

**UNDERSTANDING MODIFIABLE RISK FACTORS FOR NON-
COMMUNICABLE DISEASES AMONG ADULT MEN IN MASERU,
LESOTHO**

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College of Humanities

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Dedication

To my mom and siblings (and spouses). I wish 'Timer' was here to see this come to pass.

Acknowledgements

A big thank-you to all my friends (countless) for all the support. A friend in need is a friend indeed. To my family, you have been there through thick and thin, thank-you. To the UKZN staff and colleagues, especially in the School of Built Environment and Development Studies, thank-you for the support. A special thank-you to Dr Kerry Vermaak. Words cannot explain how grateful I am to have had you as a supervisor. I appreciate your commitment to academic rigour and your generosity. You have inspired me greatly. Thank-you for everything! If it were not of God, the One who gives life and ability to do... this would not have been possible. Kea leboha Morena!

ABSTRACT

Background

A large body of scholarship describes escalating mortality caused by Non-Communicable Diseases (NCDs) in Africa. Disease forecasts also anticipate further increases in the prevalence of NCDs in the region. However, there is little work focusing on NCDs in some African countries such as Lesotho. Studies on gender differences in mortality caused by NCDs (linked to NCDs modifiable risk factors) have observed higher death rates in men than in women. There are fewer investigations directed to gendered effects of modifiable risk factors for NCDs in Lesotho.

Objectives

In order to bridge the existing knowledge gap, this study explores the prevalence and effects of modifiable risk factors for NCDs on adult men's health. Men are the only subjects in the study owing to reports that mortality caused by NCDs is high in men compared to women, yet men are generally the least researched gender in Lesotho. The study objectives comprised an investigation of the relationship between demographic and socioeconomic factors and lifestyle risk behaviours for NCDs. The study further explored men's perceptions and attitudes to modifiable risk factors for NCDs. Given the effect that masculinity has on health, the current study has also studied how adult men in Maseru define masculinity. It has also evaluated masculinity's effects on modifiable risk factors for NCDs. Lastly, the study investigated gender norms in order to better understand how dominant notions of masculinity influence the prevalence of modifiable risk factors for NCDs in men.

Methods

The study used sequential explanatory mixed methods research design which prioritises and begins with collecting and analysing quantitative and then qualitative data. The methodology

process was guided by the Health Belief Model (HBM) and the Health, Illness, Men and Masculinity Model (HIMM) to provide different perspectives on the study. The study went through three phases. The first phase was a pilot study that provided a background understanding of the masculinity scales and prevalence of NCDs risks in a small population sample of 227 respondents. The second phase involved the analysis of the 2014 Lesotho Demographic Health Survey's secondary data. This phase was meant to provide a larger picture of the prevalence of the NCD's risk factors among adult men in Lesotho. The third phase involved collection of qualitative data using eight focus group discussions with a total of 54 adult men. This stage was informed by the second stage and this qualitative research assisted the researcher to deep-dive into the reasons behind the estimates and patterns seen from the pilot and the LDHS data analysis, and the potential health preventative measures.

Results

The prevalence of smoking

The final analysis of the data collected by and large shows a low but increasing prevalence of smoking, especially among younger adult men in Maseru, Lesotho. Between 2009 and 2014, there was about seven percent increase in the prevalence of smoking in men. The prevalence of smoking fluctuates among middle age men and eventually declines as men grow older. The prevalence of smoking decreases as the men's level of education increases. A positive change in marital status, e.g. getting married, and/ cohabiting with a woman leads to increased smoking cessation, while a negative change, e.g. death, divorce and separation leads to an increased prevalence of smoking among adult men. Men who did not practice any religious practices reported higher prevalence of smoking than men who practiced any religion. Stressful occupations led to higher prevalence of smoking. Unskilled labour also

reported higher prevalence of smoking. Increases in wealth was found to lead to declines in the prevalence of smoking.

Harmful use of alcohol

The study findings shows harmful alcohol use as the most prevalent NCDs risk factor in Maseru, Lesotho. Binge alcohol consumption is the most prevalent especially among younger adult men compared to older adult men. Similar to the prevalence of smoking, the prevalence of harmful alcohol use declines as men get older. Binge drinking prevails mostly during men's leisure time, which is commonly on weekends and at social gatherings. The study shows that excessive and harmful use of alcohol is associated with manliness. Men who do not consume alcohol excessively are perceived as weak and feminine. Men who had the highest level of education showed the highest prevalence of harmful use of alcohol compared to men who reported lower levels of education. Again, similar to smoking, the prevalence of harmful use of alcohol varies across different marital statuses. The married men and men cohabiting with women have lower prevalence of harmful use of alcohol compared to men who are widowers, divorced and separated.

Poor dietary

The prevalence of poor dietary patterns contribute greatly to the high prevalence of NCDs. Men's reported behaviours and rationales shows that men commonly abdicated responsibility for their health to women, particularly for healthy eating. The study findings indicate high prevalence of poor dietary patterns among adult men in Lesotho mainly owing to men's dependency on women for healthy food preparation. Most men reported buying convenient meals as a common practice especially when their wives/partners are not around. In addition to men's dependency on women for healthy meals preparation, a high prevalence of poor

dietary patterns in men exists because the negative effects of poor diet seem to develop over a 'long' period of time.

Physical inactivity

Physical inactivity, especially leisure time physical inactivity is reportedly prevalent in Maseru, Lesotho. Reasons for the high prevalence of leisure time physical inactivity include modernisation, which has resulted in sedentary jobs, especially in urban areas like Maseru. Ignorance is another reason described in the study for physical inactivity. This stems from undermining some activities and not perceiving them as physical activities. Another finding of interest is that some adult men perceive leisure time physical inactivity as an activity for the working class members of society.

Conclusion

Masculinity is one of the principal health determinants that contribute greatly to the risky lifestyle practiced by men. This avoidable risky lifestyle increases men's exposure to NCDs. It is of critical importance that high-risk members of society, e.g. men, to commit to and adopt lifestyle changes that mitigate the negative effect associated with modifiable risk factors for NCDs.

Key words: Lifestyle; Masculinity; Non-Communicable Diseases; Prevalence; Risk factors

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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
BMI	Body Mass Index
BP	Blood Pressure
CVD	Cardio Vascular Diseases
DHS	Demographic Health Survey
GBD	Global Burden of Diseases
HBM	Health Belief Model
HDL	High Density Lipoprotein
HIMM	Masculinity and Health, Illness, Men and Masculinity Model
HIV	Human Immunodeficiency Virus
LDHS	Lesotho Demographic Health Survey
LDL	Low Density Lipoprotein
MOHSW	Ministry of Health and Social Welfare
NCDs	Non – Communicable Diseases
NHANES	National Health and Nutrition Examination Survey
PCA	Principal Component Analysis
PRB	Population Reference Bureau
SES	Social Economic Status
STIs	Sexually Transmitted Infections
SVY	Survey
UKZN	University of KwaZulu-Natal
USA	United States of America
WC	Waist Circumference

WHO World Health Organisation

YLD Years lived with disability

CHAPTER ONE

INTRODUCTION

1.1. Background

Non-communicable diseases (NCDs) are a serious health challenge facing humanity today (Ekpenyong, Udokang, Akpan & Samson, 2012; MOHSW, 2009; McDonald & Pickart, 2011; Puoane, Matwa & Bradlay, 2008; WHO, 2011). These diseases have become the world's leading cause of mortality (GBD, 2016; MOHSW, 2009; WHO, 2013). NCDs are not only a threat to human health, but also to development and economic growth. The negative impacts from these illnesses are increasing at an alarming rate (Maher, Smeeth & Sekajugo, 2010) and are affecting society tremendously on all levels (Kanavos, 2006; Maher et al., 2010). More than half of the 57 million global deaths reported in 2008 were caused by NCDs (McDonald & Pickart, 2011; WHO, 2011), confirming these illnesses as the leading causes of mortality in the world. NCDs have not only been consistent as the leading causes of global mortality over the years, they are also a leading cause of age-standardised years lived with disability (YLDs) (GBD, 2016).

The negative impacts from NCDs vary considerably from country to country (Dalal et al., 2011), but the developing countries are prone to suffer more given their already existing health care challenges, plus their double burden from both the communicable and NCDs (Boutayeb, 2006).

Out of six World Health Organisation (WHO) regions, Africa shows the highest NCDs related mortality rates, which are unfortunately expected to rise further (Boutayeb & Boutayeb, 2005). As a region Africa has by and large made progress in the management of communicable diseases, in particular the HIV/AIDS pandemic. However, the projected rise in the burden of NCDs in the region threatens to undo the progress made. This projection has further led to the new Sustainable

Development Goal number three, which aims to promote the well-being of all by reducing premature mortality by at least one third by 2030 through prevention, management and treatment programs (Nunes, Lee & O’Riordan, 2016).

Effective management and prevention strategies for premature deaths caused by NCDs are crucial. In South Africa, the burden of NCDs has led to an increased burden on chronic health-care service providers (Mayosi et al., 2009; Phaswana-Mafuya et al., 2013) thus negatively affecting the country’s economy. Hofman (2014) reports about US\$1.88 billion of the country’s GDP to have been spent on management and prevention programs for diabetes, stroke and coronary heart disease between 2006 and 2015 in South Africa alone. In Lesotho, information on NCDs is produced through routine data and surveillance systems which are unfortunately not producing quality data on a regular basis (MOHSW, 2009). The current study thus investigates and seeks to better understand the underlying modifiable lifestyle risk behaviours associated with NCDs, and focusses on adult men¹ in Maseru, Lesotho. A number of reasons exist for this study to focus on men. Firstly, men’s health is important but often receives relatively less attention in Lesotho. This is the first study that focuses exclusively on the prevalence of NCD risk factors among men in Lesotho. Secondly, in most settings, prevalent norms of masculinity prevent men from seeking medical attention and information on health (Wang, Hunt, Nazareth, Freemantle & Petersen, 2013). They are socialized to be independent and strong, not to display emotions and not to seek assistance in time of need or stress (Sobralnske, 2006). In many societies, cultural beliefs and expectations place men under pressure to act strong and not vulnerable. This increases their vulnerability to modifiable NCD risk factors and NCDs. Lastly, the study focuses exclusively to men because their behaviour puts them at risk of developing NCDs.

¹ Males aged eighteen and above

The role men play in their lives constitutes a behavioural risk, i.e. precursor for the development of NCDs. In 2008 the World Health Organisation reported 844 per 100,000 NCDs deaths among men, and 724 per 100,000 NCD deaths for females in Africa. A similar pattern where more men than women died from NCDs related illnesses is reported in WHO (2012). In Lesotho, life expectancy at birth is fifty-one years for men while it is fifty-five for their female counterparts (WHO, 2017). The World Health Organisation (2017) reports a higher (536 per 1000) probability of dying for men aged 15 – 60 years in Lesotho compared to a lower (445 per 1000) probability of dying for women in the same age category (WHO, 2017). Of the first twenty-five causes of death in Lesotho, fifteen are NCDs (WHO, 2017).

1.2. Location of the study

The study was undertaken in Maseru, Lesotho. Lesotho is a small landlocked country, completely surrounded by the Republic of South Africa. This has led to the country's dependency on South Africa for most of its economic activities (Malefane, 2007). Lesotho is divided into four regions; the lowlands, foothills, mountains and Senqu Valley. The country is further divided into ten administrative districts, of which Maseru is the capital city located in the northwest of the country. The whole country is about 30,355km² in size and hosts about two million people (Bureau of Statistics (BoS), 2006b). The 2006 census report estimated 916,282 males and 964,379 females in the country. The kingdom of Lesotho is mountainous, and more rural than urban (Figure 1.1). More than three quarters (77%) of the people in Lesotho live in rural areas, however, the previous censuses, from 1976, 1986, 1996 and 2006 show an increase in rural-urban migration in the country. From the 2006 census report, there has been a considerable rise in the urban population from 16.9 per cent in 1996 to 22.6 per cent in 2006.

