thematic analyses that yielded a thick description of pertinent themes relevant to answering the research questions.

Ethics appraisal

The study took the necessary measures to protect the respondent's rights by maintaining anonymity. Voluntary participation was sought. They were assured that any information shared would remain anonymous unless they are willing for a follow-up interview. The confidentiality of all study participants were taken into consideration (Babbie & Mouton 2001). They have been assured confidentiality and that their participation in this study would not affect their work status. To ensure anonymity, the names and personal details of the research participants were not requested in the questionnaires, but there was a section to complete at the end of the questionnaire only if they were interested in a face-to-face interview.

The interviews were conducted as a follow-up with those who expressed interest in being interviewed at a later stage as the study progresses. Surprisingly, more than half of the total survey respondents (*n*=210) provided their details for an interview. However, for this study, only sixty were contacted for follow-up interviews. In order to decide which participants to include in follow-up interviews, the researcher reviewed the responses of all survey participants (*N*=400). She focused particularly on the responses to open-ended questions and after some preliminary data analyses, she decided to select the most interesting responses (*n*=60) as it pertained to the research aim, objectives and questions. These responses added a different dimension to the data collected and pinpointed important underlying themes that were emerging and considered pertinent to addressing what was being sought in the study. Selecting 60 participants for follow-up interviews provided sufficient data to answer some of the broader issues related to the topic in order to best answer the research questions.

Retail pharmacy workers were briefed about the objective of the study in a participant information sheet[21]. Intentions of the research were made clear and stated in the participant information sheet. The researcher's contact details were provided to all participants should there be any questions or concerns pertaining to the study. They were invited to participate in an anonymous survey and an in-depth follow-up interview if willing. Also, the participants had the right to withdraw from the study at any point they wished to. For follow-up interviews, permission was provided by workers to have the interview tape-recorded for later transcription. Handwritten notes were jotted down to capture non-verbal information communicated during interviews. All interviews were transcribed shortly after they took place and before the conducting of another interview.

Participants' privacy, dignity and overall welfare were honoured by being honest in the conducting of research and sensitive to their views (Weiss 1995; Babbie & Mouton 2001; Punch 2006). The survey and interview questions were not insulting, judgmental or embarrassing in any way (Weiss 1995). Workers were assured that all information shared will remain confidential and anonymous[22]. They were assured that transcripts and voice recordings were protected using a password lock on the researcher's computer. Ethics approval for this study was granted unconditionally by the *Human Research Ethics Committee* (non-medical) at the University of the Witwatersrand, Johannesburg (R14/49 Buldeo, ethics protocol number H13/01/21).

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[21] See Appendix 1 and Appendix 3.

[22] Pseudonyms were used to ensure confidentiality and anonymity of participants.

ANALYSIS OF FINDINGS

In this chapter, the findings of the study are presented and analysed. Key themes are unpacked and illuminated through thematic content analyses to better understand the unique context of CVD in South Africa, specifically, and NCDs more generally. Quantitative and qualitative data have been integrated and are presented thematically to offer a richer description of the findings. These address pertinent issues that exist in South Africa to exemplify more nuanced perspectives on NCDs.

The focus is on CVD knowledge, health behaviours and risk perception for CVD among retail pharmacy workers of different social groups. It includes a discussion of the modifiable and non-modifiable risk factors of CVDs and the psychosocial and socio-behavioural aspects that shape help-seeking behaviours. Some broader themes include the use of complementary and alternative forms of healing, the role of culture and social capital and the impact of the media on social representations of the body – which clarify some of the key findings relating to CVD knowledge and individual risk perception. Diverse themes are offered throughout which add depth to the multifaceted perspectives on CVDs in South Africa.

Chapter organisation

The chapter begins with the SOCIO-CONTEXTUAL BACKGROUND that includes the demographics of the study population. This opens a platform for a discussion on HEALTH AND CVD PSYCHOGRAPHICS and SELF-REPORTED CVD CONDITIONS. This then feeds into the exploration of HEALTH BEHAVIOURS, MEDIA REPRESENTATIONS OF 'THE BODY' and BODY IMAGE AND SELF-PERCEPTION, which later explains HELP-SEEKING BEHAVIOURS. These topics come together in the examination of CVD AND RELATED NCDS IN SOUTH AFRICA before a diagrammatic analysis is offered to situate THE RISE OF CVD IN JOHANNESBURG WITHIN THE IMBP to illustrate the significance of this psychosocial study.

Socio-contextual background

Respondent demographics

Variable		Frequency	Percent
AGE	19 to 29	166	41.50
	30 to 39	136	34.00
	40 to 49	61	15.25
	50 to 59	23	5.75
	60 to 69	12	3.00
	70+	2	.50
GENDER	Male	103	25.75
	Female	297	74.25
RACE	Black	271	67.75
	White	84	21.00
	Coloured	36	9.00
	Indian	9	2.25
MARITAL STATUS	Not in a relationship	254	63.50
	Married	105	26.25
	Separated/Divorced	19	4.75
	Widowed	5	1.25
	In a relationship	17	4.25
CHILDREN	Yes	286	71.5
	No	114	28.5
LIVING ARRANGEMENT (people per household)	1 to 4	243	60.75
	5 to 8	135	33.75
	9 to 12	16	4.00
	13 to 16	6	1.50
	TOTAL		**100.00**

Table 2 Frequencies for respondent demographics (*N*=400)

Age

The mean age of the total sample (*N*=400) was 34 years of age. This population is worthy of exploring as NCDs are now affecting younger groups in South Africa (Discovery Health 2012). The literature points out that those in their middle to older ages are more at risk for CVD globally, but in sub-Saharan Africa those in their younger years are more likely to suffer heart-related conditions (Shisana *et al*. 2013; Maredza, Bertram & Tollman 2015). The working age population is therefore particularly of concern due to the economic strain on the country owing to obesity and related NCDs that lead to premature morbidity and mortality (Hofman 2014). This study probes into CVD knowledge, understanding and awareness among those workers aged 19 to 75.

As seen in Table 2, over 90% of respondents were in the age group 19–49. This provides the background to the employed working population in the retail pharmacy chain, specifically the

economically active age group employed in the retail pharmacy chain. Different age groups have given insights into the health behaviour and help-seeking behaviours. This revealed varying behavioural beliefs relating to their perceived knowledge of CVD, CVD risk factors and individual perception of health. For purposes of this study, age was cross-tabulated by gender, race, self-reported stress, exercise, CVD knowledge, individual risk perception for CVD and help-seeking behaviours. Exploring the associations between these factors help understand the demographics of the respondents to shed light on the ways in which CVD is considered among workers of different social groups within a retail pharmacy setting.

Medical and epidemiological studies reveal that age is an important factor in chronic lifestyle conditions such as CVD. The life course perspective is one such viewpoint that sheds light on the process of biological ageing and how it affects health throughout one's life (Kuh, Cooper, Hardy *et al*. 2014). However, very little attention is paid to how age is socially constructed and understood in contemporary time, which provides clues as to why different age groups choose to engage in certain health behaviours or not.

The interview participants provided valuable information which assisted in understanding how age plays an important role in health behaviour and help-seeking behaviours. This added nuance when factors such as individual perception of health and CVD risk came into the picture. For example, the findings revealed that age acts as a facilitator or poses constraints to exercise and illness management if the individual has suffered from or is suffering from a chronic condition such as hypertension and arthritis. These chronic conditions pose obstacles to balancing the demands of illness and everyday life where participants could not isolate illness trajectories and management from other aspects of their lives (van Houtum, Rijken & Groenewegen 2015; Brooks *et al*. 2015; Maller 2015).

As Josephina, a 51 year-old Black[23] woman, described in an interview:

> *I'm too old to exercise … My colleague at work said that I must do light exercises to ease the pain and strain in my joints … but my arthritis is too painful for me to manage – I'm suffering all the time … I do try but I don't feel good and I don't look good. I go to Bara[24] for this pain … I'm fed up and the nurses are tired of me … Plus, I have BP[25] – it's not easy to manage BP. I don't have the time because I*

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[23] The terms 'Black', 'White', 'Coloured' and 'Indian' reflect a racial stratification of the South African population against its historical past. The use of these categories in this thesis does not imply the legitimacy of racist terminology.

[24] Bara is a shortened version for what is better understood as Baragwanath Hospital in Soweto, Johannesburg.

[25] Blood pressure (BP) "is the force of the blood pushing against the walls of the arteries" (Steyn & Fourie 2007, p. 20). BP is expressed as the systolic blood pressure (high pressure) and diastolic blood pressure (lower pressure). In South Africa, older

am a gogo[26]; after work I have to take care of my five grandchildren – they keep me very busy. In the night, I must cook and clean … I'm too busy to take care of myself … I forget to take my pillets[27], marra eish[28], I just go on (sigh) …

Age was an important barrier to PA. On the one hand, Black women in their 50s reported old age and family responsibilities as a barrier to PA. Old age was often reasoned with a medical condition such as arthritis or hypertension that prevented regular PA. On the other hand, White women in their 50s did not necessarily consider themselves old. Most of those who reported being engaged in PA placed emphasis on 'ageing gracefully' and longevity.

To elucidate, this is the account of Diana, a 52 year-old White woman:

… I'm living life and having fun. You know, I never had the opportunities to do such things when I was younger – I had three kids to take care of. Now that I am in my early 50s, believe it or not, I feel more energised than ever! I have lots of energy when I'm playing with my two lovely grandkids. I joined a walking group on weekends and the experience has been phenomenal! (laughs) *They say age is just a number, right? So yes, I think it's very important to be physically active … I would like to age gracefully like those slim, trim and drop-dead-gorgeous celebrities I see in the magazines. I mean, I want to be able to look desirable and still take care of myself when I'm in my 70s and not have to worry about being dependent on others ...*

What is striking about both narratives is how age is understood in different social contexts and how individual responsibilities are shifted in positive and negative ways. Illness management too is understood very differently. One woman felt depressed and articulated a negative view of her health and despised her attempts to seek effective treatment for arthritis and hypertension. Another woman felt optimistic in maintaining good health and expressed a positive attitude towards gaining independence – which fits well in the context of Williams' (1984) notion of 'narrative reconstruction' discussed in the Literature Review.

Unlike Josephina, body image seemed to be very important to Diana. This demonstrates how media shapes understanding of beauty and how beauty is stratified according to age (Eli & Ulijaszek 2014) as ageing "represents an inability to keep one's flesh unsullied and signals the inevitability of mortality" (Lupton 2005, p. 202). Bodies of older women and men

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Black people refer to hypertension as 'BP' for a clinical reading of 140/90mmHg or higher. Urban Black South Africans have a significantly higher hypertension than rural counterparts (Norman *et al*. 2007).

[26] Gogo is an isiZulu word that translates to grandmother.

[27] Pillets refers to pills. In this context, it refers to Josephina's chronic medication for hypertension.

[28] "Marra eish" is South African lingo. Mara loosely translates to 'but' while eish in this context tends to denote disappointment, tiredness and helplessness.

are absent in media representations of the body as they are often depicted as frail, ill and dependent – typically treated with pity, fear and disgust in all societies (Maller 2015; Flood & Moen 2015). There is a sense of moral disruption in aged bodies which leads to the reflexive uncovering of frailty that comes with chronic illness and ageing thereby posing a challenge to identity and meaning-making (Becker 1997; Flood & Moen 2015). Diana seemed empowered to challenge this notion of ageing since desirability and independence are both important to her. She perceived a greater level of self-efficacy in controlling her bodily practices and health compared to Josephina, who lacked the motivation to comply with improved health behaviours due to the social, interpersonal, familial and individual constraints she experiences.

Most respondents (90.75%) were 19–49 years of age while the rest were older (50–75). Since CVD is now affecting those in their younger years and prematurely affecting those under the age of 50, these age groups provide insight into the socio-economic and the healthcare situation of the country. It further offers a foundation for health promotion initiatives to be targeted to raise awareness (Hofman 2014). According to age stratification theory formulated by Matilda White Riley (1987), age has a historical component:

> People belong to a particular age group depending on how long they have lived, and, as a result, they share similar social roles and experiences with others their age.

<div align="right">(Cockerham 2007, p. 127)</div>

In essence, then:

> Ageing does not occur in a vacuum. It occurs in a context that includes the needs and resources of individuals, their patterns of activities, their relationship with others and their attachments to their surroundings. Ageing interacts with all these aspects of the physical and social environment.

<div align="right">(Ramashala 2012, p. 7)</div>

With this in mind, one can understand why different age groups in the study sample choose to engage in certain health and help-seeking behaviours or not through the meanings attached to individual health and bodies (Flood & Moen 2015). Age stratification theory, suggests that new patterns of ageing are caused by social changes such as the transitions introduced by urbanisation; altered eating habits, changes in dietary consumption and other lifestyle choices (Joubert & Bradshaw 2006). There seemed to be a link between the ageing of individuals and

the broader social environment because, as South Africa moves through time, the age structure and attitudes of people is being altered. "Positive ageing" provides moral distinctions between styles of ageing and old age in different societies (Hepworth 1995, p. 175). Some participants with chronic illness reported concern about their condition that foster dependence on others – which explains their feelings of loss of self (Charmaz 1983a; Doğan, Tekin & Katrancioğlu 2011). This was evident as frailty and old age was considered a social problem of dependence and a newfound interest to 'age gracefully'.

The IMBP contextualises this by illustrating how behavioural intention is accompanied by an attitude, perceived norms and personal agency – all of which is shaped by one's history, environment and society. In the apartheid era, engagement in PA and sporting activities was disadvantaged according to race unlike in contemporary South Africa where these behaviours are now encouraged (Walter & Du Randt 2011). This study found that age together with negative lifestyle choices such as a PI and unhealthy eating habits were to blame for the NCD situation in South Africa. It was also the most understood reason for the cause of morbidity and mortality.

James (40, Coloured man) revealed that when people in his community hear about the death of someone:

> *They will ask how old she or he was then start saying things about old age, they were unhealthy, lazy, ate incorrectly, too stressed … Society perceives heart disease as having lived an unhealthy lifestyle … I personally think heart disease is associated with the elderly … I'm saying this because most of the deaths I've heard of is of old people dying from a heart attack … maybe because they are too weak to exercise, especially women …*

It appeared that old age is an indicator of one's risk for CVD as well as leading an unhealthy, sedentary and stressful lifestyle. Lifestyle diseases like a CVD-related condition such as a heart attack is attributed to old age and accumulated years of unhealthy behaviours such as being physically inactive (Mesters, Wahl & van Keulen 2014). This again links with the life course perspective pointed out earlier. James mentioned that he thinks it has more to do with one's biological age, particularly the elderly. Most of the deaths he has heard of were that of elderly people dying of a heart attack. He seemed to understand CVD as physical weakness and PI characterised by gender.

Gender

As mentioned in the Methodology, there were more women (*n*=297) than men (*n*=103) who participated in this study. Women are the caregivers in society, either at work or home and are the ones who are responsible for health while men are regarded as the breadwinners who often disregard issues relating to health (Oakley 2015). In the critical context of a quadruple burden of disease, most women are affected by obesity and are also more susceptible to NCDs (Micklesfield *et al.* 2013; Day *et al.* 2014). Since this study included mostly female workers, it helps understand the gendered risk of CVD, individual risk perception, self-reported health and help-seeking behaviours and agency among economically active non-health professional females employed in a retail pharmacy health setting. The gendered distribution of this study could possibly be a reflection of other workplace or healthcare settings and gendered roles in society. Globally, men are regarded as the most at-risk for CVD but due to South Africa's unique quadruple burden of disease, women are at a greater risk for obesity, NCDs and maternal health conditions (Day *et al.* 2014).

Women in this study were cashiers, receptionists, and cosmetic consultants. Cashiers and receptionists may be more prone for PI as their job responsibilities entail sitting for most of the day. It seems that these sitting behaviours unequally disadvantage women as far as its potential impact on health is concerned. Men were merchandisers, consultants for nutritional supplements and front shop managers. Unlike women in this occupational set-up, job responsibilities for men entail standing, walking and being physically active for most of the day.

Of the total number of female survey respondents, 67.5% were in the age group 19–49 with 23.25% of males in the same age group. Those aged 50–75 comprised 9.25% among both, females and males. The literature concurs that gender tells us a lot about health and help-seeking behaviours (Day *et al.* 2014). Working women are expected to buy health as women's health is more commodified and medicalised (Twigg, Wolkowitz, Cohen *et al.* 2011) although; this trend is changing to include men (John 2015). The importance of gendered norms and how it contributes to the knowledge gap in health-related issues such as CVD awareness, health behaviour and help-seeking practices has been manifested in the literature presented earlier.

The association of gender with health is well established but the meanings attached to one's body and health behaviours are often not as recognised in the African context. The findings presented here explore data on gender as related to eating behaviours, body image, lifestyle practices and CVD knowledge and awareness. It further demonstrates how CVD is understood among working men and women and the reasons why they engage in certain health and help-seeking behaviours.

Women participants were likely to seek preventive and routine medical check-ups for themselves and were more concerned about the health of their children and family members. Similar studies in Africa, such as those presented by Makinga and Beke (2013), van der Hoeven, Kruger and Greeff (2012) and Tagoe and Dake (2011), show that women possess more agency in adopting healthier lifestyles through socialisation and learning from the experiences of others. This is possibly because women are socialised into taking better care of their bodies and are judged more by their physical appearance compared to men. The parameters within which people are socialised can directly shape their risk perception and seeking the appropriate method of healthcare (Gay & Trevarthen 2013). Some women in the study appeared to lack behavioural beliefs in adopting good health and self-efficacy due to the societal, interpersonal and individual constraints they face in the home environment where gendered and cultural norms still exist. This is reflective in the below narrative by Emelda, a 35 year-old Black woman:

> *Women in my culture are regarded as slaves – we do everything for men; cook, clean, have babies, take care of the whole [extended] family and are expected to have time for ourselves … it's a man's world. Men have it easy. Men are not judged like us women. Women must be obedient … give in to the demands of the man, the 'good makoti[29]' that everyone looks up to. It's very difficult to do everything … we are not Superwomen. Society advocates for equality among sexes but this culture thing is what separates us … Black women are more pressurised than White women … we have to obey the elders and keep quiet if someone tells us something … We don't even have time for ourselves; I can't think of one day when I was taken care of when I was sick or had a meal prepared for me when I was too tired to cook after work … we cannot live a healthy lifestyle when we go through so much stress …*

Emelda seemed disempowered in making healthier lifestyle choices due to patriarchal expectations in her cultural realm. Black women are expected to be passive compared to White women. Culture plays a role in removing the autonomy and intention of Black women

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[29] Makoti is an isiZulu word for wife.

adopting better health behaviours. In some social contexts, women do not always take better care of themselves due to the constraints they face (Wallis & Hetherington 2009). Women often oversee their own health and assume responsibility for the needs of others in their family, which puts them more at risk for stress-related conditions such as depression, fatigue and eating disorders. When gender role is confounded with culture, the agency of women is disregarded as Black women are seen as submissive and passive in the household (Iwelunmor *et al*. 2013). This is because Black women are expected to adhere to the gendered norms and expectations set out for them in society (Legwegoh & Riley 2014).

Micklesfield *et al*. (2013) studied the sociocultural, environmental and behavioural determinants that shape obesity trends among Black South African women. They suggest that traditionally, Black South African households are patriarchal. Women, therefore, suffer higher morbidity than men, but men are expected to die from NCDs at a younger age compared to women (Omoleke 2013).

Michael (37, White man) contrasted Emelda's narrative by giving his account of conventional and contemporary understandings of normative gendered beliefs. According to him:

> … *In the past, there was a stereotype that a woman's place was in the kitchen. I think this is changing in modern society with the role being shared between genders especially with the emergence of the 'foodie' generation … Women and men both now enjoy preparing meals and they indulge in food items that once had a gendered meaning … let's say, what was once considered 'food for men' like a lekker[30]lamb tjop[31], a thick piece of steak or a mega shank … but I think the difference is that women are more conscious about their body … they feel guilty about gaining an extra kilo or two but us men are like 'this is the life of luxury, indulge as much as you can' …*

There are social and cultural meanings embedded in food; people identify it as a mediator between gender and socio-economic status. Michael sketched the shift from traditional gendered stereotypes to modern efficacy beliefs that illuminates gendered equality and self-efficacy of food and eating behaviours among men and women. He points out that women are more cognisant of portion size compared to men because of societal behavioural beliefs and accepted or perceived body image. This relates to what Bourdieu (1987) explained in his social critique of the judgement of taste along the fault lines of 'masculine' and 'unmasculine' binaries. Michael is of the view that men equate good food with a life of

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[30] Lekker is South African slang for nice.
[31] Tjop is the Afrikaans pronunciation for chop (a cut of meat).

luxury, whereas women tend to be weight watchers – alluding to the association of material wealth and body weight. This notion alludes to gendered and cultural stereotypes. For example, women in Western society are expected to be slim which denotes self-control and care (Eli & Ulijaszek 2014) while in the African context; a fuller figure is associated with material and financial wealth (Mchiza, Parker, Makoae *et al*. 2015)

Prinsloo, Joubert, Mohale *et al*. (2011) explored the perceptions of body weight among Black women in Bloemfontein and concluded that there is cultural variation embedded in perceptions and preferences in body weight. Similarly, Mchiza *et al*. (2015) studied body image and weight control in South Africa to identify distorted views of body image based on the SANHANES-1 survey. What was apparent in Michael's view is that men and women differ in their understandings of dietary intake and weight management; women aim to control their body weight and feel guilty if they gain weight while men indulge guilt-free in food that is associated with luxury. Attitudes towards food differ according to gender and along racial, ethnic or cultural lines.

Annabella (40, White woman) expressed that:

> *Food products like red meat are more likely eaten in excess by men … all colours … all sizes … women are different in their eating preferences … White women prefer light food such as a chicken fillet and a nice healthy salad and veggies. They take care of themselves through what they eat and how they exercise … I can't say the same about Black and Coloured women, though … I see them eat lots of fatty, oily and greasy foods, a lot of sugary items and salty junk food … they tend to eat heavy meals for lunch and too much of it! … they are less mindful about their health and weight … that's why they are affected by obesity and illnesses compared to White women.*

This demonstrates a gendered dimension to food and eating habits that shape understandings of health. To a greater extent, the difference in obesity-related illness and disease is attributed to obesogenic dietary behaviours (Micklesfield *et al*. 2013). This is often confounded by social inequalities among ethnic groups or stereotypically categorised according to race.

The next section describes race and eating behaviours introduced by the apartheid era. It shows how present-day perceptions of food and individual health and engagement in health behaviours in contemporary South Africa exist.

Race

Race[32] impacts opportunities for health as different racial groups are differently affected. This provides vital clues to the current health status of South Africa's population. Amidst talks of its cultural diversity, addressing race is important; especially in the context of chronic NCDs like CVD. The history of apartheid with its varied social realities led to social opinions about food, health and help-seeking behaviours which were stratified according to ethnic groups and race.

Due to the legacy of apartheid, not all race groups have equal access to health and healthcare. Social inequality stemmed from stratification based on age, gender and race. Racial characterisation was used to ascribe inferior statuses to Black people – social, economic and political – resulting in unequal treatment and access to healthcare services, facilities and resources (Ramashala 2012). The inverse care law comes into play whereby those who are advantaged can afford and access good health and those who are disadvantaged cannot (Tudor Hart 1971).

The respondents included 271 Black (68%), 84 White (21%), 36 Coloured (9%) and 9 Indian (2%). The racial[33] dynamic of retail pharmacy workers in this study provides clues to the differences in population groups employed. Non-health professionals include Black men (merchandisers), Black women (cashiers), and White and Coloured women (receptionists, cosmetic consultants). Health professionals comprised pharmacists (White and Indian) and nurses (White and Coloured) while store managers were mostly White men.

Race was found to impact help-seeking behaviours. It shaped how workers hold behavioural and normative beliefs about good and bad health, attitudes towards health behaviours and perceptions of body weight. According to the participants, 'race' was considered a potential risk defining category in response to the open-ended question "Who do you think are most at-risk for CVDs?" when most participants supposed '*Blacks*', '*Whites*' and '*all race groups*' due to their unhealthy lifestyle and unhealthy eating habits. For example, responses such as '*Black people are not that informed about health and diseases that affect them*' (70)[34],

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[32] As mentioned in the Literature Review, race is of relevance in the South African context due to the legacy of apartheid and associated 'race classifications'.

[33] The question on race was close-ended. There was however an option of "Other" yet no one filled in any other identifying categories.

[34] The number within brackets indicates the number assigned to respondents.

'*White people eat too many take outs*' (10), '*All race groups are at risk …*' (4) were common. Others correctly referred to age and gender as determining factors for CVD. For example, '*Young adults are now more at-risk*' (123), '*Older White men are at a greater risk*' (386), '*Women are more at-risk*' (181). This exposes important racial perceptions of CVD risk which provides a platform for understanding health behaviours and help-seeking behaviours among retail pharmacy workers.

Only 20% of all race groups confessed that they are at risk for CVD because of their '*poor lifestyle habits and genetics*' (18). Individual risk perception for CVD seemed to be overlooked with 43.5% reporting that they do not think they are at risk for CVD and 36.5% stating that they have not thought about their risk for CVD. The fact that individuals have not considered their risk suggests that there is limited exposure to health information and awareness on CVD and it was not perceived as important enough.

Race and physical health are related, but race, in itself, is not a social factor of health due to the lack of independent explanatory power (Thisted 2003 cited in Cockerham 2007, p. 142). The findings take a step in a social structural direction to show how an individual understands health influenced by social and structural entities that go beyond biological explanations. Race and socio-economic status are inextricably linked to health and is exacerbated by disadvantaged social and economic situations that drive health adversities for racial minorities. Black South Africans were the least advantaged during apartheid and are still unequally affected in post-apartheid South Africa (Durrheim *et al*. 2011). Every household is differentiated by social, interpersonal, individual, cultural and habitual factors that determine understandings of individual health, knowledge production and health behaviours.

As discussed, age, gender and race help understand the CVD situation in South Africa. Marital status, living arrangement and parenthood can also shed light on how CVD is understood, the health behaviours workers choose to engage in and whether or not they perceive themselves at risk for CVD. These factors are discussed in the next section.

Marital status and parenthood

According to the literature, marital status shapes health in positive ways by strengthening social and emotional bonds which lead to better self-reported health and improved help-seeking behaviours (Phaswana-Mafuya, Peltzer, Chirinda *et al*. 2013; Elnegaard, Andersen,

Pedersen *et al.* 2015). Among the participants in this study, 64% were not in a relationship ('*single*', '*not dating*'), 26% were married, 5% were separated or divorced, 1% widowed and 4% were in a committed relationship. Marital status, living arrangement and parenthood were explored in order to find out how one's health behaviours are understood within the various categories.

Cross-tabulated findings show that majority of those aged 19–49 (63.25%) were not in a relationship. This is not unusual as the recent South African HIV Prevalence, Incidence and Behaviour survey notes that 28.3% of those residing in the city of Johannesburg and aged over 15–49 years of age are single (Shisana, Rehle, Simbayi *et al.* 2014). Their lifestyle behaviours were very different from those married or in a committed relationship.

Among all women who answered the survey, 65% reported not being a relationship while, among all men, 60% reported the same. This meant that 48% of women and 15.5% of men were not married or in a relationship which equated to 63.5% of the total sample population. Women and men tend to have lower self-rated health, higher engagement in negative health behaviours and greater chances of not seeking help for medical conditions due to the lack of partner support (Phaswana-Mafuya *et al.* 2013). Of the 30.5% participants who were married or in a committed relationship, women comprised 21.75% and men 8.75%. These participants had intentions for improved health and held positive behavioural beliefs and outcome evaluations of recommended health behaviours or seemed to comply with positive health behaviours compared to those who are not in a committed relationship.

When race was brought into the picture, 2.5% of those in a committed relationship were Black and 15.75% of the same race group were married. Most Black people (48.25%) reported not being in a relationship. This finding alludes to single parenthood as most of those who reported not being in a relationship were single parents who were living with 1 to 8 people in a shared household. The fact that most of the total population were Black women (52.25%) adds a further dimension worthy of exploration. It provides background information to CVD-related health behaviours, living arrangements and culture in contemporary South Africa.

Even though the study included mostly Black women, it found that most women in the total population are mothers with children between 0 months to 5 years (28%), under the age of 18 (42%) and over the age of 18 (30%). Those aged 30–39 (27%) had the most children compared to those in other age groups. Considering most women in this study are single

parents, this elucidates the issue of single-parent headed households in South Africa which remains a concern but is beyond the scope of this study.

In 2013, News24 revealed that 33% of South African children live with both parents while EWN news exposed that 39% were raised by single mothers alone with only 4% of children single-handedly raised by their fathers. This study found that fathers were absent from parental responsibilities. Fractured families continue to exist in contemporary South Africa as single-parent living arrangements, like those mentioned here, affect the health, psychological and behavioural development of children. Unhealthy lifestyle behaviours lead to childhood obesity and chronic illnesses in later life. A study by Stats SA (2014) revealed that as much as 31% of mothers in South Africa were unmarried and over 50% of first time mothers were single. Ntoimo and Odimegwu (2014) looked at the health effects of single motherhood on children in sub-Saharan Africa and reported that there is a growth in out-of-wedlock motherhood and marital instability which is increasing the likelihood of single mother families. It added that single parenting by mothers in particular is advantageous if the father does not take up parental responsibility or "engages in high antisocial behaviour" (Jaffee *et al*. 2003 cited in Ntoimo & Odimegwu, p. 2) such as excessive alcohol consumption.

Seeing as this study found that 70% of children are under the age of 18 – the most important developmental stage in a child's life – the rise of single mother-headed households adversely impact on their health if the mother lacks good caregiving skills, health behavioural beliefs and self-efficacy to take better care of her health and that of her children. When a single-parent lacks control over their eating habits, it becomes easier for children to learn negative health behaviours in their home environment (Williams & Cheadle 2016). It is well-recognised that an absent parent has adverse outcomes on young children. The outcomes are further complicated by financial hardship which impedes a father's parental role as an economic provider and mother's early involvement in childcare (Bianchi & Milkie 2010 cited in Williams & Cheadle 2016, p. 83). As alluded to earlier, individual health is shaped by one's living arrangement as the numbers of people per household constrain or facilitate negative health behaviours.

Living arrangement

The number of people living together in one household determines expenditure; especially when food is concerned. Household income is a key aspect to consider in light of socio-economic status, food consuming and decision-making. Families with different household incomes spend differently on food choices according to taste and cultural preferences (Mhlongo & Daniels 2013). Against South Africa's historical backdrop, living arrangements followed different life patterns for different racial groups (Ramashala 2012). Most women were single parents and the breadwinners in their families. They experienced stress, financial burdens and other work and family-related constraints and went through difficulties in making healthier lifestyle choices.

Joyce (55, Black woman) outlined her family's household coping strategies in a time when money is limited:

> *I wish I had more money to take better care of our family. There's so many of us living together … three adults … four kids … it is difficult when we get home to hungry stomachs. I try to be a better giver but, take-aways and combo meals is only what I can afford … it's cheaper … and easy to buy them after work … we are too tired to cook after a long day, plus I have to do the housework. We … me, my son and the makoti exchange and buy meals for everyone during the week … sometimes Shisa Nyama[35], sometimes vetkoek[36], sometimes slap chips[37] and fish or kota[38] … my favourite is pap and nyama[39] near to work … sometimes I eat lunch late at work then don't eat supper, just drink amasi[40] and sleep … when my son gets his salary, he buys bulk and also for stokvel[41] … we get a lot when it is our turn … that helps us.*

A cheaper and more convenient option to buy unhealthy take-away meals rather than cook a healthy and nutritious home-cooked meal seemed to be a feasible option. This is unusual as there are often intergenerational differences and preferences in food choices (Renzaho,

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[35] Shisa Nyama is a food outlet that sells flame grilled meat, chicken and sausage. It is often served with deep-fried French fries (chips) or cooked pap and gravy.

[36] Vetkoek is a deep fried batter that is sold plain or with savoury mince and other fillings.

[37] Slap chips is South African lingo for deep fried French fries (chips).

[38] Kota is a type of South African dish that consists of a loaf or half a loaf of bread, cored and filled with deep fried chips, russian or vienna and pickles.

[39] Pap is South African lingo for cooked maize meal. Nyama is an isiZulu term for meat.

[40] Amasi refers to sour milk.

[41] Stokvel is a type of communal system where a group of people get together to save money or contribute their monthly earnings towards a common goal such as purchasing groceries such as canned food, other groceries and household products. It includes approximately 5 to 6 people who purchase items in bulk and then parcel them for distribution to others in that group after a few months. The money could also be invested instead of buying groceries.

McCabe & Swinburn 2012). The adults in Joyce's family perceived important constraints which prevent them from making healthier food decisions. Financial difficulty, busy work schedules and household responsibilities prevent them from evaluating the outcomes of their health behaviours. Lack of normative beliefs underscored their motivation to comply with better health behaviours. The perceived lack of self-efficacy can be blamed for their attitudes towards their food behaviours.

Joyce felt unhappy about her limited role as a caregiver in her home environment. The coping strategies her family adopts seem to get them through financial difficulty in a context where money is limited. She reported living with six other people in her household which put pressure on the three adults' weekly expenditure.

Most respondents reported having 1 to 4 people in their household (60.75%), 33.75% had 5 to 8 people in their household, 4% had 9 to 12 people in their household and 1.5% had 13 to 16 people residing in their household. These living arrangement patterns unusually reflect the current urban living situation in South Africa. Previously, older people lived in rural areas in larger families, as a skip generation, grandparents headed the households and were responsible for rearing their grandchildren while their own children travelled to urban areas in search of employment (Shisana *et al*. 2014).

Living space contours eating habits and PA depending on the number of people sharing a home, whether or not there are children in the home and if one is cohabiting with a partner and elderly (Ramashala 2012). Social network and social support structures play a key role in shaping health behaviours as family and social environment affect decision-making about food and other health goals. Considering the accumulated percentage of 1 to 8 people per household (94.5%) in this study, it can be understood that food consumption patterns are altered as the price of food increases; especially when there are many people to feed in one household. This leads to lessened expenditure on food and negative coping strategies that comprise unhealthy eating habits where junk or fast foods seem to be the only feasible option (Mhlongo & Daniels 2013).

The highest number of 1 to 4 people living in a household occurred in the19–29 year age group (22.5%) while the second highest percentage of 1 to 4 people living in their household (21.25%) occurred among those aged 30–39. Given the numbers of women who reported being breadwinners in their household and caregivers, younger and older people could be

residing together or the older women in the study are single-handedly heading their households – thereby experiencing financial constraints. Food consumption, snacking and eating habits then become tainted as children possibly have limited lunch options at school. This drives negative behavioural beliefs and attitudes towards food which leads to poor lifestyle decision-making in later years or leads to childhood obesity (Mail Online 2014).

The demographic factors presented in this study show that perceived agency and autonomy differs according to age, gender, race as well as marital status, parenthood and living arrangement. These factors also provide insight into the health and the CVD psychographics of working adults.

Health and cardiovascular disease psychographics

Psychographics help to analyse behavioural intentions and practices based on attitudes, opinions, interests, emotions, lifestyle, personality and values (Sarli & Tat 2011) which explain the psychosocial aspects of CVD-related health behaviours and risk perception. In this context, psychographics was used to examine outcome evaluations of health behaviours, perceived behavioural beliefs and outcome evaluations of the benefits of healthy eating and PA. The consensus is that one's demographics, environment (home and workplace), social capital and culture shape ideas about health, motivations to comply with health behavioural expectations and body image.

Demographics exposes the 'who' or the background socio-contextual factors such as age, gender, race, marital status, children, living and working environments. Psychographics illuminates the 'why' or in-depth insight such as how lifestyle habits, perceived health, physical appearance, constrained choice, consumption patterns to CVD-related health behaviours and how it affects risk perception. Together demographics and psychographics help understand health behaviours and lifestyle consumerism. To fully understand the psychosocial aspects of CVD, demographics and psychographics were unpacked for a more detailed depiction of the current NCD situation and the future of NCDs in South Africa.