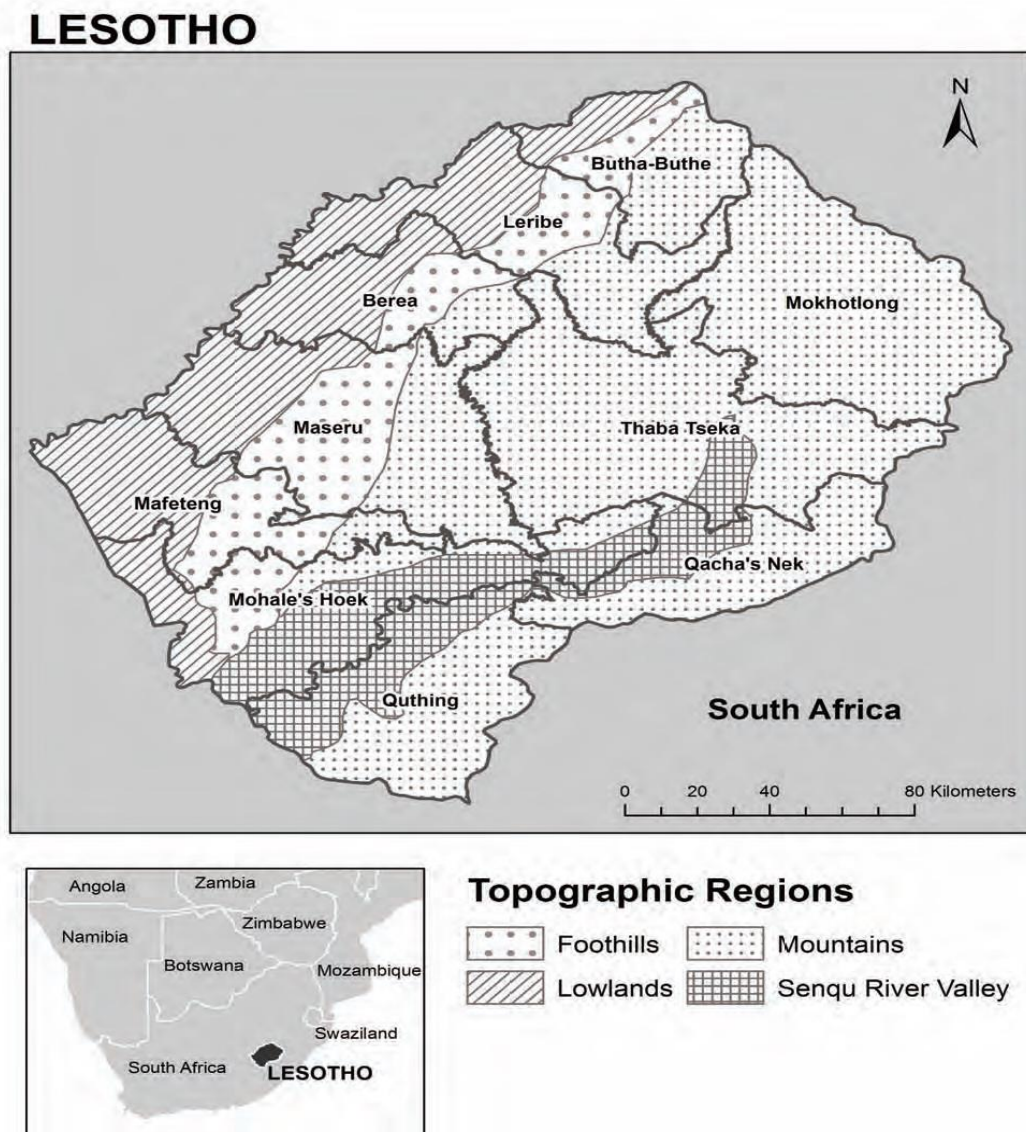
Lesotho is one of the poorer countries in the region with approximately 57.1 per cent of the population living below the poverty line (World Bank, 2015). It is therefore not surprising that the WHO (2014c) reports that health indicators in Lesotho are not improving. Communicable diseases have generally afflicted the country for decades, and the rising burden of NCDs has birthed a double burden of diseases in the country. In 2014, the WHO reported a lack of a national system's response to NCD's in Lesotho.

Maseru is measured at approximately 3,964.4km² in size and has a population estimated at 429,823 people (BoS, 2006b). According to the 2006 census estimates, there are about 205,175 males and 224,648 females residing in Maseru. Judging from the distribution by district, Maseru has been the most rapidly growing district in Lesotho over the last three decades. The city is at the top of the list with regards to developments in the country. A lot of urbanisation and industrialisation has taken place in Maseru compared to other parts of the country. Previous studies described the impact of urbanisation and rapid industrialisation in public health as some of the important factors that contributed intensely and negatively to people's health and wellbeing.

There were two major reasons for choosing Maseru as the setting for the current study. Firstly, Maseru is the capital city of Lesotho, and it is in the most populated district in the country. Secondly, Maseru was experiencing rapid urbanisation; therefore, it provided the relevant platform to conduct a study on the lifestyle related issues covered in the study. Moreover, Maseru had a good representation of the country's population from the other districts due to the rapid advancements of urbanisation in Maseru. This diversity in terms of population structure in Maseru was advantageous for the study as the varied responses shaped by the environment that the individuals grew up in played an important part in the study. Thirdly, the road networks were better

in Maseru compared to other districts. For this reason, access to different areas in and around the city during the data collection process was easy.

Figure 1.1: The map of Lesotho²



²Source: Ministry of Health and Social Welfare (2009)

1.3. Problem statement

The number of deaths caused by NCDs is expected to increase in Africa (WHO, 2012). The WHO (2012) has reported about 80 per cent of the deaths from NCDs to have already been experienced in low-and-middle income countries. The WHO (2012) further describes gender differences in mortality caused by NCDs, with higher death rates observed in men than in women. This is one of the reasons why the current study investigates modifiable risk factors related to NCDs among adult men in Maseru Lesotho. The prevalence of NCDs is usually observed in two ways (Nugent, 2008); firstly through predictions by WHO data, as well as from individual cross country survey data. Secondly, the prevalence of NCDs is observed through private research. The latter is not prevalent in Lesotho, perhaps owing to the general newness of the focus on chronic lifestyle diseases in the developing countries. Conducting research of this nature is therefore of critical importance in order to shed light on the prevalence of chronic lifestyle diseases in Lesotho.

Most developing countries have not conducted surveys to establish a baseline for the prevalence of chronic lifestyle disease risk factors (Ekpenyong et al., 2012). For this reason, these countries have not yet accurately quantified the magnitude of the NCDs problem. In Lesotho for instance, a large quantity of literature accessed on public health has paid much attention to communicable diseases. Infectious diseases comprising HIV/AIDS and tuberculosis appear to have been given first priority, including that of financial support from the government and donors interested in helping the country. The focus on mostly communicable diseases has in some way resulted in less reliable data available from private research on NCDs in the country. A rapid increase in both communicable and non-communicable illnesses has been predicted to overwhelm Lesotho in the near future (WHO, 2009b).

The study is therefore significant in that it focuses on under-researched subjects³ and an important high risk group (men) in Lesotho's capital Maseru. It offers a different perspective from existing literature. There has never been a study like this in the country. It offers a different perspective from the existing literature exploring new paradigms in the study of chronic NCDs. The study comes at the time when Africa is generally struggling to find balance between cultural practices, human rights and democracy which come with behaviours that impact on health outcomes. Adopting the Health, Illness, Men and Masculinities Model and the Health Belief Model which were originally developed in the context of developed countries, the study is anticipated to contribute to knowledge at the theoretical level in Lesotho relating to the modifiable risk factors for NCDs. Furthermore, it is hoped that the study findings will inform the health policy in Lesotho to promote a healthy lifestyle practice in the country.

The study of masculinity and health in an African context has largely been confined to HIV/AIDS research. Masculinity scale measures used generally include toughness, being violent, being adventurous, avoidance of femininity, concealing of emotions, being the main breadwinner as well as being admired and respected (Griffith et al., 2012). Masculinity measures in literature have been mostly developed and normed based on predominantly White, student-based samples in the developed countries including the United States of America (Griffith, Gunter & Watkins, 2012) thus limiting their generalisability to the African context. It is for this reason that it is critical to establish the existing measures of masculinity and health outcomes for men in the context of Africa and to determine how these scales affect men's health. The current study establishes scales measuring masculinity that are more specific and relevant in an African country.

³ Non-communicable diseases as a subject of study is less investigated in the country, and the use of men as research subjects and a gender mostly affected by NCDs (WHO, 2012) yet less researched on in relation to NCDs.

1.4. The aim of the study

The overall aim of the current study is to understand men's modifiable risk factors related to non-communicable diseases. Sub-objectives of the study are:

- 1.4.1. To examine the prevalence of modifiable risk factors for NCDs among adult men in Lesotho.
- 1.4.2. To investigate the association of demographic and socio-economic factors with modifiable risk factors for NCDs among men in Lesotho.
- 1.4.3. To explore men's perceptions (perceived severity, susceptibility, barriers and benefits) of the modifiable risk factors for NCDs in Maseru, Lesotho.
- 1.4.4. To study how masculinity is defined by men in Maseru, Lesotho.
- 1.4.5. To evaluate the effect of masculinity on the modifiable risk factors for NCDs among adult men in Maseru, Lesotho.

1.5. Research questions

- 1.5.1. How is masculinity defined by men in Maseru, Lesotho?
- 1.5.2. What are the perceptions of the severity, susceptibility, barriers and benefits of lifestyle behaviour changes in relation to NCDs among men in Maseru, Lesotho?
- 1.5.3. What is the prevalence of the modifiable risk factors for NCDs among men in Lesotho?
- 1.5.4. Is age, place of residence, marital status, education, employment status and household wealth significantly associated with the modifiable risk factors among men in Lesotho?
- 1.5.5. How does masculine identity impact on lifestyle risk behaviours for chronic NCDs among men in Maseru, Lesotho?

1.6. Definition of terms

NCDs are chronic medical illnesses or conditions which are by definition non-infectious or non-transmissible (Kim & Oh, 2013; Mahal, Karan & Engelgau, 2010; McKenna & Collins, 2010; WHO, 2004). These diseases are complex in nature and have numerous risk factors contributing to their prevalence. A complete cure for NCDs is hardly attained, and too many studies at the global level report NCDs as the current leading cause of morbidity and mortality (Beaglehole et al., 2011; Ekpenyong et al., 2012; Habib & Saha, 2010; Kim & Min Oh, 2013; Mufunda et al., 2006; Murray & Lopez, 2013; Nugent, 2008; Schmidt et al., 2011; Scott, Ejikeme, Clotney & Thomas, 2012; Phaswana-Mafuya et al., 2013; WHO, 2010; WHO, 2011; WHO, 2014b). Many studies identify the main⁴ types of NCDs (cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases) killing more than 30 million people every year (Beaglehole et al., 2011; Ekpenyong et al., 2012; Habib & Saha, 2010; Kim & Min Oh, 2013; Mufunda, et al., 2006; Murray & Lopez, 2013; Nugent, 2008; Phaswana-Mafuya et al., 2013; Schmidt et al., 2011; Scott et al., 2012; WHO, 2010; WHO, 2011; WHO, 2014b).

More than half (35 million) of the 53 million annual deaths worldwide are caused by NCDs (Di Cesare et al., 2013). Different scholars maintain that global mortality caused by NCDs doubles deaths caused by all the communicable diseases put together (Daar et al., 2007; Nugent, 2008). A growing body of literature further reports NCDs as an important global health concern (Habib & Saha, 2010; Saeed, 2013; Schmidt et al., 2011; Teh, Tey & Ng, 2014). In 2005, Habib and Saha (2010) estimated 35 million global deaths from NCDs. In 2015, NCDs continued to claim

⁴ Cardiovascular disease, cancer, chronic lung diseases, and diabetes are the four main types of NCDs (Kim & Min Oh, 2013).

increasingly more lives in the world; where the total number of deaths caused by NCDs increased by 14.1 per cent (12.6–16.0) to 39.8 million (39.2 million to 40.5 million) (GBD, 2016).