This thesis addressed health behaviours and the role of culture in shaping ideas on 'The Body' and how body ideals are perpetuated in South Africa. The findings have thus far been analysed using some of the constructs of the IMBP framework. In order to better understand how workers consider CVD and if they perceive themselves to be at-risk, it was important to

first recognise how they perceive their individual health before considering their CVD knowledge and risk perception.

Cardiovascular disease-related health knowledge

Variable		Frequency	Percent
KNOWLEDGE ABOUT HEALTH ISSUES (*N*=398)	I know a lot	8	2.0
	It depends on the topic	117	29.4
	I know very little	175	44.0
	I don't care	98	24.6
BMI (*N*=396)	Yes	181	45.7
	No	215	54.3
HEIGHT (*N*=398)	Yes	102	25.6
	No	296	74.4
WEIGHT (*N*=398)	Yes	318	79.9
	No	80	20.1
EMPHASIS ON CVD IN SA (*N*=400)	Yes	104	26.0
	No	296	74.0
HEARD OF CVD (*N*=400)	Yes	209	52.25
	No	191	47.75
KNOW OF CVD (*N*=400)	Yes. Quite well	6	1.50
	Yes. Not so well	193	48.25
	No. I'd like to learn about it	184	46.00
	No. I'm not interested to learn	17	4.25
UNDERSTAND THE TERM CVD (*N*=400)	Yes	195	48.75
	No	205	51.25
KNOW ANYONE WHO PASSED AWAY FROM CVD (*N*=400)	Yes	105	26.25
	No	295	73.75
KNOW RISK FACTORS FOR CVD (*N*=391)	Yes	120	30.7
	No	271	69.3
RACE GROUP CVD RISK PERCEPTION (*N*=400)	Black	180	45.00
	White	49	12.25
	Coloured	38	9.50
	Indian	29	7.25
	All race groups	104	26.00
INDIVIDUAL CVD RISK PERCEPTION (*N*=400)	Yes	80	20.00
	No	174	43.5
	I haven't thought about it	146	36.5
	TOTAL		**100.00**

Table 3 Frequencies for health awareness, knowledge and risk perception for CVD

Self-reported knowledge about health issues

Table 3 reflects some of the pertinent findings on CVD knowledge and individual perception of risk. It found that most respondents reported knowing very little about broader health issues and specific interest in wanting to learn about CVD. Most evident was the lack of individual risk perception for CVD among workers. The data is of prime concern as it reveals why so many workers do not seek medical check-ups and care.

When age was cross-tabulated with self-reported knowledge of health issues, this study found that most (18.6%) of those who reported they do not care about health issues were aged 19–39. This is worrying given that almost half of the total sample population reported knowing very little about health issues. Yet, 35.2% of those who knew very little about health issues were aged 19–39. NCDs are on the rise in South Africa and are affecting those in their younger years, considering the mean age of the sample (34 years), these numbers are disturbing. What was interesting is how age seemed to shape one's familiarity with health issues. Moreover, 20.4% of the same age group said their knowledge depended on the topic. This is unusual as it is often assumed that people in this age group are generally more aware of health-related issues, especially because disciplinary knowledge is socially constructed and is created by the individual and their wider social order (Bradby 2012).

Two questions probed into whether or not respondents knew their height and weight. The intention was to find out if respondents are familiar with the concept 'BMI' as it was expected to provide clues to their familiarity with health-related topics and shed light on their health knowledge. When asked if they are familiar with the term 'BMI', 45.7% reported 'yes' but were not able to correctly identify the acronym; 54.3% did not know what BMI refers to. In this exploratory study, self-reported BMI would have been an indicator of perceived, rather than actual, BMI. Nonetheless, what was interesting is that only 26% knew their height, yet 80% knew their weight. As many as 69.59% aged 19–49 did not know their height, but 21.08% in the same age group knew theirs. Yet, 71.6% in this age group knew their weight. This means that respondents are more aware of their body size and shape than their height.

Individuals were more apprehensive with their body weight than their height probably because weight is publicly shamed. There seemed to be a gendered dimension in that *"… a lot of emphasis is placed on a woman's body weight. Men are judged more by height"* (Matt, 34). When cross-tabulated, it was found that 15.8% of women knew their height and only 9.8% of men knew theirs. When asked about their weight, as many as 57.5% of women knew their weight and 22.4% of men knew theirs. Respondents seemed to possess positive normative beliefs, attitudes and personal agency in monitoring their body weight but did not possess the same in terms of their understandings of health issues.

Among men and women, 46% of women admitted that they 'Know very little about health issues' while 37% of men admitted the same. Men (40%) were more likely to say 'It depends

on the topic' compared to women (26%). Still, 26% of women admitted that they 'don't care about health issues' compared to men (21%). Considering that women are health information seekers and caregivers, the women in this study have reported either knowing very little about health issues or not caring about health issues. Most respondents of all race groups (44%) admitted that they know very little about health issues like CVD. Among each race group, Indian (44%), White (38%), Black (27%) and Coloured (22%) people admitted that 'It depends on the topic' – either because they have never heard of CVD or did not have knowledge about what it is.

Self-reported knowledge about cardiovascular disease and its risk factors

Many (52%) respondents mentioned that they heard of CVD. Some have heard of the conditions associated with CVD but later expressed in follow-up interviews that they felt uninformed due to the lack of awareness on CVD in South Africa. Some (49%) aged 19–59 heard of CVD yet 47% in the same age group claimed not to understand it. Between both genders, 53% of women and 51% of men reported hearing of CVD. Of the total population, 48% said they did not hear about CVD. They reported not taking cognisance of what it is or have not made an attempt to learn more about it. This study found that, within each race, there was a general awareness of CVD as 52% of the total population have claimed to have heard of CVD. Among each racial group, mostly Black (59%) and Coloured (55.6%) people reported not hearing about CVD while White (89.3%) and Indian (77.8%) reported hearing of CVD.

Additional risk factors associated with CVD were reported. These included obesity, lack of exercise, stress and unhealthy eating habits. Overall, 50% 'know what CVD is' but 48% expressed 'not so well' while 46% said 'No. I would like to learn about CVD' and 4% said 'No. I am not interested in learning about CVD'. When age was cross-tabulated with reported CVD knowledge, it found that in each group, there was an interest in learning about CVD yet many expressed not knowing what it is. An examination of each race group showed that most respondents in the age group 50–59 (65%), 60–69 (58%) and 30–39 (55%) reported knowing what CVD is but expressed that their knowledge about it was not good. Those in the age group 19–29 (46%) had a general idea about CVD with those in the 40–49 age group (39%) reporting the least knowledge about CVD. Those 40–49 (56%), 19–29 (49%) and 30–39 (42%) were also more interested in learning about CVD.

Focusing on gender, the findings show that a slightly higher percentage of women (51%) reported knowing what CVD is compared to men (48%), although both agreed 'not so well'. There was only a slight difference in the interest in learning about CVD where 47% of men and 46% of women showed nearly equal levels of interest in CVD knowledge. Nonetheless, 6% had no interest in learning about CVD compared to women (4%). In each race group, there was interest in wanting to learn about CVD. Most Black (56%), Coloured (42%) and Indian (33%) respondents reported wanting to learn more about CVD compared to White (18%). This is possibly because 79% of Whites reported knowing CVD, although not so well and only 39% of Blacks reported the same. Less than half of the total population (49%) admitted they 'understand the term CVD'. Among each age group, most respondents who reported understanding CVD were in the age group 50–59, 30–39 and 60–75. Most of those who reported no understanding of CVD were 19–29 and 40–49. Others (51%) 'Do not understand the term CVD'. Among men, 51% 'understand the term CVD' but among women, 52% 'do not understand the term CVD'.

In one survey question, respondents were asked to insert what each acronym in the abbreviation "CVD" meant. Many did not fill in the blanks or had inserted the incorrect words. Another question probed into respondents' understanding by asking them to provide a brief description of what they understand by the term "CVD". Some among those who said they understand "CVD" commonly expressed that:

> "*CVD is a disease related to the function of the heart*" (6) or that,

> "*CVD affects the heart, blood vessels and arteries where there is an increase or decrease of blood or oxygen to the heart*" (13)

One respondent went further to clarify how:

> "*CVD falls under the umbrella of a number of heart illnesses that can lead to death if lifestyle changes are not made*" (75)

While another simplified that:

> "*CVD is the inability of the heart to function optimally due to lifestyle habits or pre-existing conditions*" (107)

In general, many admitted that they understand "*it's got something to do with the heart*" (26).

'*Heart disease*' and '*heart attack*' (72%) were the most mentioned CVD conditions which were understood to be lifestyle-related. For instance, "*it's heart diseases caused by the lack of exercise and incorrect diet that has negative effects on the heart and blood vessels*" (22). Also, "*a heart attack due to being fat, having the wrong eating habits which affect the heart and lack of exercise worsens the condition and also cholesterol and high blood pressure*" (63). There was a collective understanding that "*CVD is anybody's disease – it depends on how you eat and the kind of lifestyle you live*" (296). In a few instances, a main point of reference was someone who is suffering from similar conditions or passed away due to CVD. Perhaps due to the lack of knowledge among most respondents, many said that they did not know anyone who passed away from a heart-related condition.

Respondents were familiar with the term 'heart attack'. Although, some described it in general terms as "*some kind of heart problem*" (51) while others provided more detailed explanations saying that:

> *It's when the blood does not circulate properly … it gets blocked like a drain pipe because of fats and oils … in people, this causes a heart attack … my grandfather died from it … there was too much fat in his veins and in the blood. One day he complained his heart is beating funny and then the next day his heart stopped working, shame*" (Sibusiso, 31, Black man)

Seventy-four percent of respondents reported not knowing anyone who passed away from CVD. This either reflects the lack of knowledge of CVD or the lack of knowledge related to one's cause of death in the family or community. Seventy-one percent of those who were unaware of someone passing away due to CVD were aged 19–59. Only 26% in the same age group reported knowing someone who passed away from a heart-related condition such as heart disease or heart attack. Among men, 73% reported not knowing anyone who passed away from a heart-related death and between women, 74% reported the same. Those aged 19–49 reported knowing a family member (60%), a work colleague (20%) or community member (20%) who is currently suffering from a heart-related condition or who has recently had a heart attack.

Gender, rather than age, was related to knowledge and understanding of CVD. Gender roles and social expectations of women being regarded as health information seekers (Oakley, 2015) enlightened why 51% reported knowing what CVD is. Among men and women, most (48%) said that the person or people who passed away from a heart condition suffered a '*heart attack*', '*heart failure*' or '*heart disease*'. '*Faulty tricuspid valve*', '*tachycardia*',

'*congenital heart disease*', '*cardiomyopathy*'[42] and '*cardiovascular obstruction*' due to fat surrounding the heart. A blocked artery or vein and damaged valves were also commonly reported (5%). Some (15%) said '*irregular heartbeats*' (100) or '*heart palpitations*' (24) or '*palpitations due to excessive insulin*' (268). Others mentioned '*Barlow's Syndrome*'[43] (357) and '*Rheumatic heart disease*' (118).

Seventy-seven percent of Indian and 78% of Coloured people reported not knowing someone who passed away from a heart-related death. This finding is an incongruity between the earlier explanations that Indian people are more knowledgeable and aware of CVD because they know someone who passed away from a CVD-related condition. Black (75%) and White (67%) people also said that they do not know anybody who passed away from CVD. Knowing or not knowing anyone who passed away from a heart-related condition did not seem to shape knowledge about CVD. This is reflected in their self-reported knowledge of CVD risk factors.

Over half of the total population (69%) aged 19 and 69 had 'No' knowledge of CVD-related risk factors. Seventy-five percent of 60 to 69 year-olds, 68% of 30 to 39 year-olds, 67% of 40–49 year-olds and 61% of 50 to 59 year-olds reported 'No' knowledge of risk factors for CVD. When the age group was narrowed down, it still found that most (72%) people aged 19–29 reported not knowing CVD-related risk factors. Nevertheless, even though there was a lack of perception of self-reported knowledge of CVD risk factors, the main findings are that respondents did, in fact, understand what factors contribute to their CVD risk. Most respondents (92%) understood that unhealthy eating habits, hereditary, lack of exercise, excess alcohol consumption, smoking, hypertension, cholesterol, stress, and overweight are some of the major lifestyle-related contributors to cardiovascular conditions. Some also reported that family history, age, gender, race and social upbringing play key roles in one's individual risk for CVD.

Seventy-one percent of women reported not knowing about the risk factors related to CVD compared to 65% of men. Although women and men (69%) both reported having a lack of knowledge about CVD-related risk factors further probing revealed that respondents are in fact aware and understand the risk factors for CVD. This was evident in their responses to

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[42] Cardiomyopathy refers to the diseases of the heart muscle, particularly when the heart muscle becomes enlarged, abnormally thick or rigid that results in the inability of the heart to function optimally (Steyn & Fourie 2007).

[43] Barlow's Syndrome is also known as click murmur syndrome which is associated with fatigue and palpitations. It occurs due to agitation, stimulants, exertion and illness.

their understanding of CVD when 49% reported understanding CVD and 50% know what CVD is. Of the 69% who reported 'no' knowledge of CVD risk factors, 51.4% reported insufficient emphasis on CVD in South Africa. Similarly, 17.9% of the 26% who said 'yes' there is enough emphasis reported 'no' knowledge of the risk factors. Knowledge of risk factors was similar within all race groups. There was an overall rudimentary understanding of CVD. A few respondents unpacked the term:

> *"Cardiovascular, means heart or something to do with the heart. Perhaps CVD means that the heart does not function the way it's supposed" (9) … "cardio – is something relating to the heart. Vascular disease – is a disease affecting the vascular system" (31) … "a disease to do with the heart" (148) … "I think it occurs when the heart is not pumping normal and interrupts blood circulation" (297).*

Although many respondents knew that "*it's got something to do with the heart*" (26), they did not fully understand its causes and consequences. More advanced understandings of CVD and its related risk factors entailed descriptions such as:

> *"It's a disease affecting the heart and the supply of oxygen and blood to the heart in order to function properly. It is determined by one's genetics and lifestyles" (116) … "CVD refers to the physiological complications that endanger the heart and reduces blood supplies to the heart. It occurs based on a person's eating and lifestyle behaviour at work and at home and daily life" (126) … "It is basically a disease of a group of disorders of the heart and blood vessels including coronary heart disease where blockages in the arteries can lead to heart attacks and malfunction can lead to failure" (340).*

A few respondents seemed knowledgeable about what CVD is, its risk factors and the consequences. Others described CVD as a condition that affects the heart and blood system and some provided specific conditions related to CVD such as hypertension, diabetes and cholesterol but individual risk perception for CVD were lacking.

Individual perceptions of health

How one perceives their own health is a clue to how they view issues relating to the body. Many respondents mentioned that their health is 'Excellent' (10%), 'Very good' (24%) or 'Good' (43%). Health was understood in terms of physical, emotional, psychological, mental and spiritual well-being. There was a sense of holistic health as respondents provided in-depth understandings of what health means to them subjectively.

Participants expressed the need to have a balance with their mind, body and soul.

For example:

> *"Health is being spiritually, physically, mentally, psychologically, socially well and complete … the overall condition of a person – the mental/physical …" (*Megan, 31) … *"it is the well-being of mind, body and soul"* (Daniel, 28) … *"relating to the body, mind and soul being in balance"* (Sharmla, 45) … *"the well-being of your body and mind"* (Sarah, 32). Put simply, *"health is the state of your body, mental health, and physical health. It's a measurement of your physical state"* (Stacy, 33).

Health was regarded as a state of being; a physical and mental condition or the state of being in an environment or in different circumstances. Clearly, one's psychosocial and holistic health was understood as the balance of physical, mental and spiritual well-being.

Others highlighted that:

> *"Health is the state of being free from physical or psychological disease, illness, or malfunction … health means wellness"* – Tarryn, 26, Coloured

> *"Health is how good or bad your body is … Health refers to the well-being of my body … A feeling of freshness…"* – Sibusiso, 31, Black man

Put simply:

> *Health is when one feels no unbearable pain in his body, has a healthy appetite, can walk without difficulty, is able to hear and understand common communication and is able to perform all physical tasks without difficulty … It's basically to be without illness, pain or physical suffering … to have a body that is fit and able … Health is also not having a chronic or life-threatening illness or controlling it well ... Normal flu or the occasional ache and pain is normal … especially with age.* – Diana, 52

Against these understandings, some (19%) mentioned that their health is 'Fair' or 'Poor' (4%). Participants' placed emphasis on being able to carry out daily chores and duties which demonstrate why they place importance on their functional ability. Ill-health can be explained as disruption to normal functioning where there is a reconstruction of identity (Bury 1982) or a loss of self which is attributable to chronic conditions and pain (Charmaz 1983a). There seemed to be a binary that existed in terms of what is accepted or 'normal' pain and what is

not. This echoes the sociocultural expectations of pain behaviour and illness normality with regard to cultural beliefs about pain threshold and experiences (Helman 2009).

Many have reported that besides a seasonal cold or mild illness once or twice a year, their health is very good. This suggests that health was understood as "*a state of being free of illness or disease, and body maintenance through diet, exercise and medicine when needed*" (Kajal, 35). Of those who perceived their health to be 'excellent, 'very good' or 'good', 40% reported PA. Sixty percent of those who perceived themselves to be in good health do not engage in PA. This describes the relationship between perceived health and low-risk perception for CVD. It implies that participants perceive themselves to be healthier than they are and therefore do not regularly engage in 'good' health behaviours.

Individual health was better perceived among the 19 to 29 year-olds (31%), the 30 to 39 year-olds (27.5%) and the 40 to 49 year-olds (12.25%) which make up over 70% of the total population. Those aged 19–29 had a positive perception of individual health as 75% reported that they think their health is 'Excellent', 'Very good' or 'Good'. Interestingly, the 30–39 age groups had a better perception of their health compared to those in the age group 19–29 because 81% reported their health to be 'excellent', 'very good' or 'good' with 16.2% expressing that their health is 'fair'. Those aged 50–59 still had a positive perception of their health by saying that it is 'fair' (34.78%). As many as 60.83% of the total population said the same about their current health and 83% in the age group 60–69 had a good perception of their health.

Men also had a better perception of their health compared to women with 17.5% expressing that they think their health is 'Excellent' and 7.7% of women saying the same about their own health. Where it differed was 62% of men who reported their health to be 'very good' or 'good' and 68% of women saying the same about their health. Women (24%) expressed more than men (20%) that their health is 'Fair' or 'Poor'.

There was a general sense that Black (42.4%), White (40.48%), Coloured (50%) and Indian (66.7%) people have a 'Good' perception about their individual health. For example, Frikkie (52, White man) exclaimed:

> *I'm healthy! … I don't get ill often – I eat well! … but I don't exercise enough … one shouldn't be embarrassed to talk about whether or not we do. I think people feel like they need to lie so that others, I don't know, respect them more or … sees*

them as superior … but if we don't do it then we don't … it's an individual choice … We all have our own lives to live and we should do it how we please. How we care for our bodies obviously differ but some practices make us kind of fit in; like, guys are more concerned about what others say about how they look, like the boep[44] … and then they want to punish themselves with sit ups 7 days a week to get rid of it. I'm like, "leave my boep alone; I'm happy with mine" … I can, at least, afford beers when it's a luxury to many …

Frikkie perceived himself to be healthy as he does not get ill often. He acknowledged that people are too embarrassed to say they lack PA. PI is considered unacceptable behaviour that is subject to judgement and is given social status. As Frikkie believed, exercise (or the lack thereof) divides people into superior and inferior. It appears that PA is regarded as a form of punishment in order to fit in as a means of controlling one's body. The notion of discipline and punishment as a surveillance mechanism subject to the clinical gaze (Foucault 1979) is insightful in this context. It highlights that the (un)disciplined body, such as having a boep, is considered as something that needs to be fixed or 'punished' in order to conform to societal expectations of bodily control. Frikkie asserts that he is happy with his boep – which, in this context, symbolises a superior status. To him, owning a boep indicates that he can afford luxuries. His boep seemed to be his sense of pride, unlike other men who take pride is their muscular bodies. This is unusual to Bennett and Gough (2012) who found that masculinity and an aesthetic, physical appearance is associated with muscularity and discipline where men in their study desired to get rid of their bellies.

Karl (43, Coloured man) contradicted Frikkie by saying:

My health is excellent! I am overweight but I don't suffer from any illnesses such as high blood pressure, cholesterol or diabetes that are associated with being overweight … I think it's because I am fit.

Karl perceived his health to be "excellent" even though he is overweight. His reasoning was based on the fact that he does not suffer from any health conditions that come with being overweight. He added that he is fit, suggesting that thin does not necessarily mean healthy and overweight does not always mean unhealthy. He further explained:

I am not too big, only a few extra kilograms more than I should be. My BMI[45] is fine for now but I am working towards losing the excess weight. When people hear 'overweight' they imagine a very fat person but there's a difference between

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[44] Boep is an Afrikaans term for beer-belly
[45] Body Mass Index

overweight and obese. I am not obese … I am physically active and I watch my lifestyle habits … This is why I say my health is excellent … if I compare myself to some of my lighter colleagues at work, I'm in a better position … many of them cannot say their health is good as they are suffering from one condition or another …

Karl seemed to have a good understanding of his health and BMI. He compared himself to others in the workplace and perceived his health to be better because he lacks medical conditions.

Like Karl, Mathew (30, White man) had a positive attitude towards being fit. He mentioned that exercise:

… helps vent out your frustration after a long day at work … boxing and running on the treadmill makes me feel better … I push myself to sweat it out as if each sweat droplet is the stress being released … cleaning me from inside out (laughs) *… it's like I'm punching the cause of my stress … I feel a great sense of accomplishment … exercising is definitely something every stressed person should try … it certainly helped me manage and live a healthier and happier life.*

Mathew metaphorically described sweating as a cathartic process as he releases his stress into the boxing bag which makes him feel a sense of achievement in stress management. He believes exercise to be one of the most promising stress relievers and attests to it being the cause of his happiness over the years.

Jessica (37, Coloured woman) referred to her physical health as not ideal:

I'm average. I do think though that I have a very good immune system; I don't think I've really suffered from the flu before unless you count a minor cold that doesn't last more than 7 days … physically I can be healthier.

Jessica perceived her overall health to be average and her immune system to be very good. Like Karl, Jessica also understood her health in terms of physicality. Both propose that good health is the absence of medical conditions and sickness.

Siphelele too (48, Black man) had a similar understanding:

I think my health for my age is exceptionally good. I am rarely ill. My OTC meds a year amount to a few hundred rands … I am happy to work in a Pharmacy and get cheaper meds. Medical doctors are too expensive … Plus, I don't have medical aid so OTC is my best option.

Siphelele highlighted how age is a determining factor of health. From a psychographic point of view, health was seen as a commodity; he buys good health from OTC at the Pharmacy he works at. Inexpensiveness and easy accessibility were reasoned in choosing to self-medicate rather than going to a medical doctor. He confirmed that he does not have medical aid and cannot afford allopathic treatments. Siphelele regards health as the absence of illness and admits to self-medicating. This suggests that he has agency over his health.

Raj (55, Indian man) expressed:

> *My health is good … I don't have a cholesterol problem … and have no chronic illnesses. I believe that my emotional and mental states are in good condition too … although I can get more in shape and be more active.*

Raj added the dimension of emotional and mental health in his understanding of health. He admitted that his physical health can be improved. Daniel (28, Coloured man) confessed the same about his physical health and went a step further to describe his need to adopt healthier eating habits:

> *I describe my health as average and there's definitely room for improvement in many ways – especially my physical health … exercising and eating healthier options like more greens, beans, fish, ostrich, lean chicken and more scrumptious soups would be beneficial for me in the long-term … my problem is that I live alone … I don't cook very healthy meals … take-away are a more convenient option for me.*

Living arrangement is a barrier to him adopting healthier eating habits as he lived alone and reported having 'take-away' meals as it is a more convenient option.

In addition to Raj, Gerhard (34, Coloured man) added the dimensions of psychological and spiritual health:

> *I am generally okay … living with managed hypertension with an occasional attack of gout or arthritis … Psychologically I am sick, physically I am weak, spiritually not satisfied. Overall, my health is sadness … I am frustrated … always in pain and I can't seem to get away from it … there's nothing I can do … I'm hopeless … even the doctors aren't very helpful … the pain continues.*

Gerhard reported having chronic conditions which later appeared to impact his perception of his health. He seemed unhappy and unsatisfied about his health in general. His experience of pain added to his general frustration and lack of control over his body. He felt hopeless about

improving his conditions as medical doctors seemed to have disappointed him in managing his pain. This experience shaped his perception of the lack of personal agency in pain management. This may well impact his individual perceptions of CVD risk.

Individual perceptions of cardiovascular disease risk

Those aged 19 to 69 had a moderate risk perception for CVD (20%) and reported 'yes' they think they 'may be' at risk for CVD. Some (43.5%) said 'No' and 36.5% said they 'have not thought about it'. Those aged 50 to 59 and 60 to 69 said 'no' they are not at risk. These percentages reveal the least risk perception for CVD compared to those aged 40 to 49 and 30 to 39 which is worrying when considered alongside the life course perspective discussed earlier as age brings with it chronic conditions. Forty-one percent of those aged 19–29 'have not thought about it' while those between 30 to 39 (34%), 40 to 49 (36%) and 50 to 59 (30%) have also not considered their risk. The fact that many have not considered their risk for CVD indicated that there is a low individual risk perception for CVD. This is a cause for concern in a context of a rising prevalence of CVD in South Africa that is prematurely affecting younger adults (Day *et al*. 2014).

Although CVD is not discriminatory, the literature shows that Black people, especially young Black women, are unequally affected for CVD such as hypertension (Sliwa, Ojji, Bachelier *et al*. 2014). Some (36%) of the 74% of those who reported insufficient emphasis of CVD in South Africa thought 'Black' people are most at risk for CVD while 20% thought 'all race groups'. A similar pattern followed when 10% of the 26% who reported insufficient emphasis on CVD in South Africa believed 'Black' people are most at-risk and 6% saying 'all race groups'.

As many as 81.5% of women and 75.7% of men have reported 'no' risk perception for CVD or have not thought about their risk. In South Africa, women are more affected by diseases of the heart and blood system – a leading cause of death (My News Room 2015). Given that most respondents in this study were women and most of them did not perceive their risk for CVD implies that CVD-related symptoms and conditions are often overlooked. Since most respondents in the study are Black women, it also explains the rise in CVD trends that are unevenly affecting Black African women (Micklesfield *et al*. 2013). Many have not considered their CVD risk as it has probably not been a health priority or because there is a

lack of education, awareness and perceived knowledge about the subject in South Africa – this issue is discussed later.

The fact that 18.5% of women reported individual risk perception for developing a CVD-related condition and 24.3% of men reported the same implies that there was a low individual risk perception for developing CVD among men and women in this study. Surka *et al.* (2015) recently conducted a series of focus-group discussions in the Western Cape and found that respondents were unable to associate a higher CVD risk score with a higher likelihood of developing CVD. This was because they did not know how to interpret their risk scores due to the lack of perceived susceptibility of CVD conditions.

Forty-three percent of respondents indicated 'no' risk perceptions for CVD while others (36.5%) 'haven't thought about it'. Behavioural beliefs and outcome evaluations of unhealthy behaviours were disregarded in most instances which revealed low intentions to perform better health behaviours due to the constraints discussed earlier in this thesis. Some (14%) of the 49% who 'understand the term CVD' reported individual risk perception for CVD while 45% of the 51% who 'do not understand the term' reported 'no' risk perception for CVD or having not thought about it. This can lead to the lack of risk perception for CVD and perceived susceptibility for developing a CVD-related condition in later years. In order to understand individual risk perception, the study further explored how workers perceive the CVD risk of different race groups which will hopefully shed light into whether or not they perceive themselves to be at risk.

Perceived race groups at risk for cardiovascular disease

There was a general perception among the participants that 'Black' people (45%) are at a greater risk for CVD compared to 'White' (12%), 'Coloured' (10%) and 'Indian' (7%). Others (26%) thought 'all race groups'. It was those aged 19–69 who perceived 'Black' people and 'all race groups' as being susceptible to CVD compared to those aged 70–75 who said that 'White' people and 'all race groups' are at risk. On the one hand, women (85.5%) perceived 'Black' people, 'All race groups' and 'White' people at a greater risk for heart-related conditions. On the other hand, men (81%) reported that 'Black' people, 'Coloured' people and 'all race groups' are at risk. This demonstrates the gendered dynamics embedded in perceived risk for CVD in terms of race.

Cross-tabulating race with perceptions of which race group respondents think are most at-risk for CVD, revealed that Black (82%) and White (75%) people thought that 'Black', 'all race groups' and 'White' people are at a greater risk. Coloured (51%) and Indian (32%) considered 'Black', 'all race groups' and 'Coloured' people most at risk. Indian and Coloured people were least perceived as being at risk for CVD but the perception still existed, as reported by the following respondents:

> "*Indians mostly consume a diet rich in starch and oil with high carbohydrates*" (135) … "*they tend to eat high fat foods and spicy foods and generally lack exercise*" (61). "*Indians and Coloureds eat the wrong foods and are at risk due to genetics and are most stressed*" (360). Besides, "*Indians and Coloureds are more at risk due to genetics, poor diet, overweight, sedentary lifestyle and a higher risk of hypertension which aggravates their risk for heart conditions*" (359).

There was a common perception among Black people that White people are more educated and aware of health issues like CVD and its related conditions and that they can afford better healthcare because of their historical background. As reflected in the following quotes:

> "*White people had better chances in life. They were the most privileged and will forever be. Their histories in this country determine how well they live now – that's why they have the best of everything; from work to better health*" (62) … "*When White people get sick, they find out, unlike us Blacks who are ignorant. Whites say it's a critical illness*" (42) … "*White people can afford to go check what's wrong with them*" (125) … "*Black people push time and carry on with it until it can be serious. We can only go to the public hospitals but White people can go to private ones and get better care for themselves and the family*" (82) … "*White people know too much about health compared to Black people. We are careless with our bodies and uneducated; we can blame apartheid for that, today we are suffering*" (163).

Other respondents reported that Black people are at a greater risk for CVD and related conditions because:

> "*Black people consume a poor diet and do not exercise*" (7) … "*they are often uneducated and unknowledgeable about what conditions they have and where they can get help*" (9) … "*they lack information due to poverty and eat what they have or can afford but those who can afford healthier meals are ignorant*" (48) … "*Black people are the ones who eat a lot of junk, oily and fatty food and do not think about what diseases affect them*" (69) … "*they lack exercise and are mostly overweight*" (18) … "*Most Black people don't go for check-ups and don't eat healthy food*" (201).

In short, there was a perception that:

> *"Black people eat anything, are not informed about health issues and almost never go for check-ups unless they are ill and notice it"* (153) … *"Black people are affected most due to the change in their historical diet to modern-day diet"* (91).

These narratives elucidate and summarise the racial perceptions of CVD risk and its associated factors in a context where historically rooted perspectives continue to exist in contemporary South Africa.

Some respondents said that White people are more at risk for CVD since:

> *"White people consume too much alcohol, smoke a lot and eat red meat often"* (22) … *"enjoy energy drinks and strong coffee and eat a lot of junk food"* (241) … *"Whites are overweight and many lack willingness to change their bad eating habits or better manage their stress and anger"* (268). *"Most White people are rich and can eat out in expensive restaurants and hotels"* (362). Plus, *"they eat too much refined and processed foods with not enough fibre and get fat fat fat"* (391). *"I see mostly it's the White people buying medication for heart problems like Disprin cardio care tablets"* (28). This is because *"White people eat more red meat, biltong and fatty foods"* (63). Also, *"their outgoing lifestyle encourages unhealthy eating habits coupled with stress and lack of control over alcohol: TNT in a crate, petrol in their hands!"* (180). *"It seems to be more prevalent in White people due to familial hyperlipidaemia"* (82).

These accounts allude to lifestyle diseases being understood as the self-sabotage of one's health. Lifestyle diseases like CVD were metaphorically understood by one survey respondent in terms of explosives and petrol. To contextualise this with what Susan Sontag (1989) spoke about in her notion of illness as a metaphor, the use of military metaphors – where the individual's body is treated like a battleground – causes 'biographical disruption' (Bury 1982). It appears that people are at war with themselves for lacking control of their body and engaging in unhealthy lifestyle behaviours. It was understood that genetics plays a role in ones susceptibility of CVD. One respondent reported that familial hyperlipidaemia is prominent among White people – indicating that CVD is a genetically inherited disorder causing hypercholesterolemia and high levels of triglycerides in the blood (Broekhuizen, van Poppel, Kopper *et al.* 2010).

White people were perceived to be in a better socio-economic status that can afford them access to unhealthy behaviours such as take-away meals, restaurants and hotels that contribute

to weight gain. From a consumerism perspective, this suggests that White people are the primary buyers of ill-health, fat and disease due to their higher socio-economic status. This, again, links with the notion of the inverse care law (Tudor Hart 1971). A study by Mhlongo and Daniels (2013) showed that wealthier families spend more money on restaurant meals while those in a lower socio-economic status, such as Black South Africans, budget for their basic necessities. This was restated by one respondent who recognised that:

> *CVD is a global issue but as far as South Africa goes I think personal income plays a big part in what healthy choices can be made. If I had a more disposable income I believe it would be easier to live a much healthier lifestyle. I would imagine that living in poverty must make healthy living a thousand fold more difficult, and I'm White!* (105)

The issue of affording a healthier lifestyle or buying good health suggests that a higher socio-economic status does not mean healthier living or reduced individual risk for CVD. A cross-tabulation of race with the understandings of the term CVD revealed that Coloured (61%) and Black (54%) people lacked understanding compared to White and Indian people. White (60%) and Indian (56%) people reported the most knowledge and understanding of CVD.

Exposure to the disease in their social and familial realm or experiential insight into the topic through knowing someone who passed away due to CVD shapes their risk perception for CVD. Respondents did not consider race to be the sole determining factor in one's CVD risk. The complexity of CVD was expressed in their written accounts:

> *"It depends on whether or not people take care of their health and eat healthy food"* (4) … *"everyone seems to be living an unhealthy lifestyle and experiencing stress"* (388) ... *"eating more fast foods, snacks, unhealthy foods and drinking alcohol"* (65) … *"I don't think this problem is race specific. It is more a matter of living a healthy lifestyle or being genetically susceptible to it"* (66) … *"Like HIV, everyone is at risk. It does not choose you by skin colour, age and gender"* (94) … *"poor and unfit lifestyles and diets are to blame"* (107) … *"Everyone in South Africa is at risk as most of us are overweight and eat take-away often and don't exercise"* (140) … *"No one is immune to bad eating habits or to heart problems"* (147) … *"To my knowledge, heart-related diseases as with cancer can affect any race"* (310) … *"modern lifestyles, genetics and diets have changed across all race groups and puts us all at risk"* (342). *"Every human has a heart. Sickness and disease know no colour, therefore having this disease is possible for anyone"* (230) … *"more education about CVDs need to be the focus in South Africa as*

people are dying not knowing right behaviours from wrong" (115) … "*we are unaware of the disease because there's no education based on it*" (23).

It was understood that CVD affects all social groups. Respondents articulated that junk food, take-aways and poor food behaviours contribute to ill-health and obesity in South Africa. They emphasised that more awareness and health education on CVD in South Africa will help individuals make informed decisions regarding their heart health. But first, understanding self-reported CVD conditions will help set the milieu to how the CVD situation in South Africa is contextualised.