NCDs became a major lifestyle challenge, predominantly in developed countries, after the Second World War, and were initially regarded as diseases of the rich (Stern, Puoane & Tsolekile, 2010).

Today a substantial number of studies are discovering and reporting the burden of chronic NCDs as increasing significantly throughout the world and among the poor of the poorest (Boutayeb, 2005; Dalal et al., 2011). African countries are known as the countries mostly overwhelmed by the burden of communicable diseases comprising malaria and HIV/AIDS, however, the situation has changed as recent research has discovered a transition to the burden of NCDs as well. In actual fact, there is a high possibility of under reporting of the prevalence of NCDs, especially among adult men in the developing African countries, possibly due to lack of enough research and lack of resources to utilise in NCD related research (MOHSW, 2009; WHO, 2014a).

Evidence from different scholars pronounces sub-Saharan African countries as well as the poor Asian countries as bearers of a considerable share of the global burden of NCDs (De-Graft., et al., 2010; Di Cesare et al., 2013; Low, Lee & Samy, 2015). NCDs are currently the major cause of deaths and disease burden in the Asia Pacific region owing to a rapid increase in NCD related mortality (Low et al., 2015). At least 2.06 million deaths from NCDs were reported in sub-Saharan Africa in 2010 (Chugh et al., 2013). South Africa reports more deaths from NCDs than other African countries (Adjuik et al., 2006), and this could be attributed to the country's rapid urbanisation, industrialisation and more advanced economy as compared to the rest of the African countries. Unfortunately, NCDs in Africa have also been projected to drastically increase over time (Boutayeb, 2005; Mathers & Loncar, 2006).

In the context of Lesotho, not much literature is found that specifically relates to the prevalence of NCDs in the country. The most reliable information provided in this area comes from the international organisations such as the WHO and the Demographic Health Survey (DHS). As mentioned earlier Lesotho, like other African countries, used to be burdened mostly by communicable diseases, and the country is today challenged by both communicable and non-communicable diseases (WHO, 2009b). In 2008, NCDs accounted for about 30 percent of adult mortality in Lesotho (WHO, 2008). In 2012, the WHO's NCDs country profiles reported the percentage of deaths caused by NCDs to have risen to 34 per cent in Lesotho (WHO, 2014b). In general, several scholars have found that the developing countries are presently bearing the challenge of both the communicable and non-communicable diseases.

Many African countries have undergone major changes in disease profiles and health status. These changes are described by a shift from infectious diseases and nutritional deficiencies to the predominance of NCDs, also known as chronic lifestyle diseases. Changes in environment and socio-economic status that come with urbanisation, combined with a change in lifestyle, have resulted in an epidemiological transition in the developing countries such as Lesotho (Phaswana-Mafuya et al., 2013; Young, Critchley, Johnstone & Unwin, 2010). Demographic change is among the most important factors associated with an increased burden of NCDs in Africa (Habib & Saha, 2010; Mayosi et al., 2009). Rapid urbanisation, mainly in the developing countries, is reported by Bhagyalaxmi, Atul & Shikha (2013) as a leading factor in economic development, whose consequences include an increase in unhealthy food consumption, an increase in tobacco smoking, harmful alcohol consumption and decreased physical activity (Bhagyalaxmi et al., 2013). In addition to the epidemiological transition, demographic change and urbanisation taking place in the low and middle-income countries, the WHO (2014a) cites the lack of resources needed for the

prevention of NCDs as another factor that fuels the prevalence of chronic diseases, especially in African countries. Examples of NCDs include mental illnesses, but the four major ones of interest for this study are cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases (Daar et al., 2007).

1.6.1. Cardiovascular diseases

Cardiovascular diseases are the leading cause of mortality in the world (Boutayeb, 2005; Colagiuri, Colagiuri, Yach & Praming, 2006; Oli, Vaidya & Thapa, 2013; Sabzmakan et al, 2013; Sans, Kesteloott & Kromhout, 1997; Unal, Critchley & Capewell, 2005; WHO, 2014b). These are the diseases of the heart or blood vessels, occurring when the blood flow to the heart, the brain or the body is reduced (Oli et al., 2013; Sabzmakan et al, 2013; WHO, 2014b). This reduction in blood supply may be caused by a blood clot and a buildup of fatty deposits inside coronary arteries, causing these arteries to harden and get narrower. Examples of cardiovascular diseases include coronary heart diseases, stroke, peripheral arterial diseases and aortic diseases. The global mortality caused by cardiovascular illnesses was estimated at 17 million deaths in 2005 (Boutayeb, 2005) and at 17.3 million in 2010, with an expectation of at least 25 million deaths in 2030 (Douglas et al., 2014). In Africa, rapid industrialisation, together with changes in lifestyle contribute enormously to the prevalence of cardiovascular diseases (Belue et al., 2009; Yusuf, Reddy, Ôunpuu & Anand, 2001). Similar to diabetes incidences, a healthy diet, regular physical activity, maintaining a normal body weight and avoiding smoking have the ability to reduce the occurrence of cardiovascular diseases (Belue et al., 2009; Boutayeb, 2005; WHO, 2014b).

1.6.2. Cancer

Cancer is counted among the leading causes of mortality in the world (Kanavos, 2006). It is rated the second killer disease in the world after cardiovascular diseases (WHO, 2014b). Cancer is defined as a group of diseases characterised by an abnormal/unusual cell growth which can potentially spread to the other parts of the body if not controlled (American Cancer Society, 2015). Approximately 14 million new cases of cancer are reported every year (WHO, 2014b) and about 7.6 million people died from cancer in 2008. Four years later (in 2012), the number of deaths increased to 8.2 million (PRB, 2012; Stewart & Wild, 2014). The end result of cancer can also be severe health consequences. Current research projects an increased annual death rate from cancer, with at least 13.1 million deaths expected in 2030 (WHO, 2005). The most common cancers are breast and prostate cancers for women and men respectively (Cancer Research UK, 2014). Besides prostate cancer, lung, colorectal, stomach and liver cancers are also common in men (WHO, 2014b). More than half of cancer cases are reported in less developed countries with more than six in ten deaths from cancer (Kanavos, 2006; Cancer Research UK, 2014). In 2008, more than half (55%) of the 7.6 million cancer deaths in the world took place in the developing countries and by 2030, between 60 per cent and 70 per cent of the projected 21.4 million new cancer diagnoses a year are anticipated in the developing countries. A healthy lifestyle that includes healthy dietary patterns, regular participation in physical activities and an avoidance of smoking play a critical role in the prevention and management for cancer (WHO, 2005; WHO, 2014b).

1.6.3. Diabetes mellitus

Diabetes mellitus refers to a group of lifelong metabolic diseases related to the regulation of glucose found in food (Price, Khubchandani, McKinney & Braun, 2013). It is a metabolic condition

in which the sugar content in the blood stream is higher than it should be. This is a result of failure by the pancreas to produce adequate amounts of insulin, or as a result of failure to respond well to the insulin produced by the body's cells (Price et al., 2013). Symptoms of diabetes include frequent urination, frequent thirst and recurrent hunger (Price et al., 2013). Diabetes mellitus has emerged as an important non-communicable disease globally and poses major public health challenges (Mbanya, Motala, Sobngwi, Assah & Enoru, 2010; PRB, 2012; WHO, 2005). Diabetes is a global challenge, with approximately 347 million people living with the condition (WHO, 2005). In 2004, an estimated 3.4 million deaths were reported from high blood sugar (WHO, 2005). Research has documented that more than 80 per cent of the diabetes deaths have occurred in developing countries, and the WHO's projections are that deaths caused by diabetes will increase by at least two thirds between 2008 and 2030.

Rapid urbanisation in sub-Saharan Africa has been identified as one of the main factors for the mounting burden of diabetes and other NCDs in Africa (WHO, 2005). Research findings report different causes of diabetes, which also differ by type of diabetes. Such causes include genetics and environmental and behavioural factors (Price et al., 2013). There are four types of diabetes. The first type of diabetes is referred to as type 1 diabetes, where diabetic patients do not produce insulin and must receive exogenous insulin through injections or an insulin pump (Price et al., 2013). The second type is type 2 diabetes, which is the most common form of the disease and it is mostly diagnosed among obese adults. Type 2 diabetes is characterised by high blood sugar, insulin resistance and a relative lack of insulin (Price et al., 2013). The third type of diabetes is gestational diabetes among women during pregnancy and may disappear after giving birth (Price et al., 2013). The fourth type is a health condition in which blood glucose levels are higher than normal or expected, but not high enough to classify the condition as full-blown diabetes (Price et al., 2013).

This is referred to as pre-diabetes (Impaired Glucose Tolerance). People who have pre-diabetes are at high risk of developing type 2 diabetes and are also at increased risk of developing heart disease (Price et al., 2013).

Similar to other regions of the world, type 1 diabetes data is scarce in sub-Saharan Africa compared to that of type 2 diabetes data, which is currently the most common form of diabetes in the region (Mbanya et al., 2010). More than 90 per cent of all adult diabetes cases are type 2 diabetes (Mbanya et al., 2010). It is evident from literature that the incidence and type of diabetes varies greatly by age, gender, race/ethnicity and family history, however, age appears to be the most significant risk factor for diabetes. The peak age for the onset of diabetes is 40 - 59 years, however in sub-Saharan Africa in particular, the prevalence of diabetes increases with age, with most reports showing a peak at 55 - 64 years or at 65 years or older (Mbanya et al., 2010). It is estimated that globally by 2030, the highest prevalence of diabetes will be in the oldest age-group, i.e. 60 - 79 years (Mbanya et al., 2010). A positive family history of diabetes is reported by Mbanya et al. (2010) as an independent risk factor for diabetes, and different studies have found that a healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use can prevent or delay the onset of type 2 diabetes (Mbanya et al., 2010).

1.6.4. Chronic respiratory diseases

Chronic respiratory diseases are diseases that are progressive in nature and make it difficult for victims to breathe as they lead to a severely limited air flow (WHO, 2015). They are reported to be among the leading causes of death in the world, and they pose an immense economic burden on individuals, their families and the country at large due to frequent health care visits and mounting costs (WHO, 2013). Chronic respiratory diseases are typically under-diagnosed because it is

difficult and expensive to collect accurate epidemiologic data on these conditions (WHO, 2013). In 2005, more than three million deaths worldwide (3% of all deaths) were reported to be as a result of chronic respiratory diseases (WHO, 2014a). An estimated 90% of deaths caused by chronic respiratory diseases occur in the developing countries (WHO, 2014a). Different risk factors for this condition include genes, age, smoking, occupational dust and chemicals, environmental tobacco smoke, and indoor and outdoor pollution (Sandford, Weir & Pare, 1997).

1.7. Risk factors for non-communicable diseases

These are the factors that increase the chances of developing NCDs. NCDs share various risk factors that cannot be controlled and those that can be controlled. These risk factors are divided into three main categories. The first category comprises of non-modifiable risk factors which are gender, race, age and genes. The second group of risk factors for NCDs is made up of modifiable metabolic risk factors. Examples of these metabolic risk factors for NCDs are raised blood pressure (hypertension), raised cholesterol, raised blood glucose levels and the body mass index (BMI). The third category of risk factors for NCDs is the lifestyle risk factors, which include physical inactivity, unhealthy/poor diet, harmful consumption of alcohol and smoking. All three categories of risk factors for NCDs play a role in the development of NCDs, however, these chronic diseases are largely caused by preventable and modifiable risk factors (Puoane et al., 2008).

1.7.1 Non-modifiable risk factors for NCDs

Non-modifiable risk factors for NCDs cannot be controlled. These factors engineer the development of NCDs naturally. People do not have a choice of the racial group they want to be

born from, and the genetic make-up that makes humans is naturally inherited. People do not choose the gender they want to be, and naturally cannot refuse to age.

1.7.1.1. Gender

Biological sex is not easily or commonly modifiable; however, there are people who have gender reassignment surgery. Gender is understood here as one of the important social health determinants (Evans, Frank, Oliffe & Gregory, 2011; Men, Frieson, Socheat, Nirmita & Mony, 2011; Vlassoff, 2007; WHO, 2010), and exposure and vulnerability to NCD risk factors varies between men and women. In their study on Men's Health and Illness, Sabo and Gordon (2012) state gender as one of the important demographic variables used in epidemiological research. The concept of masculinity therefore plays an important role in gender related research; especially that which is focused on men as the health research subjects, and masculinity traits include courage, confidence, independence and assertiveness (Mansfield, 2006).

Research reports the theory of masculinity as a concept that involves both the social and biological factors (Manfield, 2006; Pleck, Sonenstein & Ku, 1993) common in males but not strictly excluding females. Masculinity identity has an influence in health related beliefs and behaviours, and men are often reluctant to seek medical attention until it is too late because society has socialised them as strong and able to endure pain (Sobralake, 2006). In comparison to women, studies also indicate that fewer men visit their doctors in a year (Wang, Hunt, Nazareth, Freemantle & Petersen, 2013). Furthermore, women reportedly use the male cancer helplines more than men do, as they call on behalf of their fathers, spouses and sons (Geoghegan, 2009). Health screening programs for diseases are usually attended by women and less so by men because sickness or

impairment is perceived as weakness and a threat to manhood (Sobral, 2006). Men have thus been socialised to adopt health beliefs and behaviours that increase their risks and they are usually less likely to engage in behaviours that promote healthy living and longevity (Courtenay, 2000); taking risks and thinking nothing bad will happen are seen as part of being a man. Owing to men's embracement of traditional masculinity traits, more men than women in the United States of America suffer from severe chronic conditions; resulting in higher death rates among men (Courtenay, 2000).

1.7.1.2. Race

Race has a role to play in determining how much risk one is exposed to in relation to NCDs. Different racial groups respond differently to the NCDs' risk factors. Racial/ethnic distribution in a country's population may convey important information on the most prevalent diseases in the country in question (Bloom et al., 2011). As a variable, race is a significant predictor of health status and as a social determinant of health (Malta, de Moura, & Bernal, 2014). A study in the USA that analysed the prevalence of risk factors for NCDs in different racial groups found a higher prevalence of chronic non-communicable risk factors among Blacks as compared to other racial groups (Malta et al., 2014).

1.7.1.3. Genes

Family history plays a crucial role in people's health, and there is evidence from literature that NCDs can be inherited genetically (Mirinda, Kinra, Casas, Smith & Ebrahim, 2008). Every child inherits different genes from both parents. Some of these inherited genes may be faulty, thereby resulting in certain medical conditions, while others may be normal and not cause any medical

conditions at all (Mirinda et al., 2008). Whether a child ends up with a medical condition such as an NCD may therefore depend on their genetic make-up, especially if the faulty genes inherited during conception are dominant genes (Marinda et al., 2008).

1.7.1.4. Age

There is evidence from previous studies that age is one of the important determinants of health (Ranneileng, 2013). A study evaluating non-communicable diseases and risk factors in sub-Saharan Africa found aging as one of the risk factors with increased odds for non-communicable diseases (Ekpenyong et al., 2012). For instance, in view of the level of physical activity across ages, older people are more inactive (Troiano et al., 2007). There are various reasons why people get less active physically as they age, but they often experience physical pain and loss of mobility (Mowl, Pain & Talbot, 2000). A cross-sectional study on socio-demographic patterning of non-communicable disease risk factors in rural India also reported an increased prevalence of risk factors for chronic NCDs among older people (Kinra et al., 2010).

1.8. Modifiable metabolic risk factors for NCDs

1.8.1. Raised blood pressure (BP)

High blood pressure hardly shows any warning signs, and it has the potential to kill its victims without them having realised that they have it (WHO, 2013). It is defined as the force applied when blood pushes against blood vessels (Joffres et al., 2013). When this pressure is higher than it is expected to be, the condition is referred to as high blood pressure (BP) or hypertension. A raised BP is among the leading risk factors for premature death, stroke and heart diseases globally (Joffres et al., 2013; WHO, 2013). Research reports at least nine billion deaths caused by high BP each year

(WHO, 2013). In 2000, the world estimate for people with hypertension was nearly one billion, and it is expected to increase to 1.56 billion by 2025 (Joffres et al., 2013).

Approximately two fifths (40%) of the worlds’ adults were diagnosed with high blood pressure in 2000, and this number increased from six million in 1980 to one billion by 2008 (WHO, 2013).

High-income countries generally have a lower prevalence of hypertension, and the prevalence of high blood pressure is highest in Africa, with about 46 per cent of the adults diagnosed (Opie et al., 2005). Hypertension is therefore a common problem in sub-Saharan African countries, and is unfortunately frequently underdiagnosed (Opie et al., 2005). More than 90 per cent of the patients who have suffered a stroke have hypertension and reside in Africa (Mensar, 2008), and several studies from different countries demonstrate the difference between rural and urban settings concerning the BP levels; with lower levels recorded in the rural areas (Avolio et al., 1985; Mbanya, Minkoulou, Salaha, & Balkaub, 1998; Agyemang, 2006).

Table 1.1. Blood pressure readings

Blood pressure category	Systolic mm Hg (upper number)	Diastolic mm Hg (lower number)
Normal	Less than 120	Less than 80
Pre-hypertension	120 - 139	80 – 89
High Blood Pressure (Hypertension) Stage 1	140 – 159	90 - 99
High Blood Pressure (Hypertension) Stage 2	160 or higher	100 or higher

Source: WHO (2013)

1.8.2. Increased Body Mass Index (BMI)

BMI is a tool used to measure nutritional status (Bailey & Ferro-Luzzi, 1995; Ranneileng, 2013). This is a value derived from the mass (weight) and the height of an individual. It is defined as the body mass divided by the square of the body height and is universally expressed in units of kg/m² square resulting from mass being in kilograms and height being in meters (Bailey & Ferro-Luzzi, 1995; Morris, 2011). The BMI can also be determined by using a chart or a table displaying the BMI as a function of mass and height, using contour lines or colours for different BMI categories. A BMI of less than 18 means that an individual is underweight and it may be an indicator of malnutrition, an eating disorder or other health problems (Bailey & Ferro-Luzzi, 1995). Table 1.2 shows the commonly accepted BMI ranges (Hammond, 2008; Lee & Nieman, 2007; Thomas & Bishop, 2007).

Table 1.2. Commonly accepted BMI ranges

Category	BMI kg/m ²
Underweight	Under 18,5
Normal	18.5 – 24.9
overweight	25 – 29.9
Obesity Class 1	30 – 34.9
Obesity Class 2	35 – 39.9
Extreme obesity Class 3	≥40

Source: Bailey and Ferro-Luzzi (1995); Ranneileng (2013)

The World Health Organisation has long warned that obesity is becoming a major health problem in many developing countries. It has become a significant factor in the progression of the emerging NCDs in the region (Puoane et al., 2012). Since the 1980s, the worldwide obesity levels are reported to have more than doubled (WHO, 2015). More than 1.9 billion adults were declared

overweight in 2014 and the situation is expected to worsen if drastic measures are not taken from the individual to the country level (WHO, 2015).

1.8.3. Raised cholesterol

Cholesterol is a waxy fat-like substance found in the blood stream (Lawes et al., 2004) and measured in milligrams per decilitre (mg d/l). The body needs this substance in order to be able to build healthy body cells. There are two types of cholesterol, the Low Density Lipoprotein (LDL) and the High Density Lipoprotein (HDL). LDL is the ‘bad’ kind of cholesterol and HDL is a ‘good’ kind of cholesterol (Lawes et al., 2004). LDL slowly makes arteries harden and eventually narrow by forming plaques in them, and as the arteries get narrow, the heart may end up not getting enough oxygen rich blood (Lawes et al., 2004). Healthy cholesterol levels are shown in Table 1.3.

Table 1.3. Healthy cholesterol levels

	Desired cholesterol levels
Total cholesterol	Less than 200 mg/dl
LDL (‘bad’ cholesterol)	Less than 100 mg/dl
HDL (‘good’ cholesterol)	40 mg/DL or higher
Triglycerides	Less than 150 mg/dl

Source: Lawes et al., 2004

1.8.4. Raised blood glucose levels

Blood glucose is defined as the most important source of energy for the body’s cells and blood lipids in the form of fats and oils (Bunescu, Struble, Marling, Shubrook & Schwartz, 2007). The blood glucose level refers to the amount of glucose present in the blood stream and relates closely

to diabetes (Bunescu et al., 2007). It is vital for diabetes patients to monitor their blood glucose continually and to keep their blood glucose levels as close to normal as possible. The body naturally regulates blood glucose levels because if the blood glucose levels get too high, the condition may lead to long-term complications of diabetes (Bunescu et al., 2007).

1.9. Modifiable behavioural risk factors

NCDs are also commonly known as chronic lifestyle diseases because they share common modifiable lifestyle risk factors (Mafunda, et al., 2006; Nugent, 2008; DHS, 2009; Thankappan et al., 2010), and these risk factors can be alleviated/negated by a change in behaviour. The four behavioural factors, defined here as the modifiable lifestyle risk factors are smoking, the harmful use of alcohol, unhealthy diet/obesity and physical inactivity. These modifiable lifestyle risk factors contribute to the development of non-communicable diseases and more often than not are adopted during adolescence (WHO, 2014). The prevalence of the modifiable lifestyle risk factors for non-communicable diseases differs from country to country and varies from area to area within the same country. For example, in India, the South Indians generally report a higher prevalence of the lifestyle risk factors (smoking, harmful use of alcohol consumption, poor dietary patterns and physical inactivity) for non-communicable illness compared to the North Indians (Kinra et al., 2010). Different studies have found that the negative health impacts associated with rapid urbanisation are mostly avoidable; mostly by means of effective interventions that confront the shared risk factors for these non-communicable diseases (Puoane, 2008; WHO, 2010; Ekpenyong et al., 2012). For instance, chronic non-communicable diseases such as lung cancer are often a result of smoking that is a risky and unhealthy lifestyle and a habit that people adopt (Nugent, 2008). Data on the prevalence of non-communicable disease risk factors are deemed limited in

some sub-Saharan African countries (Dalal et al., 2011) such as Lesotho, despite the availability of the World Health Organisation's investigation surveys (WHO, 2010). A substantial body of literature shows that modifiable lifestyle risk factors are escalating in developing countries (PRB, 2012). These risk factors can cluster with each other to fuel the occurrence of more than one non-communicable disease condition. For instance, smoking, poor nutrition and obesity are common risk factors for heart disease and diabetes (WHO, 2010).

1.9.1. Smoking

Smokers may be categorised into current smokers, ex-smokers, never smokers and non-daily, occasional and social smokers (Marston et al., 2014). Current smokers are people who have smoked more than hundred cigarettes (including cigars, cigarillos, and hand rolled cigarettes) in their lifetime and have smoked in the last 28 days (Marston et al., 2014). It is important to note that this definition has the potential to underestimate the prevalence of smoking. Ex-smokers are individuals who have smoked greater than hundred cigarettes in their lifetime but have not smoked in the last month or in the last 28 days (Marston et al., 2014). None smokers are people who have not smoked hundred cigarettes in their lifetime and are not currently smoking. Many occasional smokers do not classify themselves as smokers. Their risk for tobacco-related diseases is underestimated and results in missed intervention opportunities (Pulvers et al., 2014). Non-daily, occasional and social smokers is a complicated group of smokers. They smoke only at social gatherings which might be once a week (Marston et al., 2014 & Pulvers et al., 2014).