Self-reported cardiovascular disease conditions

Variable		Frequency	Percent
HEART CONDITION	Yes	34	8.5
(*N*=398)	No	364	91.5
HYPERTENSION	Yes	71	17.75
(*N*=400)	No	80	20.00
	Do not know	249	62.25
DIABETES	Yes	34	8.5
(*N*=399)	No	93	23.3
	Do not know	272	68.2
CHOLESTEROL	Yes	44	11.0
(*N*=399)	No	63	15.8
	Do not know	292	73.2
WEIGHT GAIN	Yes	40	10.05
(*N*=398)	No	292	73.37
	Sometimes	66	16.58
WEIGHT LOSS	Yes	26	6.5
(*N*=399)	No	332	83.2
	Sometimes	41	10.3
BLOOD CIRCULATION PROBLEMS	Yes	36	9.02
	No	319	79.95
(*N*=399)	Sometimes	44	11.03
SHORTNESS OF BREATH	Yes	32	8.0
(*N*=398)	No	283	71.1
	Sometimes	83	20.9
IRREGULAR HEART BEAT	Yes	37	9.3
(*N*=399)	No	304	76.2
	Sometimes	58	14.5
	TOTAL		**100.00**

Table 4 Self-reported heart conditions and associated chronic illnesses

Cardiovascular disease and associated illnesses

Not knowing or not suffering from a heart-related condition was reported by the majority of respondents (91.5%). Of the 8.5% who reported knowing someone (or themselves) who suffered from a heart-related condition or people who are currently suffering, common

answers were hypertension, type II diabetes, cholesterol, weight gain or weight loss due to unhealthy eating habits. Other conditions included heart disease, heart attacks and heart failure with reported symptoms such as blood circulation problems, angina and irregular heartbeats or arrhythmia[46]. These conditions were reported by some of those (5.5%) who had suffered a major heart-related condition in the past including conditions like '*narrowing of the heart valve*' (256) and '*heart valve slips*' (257).

The most reported heart-related conditions found in the study are used in this thesis drawing on quotes to set the seriousness of CVD in South Africa in perspective. Relatedness, such as knowing someone with the condition, and perceptions or experiences of certain conditions set the platform for the discussion that follows.

Hypertension, diabetes and cholesterol

As many as 62.25% reported that they 'Do not know' if they have hypertension and 17.25% were certain they have been diagnosed with hypertension by a medical doctor, only some of whom are on chronic medication. Considering that 52.5% do not seek medical assistance, there is little wonder why so many do not know if they have hypertension as illustrated by Bongani (29, Black man):

> *My grandmother is on chronic meds for high blood pressure … it's not easy for her to keep track of her medicine times and she sometimes misses her dosage of the day … that's her greatest challenge. I sometimes go with her to the clinic and have had myself checked before and I'm clear … It's my parents I am worried about … we don't eat well … all my grandparents had it … we are at risk, I think it's important to get it checked out … but they haven't … because of the burden that goes with it.*

He seemed to have a positive attitude towards seeking hypertension screening but articulated that his parents lack perceived norms and personal agency in seeking medical assistance. He understood that genetics and eating healthily influence ones risk of hypertension but accepted that hypertension is tainted as a burden in society. This burden entailed lifestyle modifications that hypertension demands better management of the condition. Knowing someone who is suffering from the condition was the reason why he was concerned about his own health and that of his parents. This finding links to Williams' (1984) teleological

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[46] Arrhythmia is a heart-related condition in which the heart beats irregularly, and at a slower pace.

understanding of chronic illness. Bongani situated his health concerns within past experiences to narratively construct the unfolding of the relationship between the body, self and society.

As indicated in the literature review, a study by Peltzer and Phaswana-Mafuya (2013) showed that the most prevalent population group at risk for hypertension was Black South Africans (74%) with over half (49.9%) aged between 50 and 59 years susceptible to weight issues. This sentiment is echoed by others, for example: '*Only older people suffer from high blood pressure, I'm good as I'm far from my 50s!*' (320) or, '*It sounds like something my grandparents would have*' (158). One particular insight was offered when someone said '*Hyper = agitated, tension = stress. That's the way I understand it. I'm neither so I don't feel the need to go have myself checked*' (302).

These responses provide nuanced insight into the hypertension situation in South Africa. Hypertension screening was not prioritised by the participants in this study because of the relatively young age with a mean of 34. This poses a challenge for the post-2015 global development agenda (Alleyne, Binagwaho, Haines *et al*. 2013) as NCDs are making its mark among the younger population in South Africa. As shown in a study by Day *et al*. (2014) who drew on National household surveys to argue that hypertension prevalence has risen in South Africa since 1998 and increased by over 40% in adults older than 25 years in 2010.

Slightly more alarming is that 68.2% of respondents admitted they 'do not know' if they are diabetic. Shahid (35, Indian man), for example, acknowledged the outcomes of not knowing if he is diabetic but lacked perceived behavioural beliefs about lifestyle modifications that come with having diabetes:

> *I am afraid of having that test … those finger pricks are scary and very painful … I hate seeing blood … not knowing if I am diabetic is worrisome … not knowing could be fatal … but I've seen people suffer from it … their eating habits and everything changes … I don't want that.*

Unlike Shahid, Xolisa detailed how she felt when she was diagnosed with diabetes and the measures she took to understand her condition:

> *At first, I felt lost … tests were run and I was asked lots of questions which were all placed on record … the doctor never explained what the condition meant … how I got it and what I should do after the diagnosis … which made it difficult for me to understand … I'm still not that clued up ... I read more about it online … at least I now know how to better manage my health and live a healthier lifestyle.*

Xolisa seemed more empowered in decision-making and seeking health information online compared to Shahid. Her active interest in health demonstrated personal agency in controlling her condition through a change in attitudes and behaviour.

It can be suggested that the lack of knowledge about these conditions, in general, together with the lack of autonomy to make heart-healthy decisions limits individuals' motivation for lifestyle modification and self-care. A similar finding by Mshunqane *et al.* (2012) revealed that patients lack knowledge on the role of lifestyle modification in preventing diabetes-related health problems and often doubt the chronic nature of the disease. This is cause for concern in the context of a rising prevalence of CVD in South Africa. The highest percentage of respondents, 73.2%, acknowledged that they 'Do not know' if they have higher than normal cholesterol in the blood, citing various excuses for not taking the necessary steps to find out.

Cardiovascular disease-related behavioural beliefs

It emerged from the findings that the participants associated heart-related conditions with family history, stress and lifestyle choices. Sizwe (34, Black man) alleged that most Black people say that they do not know someone who passed away due to CVD or do not acknowledge the cause of death in the community.

For example, he supposed that the community members will say:

> *… They lived an unhealthy lifestyle or shame; it's in their family. I would personally look at their lifestyle and eating habits and weight. Are they a smoker? Did they exercise? That sort of thing … us Black people don't look at things like this, though, especially the older generation … they would say something primitive and blame it on some external force … thankfully I'm more open-minded than that … I mean, we hear of Black people dying of heart problems but let's be honest, how many people in that community actually see it as a medical condition?*

To this rather unfavourable account of Black people, he added:

> *… people think they are invincible as it's a 'White person's disease' … Black people are in denial, I can't say I'm being racist 'cos I myself am a Black man … I'm telling the truth … most Black people can't admit it … again, it's a generation thing … us younger people are more aware of these sorts of issues*

> *'cos we are realistic and we are more informed through social media, TV and that kind of thing … dying from a heart condition is accepted compared to HIV/AIDS … although, the transmission of HIV/AIDS differs greatly compared to one's risk of a heart condition.*

There are some important reflections in Sizwe's account on the ways in which Black people understand CVD in South Africa. He correctly pointed out that CVD is often associated with family history, lifestyle, eating habits, current weight, whether or not the person is a smoker and if they engaged in PA on a regular basis. He did not mention race as a factor for CVD risk or susceptibility but he did allude to race being an issue in terms of CVD knowledge, awareness and understanding. Age was an indicator of how one considers their chances of CVD in that, older generations were perceived to be more 'primitive' in their thinking compared to younger people. Bewitchment, as Sizwe later explained, is the reason why CVD is understood as a form of mimicking of the heart due to spirits rather than an actual medical condition.

Sizwe pointed out that CVD is considered a 'White person's disease'. This is important in the context of NCDs because literature in Africa has similar connotations of, for example, HIV/AIDS being regarded as a 'Black person's disease' (Strebel, Crawford, Shefer *et al*. 2013; van der Riet & Nicholson 2014). He added that Black people are in denial and are ignorant of CVD being understood as a medical condition. He suggested that cultural beliefs are a generational issue. Age stratification theory can help understand what Sizwe alludes to in his narrative. While he notes that older people lack the relevant knowledge regarding CVD, he claimed that younger people are more influenced by social media and TV which helps raise awareness of CVD, unlike among older people. He ends by stating that death due to a heart-related condition is more accepted among the Black community, even among the older generation, compared to HIV/AIDS due to the stigma associated with the latter.

Additional ideas come to light in Kajal's (35, Indian woman) narrative:

> *… there's actually no stigma around dying from a heart-related condition … we would say it's a pity and send our condolences to the family like we would if someone passed away in an accident … or we'll say that that person was stressed or overweight and lived an unhealthy lifestyle … There's lots of heart-related deaths in the Indian communities … I don't know if it's genetics or an unhealthy way of living … or both? Indians seem to be adversely affected … in the last 3 weeks I've heard of 10 people passing away from a heart attack … it's crazy! … 6 of the 10 were Indian … 2 of the 6 were family members … the others were*

family friends … Everyone says it's because Indian people are inactive … obese … eat too much of salt and cook too many oily foods … it's always in the POST[47] … I think there's an increase of heart-related deaths due to the lack of education on the topic … I don't necessarily think it's a race thing … anyone can die from it … like AIDS … but the ways in which they are affected is obviously different.

Kajal remarked that there is no stigma attached to heart-related deaths. Like Sizwe's articulation of shame, she noted that one would feel pity for the family who lost a loved one similar to when someone passes away in an accident. She added that there will be judgement in terms of how the person lived their life such as stress, overweight and an unhealthy lifestyle. Kajal is aware that there are lots of heart-related deaths in the Indian communities and was unsure of whether genetics or an unhealthy way of living is partially or fully to blame. She pointed out that Indians are negatively affected as she has heard of many Indians passing away due to a heart condition. This reflects the social reality in which she lives since lifestyle behaviours like PI, obesity, too much salt added to meals and oil are blamed for heart-related deaths among Indians.

It seems that the print media has a role to play in spreading informed messages about CVD among the Indian community – although not enough. As Kajal mentioned, the POST prints information relating to CVD to target the Indian community but she believes that there is a lack of information on the topic. Race was not essentially to blame because everyone is at risk for a heart-related disease depending on their lifestyle choices. She, like Sizwe, compares CVD to HIV/AIDS but both acknowledge that, although comparable, the extent of risk differs.

Similarly, Brenda (54, Coloured woman) reasoned that:

Dying from a heart-related condition would be judged as distasteful … people in the community will feel sympathy and imagine the person to be overweight and greedy if they haven't seen them before but heard of their reason for death … people are like that where I live – they misjudge and start gossip and shame people who are a few KGs[48] too many … this is why I keep myself nice because they'll start with me if I don't be careful … people have eyes, you know … they can see everything … nothing misses their eyes … that's why I don't want to get big … even after death, the poor dead person is the talk of the town …

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[47] The POST is a newspaper aimed particularly at the Indian community.
[48] Kilograms

People in Brenda's community sympathise and misjudge someone after finding out the cause of death. Fat, in this context, is also subject to gossip and this is why she avoids gaining weight. This is positive reinforcement as Brenda watches her weight in fear of what people in her community will say. She added that death is laden with social implications evident in gossip and misjudgement after death.

Like Kajal, Thandi (28, Black woman) also mentioned that there is no stigma attached to an unhealthy person but identified fat as a source of stigma, similar to Brenda. Thandi described the body image of an extremely thin person:

> *They simply say that the person must have been ill or very old … there's no real stigma attached to an unhealthy person … but there is a stigma attached to a fat person … or an extremely thin person … We can't please everyone in society … What's funny is that when a Black woman has all the 'assets' men stop and stare but if she's big and fat without any real shape then they make jokes about her … I think I'm kind of medium … but I wouldn't want to get any bigger or any smaller … as long as I am able to fit into my clothes, especially my jeans, I'm happy … Plus, I have to manage my weight as I don't want to get all sorts of diseases that come with being big.*

She accepted that society is judgemental. She gave an example to say that voluptuous Black women, as opposed to fat women, are admired by men. Body shape and body size is appreciated by the opposite sex as reflected in the literature (Aghekyan, Ulrich & Connell 2012). Thandi then expressed happiness with her current weight as a Black woman, adding that she does not want to gain or lose weight. Her reasoning is that fat brings with it diseases which she wants to avoid. 'Big' in this context was understood as a larger body size. Brenda and Thandi both expressed similar notions regarding avoidance of fat but used the word 'big' instead of fat. It seems as if 'big' is a euphemism for fat, as in, fat is laden with sensitivity compared to big.

Jabulani (39, Black man) too, talked about 'big' rather than fat. He also says that death due to a heart condition is subject to judgement and denial as discussed earlier. His account is that:

> *People will say that the person lived an unhealthy lifestyle ... it is often a big deal but no one wants to talk openly about it … because, in my society, heart disease is often seen as a White person's disease … if one of us gets it, they won't seek medical help for it because they'll fear they'll be seen as changing their beliefs … society brings across the idea that people who die due to heart disease were living an unhealthy, stressful lifestyle with little or no exercise, which is not necessarily*

true at all … heart disease is basically non-existent in our books … if you even think of explaining that you have a lifestyle condition like diabetes or something like cholesterol … people will judge you for not going to your own traditional doctor who, they believe, can cure everything …

Similar to Sizwe, Jabulani mentioned that heart disease is considered a White person's disease. There seems to be a racialised and binary identity attached to lifestyle diseases. Again, like Sizwe, Jabulani noted that Black people do not seek medical assistance for the condition as they fear biomedicine will be regarded superior compared to other forms of healing to change traditional beliefs into modern beliefs. He further suggested that society judges people who die due to a heart condition as living unhealthy, stressful and sedentary lifestyles. He insisted that Black people do not believe in heart disease. Even if they did acknowledge that their symptoms are lifestyle-related such as hypertension, diabetes and cholesterol they fear the judgement of having faith in allopathic medicine rather than traditional forms of healing.

According to Jabulani, people in his community believe that traditional doctors can cure any disease or condition, implying that the dominant biomedical model is overlooked as a form of healing in favour of traditional healing. This notion is linked to the understanding of heart conditions as a 'White person's disease' in need of allopathic treatment – which will be discussed in-depth later in the discussion on help-seeking behaviour in the South African context.

Blending in with what Sizwe mentioned about family history, Leroy (26, Coloured man) gave a personal account of the experiences his family has had with CVD:

Their initial reaction was "oh shame!" … then they start analysing who else related to that person has passed away in a similar way … I know because it happened last year … my dad's younger brother passed away of a heart attack, neh[49] … and 3 years before he passed away, dad's mother passed away also from a heart attack … but she used to drink and smoke a lot and eat her favourite chips and salty fish … we call it bokkoms … dad's brother was one of the healthiest people I knew … but because my grandmother passed away with the same condition, people started saying things like "ncaaw[50], it's such as pity … he died too young" … ya, he was still very young but, only 42 years …

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[49] Neh is a word often used to ensure understanding of what is said.
[50] Ncaaw is an expression of shame or pity.

Leroy identified a central aspect of lifestyle behaviours and the interplay of genetics in heart-related conditions. He recalls how his family members and the community reacted to the death of his uncle who lived a healthier lifestyle compared to his grandmother. Yet, people pitied his death because he died from a heart-related condition and at a younger age. Leroy then went on to explain how his grandmother was often regarded as 'deserving' of her death because:

> *Eish! But she didn't care for herself … people reckon she deserved it because she was warned and never bothered … she was old so that made it okay for her passing … it's weird how people can say things like that … it doesn't matter what age and how that person died … death is never a good thing … who decides what's the 'right' way of dying and what's not? It's people …*

Similar themes are evident in Mbali's (25, Black woman) narrative with regard to the understanding of her grandmother's death:

> *She was unfortunate because she suffered from heart disease and died because of excess fat blocked in the arteries of the heart … There's a stigma that fat people die of heart disease … They say shame, they feel pity … but heart disease is a sudden death and is a shock to everyone … But they don't take precautionary measures; eat wrong, not exercise enough … but I think it is better received compared to other diseases like TB or AIDS, and mainly, in my opinion, heart disease is considered a health disorder … like people do not have control over what they eat or how much they eat …*

Her grandmother suffered from heart disease but appears to have passed away due to a blockage of the arteries. She alluded to the weight of her grandmother and justified that there is a stigma attached to fat people. Shame and pity, as discussed earlier, was associated with death due to a heart-related condition. A feeling of shock was expressed as if her grandmother's death was unexpected among the family and in the community. She added that death due to heart conditions is better received compared to TB or HIV/AIDS. This suggests that there is a lesser stigma attached to classic lifestyle diseases. Indeed, the complexity of the stigma associated with HIV/AIDS is beyond the scope of this study. The fact that it came to light in this study in comparison to CVDs is an interesting phenomenon that requires further research in future studies.

Mbali seems to understand that lifestyle diseases cause a disorder in one's health and attributes it to one's eating habits. In this context, 'order' of the body, relates to being able to control one's health behaviours and help-seeking behaviours to achieve a sense of agency and

control. 'Disorder' is understood as a consequence of negative lifestyle choices that lead to illnesses, sicknesses or chronic diseases (Lupton 1994).

Mbali's view regarding the stigma surrounding HIV/AIDS compared to NCDs is reflected in Khensani's (27, Black woman) response:

> *Society provides the impression that persons dying from HIV/AIDS are a selected group of low-class individuals, who are living below their means and not financially capable of affording the necessary medical assistance … same can go for people dying from obesity, heart disease and the like … but people suffering these conditions are much wealthier, I assume … Black people are judgemental and in denial … When you go down in townships, bad sayings like "they deserve it" are still said when someone dies because of AIDS … Many people have moved passed the stigma. Many people say "It's sad that they did not go on treatment sooner; you can live a normal life these days" … even though "they were sleeping around" … when you suffer from cholesterol or diabetes or die from a heart attack then they say that people were greedy or 'bad' or 'made bad choices'. The view is unfairly negative in both instances …*

Khensani elaborated on lived experience to suggest that there is an understanding of stigma surrounding HIV/AIDS whereas passing away from a heart-related condition was more related to shame, guilt and lack of bodily control. The seriousness of a heart-related condition appears to be associated with that of HIV/AIDS – considered a disease worth avoiding. HIV/AIDS is associated with people of a lower socio-economic status in society whereas NCDs are understood as diseases of the wealthy. What is clear is that according to Black participants in this study, people are still judgemental of those who are suffering from or have passed away due to HIV/AIDS. An important point raised is how HIV/AIDS is now being understood as a manageable chronic disease linked to living a 'normal' life as attested in the literature (Gilbert & Walker 2009). Of interest is Khensani's assertion that HIV/AIDS is linked to sexual promiscuity and NCDs to greed but both diseases are subject to negative judgment and blame in society.

Interview participants acknowledge that these two diseases; HIV/AIDS and CVDs are very different in that one is transmitted sexually while the other is the result of genetics, leading a poor lifestyle and making unhealthy food choices. Unlike HIV/AIDS that is often stigmatised as a disease for sexually irresponsible people, CVD is understood as a disease for those who lack control over their bodies. Fat people, for example, are then shamed and misjudged as not

having self-efficacy or autonomy to make informed choices relating to their health and body (Eli & Ulijaszek 2014). This was reflected in Kajal's (35, Indian woman) view that:

> *Indian communities are growing wider around the waist … being fat is more accepted … that's the sad truth … I personally think we Indians are too lazy to watch what we eat or exercise … everything becomes an excuse … we try to lose weight for a few days and when we aren't successful we end up packing on the kilos … for some of us who care about our bodies, it's like we aren't disciplined enough to reach our health goals … I'm an example of this … I'm not a very strong willed person … it's like I know what is right and wrong but I still find myself eating all the wrong things … the temptation for guilty pleasures always gets the better of us … we end up regretting it, because we did not control our temptation … suffering is a part of the process …*

An attempt to contextualise this is present in an answer given by Fiona (46, White woman) who said:

> *Individuals have themselves to blame for heart problems … like HIV, it can also be a manageable disease … lifestyle diseases must be combated through proper diet, exercise and prescribed medication … it IS after all just that, a 'lifestyle disease' – that means, if you change your lifestyle you can live better … but most of us are ignorant … that's why we suffer.*

Fiona reiterated what others mentioned earlier regarding CVD and its comparison with HIV/AIDS but went a step further by stating that, like HIV, heart-related conditions are manageable and can be improved through lifestyle changes such as healthier eating habits, PA and medication. Moreover, since it is a lifestyle disease, it can be alleviated through lifestyle changes. Fiona places emphasis on the individual responsibility for ill-health by blaming the victim. There seems to be a lack of perception regarding the seriousness of CVD, which is problematic considering the rise of NCDs in South Africa.

The commonality in Kajal and Fiona's narratives expose that the lack of strong willpower for adopting better health behaviours and ignorance towards individual health are driving forces to CVD-related conditions. The lack of agency and autonomy in heart-healthy decision-making seems to be spurring the NCD epidemic, particularly because the seriousness of CVDs is often not considered and risk perception is lacking.

Stress and CVD

Globally, the outcomes of chronic conditions are mostly attributed to stress which is one of the main contributors to alcoholism, obesity, depression, anxiety and cigarette use that lead to adverse health (Gholizadeh, DiGiacomo, Salamonson *et al*. 2011). This study delved into perceived stress among the study population to gain a better insight into how working adults experience and manage stress and how feelings of stress shape their ideas about individual health and health behaviours. This is an important issue in the South African context where stress has led to an increase in alcohol consumption (Watt, Eaton, Choi *et al*. 2014) and cigarette smoking (South African Depression & Anxiety Group 2016).

Variable		Frequency	Percent
STRESS (*N*=400)	Very often	105	26.25
	Sometimes	265	66.25
	Not at all	10	2.50
	I prefer not to say	20	5.00
CIGARETTE SMOKING (*N*=400)	Yes	85	21.25
	No	315	78.75
TRIED TO QUIT SMOKING (*N*=400)	Yes. I was successful	20	5.00
	Yes. I failed to quit	69	17.25
	No! I will never quit	6	1.50
	I never considered quitting	10	2.50
	I do not smoke	295	73.75
ALCOHOL CONSUMPTION (*N*=400)	Yes	74	18.50
	No	195	48.75
	Sometimes	131	32.75
MINDFUL EATING (*N*=400)	Yes. Always	76	19.0
	Yes. Most of the time	98	24.5
	Sometimes. It depends how I feel	166	41.5
	No. Not at all	60	15.0
TELEVISION (*N*=387)	0 to 3 hours per week	284	73.4
	4 to 6 hours per week	99	25.6
	7 to 9 hours per week	4	1.0
SOCIAL MEDIA (*N*=400)	Yes	252	63.0
	No	148	37.0
	TOTAL		**100.00**

Table 5 Frequencies of reported stress and lifestyle behaviours[51]

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[51] Some of the data presented in this Table (TV and social media) appears elsewhere in this thesis. It appears here to highlight the behaviours adopted in stress (mis)management.

Work-related, familial and financial stress

As maintained by various scholars, stress is a cause for many health- related problems (Merz, Dwyer, Nordstrom *et al.* 2010; Gholizadeh *et al.* 2011; Baum & Fisher 2014). As many as 66.25% of participants reported 'sometimes' feeling stressed while 26.25% felt stressed 'very often'. Stress was found to impact eating habits whereby those who reported feeling more stressed ate more than necessary (78.5%) or eat because of depression (59%). Stress was related to work, family, children, one's financial situation and personal relationships. Concerns such as '*I don't have enough money*' (220) and '*I am afraid I won't be able to support my family*' (365) were common. Self-reported stress is important in social research as it provides clues to stress (mis)management and is potentially linked to the prevalence of NCDs.

Stress management for optimal health was recognised by the participants. The stress relieving strategies mentioned were meditation, listening to music, talking to a loved one, reading, exercising, watching TV, spending time in nature, playing with one's pets and singing. It seems that age is an important factor to consider when discussing stress. The age group who reported feeling stressed 'very often' were those 19–49 (23.5%). Many (61.25%) in the same age group reported feeling stressed 'sometimes'. The most stressed age groups, according to this study, were those aged 19–29 (38.75%) and those aged 30–39 (32%). These findings suggest that establishing themselves in their career and family life and being single mothers' fuel stressful life situations that add financial burdens on them. When gender was cross-tabulated with stress it emerged that, among women, 94% felt stressed compared to 88% among men. Within race, Black people (62.75%) and White people (19.5%) reported feeling the most stress. In terms of the living arrangement, those whose family consisted of 1 to 4 people (60.75%) reported feeling stressed the most as well as those who had 5 to 8 people in their home (33.75%). This reflects the underlying situations that contribute to perceived and felt stress by the workers in the study population which may or may not be shaping their health behaviours.

Stress and the importance of having good health behaviours were cross-tabulated to reveal that those who 'sometimes' feel stressed find it 'very important' (34.5%) or 'important' (22.75%) to engage in good behaviours like healthy eating habits and regular PA. Stress was an indicator of overeating behaviours with 78.5% of those who feel stressed 'very often' or 'sometimes' reporting that they eat more than they need to. Only 0.5% of those who reported

not feeling stressed at all 'never' eat more than they need to. In addition, 59% of those who reported feeling stressed 'very often' or 'sometimes' reported emotional eating 'always', 'most of the time' or 'sometimes' because of stress and depression. Those who reported feeling stressed 'very often' also considered it 'very important' (14.75%) or 'important' (7.50%) to engage in good health habits.

Watching TV for 1 to 3 hours a day to de-stress (73.4%) or 4 to 6 hours a week (25.6%) was disclosed as one of the main stress management strategies. Social media was also reported as a way of relaxation and de-stressing. Sixty-three percent mentioned that they will not go a day without social media while 37% reported not making use of any social networking sites or social media platforms. Others (21.25%) reported smoking cigarettes to control their anger and calm themselves while some turned to alcohol (18.5%).

It seems that watching TV was, however, the most common practice for alleviating feelings of stress. When stress and TV watching were cross-tabulated, the results were that among those who feel stressed 'very often' and 'sometimes', 67% spent at least 3 hours in front of the TV when they get home after work. Others (24.2%) who expressed the same incidence of stress mentioned that they can spend at least 4 to 6 hours a day watching TV. The fact that 99% of survey respondents admitted to watching TV for 1 to 6 hours daily and 52.75% saying that they do not engage in any exercise implies the rise of sedentary behaviours among this sample. Those aged 19–39 watched 1 to 3 hours of TV a day (55%). What is striking is that the same age group is more or less likely to engage in PA. Thirty-seven percent reported PA and 38% reported PI.

Contrary to expectations, many did not identify PA as a form of stress reliever. Only 47.25% of those who engaged in PA activity every other day and most of those who reported PA stipulated that they do it to keep in shape, lose weight or to tone their body. This means that PA is seen as a way of maintaining one's body image probably more than it is considered as a way of relieving stress. When stress and reported PA were cross-tabulated, 10% of those who felt stressed 'very often' reported engagement in PA and only 34% of those who 'sometimes' felt stressed saw PA as a worthwhile engagement. Sixteen percent of those who reported feeling stressed 'very often' do not engage in PA and 33% who are 'sometimes' stressed are physically inactive. This is noteworthy as those aged 19–49 reported feeling stressed 'very often' or 'sometimes' (84.75%) because of financial difficulty, family responsibilities or work-related concerns. Only some of those who reported watching TV for 1 to 3 hours

(36.69%) reported PA while 10.85% of those who reported watching TV for 4 to 6 hours reported PA. This might reflect the measures taken to reduce stress or better manage their stress levels amidst the demands of family and work-related responsibilities. Given that 47.25% reported PA and 52.75% reported PI it can be argued that the sample is not necessarily physically inactive but faces important barriers to engaging in PA. Other lifestyle choices and health behaviours then become important to explore.

Cigarette smoking and alcohol use

Table 5 shows that 78.75% do not smoke and 5% 'was successful at quitting' – which suggests a level of agency over lifestyle-related behaviours like cigarette smoking. However, 1.5% felt that they 'will never be able to quit smoking' and 2.5% 'never considered quitting'. Seventeen percent admitted that they have failed at their attempts to quit smoking. Of the 5% who reported successfully quitting smoking, those 19–39 (4.5%) reported the greatest agency over their smoking habits. Of the 17% who have tried to quit smoking but failed in their attempts, 14% were aged 19–39.

Three percent of women and 2% of men reported successfully quitting while 9.75% of women and 7.5% of men reported failing at their attempts to quit. Of the total population, Black (8.5%), White (4.75%) and Coloured (3.75%) people reported a higher failure in their attempts to quit smoking. This means that they have tried as they had a higher perceived agency and autonomy in making the correct decision to improve their health but were not able to control their behaviours even though they tried. The fact that they tried to quit implies that they either made a personal choice to quit or acknowledged the health-related implications of smoking.

The choice to not smoke showed the financial situation and the lack of money for 'luxuries' as described by Sipho (34, Black man):

> *I don't have money for luxuries … I pay my kids school fees, I pay for groceries and I pay for whatever else that's important for me and my family … money is only enough to do what is critical … I don't understand why people they smoke … I see others of my kind smoking and I think to myself "eish, you are rich … you can afford these things" … I don't mind it but because me I've never smoked in my life and I was told it is a waste of money … it makes you sick, and it makes a hole in your pocket … I rather spend it on buying things for my family who will be happy … smoking, I don't think it will make me happy. They say rich people have*

money but no happiness … me, I'm happy with my small family … we eat good
food every day, we don't waste money … my money is enough to live well …

The consensus in the literature is that lifestyle consumption such as purchasing cigarettes is a luxury and a form of buying ill-health. In terms of consumer choice, individuals are defined by their income and how they spend their money (Bradby 2012; Forbes *et al*. 2016). Health is therefore commodified where ill-health and good health can be purchased. In Sipho's instance, social class plays a role in the mapping of his health beliefs and personal agency. When smoking was compared in each race group, the results show that more Coloured (44%), Indian (33%) and White (31%) people reported smoking compared to Black (15%) people. Through his outcome evaluations of smoking, Sipho's attitudes described his behavioural intentions to not smoke which emphasised the importance he places on his and his family's health and financial situation.

When cross-tabulated, 54% of those aged 19–39 consume alcohol. Of those, 38.75% admitted that they drink alcohol 'sometimes'. Considering race and reported financial situation, it is anticipated that, like Sipho, money is prioritised for other important things. Cross-tabulation of gender and alcohol consumption revealed that 78% of males consumed alcohol while only 64% of females did so. Of the total sample population aged 19–75, 32.75% reported sober habits. Forty-seven percent of women reported alcohol consumption as a stress reliever. Considering that most women are single working-class mothers independently raising their children, over indulgence in alcohol would then increase their actual risk for CVD. Moreover, women with moderate to heavy alcohol intake have considerably higher risks of CVD mortality compared with men in different social groups as indicated in the literature (Zheng, Lian, Shi *et al*. 2015).

Cross-tabulation of race and alcohol consumption showed that 67.25% of all race groups reported consuming alcohol 'daily' or 'sometimes'. This is intriguing considering the fact that most respondents expressed financial difficulty in improved health behaviours and 'luxuries' yet as many as 43.75% of Black respondents admitted to drinking alcohol. Only 15.5% of the White population confessed to drinking alcohol. This exposes the social hierarchy in consumer choice and sheds light on stress-related consumption behaviours thought to aggravate the rise of NCDs (Evers, Adriaanse, de Ridder *et al*. 2013).

Mindful eating

'Always' watching what they eat was mentioned by 19% of survey participants who further elaborated: '*I watch out for calories, fat content, sugar and salt*' (101), '*I eat mostly salads and White meat*' (40), '*I avoid snacking on salty food stuff*' (31), '*I try to control my portion size at home and in restaurants*' (45), '*I'm a health freak … I pay attention to food labels …*' (53). In this context, food labels and eating behaviour help consumers sustain a healthy lifestyle through the food choices they make. As mentioned earlier, there are important intergenerational differences in food choices (Renzaho *et al*. 2012), where food labels for example, become a cue to understanding the influence of food purchases (Kempen *et al*. 2011) – mostly associated with the commodification of ill-health.

Others (24.5%) do not watch what they eat, giving various excuses:

> "*It becomes a tedious process*" (75), "*it's easy to grab convenient food even though it's a bad habit*" (12), "*there's no time to prepare healthy lunch and snacks all the time*" (95), "*no one has the time to pay attention to food labels when all the time they have is to grab a can and go*" (317).

Majority (41.5%) mentioned that they 'sometimes' watch what they eat and stated that:

> "*It depends on how I feel; I eat healthier when I am happy and overdo it when I am sad*" (73), "*My mood determines how much or how less I eat*" (137), "*It depends on how hungry I am and what foods are available to me at the time*" (213).

While 15% reported that they never watch what they eat:

> "*I love good food*; *anywhere, anytime*" (61), "*I'm thin, so, I'm healthy … I don't need to watch what I eat*" (351), "*When you're hungry you eat, whatever is available to you … there's no time to be picky when you're at work*" (349).

Knowing one's individual cues of hunger and satiety shapes food behaviours and decision-making about what and how much food to consume (Lofgren 2015). While some are more mindful about their eating habits, others did not choose nutritious or healthier meal options due to the constraints they are faced with in the home and the workplace. The self-regulation of food in mindful eating addresses unhealthy habits in the context of a rise of CVD in South Africa. A minority prioritise behavioural beliefs and outcome evaluations by avoiding consumption norms such as calories, excess salt and sugar and larger portion sizes to shape

intentions to maintain health and lose weight. Others lack perceived self-efficacy and health behaviour tainted by environmental and spatial constraints. Food behaviours are given meaning in the context of one's work or home environment. Emotions are also linked with eating and dietary choices or preferences which shapes decisions about what, how much and when to eat which reflects the complex discourse of diets (Turner 1991b; Abbots & Lavis 2013; Farrell *et al*. 2016).

Participants aged between 19 and 39 reported positive healthy eating habits (31.25%) by saying 'always' and 'Most of the time'. When asked about how often they engage in healthy eating habits, 12.25% of those aged 40 and 75 engaged in healthy eating habits. Of the total respondents (41.5%) of all ages who said 'sometimes. It depends on how I feel', 33.5% were aged 19 to 39 while 15% mentioned 'Not at all'. Given the rise of NCDs in South Africa, the lack of mindful eating habits is a cause for concern.

It appears that those in their younger and middle ages are more mindful about their eating habits than those of older age groups. This statement is based on the fact that 75.5% of the sample population were 19–29 and 30–39. Regardless, it found that 10.25% of those aged 40–59 and 2% of those aged 60–75 were cognisant of their eating habits either 'always' or 'most of the time'. Of the total sample population, 6.75% of those aged 40–59 and 1.25% of those 60–75 'sometimes' eat healthy depending on how they feel. Younger generations, according to Lofgren (2015), are expected to have a shorter life expectancy compared to their parents because of younger people making negative lifestyle choices and being overweight. Mindful eating is thought to be an alternative and emerging approach to healthy weight management and eating behaviours, including snacking, that lead to improving health status. This means that body image and maintaining one's healthy weight goal is important. Other factors also shape the ways in which people give meaning to, not only their food behaviours but their healthy eating habits too.

An examination of racial groups in relation to eating habits revealed that 13.28% of Black people and 14.3% of White people do not adopt healthy eating habits at all. Of the total sample, considering the racial dynamics of the study, it cannot ascertain which race group is more likely to engage in healthier eating habits. Probing further, it revealed that 28% of Blacks, 12% of Whites, 2.75% of Coloureds and 1% of Indians reported healthy eating habits 'always' or 'most of the time' while 15% did not eat healthily. More worrying is that 41.25% of all respondents who 'sometimes' ate healthily depended on how they feel.