Tobacco consumption is globally endemic, and appears to be an important health concern for all age groups (Nyabongo, 2014), as smoking is one of the causes of premature death⁵. There are various types of diseases that develop due to smoking (Nyabongo, 2014), and approximately 5 million annual deaths are related to smoking (Sellers et al., 2003). Smoking is understood as one of the preventable causes of diseases in the world (Rupprechta, Donnyb & Sveda, 2015; Ryan, Trosclair & Gfroerer, 2012), yet its prevalence continues to grow. The practice of smoking may be defined as a voluntary (or involuntary in the case of second hand smoking) process of burning a substance (tobacco), whose produced smoke is then inhaled to be ‘tasted’ and absorbed into the bloodstream (WHO, 2007).

Studies have found evidence of a number of health hazards from smoking, as stated, and when comparing the average mortality rates between those who smoke and non-smokers, smoking related diseases kill at least half of the long-term smokers (WHO, 2007; WHO, 2010). The WHO (2007) also states that about 4.9 million people die from smoking induced diseases each year, and a growing amount of literature cites tobacco as one of the principal causes of death from non-communicable diseases globally. Smoking affects the essential organs in the human body, i.e. the heart, the liver and the lungs. It is reported as one of the main causes of blood vessel blockage, making blood supply or circulation to the heart and other body organs difficult (Puoane, 2008). In their study on priority actions for the non-communicable disease crisis, Beaglehole et al. (2011) report at least one in six of all deaths from non-communicable diseases to be linked to smoking. The global burden of lung cancer continues to grow and this disease occurs predominantly among

⁵ Premature deaths here are deaths that happen before a person reaches an expected age e.g. age 70.

men due to smoking (Beaglehole et al., 2011; Ferrucci et al., 2005; Ghaffar, Reddy & Singhi, 2004; Jemal et al., 2011).

1.9.2. Harmful use of alcohol

Hazardous alcohol consumption is defined in Reid et al. (1999) as the amount or pattern of alcohol drinking that puts patients at risk for adverse health events. Harmful alcohol use is described as alcohol consumption that results in adverse events, e.g. physical or psychological harm (WHO, 1992 & Reid et al., 1999). Harmful alcohol use is ranked the fourth leading risk factor causing non-communicable diseases (Thun et al., 1997; Tomkins et al., 2007; Obot et al., 2006; White, Altmann & Nanchahal, 2002). The existing relationship between harmful use of alcohol and deaths from non-communicable diseases is also emphasised by Thun et al. (1997). Harmful use of alcohol has the potential to cause major health problems. In their article, 'Alcoholism in Africa during the Late Twentieth Century', Myadze and Rwomire (2014) acknowledge concerns associated with alcohol consumption, especially related to the expansion of the modern breweries in Africa during the late twentieth century.

Examples of the dangers brought about by harmful alcohol consumption are the abnormally low numbers of oxygen-carrying red blood cells in the body, an increased risk of cancer, intoxicated liver cells, and speedy shrinkage of certain key regions in the brain resulting in memory loss which may cause epilepsy and can trigger seizures, even in people who do not have epilepsy (WHO, 2010). Research on alcohol consumption associates heavy alcohol drinking with numerous illnesses, and the literature further also acknowledges the possibility of the failure of having identified all the effects of alcohol on a human body (Bagnardi et al., 2015).

There is also mounting evidence associating heavy alcohol consumption with cancers, including cancers of the pancreas and prostate (Bagnardi et al., 2015; Boffetta, Hashibe, La Vecchia, Zatonski & Rehm, 2006), but moderate alcohol consumption has favorable effects on health (Boffetta et al., 2006; Thun et al., 1997), especially with regards to cardiovascular diseases (Hoeger & Hoeger, 2011). Moderate alcohol consumption, as explained by Bobo and Husten (2000), refers to one drink (unit) for females and two units (drinks) of alcohol for males per day considering the appropriate measures of alcohol consumption such as age and medical issues. Various studies on alcohol consumption have, however, report adverse effects from even the smallest amount of alcohol consumed (Hoeger & Hoeger, 2011).

Many studies have actually reported alcohol as one of the important risk factors accountable for the increased risk for NCDs including throat, head and neck cancers in various countries, especially in those countries reporting the high prevalence of harmful alcohol consumption patterns (Parry, Patra & Rehm, 2011). Harmful alcohol consumption also creates deficiencies of some nutrients needed in the body (Key et al., 2004) and furthermore, in every society where studies on alcohol consumption have been carried out, harmful alcohol consumption is reported to lead to health and social problems (Obot et al., 2006; Wilsnack et al., 2000).

1.9.3. Unhealthy diet

An unhealthy diet may be described as a pattern of food consumption that has unfavourable effects on health, or a diet with harmful effects on health (de Ridder et al., 2017). Poor diet is characterised by a high intakes of processed foods, sugar sweetened beverages, saturated fats and added salt and

sugar. Poor diet is also characterised by lower intakes of fresh fruits, vegetables, nuts and whole grains (de Ridder et al., 2017). Healthy eating practice remains a huge challenge in most societies, according to Ranneileng (2013), and research confirms the concurrence of nutritional shortages in different urbanised and industrialised societies (Tokunaga et al., 2012). Poor diet is one of the major influences associated with increases in the prevalence of NCDs. A study on diet, nutrients and non-communicable diseases reported a well-balanced diet as a basis for good health (Tokunaga et al., 2012). Food consumption may therefore be defined as an important factor for healthy living practice. Numerous epidemiological studies have shown the important relationship between diet and chronic lifestyle diseases (Engelfriet et al., 2010), and research has further found that healthy dietary patterns are able to protect consumers against illnesses (Schmidt et al., 2011; Wong & Lam, 1999). Poor dietary patterns, on the other hand, add to the inflammatory dysfunctions in body tissues thereby promoting obesity and being overweight, which are related to the risk factors for NCDs (Tokunaga et al., 2012).

1.9.4. Physical inactivity

The World Health Organisation defines physical inactivity as lack of bodily movement produced by skeletal muscles that requires energy expenditure (WHO, 2018). Physical activity can be carried out at work and around the home. Examples of physical activities comprise walking, cycling, sports and active forms of recreation such as dancing, yoga and tai chi (WHO, 2018). If undertaken regularly and of sufficient duration and intensity, physical activity can provide various health benefits (WHO, 2018).

The health benefits gained from regular exercise and physical activities cannot be ignored. According to Lee et al. (2012, in Kahan, 2015:71), “*Physical inactivity among adults threatens global public health as it is a prime behavioral risk factor associated with major non-communicable diseases such as coronary heart disease, type 2 diabetes, and breast and colon cancer*”. Consistent physical activity certainly weakens many of the health risks related to being overweight or obesity (Blair & Brodney, 1999). The lack thereof is accompanied by countless undesirable health consequences, while involvement in physical exercise even has the ability to reverse the harmful effects of consuming a diet with a high-fat content (Molteni et al., 2004). Physical inactivity is described as one of the leading health challenges contributing to chronic lifestyle diseases, mental health, quality of life, and premature loss of life (Sallis et al., 2009). Strong evidence from various studies shows that physical inactivity increases the risk for many adverse health conditions, including both communicable and non-communicable chronic conditions (Lee et al., 2012).

The level of physical fitness is an important factor in the study of chronic lifestyle diseases, and literature defines physical activeness as one of the leading contributors to people’s physical and mental wellness (Wen & Wu, 2012). A study on the harms of physical inactivity reveals that being physically inactive contributes significantly to the number of deaths caused by non-communicable diseases worldwide (Wen & Wu, 2012). Studies on physical activeness describe physical activity and exercising as a miracle drug that has the likelihood to benefit every part of the human body and to considerably extend one’s lifespan (Wen & Wu, 2012), and a number of studies confirm that physical activeness protects participants from the health risk of obesity (Blair & Brodney, 1999; Guthold, Ono, Strong, Chatterji & Morabia, 2008; Lee et al., 2012; Panagiotakos et al., 2008).

1.9.5. Pollution

Recent studies on NCDs risk factors are starting to include pollution in the list of preventable or modifiable NCDs risk factors (Fuller et al., 2018; Sly et al., 2016). High-income countries such as Canada, France, Germany, the UK, and the USA are able to control pollution as a risk factor for NCDs (Fuller et al., 2018). In these countries, behavioural and metabolic NCD risk factors are the principal causes of NCD mortality (Fuller et al., 2018). In upper-middle-income countries comprising Argentina, China, Mexico and South Africa, pollution and behavioural NCD risk factors are almost equally important (Fuller et al., 2018). Pollution is the predominant NCD risk factor in heavily polluted and rapidly developing countries, e.g. India, Kenya, Peru and Senegal (Fuller et al., 2018). Exposure to air pollution is considered one of the important contributors to morbidity and mortality in sub-Saharan African adults (Nightingale et al., 2018). WHO (2017) confirms that it is less known that environmental factors, e.g. pollution are also the main causes of NCDs. According to Fuller et al. (2018), pollution is among the leading NCD risk factors globally and is responsible for approximately 16% of all NCD mortality.

1.10 The structure of the dissertation

Chapter one has provided a background to the current study. It has also described the study location and stated the problem statement of the current study. The chapter has further defined the key concepts of the study i.e. NCDs and risk factors. Lastly the chapter outlines the objectives and research questions for the study. Chapter two contains a review of literature from different contexts on the relationship between the modifiable risk factors for NCDs and the demographic factors and socio-economic factors in order to meet the first two objectives. Chapter three reviews the concept of masculinity, the relationship between masculinity and health in general, and then focuses on

NCDs. From there the chapter focuses on lifestyle risk factors and an adoption of a healthier lifestyle. The Health, Illness, Men and Masculinity Model (HIMM) model is reviewed in more detail in this chapter, as well as the measurement of masculinity. The chapter further explores the knowledge and attitudes related to lifestyle risk behaviours. In chapter four the methodology employed in the data collection and analysis is described. Chapter five presents the findings from the pilot survey carried out during the phase one of the study. In chapter six the 2014 Lesotho's Demographic Health Survey data is analysed and linked to the studies reviewed in chapter two. The qualitative findings linked to the HIMM model and the Health Belief Model (HBM) used in this study are presented in chapter seven. Lastly, chapter eight provides the discussion and the conclusion of the study.

CHAPTER TWO

DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS ASSOCIATED WITH MODIFIABLE RISK FACTORS

2.1. Introduction

NCDs are the leading causes of morbidity and mortality in the world (Adhikari, Gupta & Koshy, 2014; Mondo, Otim, Akol, Musike & Orem, 2013; Namusisi et al., 2011; Saeed, 2013; WHO, 2010). Different studies have identified a relationship between demographic characteristics, socio-economic factors and the risk factors for NCDs. This chapter explores literature from different contexts, specifically on the prevalence of modifiable risk factors for NCDs related to demographic and socio-economic factors. It is unusual for a single demographic characteristic to influence lifestyle; rather, a number of demographic characteristics work together to determine preferences and lifestyle patterns.

2.2. Demographic factors

2.2.1. Gender

Gender is a social determinant of health and it is one of the important demographic influences for NCD risk factors (Men et al., 2011). It is a multi-faceted construct that incorporates social roles, behaviour, values and attitudes (Roberts et al., 2016). Moreover, there are societal standards and norms that dictate the type of behaviour perceived as acceptable, fitting or desirable for people based on their actual or perceived gender (Roberts et al., 2016). NCD risk factors affect men and women differently, and the levels of smoking, harmful alcohol consumption, poor diet

consumption practice and physical inactivity vary between genders (Reddy, Zuma, Shisana, Jonas & Sewpaul, 1996). Different studies on NCDs' mortality reveal a higher NCD mortality in men than in women (Stevens, Schmidt & Duncan, 2012; WHO, 2011; WHO, 2012), perhaps due to the riskier lifestyle observed in men.