Of those who reported healthy and mindful eating habits 'always' or 'most of the time', 25.25% engaged in PA – which shows that people may not acknowledge the benefits of positive health behaviours such as healthy eating habits and PA. Eighteen percent of those who engage in healthy behaviours do not engage in PA. As many as 24% who mentioned that they 'Sometimes' engage in healthy eating habits reported PI due to the individual, social and financial barriers while 17.5% in the same group reported PA. As expected, of the 15% who do not eat healthy at all, 10.5% have reported PI. There are important obstacles to positive health behaviours which influences how one perceives their body and the meanings they attach to their health behaviours. This impacts whether or not they may perceive themselves to be at-risk for CVDs. Overall, 47% of those who reported healthy eating habits reported engaging in PA. In other instances though, PI, unhealthy eating habits such as overeating and emotional eating were common – as reflected in the section that follows.

Health behaviours

Physical (in)activity

Engagement in PA was mentioned by 47.25% of the total respondents while 52.75% reported PI. This is alarming considering the implications of PI on CVD-related morbidity and mortality. This finding resonates with a study conducted by Peltzer and Phaswana-Mafuya (2012) to explore PI and its associated factors among older adults in South Africa. Their study found low rates of PA among those aged 50+ which prevented healthy ageing. In general, other studies established that occupational and transport-related activities contribute to PA among the working population in South Africa (Armstrong & Bull 2006 cited in Peltzer & Phaswana-Mafuya 2012, p. 456) which can help improve health and prevent NCDs.

While it is well known that exercise and sport have positive benefits for health and plays a role in stress management and relief, the problem is that many workers in this study do not see value in PA as a stress reliever or for improved health and longevity. This means that PA initiatives need to address those in their economically active age group (19–49). This is the population most likely to engage in poor lifestyle behaviours and suffer the consequences of lifestyle-related diseases; either in later years or the accumulation of years of poor health behaviours. The fact that 3.5% of those aged 50–59 in this study do not engage in PA again suggests the lack of importance placed on it. This is also the age group mostly at-risk for

chronic conditions and likely to be on chronic medication as reported in the literature (Peltzer, Phaswana-Mafuya & Ramlagan 2011).

Responses revealed the lack of time; financial constraints, long working hours, laziness, tiredness, dislike of exercise, old age, family responsibilities and chronic conditions were the main barriers to PA. The study showed that among Black people, mostly 55% was physically inactive and among Coloured people as many as 67% reported the same. It was useful to probe into the motivations and barriers for PA among this sample population in order to gain an understanding of the opportunities and constraints workers face in health behaviour decision-making.

Physical activity: Motivations and barriers

Fifty-three percent of survey participants thought that it is 'very important' to have good habits, such as healthy eating habits and regular PA. Only 43.5%, however, engaged in healthy eating habits and 47% admitted that they 'engage in exercise or sport'. Considering the low individual risk perceptions for CVD, there were higher self-reported healthy eating habits and engagement in PA. The desire to maintain good health, keep fit, get toned and prevent stress-related illnesses was stated as motivations for PA by the participants. Staying in shape was seen as the main benefit of PA according to the participants. Of the total population, 53.5% knew it is 'very important' or 'important' (44%) to be in good shape.

Motivations for engaging in PA were associated with the importance of *'fitting in and maintaining good health'* (200) and '*to feel accepted'* (212). Others reported that their '… *health is good and* [they] *want to keep it that way'* (387) and that '*Good health means* [they] *have a chance to live longer and avoid sicknesses'* (251). Although 49.6% expressed the desire to lose weight only 22% reported engaging in PA.

The living arrangement seems to also shape PA levels. Thirty percent of those who are living with 1 to 4 people in their home are engaging in PA while 30.50% of those living with the same amount of people are not. Those who have 5 to 8 people living with them (18.25%) have reported not engaging in PA at all. In this instance, it is argued that the number of people per household negatively or positively influence behavioural beliefs about engagement in PA and other health behaviours (Bandura 2000). This either encourages or discourages autonomy due to important constraints in, for example, the workplace and at home. This is the case of

single mothered households as discussed earlier. These issues are important to explore in the context of South Africa's potential for CVD-related health behaviour and promotion.

There was an interesting variation based on gender as revealed in qualitative thematic analyses; while women associated PA with losing weight: '*I would like to lose weight and feel better about myself*' (280), '*I want to be slim and trim*' (219), '*I want to be skinny*' (209); men associated PA with muscle building: '*I want six pack abs*' (17), '*I want to push for bigger biceps*' (113), '*I want a broader chest*' (130). Clearly, women wanted to be tone, lose weight and have a firmer body so that they fit into their clothing and feel confident while men focused more on going to the gym for bodybuilding to attain bigger biceps, a broader shoulder and chest and six pack abs. Walking, jogging, running, soccer, netball, cycling and volleyball were included as the types of exercise or engagement in sport reported by men and women who exercised regularly. Others reported aerobics, spinning, Zumba, basketball and swimming. Keeping fit and getting toned were most important to those who expressed having the money to invest in their health and those who said that being in shape mattered to them. This exposes the value of financial independence and how access to material resources plays a role in how people evaluate social status (Vassilev *et al*. 2014).

The majority of respondents (53.3%) said that it is 'very important' for them to be in good shape. Of those who expressed the importance of being in shape, 39% aged 19–39 supposed it is 'very important' or 'important' (34%) to be in shape. There was also a general sense that those aged 40–59 (20.5%) and those aged 60–75 (3.5%) acknowledged the importance of being in shape. Only 2.5% of the total sample thought it is 'not important', with 2.3% of those aged 19–39. Within gender, 56.3% of men and 53% of women said that being in shape is 'very important'. Overall, 25% of men and 72.6% of women highlighted that it is mostly 'Important' for them to be in good shape and look physically attractive.

In general, men reported wanting to attract admiration from the opposite sex and be the envy of other men while women were most interested in staying in shape or getting in shape. Given the respondents' demographics such as age, gender and race, 66.3% of Black people reported the importance of being in shape while 20.36% of White people reported the same. When self-reported healthy eating habits were cross-tabulated with the importance of being in good shape, it revealed that 18.84% of those who thought it is 'very important' or 'important' to be in good shape indicated 'always' eating healthy or eating healthy 'most of the time' (24.6%).

Making time to socialise was pointed out as an additional motivation for PA:

'Exercising together gives us an opportunity to socialise …' (189), *'I forget my stress when other people are exercising with me'* (188).

Some participants indicated that they were more likely to engage in PA if they had someone to be active with, for example:

If I had a training partner I would make time to exercise more often … working out with company forces me to stay focused in an environment that allows healthy competition for mutual benefit (94).

These findings so far are consistent with similar studies that concluded that "a fit, healthy and aesthetically attractive body has itself become commodified, both as something to be attained with the appropriate expenditure on personal trainers, clothes … beauty therapy and simultaneously as something that has been marketed … and sold as a commodity …" (Bradby 2012, p. 31). This relates further to Crawshaw's (2007) notion of 'aesthetic health' and Bennett and Gough's (2012) work on the management of physical appearance.

Body satisfaction then is associated with PA among the younger age groups in this study as physical appearance related to larger sociocultural dynamics in specific times and places. Previously, cultural ideals of 'beauty' and 'handsomeness' varied across cultures but in the advent of urbanisation body image ideals are differently shaped through gendered discourses such as femininity (weight loss) and masculinity (muscularity) as depicted by Bordo (1993). Individuals, regardless of race and culture, are blending to achieve a common goal and new cultures are being born as a result of globalisation and urbanisation (Anderson-Fye 2012).

Across societies, bodies and understandings of beauty are given particular social meanings. However, Western ideals do not describe today's average Black South African woman – although, these ideologies are changing as later expressed by Busi and Naledi. Socially, we are steered to believe that beauty is based on thinness and fatness indicating that certain physical features are more socially accepted than others (Burk 2013). The socialisation of beauty and the connection it has on understandings of health and disease is critical in the context of chronic diseases in South Africa. This is especially true when sociocultural notions of gender come into the picture.

This was articulated by David (43, White man):

> *People often equate beauty with being thin and handsomeness with being muscular … I don't think it is something that can be broken down by gender but each gender obviously has their own goals in terms of how they want to look and what they would like to think of their own body when they look in the mirror … how they would like to feel ... Society is far more critical of females and there is more pressure to fit in to a set standard of beauty … I think men are more geared to be physically strong … have great big muscles and a super broad chest … whereas women are more cosmetic, dress, make-up ... beauty is in the eye of the beholder … health is the greatest wealth …*

It appears that weight is often regarded as important, not so much because of its negative health implications, but because of the associated (un)acceptance in society.

Social influences impact the social construction of what it means to be beautiful:

> *… it is based on the individuals' perception of what is physically attractive … being big built as a female is not attractive but it is as a guy … guys believe in outer beauty … females are expected to have a pretty face … women are attracted to … six packs … muscles … I find that physical attributes towards gender differ with fashion, style, culture, food and family values … we have to learn what's okay and what's not … this depends on the culture of the people. The Western concept of a pretty woman is one who is tall, thin and shapely while other cultures prefer more a curvaceous figure …"* – Matt, 34, White man

There were common barriers to attaining an aesthetic body which related to the perceived lack of time, monetary costs involved and family responsibilities as illustrated in the following responses:

> "*I don't have time*" (24), "*I spend most of my time at work*" (16), "*I don't have enough money*" (273), "*I feel too lazy after work*" (22), "*long working hours doesn't allow me to, except for walking occasionally*" (117) and "*I have too many family responsibilities …*" (345) were most common.

Or,

> "*I don't exercise because if I start exercising I gain weight*" (46), "*I don't like exercising because I feel sweaty and my body remains painful and stiff*" (71) and "*I'm not an exercise person*" (73).

In the above context, the lack of time, motivation to comply to recommended behaviour and behavioural beliefs about lifestyle modification negatively shaped outcome evaluations of PA

to influence attitudes towards adopting better health behaviours. Activities in the work and home environment were relayed as barriers to PA which means that intentions to perform better health behaviours such as PA are dismissed if working adults lack perceived benefits of PA and self-control over their health.

Medical conditions, old age and laziness were some of the self-reported barriers for PA as evident in the following statements: "*I am very sick ...*" (384), "*… I suffer from high blood pressure*" (53), "*I don't exercise because I am old … my bones are not so strong anymore*" (185), "*I'm too lazy …*" (278).

The ways in which respondents perceived and seem to be (mis)managing their health sheds light on how they cope with the symptoms of their chronic conditions and what treatments they use. Coping, according to Bury (1991) is a cognitive process where the individual learns how to tolerate the effects of their chronic condition in order to maintain a sense of value in their life regardless of their symptoms and its effects which reflect 'narrative reconstruction' (Williams 1984). Their behavioural intentions, or lack thereof, are attributed to a complex interaction of factors. A particular insight was offered by one participant who said that "*the way I was brought up didn't make me aware of the importance of exercise … it's not in my culture … no one in my family ever did*" (49). This alludes to the role of culture and group behaviour since "culture shapes how personal understandings of health and illness are constructed and normalized by influencing health perceptions ..." (Airhihenbuwa *et al*. 2014, p. 78). Walter and Du Randt (2011) had a similar finding in a study on the sociocultural barriers to PA among Black women in Port Elizabeth, South Africa.

Of the survey participants who perceived their health to be 'Excellent, 'Very good' or 'Good', only 40% reported PA which suggests that those who perceived themselves to be in good health do not engage in PA. This demonstrates the relationship between perceived health and low-risk perception for CVD. Participants perceive themselves to be healthier than they are and may therefore not always engage in 'good' health behaviours.

Health behaviours like PA are outcomes of media body ideals and images that positively or negatively shape behavioural beliefs about lifestyle modification. These are aptly reflected in the following narrative by Annabella (40, White woman):

> *My ideas about wanting to be thin is inspired by magazines and TV … I am on Instagram, it's very hard to be ignorant when your timeline is filled with images*

of well-built, slim and physically attractive men and women … I take inspiration from that … and Facebook too … I look at before and after photos of women who have lost massive amounts of weight and I say to myself "I want to be like that someday and it's up to me to get there" … I am a bit on the round side of life but I know I am healthy … people don't see it, though … because I don't exercise but I do try to eat healthily … my biggest weakness is junk food … that's the main reason for my weight issues … I have hypertension but that's manageable with chronic medication … I'm quite healthy but certain obstacles prevent me from living a healthier lifestyle … I'm not trying to make excuses, it is what it is … I'm not sexy but I'd like to be …

Annabella, like Diana, reflects her interest in wanting to be as physically attractive as celebrities noting that the media has influenced her thinking about body ideals. This is similarly expressed later by Tarryn, Naledi and Sarah. A common thread in these responses was the social construction of beauty and how the body and health behaviours are controlled by society. The following Table presents some of the findings on eating habits among the respondents which relates to the discussion on body image that follows later.

Variable		Frequency	Percent
OVEREATING	Always	21	5.25
(*N*=400)	Most of the time	60	15.00
	Sometimes	257	64.25
	Never	62	15.50
EMOTIONAL EATING	Always	20	5.00
(*N*=400)	Most of the time	36	9.00
	Sometimes	197	49.25
	Never	147	36.75
FAST FOOD	Yes	313	80.7
(*N*=388)	No	75	19.3
SNACKING	Always	29	7.25
(*N*=400)	Most of the time	76	19.00
	Sometimes	263	65.75
	Never	32	8.00
FRUIT	Yes	347	86.75
(*N*=400)	No	53	13.25
VEGETABLES	Yes	376	94.0
(*N*=400)	No	24	6.0
SODA	Yes	343	87.5
(*N*=392)	No	49	12.5
WATER	Yes	84	21.3
(*N*=394)	No	310	78.7
	TOTAL		**100.00**

Note: Consumption per week

Table 6 Eating behaviours and food and beverage consumption[*]

Overeating

Twenty percent of respondents said that they 'always' eat more than they need to or eat more than they need to 'most of the time' while 64% 'sometimes' and 16% 'never'. Those aged 19–29 ate more than they needed to (37.5%) compared to those aged 30–39 (27.25%), 40–49 (12.75%) and 50–59 (4.25%).

Sixty-two percent of women reported eating more than required to satiate their appetite and 22% of men reported the same. Among men, 86.4% had overeating tendencies and among women, 83.8% reported the same. Overall, both genders seemed to have less control over how much they eat and lesser control over what they eat. Even though race may (or may not) be a factor that shapes eating behaviours, given the demographics of this study, Black people (58%) reported eating more than they needed to in comparison to White people (16.8%). Coloured and Indian people were not largely represented in the survey responses to make an adequate claim, but, as the findings of the total population reveal, 9% of Coloured people and 1.8% of Indian people reported eating more than necessary. Regardless of race, 84% of the total population proclaimed overeating or eating when bored, stressed or depressed confirming emotional eating.

Emotional eating

Emotional eating refers to "eating in response to a range of negative emotions such as anxiety, depression, anger and loneliness, to cope with negative affect" (Faith *et al*. 1997 cited in Tanofsky-Kraff, Theim, Yanovski *et al*. 2007, p. 2). As many as 63% ate when they were bored, stressed or depressed and 37% reported not doing so. Up to 48.75% of those aged 19–39 reported emotional eating while 12.75% of those aged 40–59 reported the same. This made up 61.5% of the total population who reported emotional eating. The suggestion is that workers in this study population are facing stress-related situations within their working and home environment which drive them to unhealthy and uncontrolled eating habits. Research on emotional eating show a clear link between body perception and food (Doğan *et al*. 2011). Women who reported engaging in emotional eating were more likely to experience a sense of bodily loss of control when they reported eating during experiences of negative emotions. This reflects the perceived lack of agency and autonomy in making correct and healthier choices. As much as 50% of men and 68% of women reported emotional eating.

When probed into this in follow-up interviews, women were perceived as emotional eaters whereas men were recognised as having larger appetites. As Lisa (48, White woman) put it:

> *Women, in my opinion, are more likely to be emotional eaters … they also don't have much of an appetite compared to men … Men have a larger appetite as they have a faster metabolism … it's the women who are most affected with lifestyle diseases ... it's the women who are the ones who are obese … so, I think, that it is not so much about how much you eat but what you eat … women eat junk food loaded with sugar and extra salt … but I don't want to stereotype, it could be the same in the case of men … since I see both, men and women, eating unhealthy.*

Lisa expressed the gender dimension embedded in food and eating habits. She described why men and women differ in their eating habits and linked her explanations to lifestyle diseases. She noted that even though men have larger appetites compared to women, it is women who are most susceptible for chronic NCDs aggravated by obesity. She added that it is not how and how much, but also what one eats. Rightly so, food consumption patterns impact on weight and susceptibility to lifestyle diseases which is intensified by the sugar and salt content of food items (Abbots & Lavis 2013; Gunnar *et al*. 2015). She began with confidence, stating that it is women who are emotional eaters yet later realises that it is not determined by gender. This means that gender is not unescapably an influencing factor for negative lifestyle behaviours, but personal agency and behavioural control. However, women were generally regarded as more '*health conscious*' (98) compared to men.

Suzanne (42, White woman) partially agreed with Lisa by sharing her personal experience of controlling the portion size of her food while trying to control the management of her weight:

> *… diet-wise I know and have learnt from experience when I was on Weigh-Less that men can eat way more calories than women … My husband and I both were on Weigh-Less but he was allowed so much more leeway … I would imagine, with women … and hormones … and being the baby producers, that food would be an influence in weight gain more easily. With women having such strong cravings … if you breast feed then the baby will take it all in ... and someday grow up to be a big fat adult … and suffer from lifestyle conditions … such as obesity, a heart attack or heart diseases … I think men are more prone to heart problems, though … because in general they love red meat, biltong and beer with all those empty calories!*

Suzanne further discussed the role of genetics and how important it is for women to make the correct food choices pertaining to their health, especially if they are pregnant, as it determines the life chances of the new born baby. Building on the life course perspective discussed

earlier, NCDs are biologically and genetically determined. In this context, it depends on the food and lifestyle choices of the pregnant mother that later determines the life chances of the growing baby into childhood and adulthood. She stated that, in terms of genetics, breast milk is the carrier of substances that later determine the weight of the baby as it grows to be an adult. She supplemented her views that lifestyle choices, like genetics, predetermine one's risk of heart-related conditions, but specifically pointed out that men lack control of their eating habits compared to women.

There are gendered ideologies and perceptions embedded in these findings to explain why women tend to watch their calorie intake more than men. The main intentions are to prevent weight gain and achieve a more desirable physical appearance since *"women are under more pressure to maintain diets and keep off weight"* Stacy (33, White woman).

An exploration of lifestyle behaviours in this study provided insight to the underlying psychographic factors that helped analyse attitudes in response to the workplace and living environment (Sarli & Tat 2011) and provided cues to health consumerism behaviours and motivations to comply with better health behaviours.

Xolisa (38, Black woman) aptly captured this in her narrative when she talked about the social marketing of food according to gender:

> *Certain food is socially marketed toward women whereas others are marketed toward men … From a lifestyle perspective, I would assume that females eat more healthy and men unhealthy … us women tend to watch our calories but men don't … especially if either of the genders are single … women want to be desired for their body when they are single … men want to be told to eat more healthy … if they're single there's no one to care … so they let themselves go.*

Xolisa raised the point of polar identities that exist among both genders; healthy (women) and unhealthy (men). Marital status was understood to play a role in healthy eating habits. There was the perception that women engage in healthier behaviours in order to be desired and may have greater personal agency in shaping their bodily appearance. Men lacked agency as they needed to be reminded to take better care of themselves and eat healthily. This reinforces the notion that women are caregivers. Marital status played a role in healthy and unhealthy behaviours and whether or not one perceived themselves to be at-risk for a lifestyle-related condition such as CVD.

To advance the point raised by Xolisa, Junaid (33, Indian man) described his life before and after marriage:

> *Living as a bachelor was very different to being married … I never used to watch what I eat or how much exercise I got … I needed someone to push me to living a healthier lifestyle – that person was my mother. Though I never lived with her much longer after high school … I found a job and relocated to Jo'burg, she gave me a lecture whenever I visited her during the holidays … she drilled it into me to lose a bit of weight and take better care of my health. I see where she was going … after being employed at the pharmacy I learnt a lot from customers, I used to see myself in some of them and I despised it … I decided to do something about my health … I lost weight … got in shape … after a few years, I got married … Nadia is amazing; she keeps me on track. We exercise together, go for medical check-ups together, watch our eating habits and teach each other things we learn about health and how to live better lifestyles. My wife takes great care of me; she is a reminder of why I decided to lose weight … to be healthy and to be happy.*

Marriage brought with it personal agency and happiness for Junaid. He said that he was not as mindful about his eating habits or PA levels before marriage and admitted that it was his mother who initially motivated him to live a healthier lifestyle. Being employed at a pharmacy positively influenced Junaid's outlook on health. Upon introspection, he realised that customers reflected aspects of him that he was not happy about which made him feel guilty for losing control over his body and of lacking agency to take better care of himself. He then decided to lose weight and get in shape. His wife has positively impacted his health behaviours. As a couple, they are more cognisant of their health behaviours, help-seeking behaviours and eating habits. They are also willing to learn and share health knowledge with each other which may play a role in preventative behaviour. Junaid articulated that his wife takes good care of him and is a constant reminder of his goal to lose weight in order to be healthy and happy. He understood weight gain as a bringer of ill-health and associated weight loss with a better body image, good health and happiness.

Women participants employed in the retail pharmacy generally reported healthier lifestyle habits than men, although, their eating habits were not always healthy. The men in this study were more likely than women to smoke and consume alcohol whereas women were more likely to watch what they eat and adopt dieting practices to lose weight, get in shape or maintain their body weight. Surprisingly, men and women both mentioned eating fresh fruits (86.75%) and vegetables (94%) on a daily basis but also reported unhealthy habits such as consuming large quantities of Coca Cola (87.5%) and fast foods (81%) on a weekly basis.

Most participants (53%) acknowledged that it is 'Very important' or 'Important' (33%) to have healthy habits to maintain good health – emphasising why 45% had 'Excellent', 'Very good' or 'Good' perceptions of their individual health. Plus, engagement in unhealthy behaviours was expressed by many participants in the interviews which they understood as limiting their overall well-being. This is a given since 14% of respondents mentioned that having good health habits is 'not important' to them so they therefore consume fast food, unhealthy snacks and soda.

Fast food, snacking, soda

From the 81% who admitted to fast food consumption per week, 20% were men and 61% were women. This finding can be linked to fast food consumption and weight gain in South Africa. Given that 52.75% of the study participants reported PI, it is understood that unhealthy eating habits such as fast foods, snacking and soda consumption influences one's chances of gaining weight. Considering the fact that 8.5% have not thought about their weight and 15% have reported not engaging in healthy eating habits at all, this is a cause for concern amidst the rise of CVDs among the working age population.

Participants aged 19–49 consumed fast foods on a weekly basis (75.86%) while 15.58% in the same age group did not. Only 5% of those aged 50–75 admitted consuming fast foods in the past week. This suggests that older age groups may prefer home-cooked meals whereas younger ages prefer fast and convenient food. From a gendered point of view, between men, 76% reported fast food consumption and among women, 82% reported the same. A high percentage (47.4%) of those with 1 to 4 people in the household reported consuming fast food while 28.9% of those with 5 to 8 people in the household reported the same. This means that it is cheaper to purchase fast food for larger numbers of people than to cook for a family of four or eight.

Snacking was a preferred choice as it supposedly curbs hunger cravings and helps the individual eat less than they would during a meal such as lunch or dinner. As many as 65.75% reported snacking 'sometimes' while a fair amount (26.25%) of respondents 'always' snack or snack 'most of the time' instead of having regular meals. When snacking habits were probed in follow-up interviews, the study found that many (83%) reported snacking on unhealthy items such as crisps, biltong, sweets and candy rather than snacking on healthier food options. The remaining 17% snacked on healthy foods such as raw almonds or other nuts, raw vegetables and fruit.

Sixty-six percent of all age groups reported snacking 'Sometimes'. Of these, 50.75% of those aged 19–39 snacked often as well as those aged 40–69 (14.5%). From the 26% that reported snacking 'always' or 'most of the time', 24.6% were aged 19–49. Health behaviours among this age group were varied depending on how the individual perceived their health and what health-related goals they set for themselves. Sixteen percent of men and 49.8% of women reported snacking 'Sometimes' while 19.53% of women and 17.5% of men snacked 'most of the time'. Only 8.7% of men and 6.73% women reported snacking 'always'.

Additionally, within the living arrangement, 92.59% of those with 1 to 4 people per household reported snacking and 91% of those with 5 to 8 people per household. Workers seem to be purchasing snacks in avoidance of a regular meal due to the numbers of people to feed. It also means that food is expensive and snacks will help get them through the night. It found that 56.25% of the total population with 1 to 4 people per household reported snacking 'always', 'most of the time' or 'sometimes' and those with 5 to 8 people per household reported the same snacking behaviour (30.75%). A few (7.5%) of those with 1 to 8 people per household reported 'Never' snacking on junk food but preferred snacking on healthier options.

Sixty-six percent 'sometimes' snack on unhealthy food items instead of eating regular meals while 80% admitted consuming fast food once or twice on a weekly basis. Sixty-five percent stated that they eat more than they need to often because they are bored, depressed or stressed. Behavioural control of food items and snacks must be understood in the context of self-regulation and perceived self-efficacy to make healthier food choices and control emotional eating due to stress and boredom. Many participants (88%) have tried to include fruits and vegetables (94%) in their diet because '*it's good for health*' (156) and '*helps with weight management issues*' (201). As many as 78.7% reported not drinking water on a daily basis over the past week yet 87.5% confessed consuming a soda or more on a daily basis over the past week.

In terms of gender, cross-tabulations showed that among men, 52% reported snacking on unhealthy food 'always' or 'most of the time'. Among women, 40.41% admitted to snacking in general. The percentages differed to some extent as 32% of men reported snacking 'Sometimes. It depends on how I feel' whereas 44.78% of women admitted that snacking is something they often do. Only 16% of men and 14.81% of women did not snack at all. This means that among men and women, 43.5% of respondents snack more frequently and

41.5% snack depending on how stressed they are, their moods or feelings of happiness or sadness.

Living arrangements such as people per household and workplace and other environmental constraints impact not only snacking behaviour but soda consumption. Soda consumption is one of the leading reasons for weight gain in South Africa due to the excessive sugar content. As many as 87.5% reported consuming fizzy drinks and sodas on a weekly basis – 85.4% of this percentage was in the age group 19–59. The highest reported soda consumption was reported by those aged 19–29 (37.2%) and 30–39 (30.1%) which means that those aged 19–39 do not consider the health effects of soda. This is of interest because more respondents (87.5%) reported consuming sodas per week than water (21.3%) and engaging in other unhealthy behaviours as reported by Shane (30, Coloured man):

> *My unhealthy habit is that I still drink too much soda, eat sugary and salty snacks almost every day instead of a good lunch, even though I know they are not good for me … my health will get worse if I continue.*

There is acknowledgement that healthy behaviours promote good health and unhealthy habits compromise health. Shane admitted to snacking on sugary and salty snacks and skipping lunch almost every day which he understood to be unhealthy behaviour. He saw the link between unhealthy behaviours and health, like Shahid (35, Indian man):

> *Chocolate is definitely unhealthy for me as well as smoking the hookah pipe every day, but I suppose it's better than smoking anything else … I have been able to control my diet, but still struggle with getting regular physical activity - being an office worker who spends most of the day in front of a computer, this is vital.*

Shahid also admits to unhealthy behaviours and smoking the hookah pipe. He, unfortunately, perceived the hookah pipe as better than other forms of smoking. This is problematic given the arguments against hookah pipe smoking and its role in CVD risk and its effects on other NCDs like cancer (Chan & Murin 2011; Fielder, Carey & Carey 2013). Shahid further reported a lack of PA but greater agency in being able to control his diet. He blamed his office job and long working hours for his negative health behaviours but seem to understand the consequences of his behaviours.

Beverley (48, Coloured woman), too, said that:

Younger, I was pretty unhealthy … Binge eating and heading for anorexia … Today I value my health more … I eat no red meat, only White … live on salads and vegetables … No excess of anything such as salt or sweets ... My unhealthy habits is that I don't exercise enough … I simply do not enjoy it even though I know it's good for my body and overall health.

In Beverley's case, perceptions of health and understanding of one's health behaviours were better understood and given deeper meaning as she got older. Beverley now engages in healthier eating habits but lacks sufficient PA.

Lisa (48, White woman) differed to Beverley:

My unhealthy habits are drinking a little too much at times, especially when celebrating events that appear on our families calendar … I enjoy special occasions … birthdays or weddings and indulging.

Lisa seems to place emphasis on de-stressing and recreating spaces that invoke feelings of happiness by going to places that help her get away from the stress and be more at peace. She admitted to drinking too much at times and over indulging. Similar to snacking on 'good mood food' (Evers *et al.* 2013), engaging in unhealthy food choices to "*enjoy special occasions*" (Lisa, 48) provides a break for indulgence that can lead to unhealthy weight gain and NCDs if not self-controlled. Previously, negative emotions were primarily linked to overeating, nowadays; positive emotions are linked to unhealthy eating behaviours better understood as 'good mood foods' (Evers *et al.* 2013, p. 1) such as indulgence in sweet treats and confectionery as an excuse to 'celebrate'.

There was an overall finding that those aged 19–59 (83%) consider their health to be 'very important' or 'important' but those aged 19–39 reported greater importance on their health (64%). Aside from CVD-related health behaviours, the study found that stress was also reported as one of the main reasons for 'bad' food behaviours yet individual risk perception for CVD was lacking. Body weight was also influenced by negative eating behaviours.

Body weight and eating behaviours

It appears that those aged 19–29 have the greatest interest in losing weight (14.04%), gaining weight (10.53%) and being happy about their weight (10.03%). In general, those aged 19–49 expressed the need to lose weight (30.14%). This is valuable in a context where "relatively small amounts of weight loss may lead to meaningful improvements in blood pressure, blood lipids, glucose control and insulin levels" (Meisler & St Jeor 1996 cited in Awah *et al*. 2008, p. 619). Other respondents aged 19–59 'have not thought about it' (8.55%) while 7.8% of the 40–59 year olds wanted to lose weight. Wanting to lose weight was important for those aged 50–59 (3.51%). Regardless of age, this study found that respondents desired weight loss (35.6%) the highest among all categories pertaining to ones' contentment with their current weight. The second highest category was the happiness with current weight where 23.1% were happy with their current weight. The third highest was the interest to gain a few kilograms (18.8%) and the fourth highest was the interest in losing at least 10–15 kilograms (14%). The remaining 8.5% have not thought about their current weight. Body image, size and the health benefits of weight loss are therefore not considered important enough to encourage improved behaviours. As James (40, Coloured man) put it:

> *There's more to a person than their physical appearance … if people are happy with their weight then that's good … as long as you lived doing the things you love … even if it's the love of food … weight gain is easy but weight loss, difficult! … Argh! Death is inevitable, man … so we might as well just make hay while the sun shines … even if it's with a big round belly* (laughs).

Only 10% reported unknown weight gain while 16.58% 'sometimes' picked up too much weight due to their unhealthy food choices and snacking behaviour. Weight gain and unhealthy lifestyle choices place individuals in danger of heart-related conditions, especially if individuals are overweight or obese. Weight loss, was considered a goal for long-term health by some:

> *There is a pill for everything … including weight loss … society is excessive and obsessive in all the wrong ways. What happened to moderation? The Banting and other fad diets everyone rushes to follow are as unhealthy in my opinion. I am not a fan of the foods of today … they are genetically enhanced and I object to eating artificial hormones … In my 55 years, I've never before heard of the number of NCD sufferers as I do today. There is something drastically wrong with our lifestyles, food we eat and mental health. –* Raj (55, Indian man)

Raj alluded to the important point that dietary pills must not be considered a "magic bullet" for weight loss (Saper, Eisenberg & Phillips 2004, p. 1731). In the advent of urbanisation and globalisation, self-help is sought that often gives people more (mis)control over their body and healthcare decision-making. Even though OTC weight loss pills and supplements may appeal to consumers in a pharmacy setting, individuals must have behavioural control of their lifestyle habits such as healthy eating and PA.

Raj later explained that:

> *People lack good decision-making … they accept whatever is out there without questioning its value … people don't realise that there's only so much pills can do … to live a healthy life means being actively involved … and that includes healthy meals AND getting fit, not sitting around waiting for weight loss pills to work its magic.*

It is clear from the earlier discussion on the motivations and barriers to PA that the constraints workers are faced with everyday compel them to seek alternative means for health improvement and weight loss.

As many as 40.96% of those who voiced the importance of being in shape 'sometimes' ate healthily. This reflects a gap in the importance of feeling in good shape and healthy eating. Respondents believe that PA is a better option for being in shape and therefore place lesser importance on healthy eating habits. According to Doğan *et al.* (2011), if one feels sad and depressed, or lazy and tired, their agency over their consumption behaviours is negatively affected which shapes their body image. People also gain weight through emotional eating or overeating. Within healthy eating habits, 13.3% who admitted that it is 'not important' for them to be in shape, only 2% reported not eating healthy at all.

There is potential for health promotion messages to reach a wider audience as most respondents (43.5%) placed emphasis on the importance of healthy eating habits. When healthy eating habits were cross-tabulated with the importance of having good health habits such as PA, the study found that 34.5% of those who reported 'Sometimes' eating healthy depending on how they feel, placed emphasis on their health being 'Very important' or 'Important'. This means that healthy eating habits and PA are considered important in improving or maintaining health. Also, 22.5% who eat healthy 'most of the time' and 18% of those who eat healthy 'always' mentioned that having good health habits are very important.

Considering that 47% expressed being physically active on a regular basis, when self-reported PA was cross-tabulated with the importance of having good health habits it found that 44.5% who reported PA said that it is 'very important' or 'important' to have good health habits. Interestingly, 41% of those who reported PI placed emphasis on it being 'very important' or 'important' to have good health habits. Perhaps unsurprising, 11.5% of those who reported PI said it is 'not important' for them to have good health habits. Overall, 86% of the total population acknowledged that having good habits is important.

Eighty-three percent never found it easy to lose weight. Although some respondents expressed interest in wanting to lose weight, others expressed interest in wanting to gain weight for health reasons as illustrated by Stacy (33, White woman) who said:

> *I'm so thin it worries me. I am literally anaemic and that scares me. I would love to gain a few kilos … as weird as that sounds … many people want to lose it!*

Body weight, in this case, is linked to beliefs about improved health rather than its negative effectives. Stacy expressed her intentions for gaining weight which deviated from perceived norms of weight loss in society. Most respondents (50.25%) weight 'hasn't changed very much' over the past one year or 'hasn't changed at all' (15.25%). Others expressed that their weight 'has gone up a lot!' (18.75%) and they would like to get more in shape and lose weight (49.6%). Some exclaimed that their weight 'has gone down a lot!' (15.75%) and were happy with their dietary success.

Among women, 42.86% expressed wanting to lose weight, 10.03% 'would like to gain quite a few kilograms' and 15.54% were happy with their current weight. Some (5.76%) have not thought about their current weight. Among men, 7.52% were happy with their current weight and 6.77% expressed wanting to lose weight. A cross-tabulation of gender with reported weight change over the past one year indicated that 13% of men and 37.8% of women's weight 'hasn't changed very much'. On the one hand, 10.8% of women said that their weight 'has gone down a lot!' which suggests that women purchase health as a commodity in terms of weight loss supplements and other dietary products to ensure weight loss as reported in the literature (Lupton 2005; 2012a). This was articulated by Joyce, Fiona and Suzanne in their explanations about diets, weight loss supplements and Weigh-Less. Their weight loss and weight gain was also unintentional due to thyroid problems. On the other hand, 15.8% of women shared that their weight 'has gone up a lot!'. This is attributed to their reported

unhealthy eating behaviours, snacking, emotional eating and unmanaged stress merged with the fact that 45% of women were physically inactive.

Cross-tabulating stress with weight change over the past one year exposed that those who reported being stressed 'Very often' or 'Sometimes' (47.5%) admitted that their weight 'hasn't changed much' or 'hasn't changed at all'. Stress was not necessarily a reason for weight gain or weight loss as those who reported no weight changed over the past one year comprised 60% of the total population. There is still a chance that weight gain is affected by stress since those whose weight 'has gone up a lot!' as many as (17.5%) felt stressed 'very often' or 'sometimes'. Stress also influenced weight loss as 15% of those whose weight 'has gone down a lot!' reported feeling stressed 'very often' or 'sometimes'. Weight loss among women was related to healthier eating behaviours and dietary control in the pursuit of slimness, which relates to Raj's narrative about being actively involved in health improvement.

Jessica emphasised the importance of being slim. To her, slimness was associated with a healthy body, a positive self-image and being accepted in society. Jessica realised that fat is something she wants to get rid of to avoid judgement from society. Fat was seen as something undesired, something to avoid – it was linked to shame and guilt and the lack of bodily control. Based on experiential knowledge, she articulated that:

> *It's very important to maintain a slim and healthy body – not just for yourself and your self-image but because of what people around you may think … Talking from experience, if I gain a kilo or so I try very hard to get rid of it because it makes me feel very uncomfortable, it's like everyone is staring at me and silently judging me. I feel guilty if I indulge in an extra piece of cake and I tend to get anxiety attacks and feel remorseful as if I can't control my body. I usually feel this way on weekends when I'm with friends and someone offers me a cola when I get to their place and from there the chips, biscuits and cakes keep coming and I feel like I owe it to the host to have it because if I don't then I offend them … the worst part is how I feel when I get home and regret not saying no in the first place! No one wants to be fat … thinking of myself as 'fat' makes me cringe.*

Jessica experiences what Scambler (2009) referred to as 'felt stigma' – an aspect of the modern morality of obesity as explored by Grønning, Scambler and Tjoro (2012). When Jessica gained a few extra kilos she felt as if she had lost control over her body. She perceived herself to have stronger agency and autonomy in making the correct lifestyle choices. However, she resented herself for indulging in 'good mood foods' (Evers *et al*. 2013, p. 1)

which she knew will make her feel good for a short while but guilty afterwards, especially because she despises being fat.

Appearance signals identity, it is a marker of social class, relations and status. Slim bodies are considered more attractive and a means to attain social and material wealth (Anderson-Fye 2012). Western societies place importance on applying control over one's body to regulate it and engage in self-discipline. Those who are unable to exert self-control are regarded as inferior, undesirable and socially deviant. Food too, then, has an identity of its own and creates social identities.

One such viewpoint was shared by Naledi (49, Black woman):

> *Some people believe men should eat more than women, and women should cook for their men … especially in my culture … Black men expect to be treated like a King … their eating habits are expected to match their status.*

There is also a social expectation that people should make time to not only eat according to their social status but engage in positive health behaviours. Although, this is not always the case as conveyed by Mel, a 35 year old White woman:

> *The thing is, people are expected to invest their time and attention to their body – it's the right thing to do, I suppose. In a perfect world with perfect people, everyone would be exercising, eating well, sleeping 8 hours a night, eating an apple a day and so on and so forth but that's not always the case, is it? We work very long hours and have families to take care of … the last thing on my mind, to be honest, is doing anything that would require more physical energy … all I want to do is eat and sleep … anything as long as there's something in my stomach before I go to bed.*

Mel explained how self-care is regarded as an investment in one's body, stating that it's the right thing to do. This alluded to the fact that one has a moral obligation and responsibility to take good care of one's body and engage in good health behaviours to ensure one follows a good lifestyle. One must be willing to 'work' on their body. The importance of moral and self-discipline then becomes fundamental in attaining a better appearance. In this context, "bodies tell a story about the person they embody" (Kirk 2002, p. 82). Mel quickly pointed out that there are constraints facing people who work. For example, time is invested in long working hours and family responsibilities after work which leaves less time for activities that require more physical energy. Eating patterns and food consumption habits are then affected as she is often too tired after work to be concerned about what she eats.

The body is situated in the context of learned behaviour where culture plays a key role. Chris Shilling (1991) cited by Kirk (2002, p. 85) stressed that the body and the 'physical capital' invested in it play key roles in the production of social inequalities. Different social groups make different investments in the body. Clearly, the body is given different meanings in different contexts. Our daily practices are governed by rules that exist outside our individual capacity which removes the power and autonomy to make heart-healthy lifestyle choices.

Susan (49, White woman) succinctly elaborated that:

> *The body is not fixed in biology but it is influenced by other people and determines how we live our daily lives and what practices we engage in everyday which we sometimes assume are the same … yes, we all probably eat the same food products but how we choose to prepare it and what we choose to eat it with and how we eat it is what differentiates us … We are the same but also different.*

Susan spoke about an important aspect of the body shifting away from purely biomedical understandings of the cadaver to the body being socially understood and given multiple meanings. Health and well-being is therefore considered outcomes of participation in a set of social practices. In this context, the body serves important "practical functions" (Bourdieu 1990, cited in Maller 2015, p. 56). These are shaped by society, daily practices and beliefs constructed by the materiality of everyday life (Maller 2015). She pointed out that people are identified, unified and differentiated by their food practices – which are often embedded in culture. In this sense, trajectories of practices are varied, entities and performances that are inherently bound together (for example, see Figure 8).

Materials: (objects, tools, infrastructures): food, beverages, condiments, shops, recipes, kitchens, appliances, cooking utensils, crockery, tables, seating

Meanings: (cultural conventions, expectations and socially shared meanings): what to eat for breakfast, when, with whom, where, why

Competences: (knowledge and embodied competences): how to store, prepare, cook, eat breakfast food: cleaning, disposal

Figure 8 The elements of the social practice of eating
Source: **Adapted from Shove, Pantzar & Watson 2012, p. 29 cited in Maller 2015, p. 58)**

Megan (31, White woman) picked up on the important issue of culture and social expectations of eating habits:

> *Eating habits itself is a social and cultural event … Ladies are expected to eat less and men, more ... That's a conventional thought or assumption … Gender is a spectrum … there's a relationship between food and gender that shows stereotypes… and expectations.*

Megan's articulations of eating behaviours have a gendered dimension. It suggests that there are acceptable and unacceptable sociocultural expectations of, not how, but also how much, one eats. She quickly justified that this is a conventional thought perpetuated in all social contexts. Gender is understood alongside food – which is given social meaning and governed by societal expectations. Women are expected to eat less whereas men are expected to eat more. Adding on, Stephanie, a 24 year-old White woman expressed that *"… food and gender are related … females tend to watch what they eat more than males … but females tend to be emotional eaters, males not so much …"* This was succinctly demonstrated by Busi (30, Black woman):

> *Women tend to eat less because of their sensitivity about their looks and sometimes unproven beliefs that certain food brings weight … Generally, men eat more than women, though … to build themselves up. Different genders have different food preferences and dietary needs … I think one's culture and family life also has a role to play in the eating habits of men and women … Also, the workplace eating habits are something to look into as we're at work for the most*

amount of time … eating habits are influenced by many different factors … Black women, for example, were once expected to look fuller figured and be passive in household decisions … things are changing … they are now watching, not only what they eat, but how much they weigh … I'm one of those who challenge norms around every kind of imagined or unimagined behaviour (laughs) *… I'm happy with my body and the time I invest in it … My boyfriend is always like "babe, you're curvy in all the right places and you cook some mean meals, that's all that matters to me" … after all, a way to a man's heart is through his stomach, right?* (smiles)

Having an opinion as to why women and men choose certain eating habits, Busi associated weight management with women and weight gain with men. This relates to the point raised earlier that women are considered more '*health conscious*' (98) than men. Busi understood that men and women both have different dietary needs but culture and family shape eating habits. The workplace is explicitly mentioned as a barrier to healthy eating because most people spend most of their day at work. Like others, Busi knows that eating habits are shaped by multiple factors. She also takes on a gendered role of caregiver and nurturer – as in the case of Nadia and Junaid.

A few explicit examples of the sociocultural expectation of Black women's physical appearance and gender roles were elaborated on earlier in terms of body ideals and passiveness in the household. This extended the examination of social and cultural expectations of body size and weight among Black women and how health behaviours are changing. Dineo and Busi both reasoned that Black women are now more mindful about what they eat and how much they weigh. These women seem to challenge expected norms, imagined and unimagined behaviours. Black societies (re)create or reject certain behaviours and identities – which relates to Ogana and Ojong's (2013) findings on the thick/thin body ideals among Zulu women.

Body image ideologies are embedded within, and shaped by, one's social capital (Morris & Szabo 2013). This sheds light on how attitudes, beliefs and lifestyle are shaped by different contexts and how ideas about individual health vary among individuals and how the media plays a role in perpetuating attitudes towards what is (un)accepted in societies.

Media representations of 'The Body'

The role of TV, print and social media

TV, print and social media have influential roles to play in understandings of the body by influencing behavioural outcomes, body (dis)satisfaction and health behaviour intentions. It is clear that age relates to the use of TV and social networking. Those aged 19–39 engaged in one or more social media platforms like Instagram, Facebook, Twitter, Pinterest and YouTube. Therefore social media is able to provide possibilities for exploring illness experiences on the internet and health information practices. The new digital media, according to Lupton (2015), becomes a source of information for patients, sufferers, caregivers and anyone in need of knowledge about illness and health through a shared collective identity. Other studies showed that as the number of chronic conditions rise, so does the frequency of internet use to receive health information (Ayers & Kronenfeld 2007). The type of internet platform or social media one makes use of has the power to shape one's health knowledge and health information. The internet virtually connects individuals through cyberspace. It sees a change in the doctor-patient relationship and resisting biomedicine. The individual becomes active in his or her health, illness or disease management and lifestyle (Lupton 2015).

Forty-six percent of women and 17% of men reported daily use of social media. Among women and men combined, 63% use social media and 60% reported seeking health advice online. Most social media users were aged 19–39 (53.5%). Less frequent users of social media were those aged 40–49 (44%). The print and TV media also seem to play a key role in shaping representations of the body. In this context, the public surveillance sphere is brought into the private or domestic environment where individuals take responsibility of their own healthcare and management as maintained by Lupton 2012b. M-health technologies, as suggested by Lupton (2012b), are a form of self-surveillance in disease and illness patterning. This blurs the boundary between public and private surveillance. For instance, body image ideals are often set by the media which has the power to shift experiences from the private to a public domain (Conrad, Bandini & Vasquez 2015). Power relations are embedded in the media where public framings of 'sexy' and 'unsexy' bodies become internalised. The conceptualisations of the "public body" (Nurka 2014, p. 488) and related

beliefs change through interactions with global media. As an outcome, body shape becomes the main focus in marketing strategies and notions about sexual attractiveness.

As illustrated by Sarah (32, White woman):

> … 'Slim', 'physically fit' and "tight" are all synonyms for sexual attractiveness. I refuse to believe that people workout because they want to feel good. I believe when you look good, you feel great … It's about looking good, full stop. Everyone wants to have "the perfect body" … that "it" body that makes people want to stop and stare at what you've physically achieved … everyone wants to be desired. It's about the hype surrounding women's curves and men's abs and biceps … It's about competing bodies … It's about wanting to fit in … let's face it, no one wants to be unsexy … we all want to look younger and be that "yummy mummy" we watch on TV and read about in Cosmo[52] … it's in the media.

Like Sarah, other participants also emphasised slimness as an attractive physical feature. The media clearly contours understandings of what is considered acceptable and unacceptable body image (Ghaznavi & Taylor 2015) as articulated in the above quote. A social constructionist view informs how media is a site where bodies are socially constructed and where ideas about the body stem from multiple and complex interactions (Eli & Ulijaszek 2014). The media exposes visual representations of 'The Body' which has the power to shape self-formation and bodily norms and practices in pursuit of, as Sarah put it, "the perfect body". Sarah underlined that the media frames sexual attractiveness and a sense of desire. She alludes to the fact that women and men are subject to societal judgement and thereby feel the need to achieve a body worthy of admiration in order to 'fit in'. Sarah's narrative relates to Jessica's views on looking and feeling good. To these women, fat has the power to control one's body and is therefore regarded as something to avoid – similar to Brenda and Thandi who both expressed the shame attached to fat in society.

Attaining a physically attractive body is seen as a form of achievement. As mentioned by Sarah, looking good outside boosts one's self-confidence and makes one feel great on the inside. This relates to Monaghan's (2001) study on the embodied pleasures of vibrant physicality. "The perfect body", as Sarah expressed, is symbolic for a well maintained and cared for body where multiple meanings of physical attractiveness are attached by society. "Competing bodies" then, in Sarah's words relates to the participant who mentioned that PA *'allows healthy competition for mutual benefit'* (94) – both alluding to a physically fit body

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[52] Cosmo is an abbreviated term for Cosmopolitan – a health, beauty and lifestyle magazine targeted at women.

being achieved. Values were associated with particular body shapes and sizes of the 'desired body' such as muscular and slim (Sharp 2000).

Given that "some groups in society consider a large, muscular physique to be an essential quality of masculinity" (Kirk 2002, p. 81) and curves a symbol of femininity, it is no wonder that this ideology is prominent today. This is because society conforms to societal norms and expectations often laden with gendered stereotypes in the public eye. An individual actively absorbs media representations to make sense of 'The Self' and its place in the social world. A social constructionist perspective further argues that "bodies are important to understanding how and why people as individuals and groups behave in the ways they do" (Kirk 2002, p. 81). For instance, behaviours to achieve certain health-related goals like weight loss (or weight gain) and bodybuilding are shaped through sociocultural ideologies. This was expressed by Emelda in her views on patriarchal power and the expectations of the bodies of Black women. However, there is additional evidence to illustrate the importance of media in spurring similar ideologies. These were provided by Tarryn (26, Coloured woman):

> *… thoughts about beauty is influenced by advertising and makes us feel that the celebrities we see in the media is a be all, end all kind of beauty … we don't get to see them vulnerable … without make-up … with fat bulges hanging out … or cellulite … if we do, everyone gossips and criticises it … these kinds of things perpetuate unrealistic beauty standards … so yes, the media and advertising has a massive impact on how we accept our bodies or whether we see it as beautiful.*

For Tarryn, the ideas about physical beauty are shaped by the media which is selective in what is revealed to the audience. She feels that people are often brainwashed into thinking that celebrities are the epitome of beauty but many do not consider the fact that celebrities are also humans and vulnerable in society. Tarryn is conscious that being without make-up, being a bit overweight and having cellulite is regarded as a weakness that is often subject to gossip and criticisms. She notes that the media and advertising disseminate unrealistic standards about beauty which lead to individual perceptions about beauty or what Williams (1996) refers to as 'dys-embodiment'. Body image then becomes a pertinent topic. These ideas have been elaborated upon by Beverley (48, Coloured woman):

> *The media has a negative impact because you end up comparing yourself to others and find flaws in your body … I have found myself comparing myself to other women I meet and to those I see on TV and in magazines … the Dove*

beauty campaign[53] taught me to love my body and be happy in my own skin … It's only in the last few months that I have tried to stop putting myself down … I challenged the standards that the media has presented … and for once, I found things I like and accept my body … that felt good, I felt like I could control my thoughts and focus on the beautiful parts of me … I started eating well, exercising, although I could exercise more, and I try to manage my stress … I don't binge anymore … maybe that's because I'm no longer insecure or depressed …

Reiterating that the media has a negative impact on people as it encourages one to compare their bodies to another; Beverley notes how the Dove beauty campaign helped her accept her body – a facet of 'competing bodies' as discussed earlier. The notion of 'competing bodies' is of interest as it illuminates how meanings are attached to bodies in a context where 'fitting in' means being as sexy as celebrities –highlighted by Sarah. This suggests that the media has a positive impact on people as well as it encouraged her to learn to love her body and adopt a healthier lifestyle. Beverley admits to feeling more in control of her body, implying that she has a greater level of perceived agency based on her intent to challenge, as Tarryn put it, "unrealistic beauty standards" media presented to her. She now has better stress management and does not feel insecure and depressed as she once did. In essence, the media has a dual role to play in shaping and framing ideas about what bodies are accepted and unaccepted which discourages or further encourages self-confidence levels as pointed out by Naledi (49, Black woman):

… To be honest, I compare myself to Black female celebrities in South Africa … I feel as if they define the essence of 'Black beauty' … There's a hype around international celebs like Kim Kardashian and all the rest … who are fuller figured and changing the idea that being skinny means being beautiful ... but we as South Africans must focus here. There are celebs like Boity Khumalo and Bonang Matheba … these are public figures … they put themselves and their bodies out there … women are now, I should say, Black women are now being more active in living up to the standards set by Black celebs … I don't see much big Black teenagers or big Black women… well at least not in their mid-30s … those over 40 to about 60 let themselves go … younger women now care what people say … they have been influenced in a good way … things are changing … I use Instagram … I see how young women proudly show off their fit bodies … it's comforting to know they take inspiration from celebs and the media and are

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[53] Dove is a beauty brand. The company started a campaign to help women in South Africa feel more comfortable in their bodies and love themselves regardless of their flaws. Its main aim was to help women gain self-confidence about their body image.

living a healthy lifestyle … and actually monitoring their weight … this is important in preventing ill-health and improving long-term health.

Naledi seems to take motivation for better health from the media and from Black female celebrities in South Africa. Her thoughts shifted from international ideals of beauty to challenge the norm of slimness in the Western context of a beautiful body. She idealises "Black beauty" in South Africa to express her thoughts that Black women are now more empowered and in control of their bodies. This means that Black women are challenging cultural expectations of what was once considered beautiful and are now more cognisant of what society says. It seems as if younger Black women are being positively influenced by the media, particularly social media, to be more mindful of weight, eating habits and physical appearance – as articulated by Naledi who admitted using Instagram. More often than not, humiliation and fat shaming provokes guilt in fat people by the normalising media (Lupton 2012a). What is striking about Naledi's narrative, similar to that of Brenda and Thandi discussed earlier in this chapter is that 'big' is a euphemism for a larger sized female body. Ideas about body image, then, shape self-perceptions about individual health and how bodies are given meanings in social and cultural contexts – as reflected in the above quote and as explained in the following section.

Body image and self-perception

Body image and self-perception provides important clues to workers' understandings of individual health and body satisfaction. Examining the issues below helps unpack the CVD situation in South Africa and how health behaviours are considered, if at all.

Variable		Frequency	Percent
SATISFACTION WITH CURRENT WEIGHT (*N*=399)	I would like to lose at least 10-15 kilograms	56	14.0
	I would like to lose a few kilograms	142	35.6
	I would like to gain a few kilograms	75	18.8
	I neither want to lose nor gain weight	92	23.1
	I haven't thought about it	34	8.5
WEIGHT CHANGE (*N*=400)	It has gone down a lot!	63	15.75
	It hasn't changed much	201	50.25
	It hasn't changed at all	61	15.25
	It has gone up a lot!	75	18.75
IMPORTANCE OF BEING IN SHAPE (*N*=398)	Very important	213	53.5
	Important	175	44.0
	Not important at all	10	2.5
IMPORTANCE OF HEALTHY HABITS (*N*=400)	Very important	211	52.75
	Important	132	33.00
	Not important at all	57	14.25
INDIVIDUAL PERCEPTION OF HEALTH (*N*=400)	Excellent	41	10.25
	Very good	94	23.50
	Good	173	43.25
	Fair	77	19.25
	Poor	15	3.75
	TOTAL		**100.00**

Note: Weight change over the past one year

Table 7 Frequencies for body image, health behaviours and perceived health[54]

Sociological understandings of 'The Body'

A sociological perspective of the body helps understand the sociocultural and subjective meanings attached to the body and its possible role in the rise of NCDs like CVD in South Africa – as will be discussed in-depth later in this thesis. Fundamental gaps exist in the South African literature on the sociocultural and environmental factors of obesity among the economically active age groups. Cultural influences on different dimensions of body image among urban women were found in this study which differed among social groups. For example, Black women in their mid-40s to late 50s were able to see a larger body size status in themselves. These women seemed to have a higher tolerance of a larger body size,

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[54] Some of the data presented in this Table appears in earlier sections of this thesis as a way of setting the context for the discussions that follow. The Table as it appears here is to better situate weight-related issues as it pertains to perceptions of health.

and similarly perceived their loved ones, family and friends to be more tolerant of their body size. A larger body size was associated with a more positive body image as opposed to a thinner or leaner figure.

White women in the same age range seemed more dissatisfied about their body size and experienced 'felt stigma' and negative judgment by others. They also perceived higher dissatisfaction from their family and friends about their body size. As acknowledged, the socialisation process has an important role to play in terms of particular body ideals which differ according to age, gender and race. Understanding body image appearance can be descriptive and interpretive as appearance relates to social structures and power across societies.

Body weight (dis)satisfaction

Satisfaction with their current weight was reported by only 23.1% who said that they 'neither want to lose nor gain weight'. As many as 49.6% expressed their desire to 'lose at least 10–15 kilograms' (14%) or 'lose a few kilograms' (35.6%). Some (18.8%) 'would like to gain quite a few kilograms' while others (8.5%) admitted that they 'haven't thought about it'. To some, physical appearance matters a great deal.

Despite Black women's acceptance of a larger body size, many in their 20s, 30s and 40s conveyed a quest for a thinner body size even if it meant going against their 'culture' of accepted body size. Although older women perceived a larger body size as 'normal', majority of those in their late 40s and 50s expressed dissatisfaction of their body size. Only 3.8% in the 40–59 age group reported happiness with their current weight. Some wished they had taken better care of themselves by watching their body weight over the years:

> *I am not very happy with my size … you know, I wish I was younger and wiser … that way I would be more careful of what I put in my mouth and how much I weigh … or better managed my stress … stress is blowing me up! … but the diet pills are working.* (Sally, 41, Coloured woman)

Or,

> *I wish I was thinner … I don't like what I see in the mirror … it's hard to lose weight … dieting is not fun … but it's helping … the scale is lower than last year.* (Joyce, 55, Black woman)

And,

I am trying so hard to lose weight … I basically tried every weight loss supplement on the market but this sluggish thyroid problem is to blame … I can never lose weight and keep it off … no matter how hard I try … I lose it then pick it up again … trying to lose weight is more expensive … it's cheaper to gain weight … and regret it later in life. (Fiona, 46, White woman)

These responses encapsulate dissatisfaction with current body weight and the need to change behavioural control. The intention to lose weight was reported as one of the main goals to looking physically attractive. Individual satisfaction with their current weight was expressed by some respondents through their personal narratives.

Khensani (27, Black woman) voiced her thoughts on African women and their body size:

I think African women have the highest obesity prevalence of any other group … they are more likely to underestimate their body weight than White women … one's culture says that having a big body is OK … body size can prevent awareness among many women about the health benefits they and others in their cultural group can achieve through weight loss and healthier eating … In fact, I haven't been able to say that I'm happy with my body until recently … I've made the necessary changes and am not as big as I used to be … I fitted in without being judged but I knew I was a ticking time bomb … I feel better than I ever have because I have made the right choices; I eat a balanced diet and exercise often.

She claimed that Black women underrate their body weight compared to White women because African culture advocates for a larger body size in a context where a bigger body is accepted. Some research in South Africa addresses the question of what it means to be a Black African, where meanings such as "big is beautiful" are particularly common and mostly identified with Black women (Puoane *et al*. 2005a–b; 2006). There seemed to be a lack of informed awareness among women in this study regarding the dangers of a heavier body or the benefits of losing weight and engaging in healthier eating habits, thus supporting the notion that "bodies exist in culture" (Kirk 2002, p. 81). Unlike in the Western nations where a slender and lean body is considered 'beautiful', in Africa, it is considered 'sick' or 'diseased' (Puoane *et al*. 2010; McNaughton 2013; Morris & Szabo 2013). A more detailed discussion on this and its impact on potential health promotion is discussed in the next chapter.

Participants who reported healthy eating habits 'sometimes' or 'not at all' said they 'would like to lose at least 10–15 kilograms' (8.8%) or 'lose a few kilograms' (19%). A few (9.27%) who eat healthily 'would like to gain a few kilograms' while 9.5% who eat healthy are

satisfied with their current weight. Some (21.9%) of those who eat healthily would like to lose weight and not conform to cultural ideologies about body weight – as articulated by Busi, Dineo, Naledi and Khensani. It appears that the findings in this study challenge some of the available literature in South Africa to show that Black women now contest the sociocultural norms set out for them.

The social construction of 'The Body' is a core concept as a means of acknowledging how "bodies play a part in producing and reproducing social practices" (Kirk 2002, p. 80). For example, Khensani was not pleased with her large body. She knew that her health was being compromised because of her excess weight and decided to change her lifestyle and enforce greater agency in losing weight. In terms of culture, she was not judged when she was larger in size but she understood it was not good for her in the long-term. Khensani possessed strong behavioural intentions to perform better health behaviours whereas others lacked personal agency. This also indicates adopting the biomedical model and taking on board the health issues it raises as related to the outcomes of Western lifestyles.

In a similar scenario, Zack (35, White man) expresses his dissatisfaction with his current weight:

> *I'm fat … I'm not happy about it … but I cannot seem to lose it … the images of fat people in TV adverts about weight loss makes me feel ashamed of mine. I did try to lose it, I keep trying … but nothing seems to work … the doctor said I have a thyroid problem which makes weight loss practically impossible for me … I feel like curling up sometimes but I have to stay hopeful that one day, I will be successful.*

Like Fiona, Zack stressed that weight loss is difficult because of a thyroid problem.[55] People with thyroid dysfunction are more prone to CVD, CVD-related mortality and thyroid disease – which is most common among diabetics and makes weight loss difficult (Sabih & Inayatullah 2013). Fiona and Zack both described the difficulties they face in losing weight which is affecting their body image.

Metabolism management was considered important in preventing weight gain as articulated by Mike (32, White man) in the following quote:

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[55] The *National Endocrine and Metabolic Diseases Information Service* (2013) showed that hypothyroidism is a condition where the thyroid dysfunctions and causes the metabolism to slow down leading to weight gain and contributes to higher cholesterol levels.

Overweight people have a slow metabolism or eat too much and don't exercise ... Thin people have a fast metabolism … or don't eat much … you cannot change your metabolism for good … you have to manage it … fat people are seen as greedy and skinny people as anorexic … everyone talks about losing weight because fat will kill them … it's not that easy for many … magazines drive women to looking a certain way … healthy eating should be the goal and having a lean firm body … not extreme thin … but to be honest, fat isn't sexy … lean is.

Mike spoke about the social meanings attached to fatness and thinness explaining that people usually intend to lose weight because of the fear of fat and its relation to death. He clarified that losing weight is not as easy as it often sounds because of metabolic problems. Furthermore, the media shapes understandings of 'The Body' which either encourages or discourages people to abide by the norms and bodily expectations dictated by society. Healthy eating is advocated for living a healthier lifestyle and possessing a leaner and firmer body. Mike admitted that he considers fat to be unsexy and leanness to be sexy. This is similar to Jessica's narrative when she explained that fat makes her cringe. Mike's consideration of sexy and unsexy is also shaped by the media reflecting that he also has perceptions of different body shapes and sizes. Jessica and Mike regarded fatness as revulsion, something to be avoided – as was the case of other respondents discussed earlier. Mike's perception of an obese body represents thoughts of the Western society as fat is often symbolic for slothfulness, poor health and greed (Eli & Ulijaszek 2014).

Excess body weight was seen as something to get rid of because of the fear of what people may say, as evident in Junaid's (33, Indian man) assertion:

People say that overweight people are lazy and less attractive … like one big blob taking up other people's space … Thin is more desirable and productive … Either end of the spectrum is a problem, though … overweight people are at greater health risk of CVD as they put a bigger strain on their body by carrying around excess weight … I walked down that road before … my heart worked harder … which put pressure on me, I see how fat people struggle to move around … it's sad … I understand what they are going through … I don't ever want to be that way again … Your joints and bones need to carry more weight which is no good ... Excess weight causes diabetes … between overweight and thin, thin has a better chance of survival and better health … health wise, you are able to do a whole lot more.

Given his earlier quote about wanting to be healthy and happy, it is understood that Junaid's motivation to lose weight was due to negative societal connotations attached to being overweight. He understood that his excess weight was compromising his health and shared

experiential knowledge about what carrying around excess weight entailed. He knew he was at a greater risk of a CVD-related condition and felt physical pressure and strain when he was overweight. Junaid affirmed that he never wants to be overweight again as he knows how much he suffered. He affirmed that a thin person has a better chance of survival as they are also able to do activities that an otherwise larger body size would not be able to. Functional ability, according to Parsons (1951) cited by Turner (1991a) then became important. The binary that emerged is that fat is associated with inability and thin with ability – the plight of chronic conditions like CVD in the workplace.

Tarryn (26, Coloured woman) added to this by describing these binaries:

> *Overweight implies unhealthy and thin implies healthy … Overweight is bad and thin is good … That the one is better than the other, thin is better than overweight people … it's a grey area … On the one hand, people won't be bothered by it. They would only be bothered by it from a health conscious point of view … because overweight persons are unhealthy, lazy individuals who do not socialise well within their circumstances … Thinner persons create a healthy attitude towards life in general and concern regarding their outlook and physical appearance … it's more than that when we consider the financial impacts in the workplace.*

Tarryn pointed out polar identities embedded in the ways in which weight is understood in society and the cost implications of NCDs in the workplace. Dineo (24, Black woman) later provided a summary of what Khensani, Zack, Junaid and Tarryn expressed earlier:

> *People seem to be shaming overweight people and praising thin people … but I think that communities are learning to accept people as they are … workplaces are trying to change people for better health because of what it would cost them … People have evolved and transformed from judgement ... everyone has different views on this topic … I guess it depends on your race group or culture or family life or something of that nature … but I believe that overweight people are scared to be overweight as it means disease and death … they see it as unhealthy and something that could be prevented … some people condemn being thin, some love it … Black women are expected to be big in size … it's some gendered thing but they don't see themselves as fat … most are a heart attack waiting to happen but they continue walking around eating unhealthy things and dressing up in the most unattractive outfits … I think us younger Black women are more concerned about how we look … anyone can see how smart we are … I mean back in the day we didn't have a voice but now, things are changing …*

Dineo suggested that overweight people fear being fat because of its association with disease and death. This puts forward the point that negative reinforcement may encourage better health behaviours. It takes from the fact that it is also more acceptable to be larger in size in some sociocultural settings. Culture and race then become important indicators of how one not only understand their health behaviours but how they perceive their individual health.

Body shaming is something the respondents voiced their concern about. Even though they may not perceive themselves to be at-risk for CVD, they wanted to lose weight and avoid the shame attached to being overweight. This was suitably conveyed by Zack (35, White man):

> *… being thin is what society suggests … a target body shape … The older you get, though, the more society seems to approve of gaining weight ... in broad brush strokes, overweight is unhealthy, thin is healthy … Overweight people are rich or love food … or are gluttons … thin people are sick or models … but everyone wants to be thin … nobody wants to be overweight … thin is accepted … Overweight is ostracized.*

The meanings participants attached to their body were multi-layered and understood in the context of their home, work or social environment. For example, Stuart (29, White man) would like to lose weight and fit in because:

> *Society unjustly judges overweight people while putting thin people on a pedestal … Being thin is the ideal, being overweight is something to be avoided … There have been negative connotations attached to being fat … It's been equated to laziness, untidiness and unattractiveness … Thin has been said to equal attractiveness and beauty … There is a turnabout though with people being called out for fat shaming others … While thin is still what some people aspire to, I think 'being healthy' is a goal everyone should work towards.*

Across societies, fat is associated with negative images whereas thinness is symbolic for physical attractiveness (Ristovski-Slijepcevic *et al.* 2010). Obesity, in the above context, is therefore framed as individual responsibility resulting from a poor lifestyle whereas slimness represents a disciplined body. The categorisation of the virtuous 'Self' and obese 'Other' is thus noteworthy in the moralisation of body weight discourses (Farrell *et al.* 2016). According to Stuart, things are changing as society is now more open-minded about weight and he believes that the most important thing is to be healthy. He understood that good health is associated with thinness and bad health with fatness. As the narrative above suggests, 'being healthy' should be the ultimate goal and not only being thin.

While some respondents focused on body shaming, others pointed out that there is more to being overweight. Thato (35, Black man) elaborated on the point that one's culture shapes understandings of 'The Body' as sociocultural meanings differ in different environments:

In some cultures, being overweight is seen as a symbol of wealth and prosperity, despite the health consequences. People who are very thin sometimes suffer from the stigma that they have some disease or illness … Society seems to be programmed to look down on overweight people and unduly praise thin people without reason … but nowadays society tends to glorify obesity and discriminate those who are thin ... It is becoming a growing trend … it happens where I live … Fortunately in South Africa, at least, I do not think that it's a major health risk, it's my personal perspective … overweight people are considered unhealthy among White people for example … it could be genetic or eating habits ... they are also more accepting of thin people.

Indeed, Thato's ideas fit the understandings of ideal weight based on culture. He highlights the shift in thinking about body weight whereby obesity is being more accepted. There seems to be a lack of knowledge around the dangers of being overweight as he expressed that there is no health risk associated with obesity. This is problematic as there is a rise of obesity trends in South Africa yet, as the findings confirm, there is a lack of risk perception or understanding of the consequences of being overweight. He goes further to describe that White people are more accepting of a thinner body size while Black people are more accepting of a larger body size. As evidenced, body size and shape are given different meanings in different sociocultural contexts.

A similar perspective appears in other quotes, such as the one by Sihle (31, Black man):

In the climate of HIV, overweight is a good thing … Conventionally thin is aspired, but some people don't want to appear too thin … I'm a Black man, I've seen these things … there in the location, people judge for being thin … at work, overweight customers are given weird looks … we wouldn't call someone fat at work but in our community we will shame them and very thin people … even if they are more beautiful … it's disgusting … I'm embarrassed to be a part of a community like that … I can only imagine how others feel about it when they're picked on …

Earlier discussions on this topic revealed the comparison of HIV/AIDS and CVD when overweight was found to be more accepted than thinness in the context of HIV. The literature suggests that it is better to be larger in size and regarded as free of disease than be thin and regarded as sick (Morris & Szabo 2013). Sihle spoke about his community being judgemental

of thin people. During the interview, Sihle's facial expressions while narrating his views revealed that people judge overweight people by looking at them in a 'weird' and seemingly judgemental way. He felt pity for those who are subject to judgement and shame and is embarrassed to belong to a community that behaves in this manner.

Loyiso (36, Black man) added " … *some people say overweight people are less appealing than thin people … some say thin people are less appealing … being overweight also comes with lots of health issues … that's what many people forget.*" Loyiso's ideas reveal that body image is understood differently by different people in society but he realised, like Junaid, that excess weight is to blame for health issues.

The sociocultural understandings of body weight seem to be changing as reflected earlier and as related to Karabo's account on her body perceptions:

> *I once thought that it's about having wider hips and a bigger bum* (laughs) … *In a more traditional or cultural sense, many women do think being larger is more attractive and better for them … so they eat whatever they want without thinking about it … with the Western world becoming a greater influence on the younger generation, we see that ideas about body size are changing … In Jo'burg, I'd say the women are a lot more educated and aware of these kinds of issues … back home, I think people in my village still think that bigger means wealthier or more beautiful … when I go home for the holidays, they start judging me for being thinner … I lost weight ever since I started studying and working here … I personally think women in Jo'burg are elegant and dress well … I wanted to be the same … elders back home have their own ideas about big cities and they have strong dislikes about it … they say that we young people are "trying to be White" and that we are forgetting our culture … it seems as if culture is an excuse for women being fat … or does culture mean not worrying about our physical appearance? … That's ridiculous … women are blamed for lots of things … will culture be responsible when people die early?*

She admitted to being larger in size when she did not know better but confessed that after relocating to a city like Johannesburg, her outlook on her physical appearance changed. This meant greater perceived agency in leading a healthier lifestyle but also the negative impact of a Western lifestyle – as described by Khensani and Naledi earlier. Karabo raised important questions on (1) whether culture is a lame excuse for weight gain or (2) if culture can be held responsible for premature death.