2.2.1.1. Smoking by gender

A number of public health studies report smoking as one of the leading risk factors for NCDs in the world (Bonita & Beaglehole, 2014; Reddy et al., 2015; Waldron et al., 1988; WHO, 2011; WHO, 2015). Global gender based differences on smoking confirm more men than women as smokers (Adhikari et al., 2014; Bonita & Beaglehole, 2014; Reddy et al., 2015; Sánchez-López, Cuellar-Flores & Dresch, 2012; Peltzer et al., 2011; Waldron et al., 1988; WHO, 2009a; WHO, 2011; WHO, 2015). Literature observes a similar pattern in the developing countries where more males than females report current smoking (Population Reference Bureau, 2007; Saeed, 2013; WHO, 2010). Similarly, Lesotho records a higher prevalence of smoking in men than in women (DHS, 2009). It is worth noting however, that smoking among women is definitely increasing worldwide (Marang-van de Mheen, Smith & Hart, 2001; Reddy et al., 2015; Waldron, 1967; Zeman, Hiraki & Sellers, 2002;). Different factors contribute to the gender disparities in smoking. In Southern Nigeria, society is described as tolerant of male smokers, but not of female smokers (Egbe, Meyer-Weitz, Asante & Petersen, 2014), and this is based solely on the behavioural expectations for each gender. Kenya reports a similar attitude, where smoking is only tolerated in men (Kaplan, Carriker & Waldron, 1990). In the same way, China reports a higher smoking prevalence among males than among females (Yang et al., 1996). In the Southern African context, a comparison study on the

socio-economics of tobacco use among men in Namibia, Lesotho, South Africa and Swaziland has found a higher prevalence of smoking in men compared to women (Reddy et al., 1996).

In South Africa considerable measures aimed at reducing the prevalence of tobacco smoking are taken, however, a large proportion of the adult population, especially men, continue to smoke (Reddy et al., 2015). The prevalence of smoking is further reported as different between males as a demographic group. Men who are heavy alcohol drinkers usually smoke more than men who drink less alcohol (Bobo & Husten, 2000). In Lesotho, smoking is generally common among men and has not changed significantly over the past decades (MOHSW, 2009). Lesotho reportedly has the highest pipe, chewing tobacco and other tobacco use prevalence among men, while Swaziland has the highest snuff consumption among men (Nyabongo, 2014). The high prevalence of smoking observed in men undoubtedly increases the risk of NCDs development for men.

2.2.1.2. Harmful use of alcohol by gender

Alcohol abuse is a global public health challenge leading to at least 2.5 million deaths annually (WHO, 2011). The negative impacts of harmful alcohol consumption⁶ vary from place to place. However, detrimental alcohol consumption is generally more prevalent in men than in women (Crum, Helzer & Anthony, 1993; Peltzer et al., 2011; Van Oers et al., 1999; WHO, 2011; WHO, 2014a). Reasons for heavy drinking among men vary. For instance, some men consume alcohol excessively because they want to appear strong and masculine because drinking large amounts of alcohol exhibits strength and masculinity (Caetano, Clark & Tam, 1998). Men from all the regions of the world are more likely to consume greater quantities of alcohol compared to women

⁶ Alcohol drinking/consumption refers to drinking alcoholic beverages/drinks.

(Adhikari et al., 2014; Dar, 2006; Dawson & Archer, 1992; Martinez, 2012; Peltzer et al., 2011; Wilsnack et al., 2009; WHO, 2010). They are also more likely to consume alcohol more frequently compared to women (Adhikari et al., 2014; Dar, 2006; Dawson & Archer, 1992; Martinez, 2012; Peltzer et al., 2011; Wilsnack et al., 2009; WHO, 2010) in trying to demonstrate (directly or indirectly) their willingness to take risks (Wilsnack et al., 2000; Mahalik et al., 2007; Courtenay, 2000).

In South Africa as well, heavy alcohol drinking is more common among males than it is in females (Pithey & Morojele, 2002). A study conducted among Spanish men and women on alcohol consumption has found that men are more likely to report high alcohol consumption compared to women (Sánchez-López et al., 2012), as a result exposing these men to a higher risk of developing NCDs triggered by harmful alcohol consumption. In India, harmful alcohol consumption is common in men, with less than five per cent (3%) of Indian women consuming alcohol occasionally (Room, Demers & Bourgault, 2000). A similar trend is recorded in Nigeria, where Nigerian women are only administered a measured amount of an alcohol during special occasions when alcohol consumption is considered appropriate for all (Room et al., 2000).

In other African countries such as Namibia and the Seychelles, drinking patterns look different. Drinking an alcoholic beverage in Namibia is not a male prerogative (Room et al., 2000). From a survey on alcohol consumption in the developing countries, both men and women from Namibia report regular weekly drinking, however, the rate of drinking is still higher in men (Room et al., 2000) but less in comparison to that of Nigeria and India. Heavy alcohol drinking appears to be a man's source of pride, with relatively large proportions of occasional drinkers in China, Mexico and Costa Rica (Room et al., 2000). With reference to Chinese, Mexican and Costa Rican male drinking patterns, alcohol consumption appears more heterogeneous compared to male drinking

patterns in India, Nigeria and Namibia (Room et al., 2000). In Lesotho, a country diseases profile report by the WHO (2014) based on 2010 estimates confirms that men in Lesotho also consume more units of alcohol than women in the country. Similar to smoking, many studies on alcohol use confirm a continuous increase of the health risks associated with the harmful consumption of alcohol (Dar, 2006; Pithey & Morojele, 2002; Room et al., 2000; WHO, 2014).

2.2.1.3. Poor diet by gender

Literature describes poor diet as one of the contributing risk factors to the high prevalence of NCDs (Xu et al., 2016). Literature identifies males as a gender that consumes unhealthy diets more owing to their ignorance of the health benefits attained from particular foodstuffs (Wong & Lam, 1999). The main reasons for men's ignorance of healthy eating habits include the socially constructed gender roles for men and women, where only women are traditionally associated with food preparation (Wong & Lam, 1999; Gough & Conner, 2006). An American study on gender differences in food choices has found that taste, filling the stomach and convenience are the key factors reported for men's food choices (Wardle et al., 2004). Literature from different settings reports that food and healthy eating are associated with femininity in most countries (Wong & Lam, 1999; Courtenay, 2000; Gough & Conner, 2005).

There is an inadequacy of data related specifically to men's nutrition in Lesotho. One of the possible reasons for the insufficient data on this is the fact that women and not men are expected to cater for all the nutritional needs in a household (Ranneileng, 2013). Different studies from different countries report men as a gender that often pursue health-defeating diet patterns, regardless of their socio-economic class (Wong & Lam, 1999). However, there are men from different social groups who are cautious of the food they consume (Liebman, Cameron, Carson,

Brown & Meyer, 2001; Tepper, Choi & Nayga, 1997), but only a small number of these men admit to being on a healthy diet because they do not want to be labelled as feminine (Liebman et al., 2001; Tepper et al., 1997).

2.2.1.4. Physical inactivity by gender

Physical inactivity is becoming one of the important global epidemics (Bloemhoff, 2010). It is an independent and major social risk factor for chronic NCDs, responsible for over 500, 000 deaths per annum across Europe (WHO, 2010). Individuals who are physically active have lower rates of all causes of morbidity and mortality (Daigle, 2003; WHO, 2008). A study on physical inactivity carried out in 22 African countries established that physical activity varies between genders, with leisure time physical activity common in men from the evaluated countries (Guthold et al., 2011). More gender-based research on physical activity describes men as more physically active compared to women (Hallal et al., 2012; Troiano et al., 2007).

Previous studies also reveal that non-work physical activity has a positive impact on health while work-related physical activity has a negative impact (Saffer et al., 2011). This may be because those engaged in physically demanding jobs comprising manual labour are likely to be of a lower socio-economic status that is typically associated with poorer health outcomes. Non-work physical activity is considerably prevalent in males (Saffer et al., 2011). Reasons for the higher prevalence of physical inactivity among women include the normative female gender roles such as housework and childcare responsibilities in a household (Segar, Jayaratne, Hanlon & Richardson, 2002).

From a global perspective, partaking in physical activity appears more prevalent among men than in women (Hallal et al., 2012; Segar et al., 2002; Thomas & Thomas, 1988; Troiano et al., 2007;

Ranasinghe et al., 2013). The situation in South Africa is similar to that of the other countries; two large cross-sectional studies conducted in the Western Cape Province also report higher physical activity levels in men in comparison to women (Bourne, Lambert & Steyn, 2002).

2.2.3. Age

People of all age groups are susceptible to NCDs (Phaswana-Mafuya et al., 2013). There is evidence from literature describing age as one of the important determinants of health (Ekpenyong et al., 2012; Khademi, Babanejad, Asadmobini & Karim, 2017; Ranneileng, 2013). A study on chronic non-communicable diseases in Delhi, India found that the risk factors associated with NCDs generally increase with age (Garg et al., 2014).

2.2.3.1. Smoking by age

Age is one of the important demographic factors to use when exploring smoking as a risk factor for NCDs. The prevalence of tobacco use is higher in the older age groups compared to the younger age groups (Nyabongo, 2014; Sreeramareddy, Pradhan & Sin., 2014). For example, in South Africa a large number of adults continue to smoke regardless of the tobacco control strategies the country has put in place (Reddy et al., 2015). The implication of this finding is that older smokers are likely to suffer more from smoking-related illnesses as they have smoked for longer and tend to be heavy smokers (Cataldo, 2003). As much as smoking increases with age, previous studies also note that the prevalence of smoking declines with age (Schoenborn, 2004). At this time (old age), it might be too late for older smokers to recover fully from the damage caused by smoking to their internal organs.

In Lesotho, findings from MOHSW (2009) reveal smoking as more prevalent in middle-aged men compared to younger men, with the smoking prevalence slowly declining in the older age groups. Besides peer pressure, a study on the factors associated with smoking reports increased odds of smoking among adults who were exposed to smoking during their childhood (Penzes et al., 2012). Marketing tobacco sales through media is also an important influence on smoking, especially for adults, because marketers depict smoking as one of the ways to relax and socialise (Bobo & Husten, 2000; Heatherton & Sargent, 2009).

2.2.3.2. Harmful use of alcohol by age

Alcohol abuse is a complicated phenomenon globally. It is not restricted to a particular age group, as there are underlying social factors that influence this behaviour across all age groups and such factors comprise negative life events (Jose, Van Oers, Van de Mheen, Garretsen & Mackenbach, 2000). For Dar (2006), there are three categories of factors leading to alcohol abuse or harmful use of alcohol. These are emotional factors such as bereavement; medical factors such as physical disability; and practical problems including impaired self-care (Dar, 2006). A lot of unreported alcohol abuse happens among adults (Atkinson, 1990; Dar, 2006). Embarrassment to report drinking problems and stereotypical perceptions that alcohol abuse is only a challenge for the younger population are among other reasons for the underreporting of alcohol abuse rates (Dar, 2006).

2.2.3.3. Poor diet by age

Previous studies describe poor diet as one of the major global causes of mortality and disability and this has resulted in healthy eating patterns becoming a global priority in the pursuit to decrease NCDs' prevalence (Imamura et al., 2015). High-income nations show better dietary patterns based on the consumption of healthy items, but considerably poorer diets based on unhealthy items in comparison with low-income nations from findings from a study on dietary quality among men and women in 187 countries in 1990 and 2010 (Imamura et al., 2015). On average, younger adults across the globe are reported to consume poorer diets while older adults demonstrate the consumption of better diets (Imamura et al., 2015).

2.2.3.4. Physical inactivity by age

A report from a study on physical activity patterns among South Asian adults defines physical inactivity among adults as one of the leading causes of mortality (Ranasinghe et al., 2013; WHO, 2010). This finding illustrates age as one of the important factors contributing to physical inactivity (Nugent, 2008; Panagiotakos et al., 2008). Studies on physical activity levels in different settings report less physical activity at a global level, and that physical activity decreases with age (Sallis, 2000). A cross-sectional study on socio-demographic modelling of non-communicable disease risk factors in rural India also finds physical inactivity to be one of the risk factors for chronic diseases that increases with age (Kinra et al., 2010). Growing older goes together with many health challenges due to changes in lifestyle; such challenges include physical pain and loss of mobility (Mowl, Pain & Talbot, 2000).