In the context of a rise of obesity, culture is important to explore. Airhihenbuwa (2007) discusses this in his thoughts about centering an Africanist vision in a gateway to global health by advocating a focus on social-cultural aspects to understanding health. Amidst the rise of obesity, culture was important to explore. Airhihenbuwa's PEN-3 model (Figure1) therefore offered a cultural lens for addressing health behaviours and help-seeking behaviours by identifying aspects of culture during the rise of chronic diseases in South Africa.

Health and help-seeking behaviours

In the context of the discussions so far, an exploration on the reasons why workers choose to seek medical checks or not and whether or if they adhere to chronic medications becomes invaluable. This section probes into the perceptions of allopathic and CAM use among the study population to better understand the reasoning behind the engagement of health behaviours and how it relates to understandings of CVD and perceived risk.

Variable		Frequency	Percent
MEDICAL CHECKS	Yes	189	47.5
(*N*=398)	No	209	52.5
DAILY MEDICATION	Yes	79	19.9
(*N*=397)	No	318	80.1
	TOTAL		**100.00**

Table 8 Frequencies for reported medical examinations and daily medication

Traditional, Complementary and Alternative Medicine

As mentioned in the review of literature, TCAM is a newer concept to CAM which specifically includes African traditional medicine (ATM). This is important in this study as most participants shared their use of ATM, TCM, Ayurveda, reiki and homeopathy. The existence of medical pluralism is therefore not an uncommon phenomenon.

Allopathic medicine

CVD-related conditions are silent killers detected through routine medical checks with an allopathic doctor (WHO Regional Office for Africa 2013). Seeking medical attention is an

activity that 47.5% of the participants engage in while 52.5% avoid. Sixteen percent of those aged 19–29 as opposed to 32% of those aged 30–75 engage in medical help-seeking behaviours. This finding offers a more nuanced insight about help-seeking behaviours according to age indicating that those over the age of 30 were concerned about their health or able to afford medical assistance compared to those aged 19 to 29. Thirty-three percent of those aged 19–39, 11.3% of 40–59 and 2.8% of 60–75 reported seeking medical attention. Among those who reported routine medical check-ups, most go in '*once or twice a month*' (7.5%), '*once in three or six months*' (15%) or '*once or twice yearly*' (25%).

Eighty percent of all participants do not take any medication on a daily basis which denotes the lack of awareness of their actual individual risk for CVD. Many (52.5%) do not know their CVD risks and do not get screened for health-related conditions because they believe that they are in good health and therefore avoid seeking medical assistance. Although, perceiving oneself to be healthy does not translate to being healthy (Armstrong 2014). Perceptions of individual health are blurred in that perceived good health could prevent people from considering their risk for CVD.

For example:

> "*I don't think there's anything wrong with me … I feel healthy*" (78), "*my health is good for now*" (352), "*I take multivitamins and eat healthy*" (164), "*I'm not a sickly person*" (103) or "*I exercise at gym and check my blood pressure, weight and cholesterol there so I don't go to a medical doctor unless I need to*" (366).

Other participants identified the cost of medical assistance and the time it takes to access it as a barrier:

> "*I don't go for medical check-ups because I don't have the time or money*" (9), "*it's too expensive*" (111), "*I have never had a serious condition to be put on medical aid*" (393), "*… I have too many financial commitments*" (28).

There seems to be a lack of importance placed on help-seeking behaviour with participants saying that "*It's really not that important …*" (66). This corresponds with Armstrong (2014) who drew on Hochbaum's analysis underpinning health behavioural intentions such as healthcare attendance, disease screening, help-seeking behaviour, risk perception and illness management. He found that if one lacks agency, behavioural beliefs about lifestyle modification and outcome evaluations of a particular condition, their help-seeking behaviour will be low.

Aside from avoiding medical treatment because they believe they are healthy, some respondents have also not considered going for medical check-ups because they preferred to self-medicate.

For example, respondents expressed:

> "*I have learned from a young age to avoid doctors … we make homemade traditional remedies for different health conditions*" (Indian woman, 55), "*… there's so much we can find over-the-counter*" (White man, 35), "*I take multivitamin supplements and eat a healthy diet and get enough exercise*" (White woman, 38).

The lack of trust of the nurses and medical establishment was another barrier mentioned:

> "*I don't go for medical check-ups because our clinics are poor and nurses are not well trained. I don't have time to waste waiting in long queues*" (Black male, 43).

There are important perceived constraints to seeking medical attention as articulated by the following survey respondents:

> "*I don't go for medical checks because I'm not used to it. I have not been examined by a medical doctor since a long time as I wasn't working*" (Black woman, 39).

> "*Medical checks are a waste of time and money. I don't bother.*" (Coloured woman, 46)

These responses reflect the lack of importance placed on health behaviours like seeking medical assistance. This provides insights into why CVD risk perception is missing among workers who face fundamental constraints to adopting good health behaviours such as having a medical examination.

Fear of what the medical checks could reveal was an additional barrier to seeking medical help.

> "*I'm scared*" (105), "*I am afraid of what I will find out*" (289) and "*I'm terrified of what the doctors will find and what my life would be like after that*" (261).

While most never considered going for medical checks or reported fear, having no reason to go or, going only when ill because they think they are in good health, some claimed agency in being able to take care of their own health and not needing the help of medical doctors.

For instance:

> "*I can monitor myself – I know how to treat myself*" (65), "*I don't think there's anything seriously wrong with me what my traditional doctor can't fix*" (78), "*I never thought of going for a check-up as it is not important to me*" (293), "*I never had a reason to go*" (6), "*I don't see the need to*" (69), "*Nothing made me think about going*" (167).

Such responses demonstrate knowledge about chronic conditions that shape help-seeking behaviours and decision-making in line with what was discussed in the literature (Elnegaard *et al*. 2015). Respondents seemed to lack outcome evaluation of the benefits of seeking medical care and screening but believe that they have strong behavioural control and personal agency in treating themselves. This may well explain why 52.5% do not seek medical treatment. Follow-up interviews probed into the forms of healing respondents make use of, whether alongside medical treatment or exclusively.

In some instances (47%) chronic medication for hypertension, hypotension, cholesterol, type II diabetes, thyroid and cancer was reported. Other types of daily medication were for family planning, maintaining health and preventing deficiencies by including multivitamins, iron, and calcium and magnesium tablets. Arthritis, asthma, HIV/AIDS, gout, stress, depression, anxiety, allergies, pregnancy, anaemia and fibromyalgia were also reported as conditions needing daily medication.

It appears that the use of TCAM[56] was preferred in most instances. Those seeking treatment for health conditions from medical health professionals also mentioned that they are seeking treatment for other health conditions from ATM, Ayurveda practitioners, Chinese healers and reiki masters. The use of these healing systems was considered an affordable option for interviewees who believed it offered a more practical and long-term health solution. This reflects the general trend in South Africa and elsewhere where 65–80% of the world's population rely on diverse medical and healthcare systems, practices and healthcare products that are not part of conventional allopathic medicine that vary between cultures and countries (WHO cited in Pan *et al*. 2014).

Fifty percent of women reported seeking medical assistance compared to men (41%). There is no surprise that medical doctors were trusted by those who only seek allopathic medical advice.

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[56] The Literature Review includes a definition of TCAM as a newer concept to CAM (see page 65).

Henry (33, Coloured man) acknowledged that culture plays a key role in health behaviours:

> *There is a place for cultural practice for all other issues but for serious health-related issues I believe that a professional who is trained and specialises in the medical field would be best equipped to treat me …*

However, despite the existence of different cultural norms, he shared his personal preference for a professionally trained and qualified doctor in the medical field. Like Henry, Stephanie (24, White woman) emphasised the importance of medical professionalism:

> *The doctor specialises within a range of medical conditions … I trust doctors more … I think that for the condition heart disease, a GP should be your first contact and then they will refer you to the other appropriate specialists … I am science focused … I have only been exposed to their type of medical practice, so I do not believe in treatment outside the medical field … I trust professionals better … they can alleviate all conditions.*

She placed trust in a medical doctor as she believed medical doctors are skilled and equipped to alleviate all conditions, as opposed to curing all conditions. The difference between Stephanie's narrative and Jabulani's is that she believes that biomedicine can alleviate all conditions while he advocates that traditional doctors can cure all conditions. This is consistent with the literature that confirms that Black people are more likely to seek healthcare assistance from African traditional healers who they believe can cure all conditions (Sobiecki 2014) reflecting the use of TCAM in the South African context.

African Traditional Medicine

ATM is often perceived as lacking in scientific merit. Given South Africa's historical and political background, sociocultural understandings of health, illness and help-seeking behaviours are important when trying to understand the CVD situation in South Africa. A psychosocial study of CVD will not be complete without exploring the use of TCAM for diagnosing, managing and treating chronic conditions.

The use of TCAM appeared to differ according to race, for example, "*White people know how to take medication for every sickness but Black people they drink 'inbiza' traditional medicine*" (Black man, 57). Another detailed his sole use of ATM to question the power of medical doctors.

This is the account of Jackson (46, Black man):

> *I do not go for medical attention … from the time I was a small boy … I believe in the power of traditional medicine … even before Western medicines came out, us Africans used traditional medicines for healing and curing people who are sick … my grandfather and father did so in the farms in Kwa Zulu-Natal … many of the men in my family learned his practices … now treating the people … people think that traditional healers are witch doctors … they use muti[57] and herbs based on what the spirits or ancestors say … if I have a problem, I ask my family members for herbs or I visit Jo'burg CBD … there's someone there who's very good … you only pay R50[58] … very cheap … he has herbs to cure all body sicknesses … diseases … love-life … everything … I had a heart problem … now after drinking those herbal teas it's gone … we don't believe in fancy names for heart conditions, fertility problems, body part issues and what-what[59] …*

It seems as if the use of ATM outweighs the use of Western forms of healing. The beliefs that ancestral medicines had the power to heal and cure people adds depth to understandings of cultural practices of medicine-making still deeply rooted in contemporary South Africa. This feeds into debates on how traditional healers are often blamed for witchcraft (BeLue *et al*. 2009; Nkosi 2012) – evident in Jackson's narrative.

Beliefs that consuming traditional medicines serves as a cure to heart-related problem exposes the plight of chronic disease and the dynamic healthcare situation in South Africa. This is especially true when allopathic treatment is often overlooked in a context where sociocultural meanings attached to health and chronic diseases dominate Western notions. As Jackson pointed out, each culture has its own language for different medical conditions but allopathic doctors have fancy names for heart conditions. This relates to what Merleau-Ponty (1962) spoke explicitly on in his work on how language contributes to the social reality and lived experiences of different social groups.

In essence, individuals do not necessarily lack knowledge about diseases; rather, culture reinforces existing knowledge as different social groups have various ways to refer to the conditions – aptly reflected in a study by Airhihenbuwa *et al*. (2014). Black people seemed to have umbrella term understandings for each condition.

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[57] Muti is an isiZulu word that refers to traditional medicine.
[58] R50 is affordable compared to the costs of medical treatment in South Africa.
[59] "What-what" can be understood as etcetera etcetera.

This is further evident in Jackson's narrative:

> *We have terms for them in our own languages which only we can understand …*
> *Black people don't believe heart problems can kill us … we pray in the bushes at*
> *night … most of the sickness, even HIV they say can be cured … I don't know if*
> *for really … most people use traditional medicines … they don't want to tell*
> *anybody but they use it … I used it for many purposes … and I still use it …*
> *it works … I'm telling you, they work 100 per cent … the patients respond on it*
> *… the only side effect is vomiting and diarrhoea … because all the bad things are*
> *coming out before you feel better … we don't need doctors … many times it's not*
> *a medical sickness, it's people doing funny things making other people sick like*
> *it's something else … it is witchcraft that causes bad health … ask Black people.*

There is the contested belief that Black people do not consider the possibility that they can die as a result of a heart condition. Spiritual explanations and the trust that prayer can rid all sicknesses and diseases including HIV become problematic in the context of a rise in chronic conditions in South Africa. Jackson's story mirrors the underlying factors that shape whether or not individuals perceive themselves to be at risk for CVD and the perceived agency they have in health-related decision-making. The use of ATM is fraught with secrecy usually because of the fear of judgement in society. A common understanding on how traditional medicines and herbs work to release toxic substances or evil spirits believed to be the source of sickness and disease continue to exist. This is insightful considering its cultural meanings in an urban setting like Johannesburg – which is considered a place where people go to forget their cultural values, as described earlier by Karabo.

It is clear that ATM is believed to have the power to invoke a sort of cathartic cleansing of the body through which vomiting and diarrhoea helps rid a person from the root cause of their condition. Cultural perceptions like these were evident in the accounts of interviewees; however, it becomes problematic when medical doctors are considered unnecessary. Bewitchment was blamed for pain and suffering which links to the available literature on HIV/AIDS and its association with cultural beliefs (Nkosi 2012). As Jackson explained, chronic conditions like a heart-related problem is not always attributable to biological or medical causes since spiritual forces mimic such conditions. He affirmed that Black people are knowledgeable about culture and reasoned that Black people identify the role of traditional practices to better understand health in a context where Western ideologies and treatments will not suffice.

Similar to Jackson, Sipho (34, Black man) gave a cultural account of his health behaviours:

> *In my culture, our forefathers were using traditional ways of healing which were cheap … it worked well … herbs has no side effects but if it is something in your body that needs cleaning then it will come out in some way … pimples, vomit, running stomach, fever … White doctors must not rob us of our use for traditional medicines … they must try it, maybe it will help them too … Traditional healers must get the respect like medical doctors … not all traditional healers are inexperienced … people don't think traditional healers have any power … mostly Black people go to African healers, I think … but young ones these days they want to go to medical doctors … they don't believe in our healers … I think it's because of Western cultures … it makes them forget our traditional roots … it's not good … medical doctors can't help if it's a problem with ancestors or spirits causing the sickness … people, they can do very bad things to make someone sick … or even kill … they can make like it's a doctors sickness but it's not … doctors, they only know how to give expensive medicines … that doesn't work … I don't like to waste my time or my money … I know people who had their diabetes, high blood and arthritis cured … my sister and grandmother and even my mother.*

Sipho went a step further than Jackson to refer to the cathartic process Jackson talked about in his cultural explanations of ill-health. Aside from Jackson's claim of vomiting and diarrhoea, Sipho explained that pimples and fever are also side effects of traditional medicines. What is evident in Jackson and Sipho's narratives is the cleansing process that traditional medicines bring with it. According to this, traditional healers are more powerful than allopathic doctors. There was an assumption that allopathic doctors are of a specific racial category which is understandable because although there are many Black allopathic doctors in South Africa today, in the past, most doctors were White. This might be the reason why there are contestations surrounding Black doctors being understood as a professional. Black doctors were often seen as deviating away from social expectations such as following their traditional roots and are blamed for being too westernised (Digby 2013) – leading to mistrust of Black allopathic doctors in South Africa.

The younger generation of Black people, according to Sipho, are more accepting of allopathic doctors and choosing not to visit traditional doctors. Medical conditions are often understood as a sickness for doctors to treat and spiritual sicknesses for traditional healers to cure. This is consistent with the classic literature on *Body and Mind in Zulu Medicine* by Ngubane (1979) who provided a detailed ethnography of health and disease. Sipho and others' understandings echoed that allopathic medicine is ineffective, expensive and a waste of time.

What is palpable in the accounts is that ATM is not yet as recognised or seen as legitimate compared to allopathic doctors. There is power embedded in biomedicine which, as many interviewees suggested, still dominates. This perception reflects the reality in the South African system where traditional healing, despite its use by 70–80% of the population, has not yet managed to attain a legitimate status as a recognised healing system (Kasilo 2000 cited in Peltzer *et al*. 2008, p. 2). Sipho's narrative alluded to the lack of respect or legitimacy traditional healers are faced with compared to allopathic doctors.

A legitimate concern was expressed by Joyce (55, Black woman):

> *Many traditional healers … and spiritual leaders want to make profit … they are fake … they demand consultation fees first before they see … and they charge such a lot of money for treatment fees … African herbalists … in every corner ... every stop sign there's a sticker … but one day I consulted one herbalist for something my doctor said was BP … he gave me some herbs and roots and some things to do in the bath ... after three months I went to check how is it because I wasn't feeling hot like before … you won't believe, good news … it was gone … that man he cured my BP … chronic medicine is too expensive … I can't afford it … patients will be sent for 101 tests before you can find a problem … sometimes doctors see what the problem is … but I believe that African healers are best for all conditions …*

Some traditional and spiritual healers engage with profit making and are being recognised as 'quacks' (Abdullahi 2011). Even so, African herbalists for example, are often believed to cure hypertension with remedies made using herbs, roots and spiritual practices – as in the case of Joyce. Her reason for choosing an African herbalist was attributed to the rising costs of chronic medication. This explanation reflects one of the most significant barriers to accessing allopathic healthcare in South Africa – as explained earlier by Jackson, Siphelele and Sipho. Joyce evidently lacks trust in allopathic medicine stating that medical doctors are not as good as African healers in diagnosing certain conditions. Her mistrust relates specifically to Sipho's narrative on the legitimacy of Black and White doctors in South Africa and the reasons given as to why people choose ATM over allopathic medicine.

Another insight was offered by Sally (41, Coloured woman) who shared her personal experience of traditional medicine:

> *Let me tell you a personal story … something I'm not afraid to share … You know what I use? African Traditional Medicine – it does not get the credit it deserves. Modern medicine is traditional medicines with extravagant names … it's*

packaged by Pharmaceutical companies … These companies make tremendous profit from the public. I am not saying that every other healer should be taken seriously … as there are fake medical doctors … and illegal pharmaceutical companies … there are also fake medicines and healers out there … African medicines are seen as witchcraft or some kind of cult science … Most of today's medicine come from plants … it is natural. I stopped going for medical check-ups because it's a waste of time … I'm not afraid to say that I visit an African healer … and you know what? I can confidently say that my health has never been better. I found out things that I will not have ever learned from the doctors … I was suffering from diabetes and it was causing ill-health for me … I'm now diabetes free … not many would believe me … but it's true.

Like Jackson who emphasised that people are secretive of their use of traditional medicine, it appeared that Sally, too, acknowledged the fear of what society would say. This is why she disclosed the lack of fear in sharing her help-seeking behaviours. She knows that ATM is not given the recognition it deserves which picks up on the point raised earlier regarding the legitimacy of traditional healers. Sally, similar to Jackson, asserted that modern allopathic medicine is comparable to traditional medicine but with different names. She talked about Pharmaceutical industries capitalising on profits and expressed that many of these industries are illegal and distributing fake medications to the public.

This again links back to what Joyce articulated in her narrative on the legitimacy of African traditional healers and what Jackson disputed in terms of traditional healers being considered witchdoctors – a topic well explored by Nkosi (2012). Sally later admitted that her health has drastically improved since she placed her trust in ATM, alluding to the fact that allopathic doctors are not as knowledgeable as African traditional healers – linking to what Sipho spoke about on the contestations of Black and White doctors and what the classic literature revealed (Ngubane 1979). These expressions expose the truth about the lived social realities that currently exist in South Africa's complex sociocultural context.

Traditional Chinese medicine, Ayurveda, reiki, Homeopathy

Some respondents revealed that they prefer making use of TCM and other alternative forms of healing that help get their bodies in balance. Lopes Ibanez-Gonzalez and Greenstein (2014a) found similar findings where a mixed treatment of Western biomedical medicines and Chinese herbal remedies for managing chronic illness was a preferred choice among participants in their study.

In this study, a firm belief and trust in these practices was communicated by Sharmla (45, Indian woman) who placed her trust in these practices:

> *I have faith and believe in these practices … It is non-intrusive and non-abrasive … it addresses the root cause of ill-health … it is a long-term prognosis and I would rather have alternative medicine … I don't trust doctors after a surgery went haywire, I will seek other forms of treatment … especially if it's promising … So far I'm happy with my health … I've never felt better … unlike when I was constantly relying on medical help … I felt so lost and helpless … I now feel like I'm the driver of my body … I have control … it feels great … thanks to Chinese medicine.*

Sharmla's story, in some ways, is similar to that of Sally's – where Sharmla placed her trust in TCM, Sally believed in ATM. What is common in both accounts is that these women favour a more holistic approach to health and healing that addresses the root cause of ill-health and regard the benefits to be longer lasting compared to allopathic medicine. Where Sally lost her trust in medical doctors due to her suffering from diabetes, Sharmla lost trust in medical doctors after an operation mishap. These incidences led them to choose a more nuanced approach to healing. Both expressed feeling content with their health and in control – relating to personal agency and autonomy in health-related decision-making. In this case, Sharmla mentioned how TCM helped her gain control over her body and made her feel better on the road to recovery.

Yolande (52, Coloured woman) expressed similar agency in choosing holistic healing as a way forward from allopathic help-seeking behaviours:

> *… getting reiki healing often helps calm me and keeps me centred … I rarely ever get sick and when I do, I recover quite quickly … I have had numerous reiki sessions with two different practitioners … My very first experience was prior to surgery … the experience was wonderful … I had a quick recovery process … it dramatically improved the healing time … That was about two years ago in Cape Town … after moving here, I recently went to a more local practitioner in Jo'burg … both practitioners were well trained … spiritual practices do not manipulate others … unlike medical doctors … holistic practices are for using our own energy to recreate our own happiness and overall health and wellness … I also visit a Chinese healer for my chronic lower back pain … I hated acupuncture at first but now I'm so used to it … I often go for a full body massage to help with blood circulation and to ease joint pain … Plus, I suffer from high blood pressure … I've seen a major improvement with Chinese medicines … I'm slowly going off the chronic meds I was on … that's major!*

Yolande understood reiki as comforting and believed it had the power to help her attain overall health and wellness. It appeared that unlike allopathic medicine and healers who were thought to manipulate their patients, reiki is a spiritual practice that does not manipulate but focuses energy to bring about equilibrium in the body. She admitted making use of TCM and consulting a Chinese healer for chronic back pain but later confessed that her experience of acupuncture was initially unenjoyable. Yolande chooses to go for a regular body massage to encourage blood circulation to help alleviate her joint pain. She suffers from hypertension and reported improvement in her condition since she began using TCM, so much so that she is now reducing the dosage of her chronic medications – which is an accomplishment for her attaining better health long-term.

It became evident that participants are using alternative forms of healing alongside allopathic treatment thus rendering them as complementary. This was expressed by Beverley (48, Coloured woman):

> *I haven't had much luck with Chinese herbs or other treatments … a White lady at work suggested I go see her Chinese doctor for a nagging pain in my leg … I gave it a try … I was beginning to feel better only after 6 treatments … I thought I'd get quicker results … I did acupuncture but could not withstand the pain of the needles … it was like post-surgery pain all over again ... I might as well continue with the medication I'm on … our doctor has treated my family for years … we trust him … I'll still go to the Chinese doctor … but not for acupuncture … it's too painful for me … my neighbour recently told me to go for something called reiki … she once felt very heavy and drained but now she is more energetic and pain free … maybe that will be an option for me … but I won't leave my doctor.*

Due to the non-success of TCM in providing longer lasting relief of Beverley's chronic leg pain, she decided to continue with allopathic treatment. Acupuncture was a much too painful process to undergo which reminded her of the post-surgery pain she once felt. She emphasised trust in her family doctor but considered having reiki healing done to help with her pain after hearing her neighbour's success story. Social capital and one's living environment in help-seeking behaviours have influential roles in help-seeking behaviours.

Karabo, a 36 year-old Black woman recalled her ordeal in trying to get pregnant. She found a name of a homeopath in one of her local newspapers and decided to give it a try as she was losing hope in allopathic medicine. She soon regained her faith in Western medicine and shared her experience in the following account:

I've had a minimum of three stress free years thanks to adjusting and sorting out my hormone imbalance … thanks to homeopathy I don't have hormone issues as I once have … I'm now regular on my monthly … it's a good sign, I hope … it's true what people say about stress causing hormones to stop working properly … I was once a very stressed person, I tell you … another thing for me is the power of Western medicine … I painfully realised after the most stressful time of my life that you can't escape medical help ... as a result of trying to get out of my painful existence – which I got so accustomed to – I sought treatment from a Chinese healer ... It's magic how many healing options we have … people must not forget to go to their doctor, though … they're still the medical experts and often know best … I like keeping my options open … I've been through the same as many … giving up on Western medicine … finding dietary changes to make a difference and turning to Chinese medicine to try and eliminate the last of this condition … my husband and I are determined to get pregnant … stress has robbed me of motherhood ... I would hate it to be the cause of other health issues … I need to manage it more effectively … but I am trying.

Homeopathy seemed to be Karabo's favoured choice alongside allopathic treatments. Her stressful life caused her to experience an imbalance in hormones which prevented her from getting pregnant. She was unable to manage her stress levels which negatively impacted her health. She said that she once doubted the power of contemporary allopathic medicine but fast realised that medical help was her only hope – even though the treatment options were numerous. She tried TCM but reported keeping her options open as she firmly believed that medical doctors are skilled and professional experts who know best. Stress has robbed her of motherhood and she is more empowered to manage her stress so that it does not cause any other health issues in her life. She seemed to have a great level of perceived agency and autonomy in making decisions relating to her health. Karabo perceives greater self-efficacy and behavioural control and has strong intentions of having a family of her own.

The participants provided a broader overarching background to help-seeking behaviours. They questioned and challenged the legitimacy of allopathic doctors and seem to be finding holistic approaches to health and healing as a long-term solution.

The following quote by Phillip (38, White man) added depth to this finding:

Traditional Chinese practices and medicine offer so much for good health and healing … I used to suffer from panic attacks and slow beating of my heart … a few people in my circle told me it's a complicated condition … I self-diagnosed it as arrhythmia … I was too stubborn to go to a medical doctor … I searched online … I still won't go … I'm a guy, we don't do those kinds of things unless we

really HAVE to … Anyway, I couldn't get over this flickering feeling in my chest … I was terrified in case something happens … then I saw an ad for a Chinese healer … I don't trust doctors after all the terrible stories I've heard about them … I am now a lot better thanks to Chinese medicine.

Phillip advocates for TCM based on his experiences of its success in the past. He made use of a lay referral system to diagnose his conditions first before turning to the internet for medical advice. The fact that Phillip was open to receiving an alternative form of healing suggests that he places importance on his health. His mistrust of medical doctors was attributed to other people's experiences that influenced his decisions not to seek medical attention.

The quotes extracted from follow-up interviews suggest that race and culture are indicators of help-seeking behaviours. Of the 52.5% of the total population who reported not seeking medical attention, 36% were Black people, 10% were White, 5% were Coloured and 1.5% were Indian. Regardless of age, gender or race group, the study found that many are more willing to seek alternative or complementary forms of healing largely due to the mistrust of medical doctors. This provides insight into the health status of South Africa. The fact that workers reported seeking other forms of healing suggests that South Africa is culturally diverse in its help-seeking behaviour which reveals the acceptance of medical pluralism.

Self-reported help-seeking behaviour was cross-tabulated with perceptions of individual health. Forty percent of workers who reported seeking medical advice perceived their health to be 'excellent', 'very good' or 'good'. As many as 39% of those who reported not seeking medical assistance have similar positive perceptions of their individual health even though they do not seek medical advice and care. This indicates that perceptions of health may not always be accompanied by help-seeking behaviour. In this context, there was only 1% difference in numbers of people who seek and do not seek medical assistance respectively. This highlights that medical assistance does not always shape good perceptions of individual health. In other words, it can be expected that those who seek out medical assistance have more positive perceptions of their health compared to those who do not. However, this was not the case in this study as help-seeking behaviour did not seem to shape perceptions of health. In fact, as discussed earlier, the internet and social media seem to have a more influential role on the perceptions of health.

Online help-seeking behaviour

Others reported seeking healthcare information on the internet and believed that online platforms and chat groups help them feel more active in health-related decision-making. As many as 77% of respondents reported using the internet for general-health information seeking. This finding is similar to Faith, Thorburn and Smit (2015) who found that 78.7% of individual's used the internet for the same reason and other e-health behaviours. Lupton (2015) contextualises this by suggesting that lay people are no longer restrained to accessing health information in print and TV but are being accustomed to a new digital media. She added that individuals seek information on the internet and share their experiences of medical conditions, healthcare practices and caregiving on social media platforms, blogs and chat groups. This suggests greater perceived behavioural control in a context where the internet is a useful but constrained space for health-related decision-making and a source of health information (Nurka 2014).

For example:

> *Everything is on Google these days … who needs medical books … online we get hands-on expert knowledge and we can be active in learning how to best take care of ourselves … engaging with others online makes us feel like what we are going through is real … it's not something abstract … health books make me feel like a loner.* (Phillip, 38)

Phillip underlined how internet search engines, like Google; acts as a mediator between public and private experiences of health, illness and disease. The internet then becomes a convenient and more accessible option for obtaining health information and "self-diagnosis" (Conrad *et al*. 2015, p. 7) compared to medical books or health magazines. There is a sense that the internet provides a platform for experiential knowledge which empowers lay people to access health information online. The individual then feels more active, rather than passive, in understanding his or her health, managing their illness or disease and making sense of their health behaviours. This has potential to strengthen personal agency and intentions for behavioural control and lifestyle modification.

Unlike Phillip, Susan (aged 49) expressed that:

> *Longevity[60] teaches me a lot about health … it's inexpensive and keeps me motivated to attain good health … it also makes for easier points of reference in case I need to back track.*

She seemed to purchase health and lifestyle magazines to seek health information and keep it on hand for easy accessibility of information. Susan never mentioned using the internet for health information, which was unusual considering that most respondents (77%) expressed using the internet for seeking medical advice and information. One study found that patients who sought information via the internet actively seek treatment, are in a better position to make informed decisions about their health and are more willing to learn about health issues from healthcare professionals (Bauerle Bass, Burt Ruzek & Gordon 2006). Seeking information differs demographically and psychologically in terms of information coping styles (Barnoy, Bar-Tal & Zisser 2006). In essence then, health information seeking may not be independent of one's intention as such but is based on outcome evaluations of 'accepted' body image and self-perceptions – as pointed out by David and as reflected in a study by Burk (2013). In South Africa, knowledge and perception of 'acceptable' and 'unacceptable' health and help-seeking behaviours are laden with complexities. These complexities focus the lens on the current CVD situation in the country.

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[60] Longevity is a health magazine

Cardiovascular diseases and related non-communicable diseases in South Africa

Knowledge and perception of cardiovascular diseases and related lifestyle diseases in South Africa

The lens must be turned to CVD and related NCDs in South Africa to understand the psychosocial and cultural unfolding of chronic conditions to later consider the ways forward and the future of these diseases in the South African context.

The lack of individual risk perception for CVD among respondents coupled with the fact that 74% declared that there is not enough emphasis on CVD in South Africa alludes to a gap in health promotion and education regarding heart-related conditions among the participants. Of the 74% who said there is not enough emphasis on CVD in South Africa, 36.5% reported knowing CVD but not so well while others (33%) confessed that they do not perceive themselves to be at-risk for CVD. Of the 74% who said there is not enough emphasis on CVD in South Africa, 38% admitted that they 'do not understand the term CVD'. Some (26%) said there is enough emphasis on CVD in South Africa; however, only 12.5% understood the term.

Thirty-three percent were not familiar with CVD at all and reported that they would like to learn about it. Of the 26% who thought there is enough emphasis on CVD in South Africa, 11.8% said 'yes' they knew what CVD is but not so well and 12.8% said they would like to learn about it. Others (28%) have not thought about their CVD risk. Yet of the 26% who said 'yes' there is enough emphasis on CVD in South Africa, only 6% identified individual risk for CVD, 11% lacked individual risk perception and 9% have not thought about their risk.

The investigation into perceived CVD-related knowledge and individual risk perception for CVD showed that individuals are open to learning about these conditions. Further probing into CVD prevention and understandings of the risk factors for CVD allowed for a more nuanced understanding of CVD in the workplace context. Attitudes towards engaging in better health behaviours and how personal agency, living and working environments and culture shape perceptions about coping with CVD or managing its related symptoms, stress

and emotional eating were important channels to exploring how retail pharmacy workers comprehend CVD.

When asked what participants thought the term 'CVD' meant, many were uncertain and expressed willingness to learn about CVD indicating fertile ground towards a more accepting environment to learn about CVD as summed up in the words of the respondents:

> "*I'm familiar with the word but I'm totally clueless on what it is, given an opportunity to learn about it, I would grab it with both hands*" (145) … "*I know nothing about the disease but it will be a pleasure to learn about it or get information about it*" (161) … "*I would like to learn everything about it because I have no idea what it is. This is the first time I'm hearing about it - I'm very interested to know about CVD*" (378) … "*I actually don't know about CVD but all I heard about it is that it's a silent killer*" (388).

They did not seem ignorant and unwilling to learn about CVD. The problem, it seemed, was that they have not been exposed to as much CVD-related information as they would have liked. This highlights the importance of having a good grasp on how CVD is understood and how lifestyle diseases are considered in order to further interrogate and comprehend the difficulty of the CVD situation in South Africa.

The following responses represent the main views expressed on this topic:

> "*Lifestyle diseases can be prevented and managed through proper diet and exercise. It is quite serious and is rising in South Africa. I think it could be overcome with the right kind of education.*" (106)

> "*South Africa needs to be more aware of the benefits of exercise. I'm sure it would help get better health – they must also eat a healthy diet. We have very polar approaches to health with people either being very healthy or unhealthy in their habits. South Africa is now like the first world countries; people are getting fat and sick.*" (387)

> "*It's like people don't understand what lifestyle disease is. I don't think 95% of South Africans know what CVD is.*" (100)

> "*People need to be educated a bit more from childhood there needs to be education about it – that's lacking in SA.*" (303)

> "*Our government doesn't make the situation any better when they are incompetent.*" (251)

"I think obesity is on the rise in SA, but also the unhealthy lifestyle that can't be seen. Cholesterol and high blood pressure, the things you can't see on the surface, are silent killers. Something definitely must be done to raise awareness of lifestyle diseases, especially CVD in SA." (68)

These quotes shed light on the perceptions of NCDs among the participants who blamed South Africa's healthcare status on the government's incompetency in proper health education and management. The contradictory approaches reflect the binaries and identities discussed earlier to fit in with understandings of South Africa's historic-political background. Given that many (52.5%) reported not seeking medical assistance, lesser importance is placed on individual CVD risk due to misinformation thereby leading to a lack in risk perception. South Africa has been compared to first world countries facing the obesity epidemic and other health crises. According to Mr Graham Anderson, Principal Officer and CEO of ProfMed, this is disturbing given the fact that South Africa is recognised as the fattest nation in sub-Saharan Africa and the world's most expensive nation in terms of healthcare and medical costs (Business Day Live 2015). Participants knew and acknowledge that NCDs are a serious cause for concern and can be prevented but the need for health education was identified as a driving force for positive lifestyle behaviours and raising awareness and education about CVDs in South Africa.

For example:

"South Africans must be more careful. We must try and educate ourselves to better our country. Diseases and viruses can easily be avoided. It is little things that we have to focus on – it starts by learning considering that anyone can get CVD" (168) … *"There should be no excuse but the problem is that healthy living is expensive and SA lacks proper healthcare. The main issue is that bad lifestyles can eventually affect the culture and the future of South Africa – we need a revolution to change it"* (200) … *"Everyone is responsible for how they live their lives. What they do has an effect on the ones they love which is then passed on to others who we communicate with. This is why we need proper education in South Africa so that we can spread the correct messages. Our traditional beliefs are causing problems for our health ... "our" as in Black people.*" (211)

There was a consensus that lifestyle diseases can be avoided through correct messages and improved health behaviours. The challenges people face is financial difficulties and improper healthcare. Coupled with the impact of culture and traditional beliefs, CVD is misunderstood.

In sum:

> *Two main things affect the increase of CVD in SA. That is healthcare and education. In countries like ours where so-called governments don't consider themselves responsible for basic healthcare, even the most simple to prevent illness becomes life-threatening. Our educational system is nothing to be proud of and people have so many superstitious beliefs that replace science. CVD is a big challenge for SA. If we don't deal with it sooner, we will regret it later. There definitely needs to be more emphasis on it.* (381)

Improvement in the healthcare context was expressed as a way forward in the changing healthcare situation in South Africa. For example, as discussed earlier, the public healthcare setting needs to be improved to ensure that progress is made in tackling the NCD situation; especially in a context where CVD is considered a disease for the aged:

> *"Sadly, our public hospitals are where people go to die – I'm sure many of them die from either old age or a CVD-related condition. I believe the health department is working on this but not enough."* (157)

Indeed, education and proper healthcare are important to turn the CVD situation in South Africa. To illustrate, Kajal (35, Indian woman) thought there is insufficient emphasis on CVD in South Africa as there is on HIV/AIDS, thus, health education on NCDs is lacking:

> *I don't see much advertising for heart conditions and its associated symptoms on TV but I do see lots and lots of messages in the magazines about living with HIV/AIDS, healthy eating and losing weight … maybe if South Africa merges those messages with something about the heart then people would go "hey, it's not just about losing weight but it's about avoiding diseases that go with it" … the ways in which messages on healthy living are being conveyed is problematic … there's more attention on HIV/AIDS than there is on CVD. SA is bombarded with HIV/AIDS messages but no one really pays attention to lifestyle matters. This needs to change so that people are more aware of the causes, symptoms and consequences of CVD.*

She pointed out that HIV/AIDS is the focus of much media attention in South Africa and alluded to the fact that CVD needs to be similarly focused. This was briefly echoed in other responses:

> *"CVD is growing and is more prevalent than years before. There's not much awareness on it. People (me included) need to know what's out there and the dangers it causes. CVD is something I have heard about but don't understand*

completely. It is becoming a bigger issue now – that much I do know" (Coloured man, 31)

"Most countries in Africa are run by greedy government workers who do not care about the health and livelihood of the people. The only thing SA cares about is corruption. The problem we face is also poor health conditions in hospitals with shortages in medical personnel and even proper medication. So many people are looking for cheaper ways to manage their health … we don't know how we can get diseases like CVD. Unlike HIV, we all know about that." (Black woman, 28)

There is much controversy surrounding the state of South Africa's government and the inadequacies of managing the country and the health of its people. The conditions of the healthcare system are problematic with shortages of medication and skilled staff and nurses (Gray & Vawda 2016). The lack of awareness on CVD is of particular concern given that messages on HIV/AIDS are far reaching. This was discussed earlier by Kajal who, like the survey respondent above; acknowledged that South Africa is fully exposed to messages about the seriousness of HIV/AIDS but not very aware of the seriousness of CVD and the risks that accompany it. Adding to the aforementioned accounts of NCDs and HIV/AIDS in South Africa, one respondent summed up by saying:

"CVD is because of ignorance or lack of education which may play a big factor too. There is not enough emphasis on this serious condition. There is not much awareness in South Africa about lifestyle diseases in general because everyone focuses on HIV/AIDS." (362)

While another explained that:

"Obesity is our greatest challenge … Consuming too much food is another challenge. We have abundance of food … people consume so much. I also think we lead a very stressful life in SA. There are lots of fast foods as well which youngsters seem to be addicted to. All of these are issues but the government doesn't focus too much on solving the problems as a long-term solution."(219).

This again confirms the perceived inefficiency of government and incapacity of public hospitals to effectively deal with the rise of NCDs. This is evident in the narratives that follow:

"I think we get bad food advice in South Africa and from poor government and unskilled hospital staff … too many people are too poor to choose better healthcare. There seems to be an increasing trend of obesity is South Africa and a huge increase in processed foods … and diets that are high in sugars. Moving toward a future marked by increased use of computers and electronic gadgets

221

means that there is less physical activity like sport and that's why CVD is on the rise." (233)

"We need to acquire the knowledge needed about these kinds of heart diseases in order to see the benefit of living and practising a healthy life. People need to know why they are doing things, why they must eat certain foods, why they must exercise and all of that. People think it's only to lose weight but they don't know it's also about preventing disease." (103)

"Improving the standards of living without concurrent health education has brought about the advent of lifestyle diseases such as hypertension. Bad diets such as too much consumption of fatty foods, processed foods and too little intake of fruits and vegetables and behaviours like drinking and smoking are the main culprits which are worsened by ineffective public health messages in SA." (314).

The lack of informed messages about food choices, the benefits of living healthy lifestyles and the advantages of avoiding sedentary behaviour were prominently featured in the respondents' narratives. There seemed to be a sense of powerlessness in choosing proper healthcare which suggests that one's agency is missing in healthcare decision-making. The problem may therefore not be one of intent but one of skill such as not possessing the required health knowledge, education and means for improving one's health (Yzer 2012). There are multiple underlying factors embedded in South African society that spur the rise of NCDs. For the purposes of this thesis, the following section attempts to situate the rise of CVD in Johanesburg within the guiding Theoretical Framework. It analyses the CVD situation in a contemporary urban setting through contextualising the experiences of workers in this study population.

Situating the rise of cardiovascular diseases in Johannesburg within the Integrative Model of Behavioural Prediction

This section situates the rise of CVD within the IMBP to understand the nuances and complexities embedded in psychosocial and cultural understandings of individual health, CVD and risk perception. Since the IMBP guided the study, the focus of this section is to contextualise the pertinent findings and consider the theoretical and practical interventions that may result from these outcomes as applied in the context of the rise of CVD. As discussed in the Theoretical Framework, the IMBP is based on the premise that individuals act on their intentions for better health if environmental factors do not constrain behavioural performance. In the case of CVD among the study population, individuals seemed to not perform recommended health behaviours even though they may have intended to. This is because they faced important and multi-layered constraints.

As tabulated (see Table 9), the study findings are situated within different levels and are justified by contextual and psychosocial factors as it pertains to the IMBP. This is to explain CVD-related health behaviours and CVD risk perception which is useful in answering some of the broader research questions. As a guiding framework, the IMBP is valuable for further understanding the CVD situation in Johannesburg and NCD-related illnesses and conditions. The IMBP explored the CVD situation through multiple levels; societal, social, interpersonal, individual and habitual – all of which are shaped by socio-contextual and psychosocial factors.

In its attempt to explore the nuances embedded in the research topic, this chapter ties together the most pertinent issues raised in the thesis. The visual representations that follow (see Table 9 and Figure 9) help analyse the current CVD situation in a contemporary urban setting in a way that has not been researched before. Understanding how CVD is considered and the meanings attached to health behaviours sheds insight into why workers perceive themselves at risk for chronic diseases or not. This helps broaden the conceptualisations of health and disease and allows practitioners to be more aware and sensitive to the complexities of CVDs and underlying factors such as the influence of culture.

Levels	Contextual factors	Psychosocial factors
Societal	Background and structural aspects such as: Public health promotion policy CVD programs and initiatives NCD prevention campaigns Healthcare institutional laws and policies Organisational culture TV, print and social media	Cultural identity and norms CVD health promotion Lifestyle behavioural beliefs Experiential attitude Judgement Shame ⎤— Stigma Blame ⎦
Social	Physical and social environment: Access to PA resources and facilities Access to health knowledge and education Physical and built environment constraints	Shared community values Community efficacy Social cohesion and solidarity Childhood upbringing
Interpersonal	Personal responsibility for individual health: Living space (family, neighbours) Workplace environment Food preparation Gendered division of labour Material and financial wealth	Injunctive norms ⎤— Attitudes Descriptive norms ⎦ Body weight shaming Personal weight goals and body image desires Outcome evaluation
Individual	Socio-demographic characteristics Self-reported CVD knowledge and risk Other's health knowledge and education Parenthood Marriage Agency Autonomy	Perceived self-efficacy Perceived knowledge Perceived constraints to better health behaviours Control beliefs Behavioural intentions Perceived values
Habitual	Constraints/facilitators to improve CVD-related health behaviours Recommended help-seeking behaviour Tradition/culture Positive lifestyle habits Workplace ethics	Positive and negative habits Aim to maintain health Motivated to change negative health habits Perceived body image expectation of significant other Salience of health and help-seeking behaviours

Table 9 Understanding factors embedded in CVD, health behaviours and CVD risk perception as found in the study
Source: **adapted from Hulland, Leontsini, Dreibelbis, Unicomb** *et al.* **(2013, p. 3)**

These levels expose the interplay of deeper underlying factors that must be examined in greater depth in future studies. Table 9 is a snapshot of some of the main structural, contextual and psychosocial factors found in the study which illuminates its implications on varying levels. Taking it further, Figure 9 provides a more comprehensive and nuanced depiction of the CVD situation as found in this study.
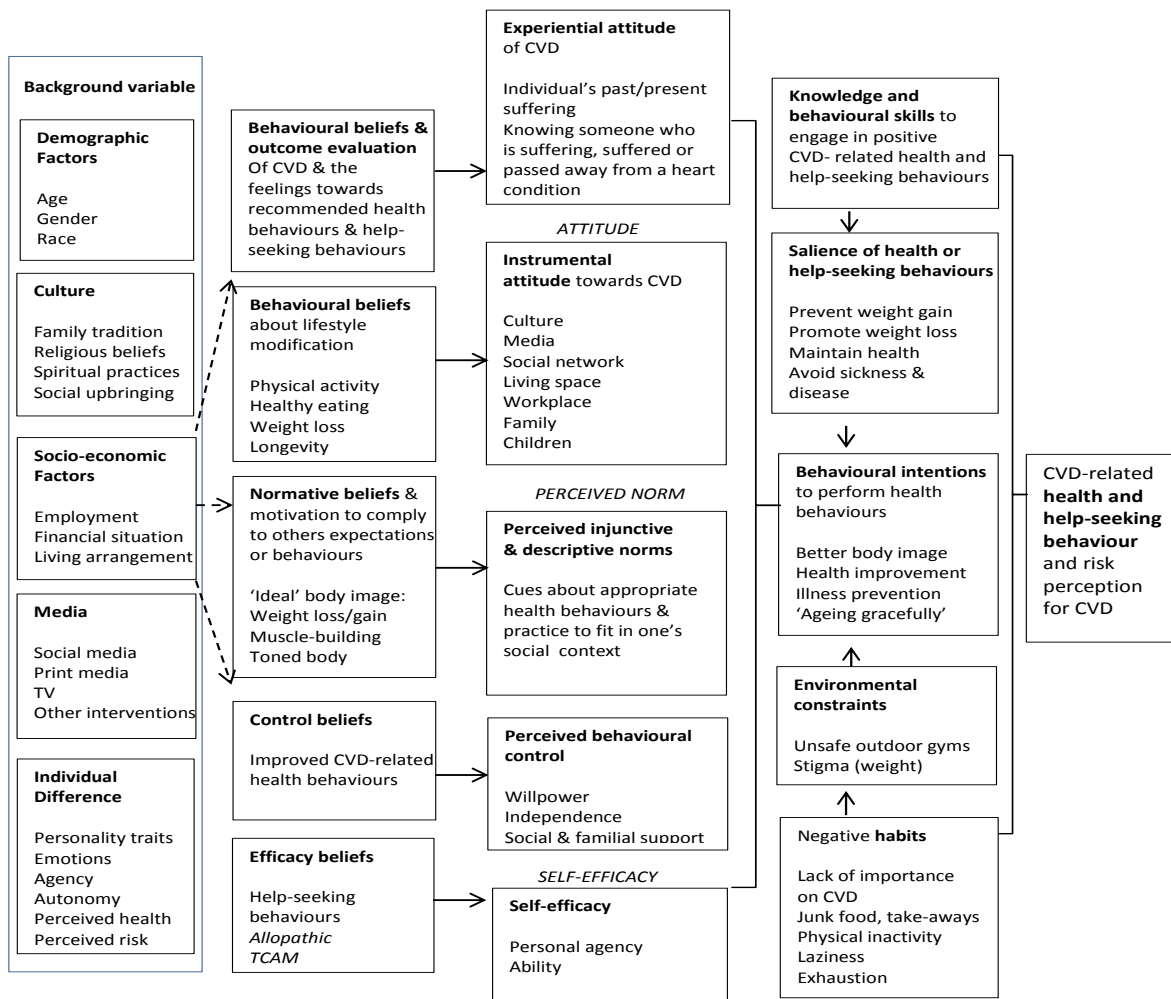
Figure 9 Thesis findings incorporated into the IMBP to understand the rise of CVD
Source: **Adapted from Yzer (2012, p. 23)**

Yzer's (2012) presentation of the IMBP (see Theoretical Framework) was modified to suit the purposes of this study. It presents a holistic articulation of the theoretical constructs related to the study aims and objectives identified in the Introduction for a more nuanced understanding of South Africa's CVD situation. Figure 9 wishes to show *what* the CVD-related factors for health and help-seeking behaviours among different social groups are, *how* these groups understand their behaviours and *why* they may or may not regard themselves as being 'at risk' for CVD.

This modified IMBP helps to understand whether or not individuals are more or less likely to adopt recommended health behaviours. It integrates the findings to show how CVD, health behaviours, help-seeking behaviours and risk perception for CVD can be explained in the

unique South African context discussed so far. In so doing, the psychosocial and contextual factors of CVD and the outcomes found in this study were merged with the constructs of the IMBP to reflect the researcher's ideas of how these fit in with the main findings of this study.

As Table 9 and Figure 9 reveal, the contextual factors important to understanding the CVD situation include elements related to an individual's setting and environment that influences health behaviour change while the psychosocial factors comprise psychological, social and behavioural determinants that lead to positive or negative behavioural outcomes. The IMBP therefore has the ability to explain intention for adopting better health behaviours. In order to understand the CVD situation and its related health behaviours among the working age population in this study population, it is important to look at the psychological and social factors affecting eating behaviours. *Attitude* acts as the mediator of behavioural beliefs on the intention to change 'negative' behaviour into positive. For example, one must first *perceive* weight loss as beneficial for long-term health in order to diet but they must also have a greater perception of their *self-efficacy*. It found that participants seek help from sources outside of conventional biomedical treatments such as the media or online help-seeking behaviour and alternative forms of healing for chronic pain and lifestyle-related conditions.

Based on the constructs of the IMBP, subjective or *perceived norms* function as a mediator of the effect of *normative beliefs* on the *intention* to engage in PA, healthy eating habits and weight loss. Self-efficacy functions as a mediator of the impact of *efficacy beliefs* on the intention to adopt better help-seeking behaviours based on knowing someone who is suffering from, suffered from or passed away due to a heart-related condition. Workers seemed to lack the skills or proper knowledge and terminology of CVD but are willing to learn about it. They may have the intent to engage in better health behaviours but are prevented due to the constraints they face. Nonetheless, it is expected that better knowledge about CVD will have a positive relationship with health behaviour and in seeking information and care.

The intention for better health behaviours are then reinforced but these constraints on different levels which may remove the autonomy to make heart-healthy choices. Social pressures and cultural perceptions shape eating behaviours and ideas of 'The Body'. Losing weight was regarded as a means of fitting into accepted body imagery in society. Poor eating behaviours included snacking, skipping meals, eating junk food, fast food consumption and yo-yo weight loss dietary behaviours which posed constraints in body weight control.

Impacting factors such as environmental restraints like 'felt stigma' (Grønning *et al*. 2012) can have a positive influence on the intention for health behaviour change but does not warrant engagement in better health behaviours such as losing weight. This again may be due to the perceived and actual constraints the study population experience every day. Stress, financial limitations and the lack of time were found to pose restrictions for the individual adopting healthy behaviours such as eating healthily, exercising and losing weight.

Although there are some limitations to the IMBP as pointed out in the Theoretical Framework, it is evident that the IMBP is useful in its explanatory and exploratory power which lends itself to an analysis that enquires into workers lived social realities and experiences. The IMBP therefore serves as an analytical framework that is adaptable to workers from different social groups and occupational sub-categories (see Figure 6). This aspect is reflective of the overall findings presented in this chapter where the tenets of the IMBP have informed the situational analysis of the rise of CVDs in Johannesburg.

GENERAL DISCUSSION AND CONCLUSION

This chapter includes a general discussion of the views presented in this thesis and highlights its implications. Thereafter, a succinct conclusion is offered before recommendations are made in the final chapter. The primary purpose of this chapter is to show how the study met the aim and objectives and answered the questions posed in the Introduction. It further illuminates how the findings support and differ from existing knowledge on the topic. Throughout, it reflects on the main findings on CVD in South Africa by locating the topic within wider debates and discourses in the sociology of health and illness.

In accordance with the aim and objectives, this thesis drew on the sociological understandings of CVD, health behaviours and risk perception. It went beyond the biomedical and psychological explanations of health and help-seeking behaviour to answer the questions using a psychosocial theoretical framework. The theoretical framework examined some of the main concepts, issues and debates with a primary focus on the aspects of CVD and risk perception. The IMBP explored how internal and external factors shape the ways in which health, illness and chronic diseases are understood and experienced. The IMBP focuses on the health behaviours, promotion and maintenance of health through psychosocial, environmental and behavioural changes. It offers a more holistic advancement in understanding multi-causation factors of ill-health and how people understand, react to and experience risk factors and health behaviour. The IMBP was a useful framework for understanding CVD – specifically the contextual factors that shape CVD knowledge and awareness. It is also useful for health communication as it identifies cognition such as attitudinal, normative and behavioural control (Robbins & Niederdeppe 2015) in the engagement or non-engagement in preventive behaviour. This identification can help advance CVD prevention initiatives in South Africa and guide the development of programmes to decrease negative CVD-related health behaviours.

There are internal and external factors that emerged as explanatory elements in shaping how CVD was understood and how chronic diseases are experienced among retail pharmacy workers. Using the IMBP to highlight the social context and environmental aspects to NCDs, the study revealed that lay workers use multiple sources in choosing information that relates to the experiences of health. Beliefs, norms, values and social practices were associated with health and CVD – which are interrelated and forms part of the social order. Delving into these

aspects was important because the way in which lay people internalise information and make decisions about lifestyle preferences depicts their mental ability to utilise information. This decision-making process occurs through external factors that exist within an environmental context to help society adopt improved health behaviours. Health is socially constructed (Kleinman & Seeman 2002). Illness too is not only an individual lived experience, but is a social experience. This implies that society has the moral duty to support the unwell whereby the beliefs they conform to may be a result of cultural upbringing and social norms (Petersen & Wilkinson 2008).

The study showed the constraints workers face in adopting good health behaviours such as PA and mindful eating, how risk perception is (mis)understood, the meanings attached to health and the types of help-seeking behaviour workers adopt. Moreover, it explored how cultural norms, gender and social networks shape conceptualisations and considerations of lifestyle-related diseases. Recent studies have found that social capital at individual and community levels are important for the mobilisation of resources essential for effective self-management of long-term conditions such as heart diseases and diabetes (see Vassilev *et al*. 2011; Vassilev *et al*. 2014; Reeves *et al*. 2014; Brooks *et al*. 2015; Forbes *et al*. 2016). Additionally, the support from social networks often substitutes for formal care which helps individuals save costs associated with conventional medicine (Reeves *et al*. 2014; Forbes *et al*. 2016).

The findings of this thesis reveal an emerging trend of social capital in the workplace level. Participants expressed "social comparison" (Brooks *et al*. 2015, p. 8) to work colleagues whom they compared themselves to in terms of relatedness in help-seeking behaviours and managing health conditions. The capacity to expose this understanding of self-help, self-care and self-management in health initiatives in the local (and global) context will appeal to decision makers. It also offers potential for understanding the shaping of patterns and types of relationships that perpetuate inequalities and how new chronic illness management support strategies can be developed (Vassilev *et al*. 2011). This is expected to facilitate effective interventions and policy changes where self-care should be at the centre of policy initiatives in the global arena.

Bury (2007) pioneered the notion of a self-skills training program to help individuals make better sense of their chronic conditions (Scambler & Scambler 2010). As pointed out in this thesis, there is no one-size-fits-all framework to understanding the meanings and experiences of those living with chronic conditions. This is because a changing society demands changing

initiatives (Scambler & Scambler 2010). Therefore, exploring the multi-layered ideologies surrounding 'health', 'illness' and 'disease' through triangulation has enhanced the sociological significance of this study.

The psychological construct of *self-efficacy*, as pointed out by Bury (2007), explains that it is less about educating those suffering with long-term conditions and more about helping them gain the skills that can help them better understand and tackle their condition more effectively. As such, it can help predict health status and show how the individual is oftentimes most responsible for their own health, however, from a purely sociological standpoint, self-efficacy is compromised because of the limits of structural constraints. The psychosocial approach presented in this thesis reveals that socio-economic status in Johannesburg is associated with risks for CVD and the restriction of cardioprotective factors in different contexts (individual, social, community, workplace). It found that marriage, having close relationships with elders, younger age and 'being a man' were factors for health improvement and motivation.

Additionally, engagement in good health behaviours such as PA and mindful eating as well as knowing someone or community members who had CVD or passed away due to a NCD-related condition was protective for individual's willingness to adopt better lifestyle choices. Moreover, working or living with health conscious people as well as having a healthy and mindful support structure to encourage healthy weight loss and PA were some of the most important cardioprotective factors found in this study.

The IMBP drawn on in this thesis bridges the psychological with the social, emphasising the individual and the collective (Figure 9). In this way, the centralities of socio-economic structures help understand individual's living conditions and their perceived and actual experiences of health and illness. Society is socially stratified and experiences are embedded in power relations and social hierarchies which demonstrate how, for example, ideas about 'luxuries' are shaped. Through social constructionism, lay knowledge and practice can be understood as the result of historical and social contexts – as described in the Introduction. Without doubt, contemporary South Africa is a product of its historical and sociocultural background – which underpins individual knowledge, lived and social experiences (Moon 2008) and subjective realities.

The study suggests that there is no comprehensive picture of the NCD epidemic, but the findings presented in this thesis lead the way forward in understanding CVD in an urban setting in South Africa. It becomes clear that there are fundamental perceived racial differences in the experience of health, illness and diseases. The structural environment (home, work, community) discussed in this thesis do not necessarily erase racial differences but seem to be reinforcing them due to South Africa's historical-political past. Racial dimensions merged with cultural factors to expose meal preparation, food consumption patterns, beauty ideals, health behaviours and help-seeking behaviours of participants in this study. Racial categorisation of bodies and illness were also evident. Perhaps unsurprising was that racial categories were blamed for illness – which is reflective of South Africa's deep-seated racial stereotypes.

As demonstrated through the detailed outcomes, the risk factors embedded in CVD, such as overweight and obesity, are laden with sociocultural meanings about body image and (un)acceptance. Social capital in the workplace, home and community level thereby has a role in shaping normalcy and deviance in self-care of long-term conditions (Vassilev *et al*. 2011). The findings are not exhaustive in exploring health behaviours, particularly in the workplace context, but nevertheless make a contribution to the under-researched area of CVD risk perception among employed adults in South Africa. This study easily lends itself to the lived social realities and experiences of the study sample; explaining the move away from individual responsibility to social responsibilisation and the social significance of this topic – which, in essence, shows the value of this research as a contribution to the field of Health Sociology, extending beyond a psychological, biomedical, and clinical framework. Inherent in this contribution is the complex relationship which demonstrates how 'The Body' is a site for the interplay of individual, social and societal meanings. These govern the ideas of health within different time and spatial parameters which drive (un)healthy behaviours.

Multiplicities of views are significant as they illustrate how individuals and population groups attach meaning to their (dys)embodied experiences (Williams 1996) and (dys)functioning of everyday life. Social involvement with a wider variety of people in the workplace and groups in the neighbourhood and community environment seemed to support personal self-management of chronic conditions and helped individuals cope better (Reeves *et al*. 2014). The psychosocial understandings of CVDs occur in multiple ways, linking individual and societal beliefs, feelings, ideas, perceptions, social relations and contexts to the self and social structures – relating to the notion of habitus (Bourdieu 1987) as discussed earlier in the thesis.

When contemplating the individual's decision to make heart healthier choices, it was important to consider the moderating role that demographics play in the decision-making process. Age, gender and race were examined as potential determinants of health and disease. Age was explained through age stratification theory and gender by way of gender norms, expectations and socialisation. Regarding gender, mature women in this study were more concerned about 'ageing gracefully' – revealing that views of one's body are context specific and dependent on one's socialisation processes. This study not only adds to the understanding of the social construction of age but fills in the gap by demonstrating how age shapes the experiences of individual health and chronic conditions. Race was explored through South Africa's historical-political past and how culture has shaped health behaviours and help-seeking behaviours. These findings confirm that intricacies and diversities indeed mark CVDs.

Cultural and socio-economic processes and consumption practices provide meaning, purpose and social identities in South Africa further shaped by the media. Consumers are persuaded to make unhealthy heart choices through media and marketing strategies. The availability of fast food then jeopardises agency and autonomy for adopting healthier behaviours (Kempen *et al*. 2011). The psychosocial perspective has potential consequences for the formation and implementations of policy and programmatic interventions. This is useful to explain the NCD situation in South Africa, promote recommended lifestyles and address healthcare and service provision. It generates new findings on the socio-behavioural aspects of CVD that may assist in the future of the NCD epidemic in sub-Saharan Africa and abroad. Social measures improve the functioning of society and the capacity of communities thus help to deal innovatively with social preventive responses.

As reflected in the findings, wishing to change health behaviours is not always accompanied by the perceived risk for chronic conditions such as CVD. Therefore, health promotion and disease prevention frameworks need to be tailored to appeal to individuals from different social backgrounds (Gilbert *et al*. 2010). Clearly, the socio-behavioural and contextual settings workers find themselves in shape their CVD knowledge, awareness and health behaviours. The preventive and promotive aspects of NCDs include, but are not confined to, personal, cultural, social and behavioural interventions to educate and encourage good health behaviours (Airhihenbuwa *et al*. 2014). However, this must be more persuasively integrated into South Africa's overall healthcare system to strengthen its current framework and potential for effective NCD surveillance. The thesis addressed the binary of 'good' and 'bad' health

behaviours as proposed by Lupton (1996) and its relationship with 'The Body', self and identity – which is necessary for the awareness, knowledge and prevention of NCDs in South Africa.

Workers have a reasonable understanding of CVD but lacked knowledge of medical terminology and information about health issues, yet provided correct heart-related descriptions. This further added to the problem of low individual risk perception for CVD. Most survey respondents in this study were Black who admitted not knowing much about health issues. Based on South Africa's socio-political and historical past, it seems as if the racial stratification of health has not shifted much. The structure of the retail pharmacy workplace setting is also stratified in terms of occupational positions and differentiation of social groups (Figure 6). These aspects together highlight the influence of structural conditions in the home, community and workplace contexts that shape perceptions and health behaviours – as evident throughout this thesis.

Participants were unaware of the associated risk factors and vulnerability, which pose a challenge to them adopting 'good' health behaviours. 'Bad' health behaviours were related to time constraints, long working hours, financial stress and family responsibilities. Even though the worker's lacked perception of their susceptibility to CVD, their evaluation of 'good' health and its consequences are hopeful for health behaviour change. For example, it reflects the workers' beliefs of how well a recommended action (such as engaging in PA regularly, eating healthily and losing weight) will reduce their risk of CVD or moderate the impact of the condition (Redding *et al*. 2000).

Lack of time was the single most common reason for working adults not exercising or not eating healthy food – behaviours that are vital in restricting the chronic disease burden. Time constraints are said to have a direct impact on health negatively (Strazdins *et al*. 2015). It was evident that other patterns exist in South African society, partly explicated by the influence of culture on different population groups, such as food choices and norms surrounding body image and attitudes towards help-seeking behaviours and health. Workers' family, community and workplace environments play a role in shaping their CVD knowledge as well as the exposure to the media. Clearly, the workplace and home environment shape ideologies, expectations and perceptions of health, illness and diseases.

Health behaviours were driven primarily by individual, social and cultural attitudes and beliefs that shape risk perception. The findings suggest that working adults experience significant barriers and motivations for physical (in)activity and (un)healthy eating habits amidst the demands of work, family and parenthood.

Cultural and hegemonic norms and ideals were attached by the participants to their health behaviours and lifestyle choices. The constructions of health and illness and 'The Body' were a pertinent finding in this context. Body image was related to Western ideals – which contradicts some of the available literature in Africa. For instance, the notions of traditional beliefs and expectations were differently valued as workers, particularly Black women, are challenging patriarchal and cultural power by expressing a need to lose weight rather than conform to the 'big is beautiful' ideal (Puoane *et al.* 2005a) that was once expected of them.

However, the boundaries between 'accepted' and 'unaccepted' bodies seemed blurred and differed in urban and rural settings. Other studies show that Black women are most resistant to dominant Western ideals and values around weight and beauty (Ristovski-Slijepcevic *et al.* 2010). The study found that Black women were accepting and actively challenging sociocultural norms regarding body weight, gendered roles and expectations by conforming to Western ideals. This is reflective of the fact that multiple meanings are attached to 'The Body' – which is fundamental in changing the racial, cultural and social experiences of, both, women and men and their bodies.

Public framings of bodies and food are contrasted to expose sociocultural anxieties about which health behaviours are un-/acceptable (Farrell *et al.* 2016). Perspectives on PA, the contours of eating and the relationship between 'The Body' and identity are part of the sociological imagination. Corporeal experience, then, is linked to social processes, systems and structures. The lived body and the social body were shaped by life experiences, social control, media and culture. Women's perceptions and experiences of their body were driven by the media such as magazines, newspapers and television, which portray idealised body images and create sociocultural pressures.

To some extent this thesis is consistent with some larger studies conducted in sub-Saharan Africa to show that age, gender, marital status, culture, financial position and place of residence are important factors associated with overweight and obesity discourses and the rise of NCDs (see for example Amuyunzu-Nyamongo 2010; Dalal *et al.* 2011; Celermajer *et al.*

2012; Scott *et al*. 2012; Airhihenbuwa *et al*. 2014; Abrha *et al*. 2016; Neupane *et al*. 2016; Spires *et al*. 2016).

Body image is located within its socio-historic context and structured by contemporary discourses on culture and embodiment. Along with poor body image, the findings suggest that females were more likely to report body image dissatisfaction and a greater use of weight loss products. Conceptualising body image as a social process is a way to address body image issues as an outcome of social and societal forces. The interactions between gender and culture occur in a wider discursive context that (de)constructs body size as individual "responsibilisation" (Brown 2013, p. 1) which merges weight and physical appearance with what the researcher considers social responsibilisation. There are multi-layered complexities associated with weight loss and weight gain in the African and Western societies which spur idealistic perceptions of (un)acceptable body image. The social reality of obesity revealed that psychological factors are shaped by social and physical processes to maintain social order ('good' health) or prevent social disorder ('bad' health).

Embodiment must be at the centre of health-related research for an adequate picture of social life. Metaphorical meanings attached to the body are fundamental to understanding health and related behaviours in everyday life. On the topic of embodiment, CVD situates the body and eating habits within a broader habitus (Bourdieu 1987) which focuses the sociological lens on the body and its attached meanings. It was imperative to comprehend the meaning of the concepts used which becomes the foundation of which knowledge is constructed.

The contribution of this thesis lays further grounds to tackle NCDs in sub-Saharan Africa by focusing 'upstream' on the causes of negative health effects and adverse underlying psychosocial conditions that promote unhealthy behaviours. Social factors play a critical role in health as social conditions promote the possibility of illness and increase opportunities for disease prevention and maintenance of health (Gilbert 2012). However, some of the greatest threats to individual health stem from unhealthy lifestyles and high-risk behaviours that lead to a host of modern-day health problems such as heart disease and cancer. From the views reflected on in the thesis, it is evident that workers believed that risk for CVD affects equally regardless of the racial groups people belong to.

CVD, like HIV, was not seen as a 'racial disease' that only affects a select few but a disease that everyone is exposed to (Buldeo & Gilbert 2015). Similar risks were attributed to genetic

composition, eating habits and lifestyle choices, although, the extent to which risk affects individuals are known to vary depending on one's health status. Though these diseases are very complex, the findings indicate how NCD-related chronic illnesses are replacing communicable diseases. This is concerning from the public health perspective given that obesity trends are on the rise in South Africa. A demanding and stressful lifestyle, unhealthy diets, smoking and excessive alcohol consumption, obesity and being physically inactive have become principal risk factors for ill-health in modern times (Malhotra *et al*. 2015; Spires *et al*. 2016). The findings of this study are original and make a novel contribution to research on the NCD epidemic in South Africa.

This thesis suggested that a psychosocial trend exists to trigger individuals to adopt different attitudes and approaches to their health. As mentioned earlier, some women, particularly Black women, felt cultural pressure to be self-accepting and empowered to challenge cultural expectations of 'The Body'. Others accepted a larger body – a norm set by their family members and loved ones. Learned expectancies suggest that individuals' learning histories are formed through an amalgamation of direct and mediated learning experiences that individuals face in different years of their lives. These experiences shape the meanings in their "sociologies of everyday life" (Riley 1987 cited in Cockerham 2007, p. 127). The social and cultural expectancies one is exposed to thereby influences behavioural choices such as food consumption and cooking and beauty ideals. The individual then engages in behaviours from which one expects a reward or feelings of a sense of achievement.

As evident in this study, these include bodybuilding, working out, watching what they eat and avoiding behaviours for which one expects punishment, for example, overeating and the social stigmas that arise. In extreme cases, one will form stronger expectations if they perceive thinness to bring better health and the person will then pursue weight loss strategies more vigorously. Positive attitudes can help enhance behavioural and self-control, but this is not always the case due to the constraints participants face every day. Similar to the findings of this study, Brooks *et al*. (2015) reveal that individual's often ignore diagnosis and do very little with regards to long-term conditions self-management. Moreover, those who knew they had a chronic illness diagnosis such as hypertension did not consider themselves ill.

As found in this thesis, some individual's made direct references to heart-related conditions not being possible in their culture. It was regarded as something that had to be managed by traditional means in order to normalise the ways in which they continue to live their lives.

Brooks *et al.* (2015) also found that participants revealed barriers to achieving personal goals which were within and outside of an individual's control such as; family problems, health problems (illness, deterioration), finance issues, fate and everyday life getting in the way of effective self-management. The findings in this thesis identified different levels in which justifications for actual choices and constraints operate (individual, social, societal, work, community). Constraints shape health and the options individuals have in making choices that impact their lives impeded or increased by psychological (internal) and social (external) factors (Vassilev *et al.* 2011). It went further to explore how constraints are socially and economically patterned in ways that contribute to unhealthy behaviours, lifestyle choices and CVD risk.

One's living arrangement too was shown to mould behavioural beliefs and health behaviours. The study further found that due to time constraints, long working hours and family responsibilities after a long day of work meant that there was less time for cooking healthy meals. Single mothered households were shown to have adverse impacts on the health of children by encouraging negative lifestyle behaviours. Single mothers are prompted to use coping strategies like buying convenience food that is easy to prepare with low nutritional value or to purchase take-away dinners. They might be skipping meals and snack on the go which leaves less room for consuming a healthy dinner. The home and the workplace posed constraints on healthy food options which facilitated poor health behaviours and consumption.

They, therefore, purchase ill-health packaged in the form of sugar-sweetened beverages and processed foods without enough intake of water, fruit and vegetables. These eating habits could explain the rise of childhood obesity in South Africa, whereby parents place a low priority on preparing healthy meals which can lead to obesity and chronic conditions later in life. The parents' poor eating habits are often also to blame for childhood obesity rather than junk food (Mail Online 2014).