2.2.4. Marital status

An increasing number of studies have reported marital status as one of the important determinants of health. Different studies have explored the influence the variable marital status has on health related behaviour (Cho, Khang, Jun & Kawachi, 2008). Studies comparing the different categories of marital status consistently maintain that married people are healthier compared to their unmarried counterparts (Cho et al., 2008; Chung and Kim, 2015; Schoenborn, 2004).

2.2.4.1. Smoking by marital status

Studies conducted in the USA and Asia report lower smoking rates and increased cessation rates among married people (Cho et al., 2008; Schoenborn, 2004) implying that marriage is advantageous to health. This is because many spouses, especially wives, constantly monitor and try to control their husbands' health behaviours (Umberson, 1992). Research findings from a study on social capital, economic conditions, marital status and daily smoking conducted in Sweden has found that never married participants and in particular the divorced, show a considerably higher prevalence of daily smoking than married and cohabitating partners (Lindström, 2010). Similarly, a study conducted in the western parts of Asia reveals the positive effect that wives have on their husbands' behaviour (Cho et al., 2008). Most husbands are reportedly successfully encouraged by their wives to stop smoking (Cho et al., 2008). In sub-Saharan African countries such as Lesotho, there is a high prevalence of smoking among single men (Sreeramareddy et al., 2014). This provides evidence that marriage can provide social and psychological support that encourages healthy living (Cho et al., 2008).

2.2.4.2. Harmful use of alcohol by marital status

Research describes the influence of marital status on alcohol consumption as complex (Power, Rodgers & Hope, 1999). One of the consistent findings in literature is that alcohol consumption varies across marital status categories (Power et al., 1999). Harmful alcohol consumption is possible within any category of marital status, but it is common in literature to see a general trend of heavy drinking increasing among the divorced in comparison to those continuously married or cohabiting (Eng, Kawachi, Fitzmaurice & Rimm, 2005; Dar, 2006; Power et al., 1999; Schoenborn, 2004).

In addition to other previous studies, Crum et al. (1993) also report a high risk of alcohol abuse and dependency among the never married, widowed and separated or divorced study participants.

Individuals who never get married are the ones who usually have a chronic heavy alcohol consumption pattern, thereby contributing to their increased exposure to NCDs (Power et al., 1999; Schoenborn, 2004). A study on alcohol use disorder in England has found the least likelihood of harmful drinking among older men who are married, and a greater possibility of harmful alcohol consumption among widowed and divorced men (Dar, 2006).

2.2.4.3. Poor diet by marital status

While married men and those who cohabit with their ‘girlfriends’ are likely to eat healthier meals, married men in particular are more likely to be overweight than men in other categories of marital status (Eng et al., 2005; Hanson et al., 2007; Schoenborn, 2004). This finding points to the possibility of other underlying factors beyond poor diet to weight gaining. Changes in social roles such as entering into marriage, starting to cohabit with a partner or exiting marriage, whether

through a divorce, separation or becoming a widower have an influence on one's body weight (Sobal, Rauschenbach & Frongillo, 2003). Scholars recognise a relationship between body mass and marital status. A longitudinal national study conducted in the USA has found that men who are divorced or separated and those whose wives have died lose more weight than men who are married (Sobal et al., 2003).

2.2.4.4. Physical inactivity by marital status

Marital status plays a critical role as a determinant of general behaviour, including physical activity among men (Petee et al., 2006). Using cross-sectional data from the 1999-2002 National Health and Nutrition Examination Surveys (NHANES) in the USA, Sobal and Hanson (2010) have found mixed results regarding the relationship between marital status and physical activity. Other cross-sectional studies also report mixed results on physical inactivity, but usually report unmarried individuals as more active than the married individuals (Kaplan, Newsom, McFarland & Lu, 2001; Nomaguchi & Bianchi, 2004; Sobal & Hanson, 2010).

Previous studies sometimes report married people, especially men, as more active than the unmarried ones, and occasionally also find no relationship between marital status and physical activity at all (Sobal & Hanson, 2010). A study that compared married men to their single counterparts in the USA reports moderate levels of physical activity among married men and more activity among men who are not married (Petee et al., 2006). In spousal pairs however, the highly active men have similarly active wives (Petee et al., 2006). Literature reports unmarried and single individuals from different countries as more active compared to their married counterparts or those staying together with their partners (Eng et al., 2005; Sobal et al., 2003; Sobal & Hanson, 2010).

For married people, marital role obligations (Sobal et al., 2003; Sobal & Hanson, 2010) are major

hindrances to consistently engaging in some form of physical activity. The result of less or no physical activity involvement among married men and men living together with their partners is usually obesity (Sobal, Rauschenbach & Frongillo, 1992).

2.2.5. Religion

Religion is one of the strong social forces that shape individuals' lifestyles (McCullough & Willoughby, 2009). It influences health patterns and choices, and the wellbeing and social behaviour of many individuals depends on religion (McCullough & Willoughby, 2009). A growing number of studies continue to show religion as one of the key contributors in health-related outcomes (Benjamins, 2012; Room et al., 2000).

2.2.5.1. Smoking by religion

Religion regulates lifestyle for many people in the world. Studies on the effects of religion on smoking have found less smoking among people who report membership of a religious group (Koenig et al., 1998; Wang, Koenig & Shohaib, 2015; Yong, Hamann, Borland, Fong & Omar, 2009). For example, a comparison study between Malaysian Muslims and Thai Buddhists reveals that the majority of Muslims and Buddhists believe that their religion discourages smoking (Yong et al., 2009). A cross-sectional study that investigated the relationship between religion and smoking in adults has found that individuals who report belonging to a religious group and who are regular attendants of religious services are less likely to smoke (Koenig et al., 1998). Members who report current smoking yet are members of a religious group smoke fewer cigarettes than their non-religious counterparts do (Koenig et al., 1998). It is also important to note that during a study

conducted in thirty countries in sub-Saharan Africa, men who belong to other/traditional religions describe a higher prevalence of smoking than those who perceive themselves as liberal and not affiliated to any religious group (Sreeramareddy et al., 2014).

2.2.5.2. Harmful use of alcohol by religion

Multiple aspects of religion need to be understood in order to better understand the relationship between religion and alcohol consumption. Religions often regulate what their members should eat and drink (Lucchetti, Koenig, Pinsky, Laranjeira & Vallada, 2014), and there is also evidence that religion regulates alcohol consumption (Ayers et al., 2009; Wallace & Forman, 1998 in McCullough & Willoughby, 2009). People who practice a form of religion are less likely to consume alcohol excessively compared to their counterparts who do not practice any religion (McCullough & Willoughby, 2009). Alcohol consumption is forbidden in many religions, e.g. in Islam, Hinduism and in some denominations in Christianity, resulting in followers consuming lower quantities of alcohol (Hjelm, 2011; Lucchetti et al., 2014; Room et al., 2000). Even though some religions prohibit the use of alcohol, alcohol related problems are reported among members from different religions (Assanangkornchai, Conigrave & Saunders, 2002; Dar, 2006).

2.2.5.3. Poor diet by religion

Most religions regulate dietary patterns for their members (Meyer-Rochow, 2009). For example, a study comparing health-related behaviours and the risk of NCDs between Muslims and non-Muslims in Thailand reveals that Muslims have a higher prevalence of unhealthy dietary patterns than non-Muslims (Wichaidit et al., 2014), which results in an increased risk of cardiovascular

disease (CVD) and other NCDs among Muslims. Global studies present diverse characteristics of Muslims in terms of their eating patterns (Wichaidit et al., 2014); however, it is important to consider that health behaviours and outcomes of Muslims may vary from country to country, depending on the setting and context (Wichaidit et al., 2014).

2.2.5.4. Physical inactivity by religion

A cross-sectional study on the prevalence and risk factors for self-reported NCDs among older Ugandans reports religious affiliation as one of the factors used to predict the risk factors for NCDs. A study conducted in Thailand between Muslims and non-Muslims comparing health-related behaviours and the risk of NCDs between these groups has found a higher prevalence of obesity and high physical inactivity among Muslims in Thailand (Wichaidit et al., 2014). Muslim, Pentecostal and Seventh Day Adventist adults are more likely to report risk factors for NCDs than Catholics (Wichaidit et al., 2014), and older Muslim men running different businesses report a higher level of physical inactivity because the nature of their daily business hours encourages a sedentary lifestyle (Wandera, Kwagala & Ntozi, 2015).

2.2.6. Place of residence

A place of residence has an effect on the quality of life (Cheng Wang, Tang, Chu & Chen, 2012; Eberhardt & Pamuk, 2004; Ross, 2000). People usually get inspired to live a certain lifestyle based on what they see around them. Individuals who are surrounded by people who smoke, people who consume alcohol excessively, people who consume a poor diet and people who are reluctant to

participate in physical activities, have decreased chances of living a different lifestyle from everyone else around them.

2.2.6.1. Smoking by place of residence

The location in which an individual lives has the potential to influence their behaviour. In an African context, Taha and Ball (1982) report a higher prevalence of smoking in urban than rural areas. Furthermore, an analysis of the Demographic and Health Survey data from Namibia, Lesotho and Swaziland; and the National Income Dynamics Study for South Africa, Nyabongo (2014) has found that cigarette use is generally higher in urban areas, while the use of chewing tobacco, snuff and pipes prevails more in rural settings. In their study of the prevalence, distribution and social determinants of tobacco use in 30 sub-Saharan African countries, Sreeramareddy et al. (2014) have found that there is a higher prevalence of smoking among rural men in their study setting. MOHSW (2009) also observes minor differences in smoking by urban-rural residence, with cigarette smoking the highest in the rural or foothills of the country.

2.2.6.2. Harmful use of alcohol by place of residence

Many studies have identified harmful alcohol consumption as an important risk factor for NCDs (Beaglehole & Yach, 2003; Amare et al., 2012; Lucchetti et al., 2014; Nies et al., 2012). Understanding location as a determinant for alcohol abuse is partly based on differences in access to particular substances within geographic locations (Weg & Cai, 2011). For instance, modern day beers and wines are easily accessed and more common in cities or urban areas than they are in rural areas (MOHSW, 2009 and MOHSW, 2014). In most rural areas, traditional beer is the most

common and easily accessed alcoholic beverage. The variability in cost associated with alcoholic beverages also results in variability of levels of use and abuse of alcohol by location. A study on the variability of veterans' alcohol use by place of residence in the USA, has found evidence that alcohol consumption patterns vary according to geographic location and place of residence (Dixon & Chartier, 2016; Weg & Cai, 2012). Urban dwellers can afford the cost associated with the purchasing of alcoholic beverages. On the other hand, rural area dwellers, who are often unemployed, can at least afford traditional beer because it is cheaper than the modern industry produced beers. Traditional home brewed beer has an effect on the development of NCDs, in fact, from a study carried out in the Eastern Cape province in South Africa (Transkei), home brewed beer is associated with a high rate of oesophageal cancer (Matsha, Brink & van Rensburg, 2006).

2.2.6.3. Poor diet by place of residence

Urbanisation and nutrition transition in developing countries, e.g. Ethiopia and South Africa, are accompanied by increased chances of cardiovascular diseases due to raised cholesterol levels (Amare et al., 2012; Pretorius & Sliwa, 2011). This has happened somewhat because of the abandonment of traditional diets for Western diets (Amare et al., 2012; Pretorius & Sliwa, 2011; Puoane et al., 2006). Literature reports that obesity levels are growing in the sub-Saharan African countries' urban settings (Young et al., 2010), and this may be due to the fact that the Western diet in the urban settings diet has too many calories and is thus rich in energy content.