In 2011, Health24 reported a finding by the Medical Research Council to disclose that more than 17% of South Africa's children between the age of 1 and 9 in urban areas were overweight. This is worrying as NCDs are on the rise in South Africa and affecting the younger population – which is especially true among single parents who face the stress of raising children alone, thereby adding greater financial burdens. This is of concern because if parents fail to make informed decisions about their health behaviours such as consuming a

balanced diet or engaging in PA, it sets the stage for children to engage in negative health behaviours in later life as dietary habits are learned.

The intentions, behavioural beliefs and perceptions of workers for choosing to engage or not engage in recommended health behaviours were as pertinent as the above finding. It highlighted the constraints workers face within their family, community and workplace institutions and the accessibility of TCAM healing systems in a time when biomedicine is unafforded and health is commodified. The IMBP has the potential to help develop interventions to improve public health outcomes, medical decision-making or other help-seeking behaviours such as the use of TCAM.

The study examined individuals' attitudes and intent for TCAM use to explain the meanings attached to TCAM-seeking behaviour as related to symbolic interactionism. The utilisation of TCAM; namely, ATM, TCM and Homeopathy were preferred choices among most interviewees. The experiential knowledge of traditional healers, in particular, was linked to cultural understandings of health, disease and chronic illness. The emphasis later shifted to the use of TCAM for NCD-related illness diagnosis and management, which reflected discourses on 'The African Body' and identity. This discourse underlined (mis)transformations brought on by the post-colonial era through power dynamics embedded in post-modernism.

Social, structural and cultural change related to globalisation and urbanisation. The psychosocial lens through which these processes were viewed included non-health professional perspectives which allowed capturing how workers adapt to their environments. The issue of cultural beliefs and social practices come into play where grandparents and parents have possessed information that has been passed on to other generations in one's family. Help-seeking behaviour is therefore not given much attention as people are finding other ways of attaining better health. One should not dismiss the social and cultural aspects embedded in help-seeking behaviours as it will help better understand CVD in South Africa.

Given the increase in medical costs, and the current socio-economic situation in the country, it is understandable why people will choose to make use of alternative healthcare. Amidst the rising prevalence of CVD, it becomes a problem when medical experts are overlooked as a point of contact for heart-related conditions. Although, the role of social capital and networks are noteworthy for making a positive difference in the self-care, management and lived

experiences of those suffering from long-term conditions associated with heart-related outcomes (Brooks *et al.* 2015).

According to symbolic interactionism, the social construction of reality is dynamic and fluid. Through interacting with others, workers were creating perceptions of their health and CVD risk through the process of receiving and interpreting information. The literature pointed out that the realities of life are socially constructed and meaning come into existence through one's engagement with their lived realities (Pascale 2011). In this study, retail pharmacy workers constructed the meaning of their health through the interconnectedness of objectivity and subjectivity in their social, working and everyday lived realities. Psychosocial aspects of human behaviour, then, have explanatory power. In the case of CVD in South Africa, this is important as it emphasises CVD-related perceptions, self-reported health behaviours and one's individual perception of CVD risk. Although psychological theories have limited capability to predict future behaviour, it has exploratory power in understanding the underlying issues and complex relationships that affect human behaviours; albeit in a dynamic way. Though these warrant in-depth examination, it is beyond the scope of this study's purpose.

This study yielded five most significant contributions to NCD research in South Africa. First, health behaviours were based on experiential attitudes. Participants reported that they act more on social expectations rather than the outcome of their expected cultural behaviours. They understood that CVD had consequences and acknowledged the long-term health implications of leading an unhealthy and sedentary lifestyle. Second, personal agency and self-efficacy in the ability to choose allopathic methods of CAM healing and self-medicating or seeking online assistance reflect the dynamic and changing profile of help-seeking behaviours and NCDs. Third, behavioural intentions seem to be formed by demographics, normative beliefs and motivation to comply with others' positive expectations or behaviours relating to healthier eating, weight management and PA. Fourth, the innovative research undertaken here by attempting to bridge the gaps between biomedical and social understandings of CVD and related NCDs adds a body of knowledge that is currently unavailable in a workplace context in South Africa. Fifth, locating the study within the framework of the IMBP encouraged a psychosocial understanding of the research topic. This stance, therefore, makes important contributions in the local or global context

The research fits the broader global context of CVDs and NCDs and into the growing local body of knowledge centred on chronic diseases and risk perception. Although it is not generalisable outside the selected sample, the findings are however unique in South Africa. Therefore, this thesis offers a more nuanced exploration of the subject and other related issues. In exploring and analysing CVDs, this study highlighted and explained some of the complexities. The study warns that understanding CVD and its health-related behaviours and risk perception in South Africa is a complex and dynamic process. There is interplay of multiple factors that shape the NCD discourse.

This original research merges the biological aspects of CVD and the social aspects of risk in the workplace, particularly those employed within a pharmacy setting – where one is often assumed to know and practice 'correct' health-related behaviours and discourse. The hierarchical structure of the retail pharmacy setting reveals stratifications of workers according to race and gender. This is reflective of deep-seated racial stereotypes as a result of South Africa's historical-political past. The sub-categories presented in Figure 6 can be tailored to fit other workplace contexts. This will allow for the conducting of further research on NCDs within different workplace contexts and potentially impact NCD prevention initiatives.

NCD prevention programmes should be multi-component and adapted to suit the South African context, in general, and the South African workforce context more specifically – sociocultural factors and beliefs regarding 'The Body' need further consideration in prevention policies and interventions. Considering culturally and environmentally appropriate programmes that involve workers in planning and implementing these initiatives will prove to be more sustained. Since most interventions focus on behavioural change with the emphasis on individual responsibility, this study advocates for a more holistic approach. It claims that health, illness and disease are the result of the connection between social circumstances, individual behaviour and the physical environment – which reinforce (un)healthy behaviours. However, the challenge is that educating workers to be more mindful of their lifestyle choices and dietary behaviours within a workplace setting when their living and the socio-economic situation is not conducive of healthy behaviours is expected to produce short-term effects.

Well-planned, cost-effective interventions that consider all levels of South African society is a must since chronic disease are not only the result of biological outcomes, but is determined by factors such as the sociocultural environment, economic status, living and working conditions

and government legislation. A retail pharmacy setting provides a suitable platform for the implementation of such interventions – provided it is practicable. Workplace programmes and other initiatives should attempt to create environments that support heart-healthy choices. Within the retail pharmacy chains, for example, staff should be educated about lifestyle choices and CVD to allow them to feel motivated to engage in better health behaviours. Working adults of varying employment levels and social backgrounds can be reached simultaneously in workplace interventions that may prove fruitful in addressing the CVD situation.

Contemporary research on NCDs is not complete without acknowledging the pressure resulting from the juxtaposition of views about individual responsibility for health. Typical public discourses denote that ideas concerning health and body weight are a result of behaviours and personal choices. It is also how individuals interact with their social, familial and work environment that influences their health. Blaming the individual leads to negative stereotypes which later prevents broader understandings of the situation beyond the individual-level (Scambler 2009). The individual agency plays a critical role in how individuals behave and why they adopt the lifestyles they do, but multiple factors together shape heart-healthy decision-making. The findings provided an alternative perspective to what is known about CVDs and NCDs. This alternative perspective was achieved by looking at CVD through the lens of sociology. As NCDs continue to rise in the South African context, knowing how CVD-related conditions unfold beyond biological explanations helps effectively respond to its demands.

This study's sociological significance, unlike most others, is that it challenges contemporary discourses of epidemiological and clinical understandings of NCDs. The reality of NCDs in South Africa is that societies continually perpetuate social norms, expectations, beliefs and practices that pose constraints on an individual (Durkheim 1982). These norms are enacted and reinforced when individuals engage in social interaction, such as food consumption behaviours and physical (in)activity. This thesis unpacked this view by identifying the factors that shape individual health and risk perception regardless of their CVD awareness. Even though eating behaviours and PA is an individual choice; it expands the role of the environment and the community that interact to impact an individual. This reinforces the idea that individual choice is the outcome of a network of interconnected social structures.

Adding on to the sociological understanding of CVDs, social class "operate[s] through a very broad range of physiological mechanisms to influence the incidence and course of virtually all causes of disease and death" (House & Williams 2000, p. 83). The environment these groups reside in and the socio-economic circumstances also affect their diets and PA patterns (Steyn *et al*. 2006). Some studies have shown a relationship between health and income, with the least socially advantaged segments of society being the most at risk regarding the incidence of chronic diseases.

These social groups show lesser rates of acceptance of health-promoting and improvement behaviours. Supplementary investigations have further linked occupational factors and CVD, including non-specific job stresses such as work overload, shift work and poor nutritional habits. Psychosocial and organisational factors have an influence on CVD in the workplace (Bosma, Marmot, Hemingway *et al*. 1997) and beyond. Furthermore, additional studies demonstrate that social and cultural factors need to be focused on more widely (Tovée, Swami, Furnham & Mangalparsad 2006).

Of further sociological value then are the combined consequences embedded in a situation whereby the environment shapes attitudes, health behaviours, risk perception, social networks and personal biography. To relate this to a classic sociological viewpoint, Mills (1959) suggests that to understand several aspects of societal needs there must be a similar assessment of the individuals' biography and shared history of the society and social groups at large. The usefulness of studying CVD in South Africa within a macrocosm is based on Mills' (1959) notion of the *sociological imagination* which implies that there is no definite way of interpreting the happenings in the world as it is ever-changing. In understanding the sociological imagination, the findings presented in this thesis underlined the major sociological perspectives of health and illness concerning societal norms.

Adopting the sociological imagination helped explore social transformations in South Africa and how it has affected the lives of people in different societies and social circumstances. Cultural beliefs shed insight on subjective views about health and illness and the decisions to seek help. Dichotomies such as agency versus social structure are critical factors in understanding the relationship between society, health and illness as it presently exists. These explain the underlying factors on how working adults make sense of their health behaviours, experiences of chronic conditions and its related risk perceptions. This links with Durkheim's (1895) proposition of a *social fact* which, as Mills (1959) agreed, cannot be in isolation

because of the fluid nature of the world and the processes of knowledge creation which differ per individuals' biographical, social and environmental context.

However, these authors are different in their approach to studying society; on the one hand, Durkheim (1895) places emphasis on societal-level measures of individual behaviours; on the other extreme, Mills (1959) favours history and biography in examining the ways in which society functions. Based on the propositions of these theorists, this study finds significance in undertaking a holistic view of exploring risk perception to CVD and health behaviours to highlight the shift in responsibility for 'health'. The significance is on the need to study societal responses to CVD through a macro-sociological lens to clarify risk perception, cultural identity, health behaviours and lifestyle. However, social networks vary across societies and may impact negatively on health regarding premature death and disease (Cacioppo, Hawkley, Crawford *et al*. 2002), including CVD (Berkman, Leo-Summers & Horwitz 1992).

From a sociological perspective, health can be described as a relative concept to the surroundings and circumstances in which people find themselves (Aggleton 1990). This notion of relativity is pertinent to the examination of environmental and lifestyle factors associated with CVD. Bury (2000; 2005) and Blaxter (2004a–b) note that meanings of health and illness are shifting due to the constant change in society and patterns of disease and lifestyle induced risks. One's social environment, consisting of the social, economic and political relationships at the local level, impact on how people understand their 'health' and how this leads to disparities in risk (Schulz, Kannan, Dvonch *et al*. 2005) largely unaccounted for in the sub-Saharan African context. The physical and social environment therefore highlights the working individual's exposure to CVD-related health risks, including; perceived stress inducing factors, health behaviours, help-seeking behaviours, social integration and support and the subsequent psychosocial responses to these issues, health inequalities and inequities.

In light of the growing burden of CVDs and in line with global resolutions to respond to, slow down and put a stop to the increasing trend of premature deaths from NCDs, it becomes evident that a closer psychosocial interrogation of CVD in South Africa is needed. By bridging between psychological and social perspectives, the research makes a valuable contribution to learning how NCDs like CVD can be effectively addressed to promote heart healthier behaviours. The specific psychosocial lens offered a superior platform through

which the holistic picture of these processes, institutions, social actors and contexts can be captured and understood.

The findings detailed here are critical in shaping the understanding of the problems raised. It highlighted the lack of risk perception for CVD, why medical experts are disregarded for treating conditions and why people do not always act on their intention even if they have the 'right' attitude or intention. The thesis showed that ignoring the underlying factors beyond the individual control indicates a flawed understanding of the research problem as evident in most other studies. Although health behaviours and individual choices are important aspects of chronic disease outcomes, it is only a minor component of an entire social world in which one exists.

The knowledge of sociological principles, debates and issues are essential to understanding the experiences of health, illness and chronic disease. Accordingly, the differences in lived social realities and everyday experiences are bound up with the prevailing social and cultural expectations of behaviour and its embodied meanings. Hence, social research on chronic diseases helps better understand the changing patterns of society, health, illness, chronic disease attitudes and behaviours. These topics are essential building blocks of which knowledge can be produced, policies created and implemented and healthcare services improved based on social contexts. Theory guides interventions and constitutes knowledge and experiences located within social processes in a macro-sociological context – as evident in this thesis.

Overall, it was evident that participants had an understanding of CVD, however, cultural beliefs and (mis)conceptions seemed to shape their interpretation of heart-related problems, its causes, symptoms, management and response to its symptoms and related conditions. On the subject of CVD knowledge; dietary habits, lifestyle, heredity factors, stress and lack of exercise were correctly identified as possible contributors to CVD. The study demonstrated how meanings attached to health; illness and disease vary across time and space. It also discovered how demographic factors such as age and gender are key determinants to understanding the psychographics of an individual, the meaning-making process embedded in symbolic interactionism and how embodied experiences are managed in everyday realities.

Indeed, meanings about health, illness and chronic disease are socially produced. Becoming sick and unhealthy is beyond the result of biological processes and individual adversity, but is

a consequence of the social and cultural organisation of society. Therefore, these issues are not only of academic value but are similarly vital for policy-makers as well as healthcare professionals. In the absence of interventions or the slow implementation of measures that encourage people to make healthier food choices, South Africa might be headed towards an unparalleled rise in healthcare costs and NCD-related deaths. Overall, this thesis has identified CVD-related issues on the theoretical level, to seek out, address and potentially impact the practical level by considering the factors that add to the changing pattern of CVD prevalence. This study is therefore a step in the right direction considering the aim to decrease premature mortality from NCDs as a post-2015 development agenda (Day *et al.* 2014). Addressing the pertinent issues raised in this thesis has the potential to help public health interventions keep pace with the complex dynamics of NCDs in South Africa and elsewhere.

Although there is currently a scholarly debate about the rise of NCD in sub-Saharan Africa, these are located primarily in clinical and epidemiological studies. By looking through the sociological lens of health, illness and chronic disease, this thesis situated CVD and risk perception in the broader macro system of South African society while drawing attention to the microcosm of the working age population in this study. The future of the NCD epidemic could therefore benefit from being explored in this way as it looks deeper into the underlying social issues people in contemporary South Africa face. This thesis therefore challenges conventional understandings and assumptions about modern lifestyles by sifting out some of the social, cultural and political contexts within which working adults conceptualise issues regarding weight and food choices in the rise of CVD in South Africa.

Obfuscating the picture further is a growing body of research on cultural differences in food behaviours and body image. As such, the thesis posited that the relationships among 'The body' and health are complex, dynamic and multi-dimensional. Through health perception and health behaviour, this study offers a window into the current NCD situation in Johannesburg to provide a solid piece of information on a public health problem from a medical sociological perspective.

RECOMMENDATIONS

Despite the fact that there is evidence pointing towards NCDs as a significant health concern in South Africa, unless addressed with urgency, the burden of NCDs will continue rising. Heterogeneity exists in the epidemic that is the result of social and health inequalities which cannot be understood in isolation as they interact to produce complex social patterns of health and chronic disease outcomes. As the epidemic unfolds, it is speculated that the social context will continue to change as a result of responses to NCD prevention and treatment interventions (Kahn 2011). It is within this broader context that a new NCD agenda for research and action in response to the increasing prevalence of CVD must be developed.

Although an in-depth exploration of CVD was outside the scope of this thesis, the results are useful for larger, multidisciplinary studies which may provide material for policy intervention and NCD preventive campaigns to improve the promotion of good health behaviours. Mortality and morbidity attributable to CVDs must be targeted for public health interventions that support collaboration between biomedical practitioners and holistic healers. Understanding health and help-seeking behaviours among the working age population gives valuable information needed by health professionals to provide effective treatment for the positive future outcome of the NCD epidemic in South Africa.

As reflected, the IMBP is a promising psychosocial framework adaptable in its application to CVD-related health behaviours and risk perception for CVD. Multidisciplinary research is needed that calls on the expertise of psychologists, sociologists of health and applied public health scholars. This collaboration has the potential to further examine how social practices and psychosocial theories in health research could possibly (re)frame the ways in which health outcomes are understood which could inform interventions that move beyond attitudes, behaviours and choices (Maller 2015). This is particularly because health outcomes are multidimensional and have practical implications as a result of complex interactions on different levels; psychological, social, cultural, economic, environmental, individual, workplace and community.

Practical implications

This section presents five practical implications as it relates to the study. First, the IMBP serves as an important tool that could be applied in other workplace settings and across provinces in South Africa. Second, the IMBP is based on the premise that intention to perform behaviour is the main indicator of behavioural performance. Therefore, assessing a respondent's perceived intention to perform a behaviour and actual performance of behaviour is worthy of investigation by interdisciplinary researchers. Third, policy initiatives in South Africa can possibly include the IMBP to assess other risk behaviours in the context of NCDs and other health-related topics. Fourth, injunctive and descriptive norms might lead the way to developing new policy programmes and CVD prevention initiatives. Fifth, and perhaps most importantly, workplace health promotion initiatives need to be carefully designed to educate workers about the benefits of living a healthier and physically active lifestyle. Other initiatives could include the free availability of screenings for chronic diseases for staff as part of a 'healthy employee' strategy. By increasing health promotion and awareness on CVD-related health behaviours, workers are expected to be more informed to manage chronic conditions and cope effectively with the physical and psychosocial impact of their conditions. Moreover, it might help them possibly consider their risk for CVDs and other related NCDs.

This thesis is a snapshot of the CVD situation in South Africa. Based on the findings, the thesis offers recommendations that are hopeful in paving the way forward for future studies. It helps contribute to the effective promotion of better health behaviours and the prevention of NCDs. Since the interplay between social factors and processes of diseases are dynamic, a detailed examination of the impact of varying contexts is required in future multi-disciplinary studies. Although the findings presented in this thesis are unique for the South African context, the rise of NCDs in the workplace needs to be more deeply explored, especially when considered alongside the meanings attached to 'The Body', self and identity through symbolic interactionism as presented here. Since CVD and related chronic diseases are rapidly increasing, knowing how perceptions, norms, culture, gender and social networks shape health and help-seeking behaviours as well as the understandings of risk is a useful undertaking during the complex unfolding of chronic conditions in South Africa.

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APPENDIX 1: Participant information sheet for survey

School of Social Sciences, Department of Sociology
Private Bag 3, WITS 2050, South Africa – Tel: +27 (0)11 717 4424

To whom it may concern

RE: Request for your participation in a survey

Good day, my name is Priya Buldeo and I am currently a Ph.D. student in Health Sociology at WITS University. My study *"A psychosocial study of cardiovascular diseases, health behaviours and risk perception among retail pharmacy workers in Johannesburg, South Africa"*, is an attempt to better understand CVD so as to make an impact on its prevalence and to consider the reasons why it remains a growing health threat in South Africa. For this reason, I kindly invite you to be a part of my study.

All you are required to do is to complete the attached questionnaire. You will not be obliged to answer any questions with which you are uncomfortable and you therefore have the option to decline to respond to any questions asked. Completing the questionnaire means that you are giving me permission to use the data for my study. All data collected will remain <u>anonymous</u> as you will not be asked for your personal details unless you are willing to be interviewed by me at a later stage.

If you are willing for me to interview you as my research progresses, please fill in your e-mail address and/or contact number in the space provided at the end of the questionnaire to enable further contact.

It is in my understanding that the study will neither pose any risks nor result in any benefits for you and the company you are employed at. However, if you feel that you have concerns regarding the study or if you require any additional information, please contact me or my supervisor to discuss these further.

Kind regards,

Priya Buldeo   Professor Leah Gilbert

priya.buldeo@gmail.com   leah.gilbert@wits.ac.za

APPENDIX 2: Questionnaire

This is a general questionnaire about your background, health and lifestyle. I would appreciate it if you could kindly answer the questions as honestly as possible since, as you know, this is completely anonymous and I cannot trace the answers to you.

INSTRUCTIONS:

a. Place a tick ☑ in the box next to the option that best describes your answer.
b. Do not detach any pages.
c. Submit the questionnaire even if you do not complete it.
d. Only provide your personal details at the end of this questionnaire if you are willing to be interviewed face-to-face at a later stage.

QUESTIONS:

1. What is your age? _____ years

2. What is your gender?
   01) Male ☐
   02) Female ☐

3. How would you classify yourself?
   01) Black ☐
   02) White ☐
   03) Indian ☐
   04) Coloured ☐
   05) Other ☐ *Please specify:* _____

4. What is your marital status?
   01) Not in a relationship ☐
   02) Married ☐
   03) Separated/ Divorced ☐
   04) Widowed ☐
   05) In a committed relationship ☐

5. How many people do you share your living space (home) with?
   01) 1 – 4 people ☐
   02) 5 – 8 people ☐
   03) 9 – 12 people ☐
   04) 13 – 16 people ☐
   05) Other ☐ *Please specify:* _____

6. Do you have any children?
   01) Yes ☐ How many? _____
   02) No ☐

7. How often do you feel stressed?
   01) Very often ☐
   02) Sometimes ☐
   03) Not at all ☐
   04) I prefer not to say ☐

8. Do you engage in exercise/sport?
   a. 01) Yes. I do engage in exercise/sport ☐
   Which one/s?

   _____
   _____

   b. 02) No. I do not engage in exercise/sport ☐
   Why not?

   _____
   _____

9. How much time do you spend watching television per day?
   01) 1 – 3 hours ☐
   02) 4 – 6 hours ☐
   03) 7 – 9 hours ☐
   04) I do not have time to watch TV ☐

10. Do you make use of internet social networking sites?
    01) Yes ☐ Which one/s_____
    02) No ☐

11. Do you smoke cigarettes?
    01) Yes ☐ How many cigarettes per day? _____
    02) No ☐

12. Have you ever tried to quit smoking?
    01) Yes and I was successful at quitting ☐
    02) Yes but I failed at my attempt/s to quit smoking ☐
    03) No! I will never be able to quit smoking ☐
    04) No. I never considered quitting ☐
    05) I do not smoke ☐

13. Do you consume alcohol? (such as beer, wine, whiskey, brandy)
    01) Yes ☐
    02) Sometimes ☐
    03) No ☐

14. Do you watch what you eat?
    01) Yes. Always ☐
    02) Yes. Most of the time ☐
    03) Sometimes. It depends how I feel ☐
    04) No. Not at all ☐

15. How important is it to you to be in good shape?
    01) Very important ☐
    02) Important ☐
    03) Not important ☐

16. How has your weight changed over the past one year?
    01) It has gone down a lot! ☐
    02) It hasn't changed very much ☐
    03) It hasn't changed at all ☐
    04) It has gone up a lot! ☐

17. How do you feel about your weight?
    01) I would like to lose at least 10–15 kilograms ☐
    02) I would like to lose a few kilograms ☐
    03) I would like to gain quite a few kilograms ☐
    04) I neither want to lose nor gain weight ☐
    05) I haven't thought about it ☐

18. How often do you snack on junk food instead of eating regular meals?
    01) Always ☐
    02) Most of the time ☐
    03) Sometimes ☐
    04) Never ☐
    Please explain your answer:
    _____
    _____

19. During the past one week, did you eat fast food?
    01) Yes ☐
    02) No ☐

20. How often do you eat more than you really need to?
    01) Always ☐
    02) Most of the time ☐
    03) Sometimes ☐
    04) Never ☐

21. How often do you eat because you are bored or depressed?
    01) Always ☐
    02) Most of the time ☐
    03) Sometimes ☐
    04) Never ☐

22. During the past one week, did you eat fruit?
    01) Yes ☐
    02) No ☐

23. During the past one week, did you eat vegetables?
    01) Yes ☐
    02) No ☐

24. During the past one week, did you drink carbonated drinks (such as fizzy drinks/ soda/ cold drinks)?
    01) Yes ☐
    02) No ☐

25. During the past one week, did you drink water?
    01) Yes ☐
    02) No ☐

26. What do you think of your health?
    01) Excellent ☐
    02) Very good ☐
    03) Good ☐
    04) Fair ☐
    05) Poor ☐

27. How important is it to you to have good habits such as healthy eating and regular exercise?
    01) Very important ☐
    02) Important ☐
    03) Not important ☐

28. Do you go for medical check-ups?
    01) Yes ☐ How often_____
    02) No ☐ Why not?

    _____
    _____

29. Have you ever had a heart-related condition?
    01) Yes ☐ Which one/s? _____
    02) No ☐

30. Do you suffer from hypertension (high blood pressure)?
    01) Yes ☐
    02) No ☐
    03) Do not know ☐

31. Do you suffer from rapid weight gain?
    01) Yes ☐
    02) No ☐
    03) Sometimes ☐

32. Do you suffer from rapid weight loss?
    01) Yes ☐
    02) No ☐
    03) Sometimes ☐

33. Do you suffer from diabetes?
    01) Yes ☐ What type? _____
    02) No ☐
    03) Do not know ☐

34. Do you suffer from blood circulation problems?
    01) Yes ☐
    02) No ☐
    03) Sometimes ☐

35. Do you suffer from irregular heartbeat?
    01) Yes ☐
    02) No ☐
    03) Sometimes ☐

36. Do you suffer from high blood cholesterol?
    01) Yes ☐
    02) No ☐
    03) Do not know ☐

37. Do you take medication on a daily basis?
    01) Yes ☐ For what condition/s? _____
    02) No ☐

38. How familiar are you with issues regarding health?
    01) I know a lot about health issues ☐
    02) It depends on the topic ☐
    03) I know very little about health issues ☐
    04) I don't care about issues regarding health ☐

39. Do you know what the term "BMI" refers to?
    01) Yes ☐ It refers to: B_____ M_____I _____
    02) No ☐

40. Do you know your height?
    01) Yes ☐ I am: _____ in height
    02) No ☐

41. Do you know your weight?
    01) Yes ☐ I am: _____ in weight
    02) No ☐

42. Have you ever heard about CVD?
    01) Yes ☐
    02) No ☐

43. Do you know what CVD is?
    01) Yes. Quite well ☐
    02) Yes. Not so well ☐
    03) No. I would like to learn about CVD ☐
    04) No. I am not interested in learning about it ☐

44. Do you understand the term "CVD"?
    01) Yes. I understand the term ☐
    Please provide a brief description:
    _____
    _____
    02) No. I do not understand the term ☐

45. Do you know anyone who has passed away due to a heart-related condition?
    01) Yes ☐
    What heart-related condition was it? _____
    How was this person/people related to you? _____
    02) No ☐

46. Which race group/s do you think are most at-risk for CVD?
    01) Black ☐
    02) White ☐
    03) Indian ☐
    04) Coloured ☐
    05) All race groups ☐
    Please explain your answer:
    _____
    _____
    _____

47. Do you think you may be at risk for CVD?
01) Yes ☐
02) No ☐
03) I have not thought about it ☐

48. Do you know some of the CVD risk factors?
01) Yes ☐
Please provide examples:

_____

_____

_____

02) No ☐

49. What do you understand by lifestyle diseases?

_____

_____

_____

50. Do you think there is enough emphasis on CVD in South Africa?
01) Yes ☐
02) No ☐
Please explain your answer:

_____

_____

_____

Thank you for being a part of my study ☺

If you would like me to contact you for a face-to-face interview, please fill in the following details:

Your name: _____

Your e-mail address: _____

Your contact number/s: _____

APPENDIX 3: Participant information sheet for follow-up interviews

School of Social Sciences, Department of Sociology

Private Bag 3, WITS 2050, South Africa – Tel: +27 (0)11 717 4424

Dear: _____

I would like to thank you for willing to be interviewed by me after completing the questionnaire. To clarify, this follow-up contribution to my study requires your participation in an in-depth interview of approximately an hour. This will be scheduled at a time and place that is suitable for you. You will not be obliged to answer any questions with which you are uncomfortable and therefore have the option to decline to respond to any questions asked. All data collected through the interview will be held with the strictest confidentiality and you will have the option to remain anonymous – in which case all transcripts and reports will be appropriately coded to ensure that your request is fully respected.

It is in my understanding that the study will neither pose any risks nor result in any benefits for you and the company you are employed at. However, if you feel that you have concerns regarding the study or if you require any additional information, please contact me or my supervisor to discuss these further.

Kind regards,

Priya Buldeo

Priya Buldeo   Professor Leah Gilbert

priya.buldeo@gmail.com   leah.gilbert@wits.ac.za

APPENDIX 4: Participant consent form for follow-up interviews

I, _____, hereby confirm that I have been briefed on the research that Priya Buldeo is conducting on cardiovascular diseases, health behaviours and risk perception among retail pharmacy workers in Johannesburg, South Africa.

I understand that my participation is completely voluntary and that I have the right not to answer any questions that I do not feel comfortable with. In addition, I acknowledge that I can withdraw my participation in the research at any time I so choose.

The purpose of the study has been explained to me in the accompanying letter and I acknowledge that neither me nor the company I work for will benefit from the study or be subjected to any risks as an outcome of Priya's study.

Lastly, I trust that any information I share will be held in the strictest confidence by the researcher.

Participant's details:

Full name: _____

Signature: _____

Date: _____

APPENDIX 5: Participant consent form for audio-recording

☐ I agree to the audio-recording of this interview for the purposes of data capturing. I have been informed that the transcription will remain confidential and that the recordings will be safe-guarded in the strictest manner by the researcher so as to avoid any unauthorised use of the information provided by me.

<u>Participant's details:</u>

Full name: _____

Signature: _____

Date: _____

APPENDIX 6: Participant consent form for anonymity

☐ I wish to have my full name included in Priya's final thesis.

☐ I wish to remain anonymous – in which case I trust that Priya will neither include my name nor any information that may identify me in her final thesis.

Participant's details:

Full name: _____

Signature: _____

Date: _____

APPENDIX 7: Interview schedule

Social contextual characteristics:

1) How would you describe yourself? (age, gender, race, religion)
2) Where do you live/work?

Health behaviours and health promotion:

3) Tell me a bit about your eating habits? Exercises? (Probe: motivations and barriers to engaging in these health behaviours)
4) How would you describe the types of food you eat? What are your 'healthy habits'? Exercise perceptions: Benefits of exercise? What can you tell me about a person who exercises and eats a healthy diet?
5) Do you know where to access information regarding heart health?
6) Do you think South Africans are aware of the seriousness of lifestyle diseases?

Perceptions of 'health' and lifestyle:

7) What do you understand by 'health'? illness? disease?
8) How would you describe your physical health? Do you have any health concerns?
9) Weight: Have you ever tried to lose weight? Why? What type of weight loss products did you use?
10) Stress: Are you experiencing any stress at the moment? What are the main sources of stress in your life? Does this stress affect your health? How?
11) Social network: Who do you think your health is most influenced by? (Probe: family members, friends, work colleagues? How might your lifestyle be different if you were not in a relationship or if you did not have children? Would your meals be different if you were living alone? Probe: How/Why?)
12) Do your family members listen and support your health goals i.e. losing weight or exercising? Why/ why not?

Culture and body image:

13) Culture (What do you understand by 'culture'? Do you think your culture has shaped your ideas about health and disease? What does your culture say about people who are voluptuous/ overweight? Or thin?

14) How is body size or appearance (toned, slim, fit or rounded) regarded in society? Does it differ according to gender? (Probe: stereotypes, (un)accepted body weight).

15) Do you think people in your culture intentionally avoid 'healthy eating' (Probe: Beauty ideals/ desire).

16) They say a women's place is in the kitchen. What does your culture say about the meals women are expected to prepare?

17) Do you think family responsibilities prevent women from eating healthy and exercising? Yes – How? No – why not?

18) Do people in your culture usually watch what types of foods they eat? Why/Why not? How do you think these views differ in a Western context?

19) What would you say your beliefs regarding health is influenced by? (Probe: Age, Gender, race, Social upbringing, religion? How does this define your identity?)

20) Diagnosis/consequences (Probe: stigma of NCDs?)

21) How would you feel if you were to be diagnosed with a heart-related condition? Why? How do you think people will treat you? (Probe: What impact will it have on your family/work?)

22) What are some of the cultural beliefs about death in your community? What is 'normal' death (acceptable/unacceptable)?

23) Are there any beliefs or superstitions surrounding how these kinds of diseases are contracted?

Working environment:

24) What employment position do you hold at the pharmacy you are employed in? Does your work environment contribute to your views on health? (Probe: How? Customers? Work colleagues? Geographical location?)

25) Do you think your work (or home) environment influences your daily lifestyle? How? (Probe: eating habits? exercise?).

CVD risk/ help-seeking behaviour

26) How would you know if you are at risk for a heart-related condition? (Probe: symptoms)

27) Help-seeking behaviour: If you wanted to know whether you have CVD, how would you go about it? Who will you seek advice from [probe: lay referral]? When you are feeling unwell, who do you usually seek treatment from? Where do you usually receive information about health?

28) Who do you think can best help those suffering from a heart-related condition? (Probe: TCAM) – How? Why?

APPENDIX 8: Interviewee demographics

Women (*N*=30)

PSEUDONYM	AGE	RACE	AREA
Josephina	51	Black	Roodepoort
Mel	35	White	Sandton
Susan	49	White	Northgate
Emelda	35	Black	East Rand
Lisa	48	White	Boksburg
Jessica	37	Coloured	Edenpark
Suzanne	42	White	Randburg
Sharmla	45	Indian	Norwood
Stephanie	24	White	Strubensvalley
Yolande	52	Coloured	Cresta
Annabella	40	White	Oakdene
Khensani	27	Black	Alexandra
Megan	31	White	Alberton North
Naledi	49	Black	Thokoza
Beverley	48	Coloured	Palmridge
Diana	52	White	Fourways
Stacy	33	White	Farramere
Karabo	36	Black	Edenvale
Sally	41	Coloured	Boksburg North
Xolisa	38	Black	Soweto
Joyce	55	Black	Randburg
Sarah	32	White	Benmore
Brenda	54	Coloured	Eldorado Park
Kajal	35	Indian	Bassonia
Mbali	25	Black	Athol
Tarryn	26	Coloured	Mondeor
Thandi	28	Black	Brackenhurst
Dineo	24	Black	Benoni
Fiona	46	White	Randridge
Busi	30	Black	Soweto

Men (*N*=30)

PSEUDONYM	AGE	RACE	AREA
Michael	37	White	Sandton
Karl	43	Coloured	Benoni
Siphelele	48	Black	Alexandra
Mathew	30	White	Fourways
Frikkie	52	White	Randpark Ridge
Daniel	28	Coloured	Roodepoort
Sizwe	34	Black	Soweto
Eric	28	Black	Rosettenville
James	40	Coloured	Boksburg North
Jabulani	39	Black	Diepsloot
Raj	55	Indian	Actonville
Sibusiso	31	Black	Randburg
Bongani	29	Black	Mulbarton
Leroy	26	Coloured	East Rand
Gerhard	34	Coloured	Mondeor
Phillip	38	White	Alberton
Jackson	46	Black	Alexandra
Sipho	34	Black	Soweto
Stuart	29	White	Brackenhurst
Junaid	33	Indian	Mayfair
Sihle	31	Black	Johannesburg
Zack	35	White	Norwood
Thato	35	Black	Alexandra
Mike	32	White	Meyersdal
Loyiso	36	Black	Edenvale
David	43	White	Houghton
Matt	34	White	Brackendowns
Shane	30	Coloured	Mondeor
Shahid	35	Indian	Lenasia
Henry	33	Coloured	Boksburg

APPENDIX 9: Map of Johannesburg

(North, East, South, West)