Unfortunately, the body fails to use this energy efficiently because people in these urban settings tend to be less engaged in physical exercise (Steyn et al., 2008). Steyn et al. (2006) observe that people in the urban areas use modern means of transportation, thus walking less than they would in rural settings where most modern transport means are not available or are difficult to access. In

Lesotho, diet was not an issue prior to industrialisation and modernisation (Ranneileng, 2013), when adequate and nutritious traditional dishes were popular. Lesotho, like other African countries has adapted the Western way of living, thus the traditional African eating patterns and habits in general have undergone a transition (Crush, et al., 2011; Ranneileng, 2013) and have negatively influenced dietary practices.

2.2.6.4. Physical inactivity by place of residence

There are different findings from studies related to the prevalence of physical activity. A study on the worldwide prevalence of physical inactivity and its association with the human development index in 76 countries reports one out of five adults to be physically inactive around the world (Dumith et al., 2011). Richer members of society and in urban areas report a high prevalence of physical inactivity (Dumith et al., 2011).

2.3. Socio-economic factors

2.3.1. Education

Healthy behaviour practice is greatly influenced by the level of education attained (Assari & Lankarani, 2006). Researchers recognise the level of education as one of the important social determinants of health. Individuals with higher education attainment are mentally equipped to make sound and better health choices compared to their counterparts with less or no education (Shankar et al., 2013).

2.3.1.1. Smoking by education

Smoking poses a serious public health concern (Piko et al., 2005; MOHSW, 2009). The habit of smoking is initially for recreational purposes. It is generally less prevalent among individuals with higher education and more prevalent among the less educated and individuals with a lower economic status (Sreeramareddy et al., 2014; Nyabongo, 2014). Reasons for these findings could include the biased exposure and access to information that warns and discourages the educated from smoking. In addition to smoking for recreational purposes, in some cultures, smoking is practiced as part of different rituals where participants smoke to induce a trance-like state for spiritual enlightenment (Ryan et al., 2012).

A study on socio-economic inequalities in low-income and middle-income countries has found smoking among adults with no education twice as prevalent as among adults with higher institutional education (Beaglehole & Yach, 2013; Hosseinpoor et al., 2012; Kassu et al., 2012; Lucchetti et al., 2014; Nies et al., 2012). For instance, in Lesotho more men with no education or a low level of education report a high prevalence of smoking compared to men who report higher levels of education (MOHSW, 2009).

2.3.1.2. Harmful use of alcohol by education

The relationship between education and harmful use of alcohol seems complicated from the literature accessed. Findings from different settings differ on harmful use of alcohol reports. In the USA for example, Dar (2006) finds the harmful use of alcohol higher among highly educated individuals. Similar findings by Assari and Lankarani (2016) report that harmful use of alcohol increases as the level of education increases. Contrary to Dar (2006) and Assari and Lankarani

(2016), however, Van Oers, (1999) reports harmful use of alcohol to be more prevalent among individuals with the lowest level of education in the Netherlands. The level of education's role thus seems ambiguous concerning alcohol consumption. In addition to the case of the USA, in China and Costa Rica harmful use of alcoholic increases with education, but in other countries like Nigeria, the Seychelles, Namibia and Mexico, harmful use of alcohol declines as the level of education increases (Room et al., 2000).

Moreover, a study on the level of education and alcohol abuse and dependence in adulthood reveals a higher prevalence of alcohol abuse among individuals with lower levels of education than among those with higher levels of education (Crum et al., 1993). In addition to alcohol abuse being common among those with low levels of education, different scholars (Cook & Moore, 1993; Ruhn, 1995; Mullahy & Sindelar, 1996, in Van Oers et al. 1999) are of the view that alcohol consumption might also lead to a lower educational level. In South Africa, using population based surveys (DHS, 1998 and SABSSM II, 2005), risky and hazardous drinking among drinkers positively relates to lower levels of education (Peltzer et al., 2011).

2.3.1.3. Poor diet by education

Diet plays a critical role as a risk factor for NCDs (Moreira & Padrão, 2004; Vlismas et al., 2009). Among other socio-economic factors, the level of education has a great influence on dietary patterns (Darman & Drewnowski, 2008). Previous studies describe the level of education as an important factor in food choices and food intake (Lenz et al., 2009; Satia, 2009). Healthy food choices and food intake improves among adult Portuguese as the level of education increases (Moreira & Padrão, 2004). Similar patterns are reported in most of the European countries where better and healthier food choices are observed among Europeans with higher levels of education

than those with lower education (Darman & Drewnowski, 2008). In the Qassim Region in Saudi Arabia and in many other countries, adults with low education levels report poor dietary practices compared to adults with higher levels of education (Midhet, Al Mohaimeed & Sharaf, 2010; Vlismas et al., 2009). In New Zealand as well, a study that investigated dietary intake in adults concludes that higher levels of education positively influence healthier dietary patterns (Wall, Gearry, Pearson, Parnell & Skidmore, 2014). From a recent study examining ethnic differences in dietary patterns, Dekker et al. (2015) realise a relationship between higher education and healthier dietary choices within the Dutch origin population. Individuals with no education and with lower levels of education are generally more likely to follow higher-risk and low cost dietary patterns (Lenz et al., 2009).

2.3.1.4. Physical inactivity by education

Differences in the level of education achieved influence the nature of the physical activities that individuals generally engage in. The more educated individuals are more able to afford access to resources that facilitate leisure time physical activity, while those with less education may struggle to afford the resources used to facilitate leisure time physical activities, e.g. gym (Saffer et al., 2011). Individuals with a higher education level also have the time and energy to engage in leisure time physical activity before or after work because their work-related physical activity is less intense compared with the work related physical activity experienced by the less educated at their workplaces (Saffer et al., 2011). Leisure time physical activity increasingly declines with lower levels of education (Saffer et al., 2011). From a cross-sectional study on the differences in leisure-time, household and work-related physical activity in the USA, leisure time physical activity decreases with lower levels of education, and work-related physical activity is reported lowest

among adults with greater education (He & Baker, 2005). Lower levels of leisure time physical activity among the less educated help explain the socio-economic differences in health (He & Baker, 2005).

2.3.2. Employment status

There is an association observed between health related behaviour and employment status (Lee, Crombie, Smith, & Tunstall-Pedoe, 1990). This relationship is, however, dependent on the duration of the unemployment status. People who are unemployed for a long time have significantly worse health profiles compared to those who work or are unemployed for a short period of time (Lee et al., 1990). Literature on health related issues further describes occupation as a social health determinant. Occupation has the potential to influence health outcomes positively and negatively (Capon, 2014). Decent work, often for skilled labour, is seen as the basis for good health practices (WHO, 2008).

2.3.2.1. Smoking by employment status

Employment status functions as one of the important social determinants of health. A cross-sectional study conducted among the adult population throughout Scotland has found a considerably high percentage of unemployed adults who report that they smoke, compared to their counterparts who are employed (Lee, Crombie, Smith & Tunstall-Pedoe, 1991). Unemployed individuals state too much free time as one of the reasons for the high prevalence of smoking among unemployed individuals (Lee et al., 1991). Unemployed individuals in Korea report more smoking relapses and less quitting compared to the employed (Jung, Oh, Huh & Kawachi, 2013).

In addition to unemployment, an analysis of the Korean labour and income panel study reveals insecure employment as a more consistent determinant of smoking behaviour than unemployment (Jung et al., 2013).

The prevalence of smoking differs significantly by occupation among the employed (McCurdy, Sunyer, Zock, Ant, & Kogevinas, 2003; Smith & Leggat, 2007). For example, in the United States of America, Bang and Kim (2001) have observed a difference in smoking between the blue-collar workers and more educated white-collar workers. The blue-collar workers are more likely to smoke than white-collar workers are (Bang & Kim, 2001).

In their study conducted in South Korea; Cho, Kim, Myong & Kim (2013) have found work conditions as some of the key influences related to smoking. Employees who work long hours and those who work in manual positions are more likely to smoke than their counterparts who work normal working hours. More studies that explore the association between working conditions and smoking have found an increased prevalence of smoking among individuals who work for long hours, those whose jobs involve intensive manual labour and those working night shifts (Bang & Kim, 2001; McCurdy et al., 2003; Cheyip, Nelson, Ross & Murray, 2006; Smith & Leggat, 2007). Cho et al. (2013) have found a correlation between stressful work environments and smoking in a study conducted both in the USA and in Europe.

Furthermore, a study that estimates the prevalence of cigarette smoking in the USA reveals the highest prevalence of smoking among material moving occupations, construction labourers, vehicle mechanics and repairers; while teachers report the lowest prevalence of smoking (Bang & Kim, 2001). A few years later; Lee, LeBlanc, Fleming, Gómez-Marín & Pitman (2004) report similar results where they find high rates of smoking among blue-collar workers, and a significant decline in smoking among white-collar professionals in the USA. Moreover, agricultural workers and

unskilled/manual workers report a higher prevalence of smoking than those in management and other professional occupations (Sreeramareddy et al., 2014). Azagba and Sharaf (2011) assert that the reasons for smoking vary between individuals, but stress relief may be one of the important reasons for people to smoke in the work environment. Blue-collar workers, who usually do more physical and psychosocially stressing work, also describe smoking as a stress reliever (Lim et al., 2013). It is important to mention that some research findings comprising Lallukka et al. (2004, in Cho et al., 2013) find no relationship between labour intensive conditions and smoking behaviour.

2.3.2.2. Harmful use of alcohol by employment status

Literature describes employment status as one of the risk factors for unhealthy behaviours, e.g. harmful use of alcohol (Mustonen et al., 1994; Popovici & French, 2013). Heavy alcohol drinking maybe triggered both by the work environment itself and by unemployment status, however, the unemployed tend to report high prevalence levels of alcohol consumption compared to the employed. This is generally because unemployment is associated with increased leisure time that might encourage social drinking (Lee et al., 1990; Popovici & French, 2013). Previous studies also record harmful use of alcohol as a coping mechanism for unemployed individuals (Mustonen et al., 1994; Setlalto et al., 2010), and the literature reports positive and significant results from a study conducted to determine the relationship between harmful use of alcohol and employment status in the USA (Popovici & French, 2013). Furthermore, a growing body of literature reports a higher prevalence of hazardous alcohol consumption in the less affluent population (Mbatia, Jenkins, Singleton & White, 2009); from an urban area in Tanzania, an unemployed group of research participants on the prevalence of alcohol consumption reported the highest prevalence for hazardous drinking (Mbatia et al., 2009).

The work environment has the potential to induce several unhealthy behaviours including harmful use of alcohol. For example, a stressful work environment may lead to some workers using alcohol as an anti-anxiety or anti-depressant agent to relieve stress (Frone, 1999; Azagba & Sharaf, 2011). Job stress is one of the factors that make it harder for alcohol drinkers to quit or reduce their rate of alcohol consumption (Azagba & Sharaf, 2011). A study on alcoholism in social classes and occupations in Sweden provides evidence that there is a significant association between the prevalence of alcoholism in particular occupational groups. Manual workers or the blue-collar workers participating in this study are more likely to consume alcohol excessively compared to their non-manual labour counterparts (Hemmingsson, Lundberg, Romelsjö & Alfredsson, 1997). A study conducted on alcoholism and occupations in the USA has found an association between one's occupation and alcohol dependence and abuse (Mandell, Eaton, Anthony & Garrison, 1992). The study findings confirm the prevalence of alcohol dependence and abuse in the construction and transportation industries, with heavy truck drivers and material movers as the employees who usually consume a lot of alcohol (Mandell et al., 1992).

2.3.2.3. Poor diet by employment status

Previous studies define nutrition as an important health determinant (Awosan, Ibrahim, Essien, Yusuf & Okolo, 2014; Satia, 2009), and poor diet is identified as one of the major risk factors for cardiovascular disease and other non-communicable diseases (Awosan et al., 2014). Employment status is also an important health determinant and one of the key demographic characteristics associated with dietary intake, and consequently contributes to the health disparities in different societies (Satia, 2009). The employed members of society can afford to purchase healthy foodstuff because they have an income (Satia, 2009), and are therefore supposedly eating healthier than the

unemployed who cannot afford to buy healthy foodstuff. It has however, been reported in literature that the employed are also more likely to report a higher fat intake, which defeats healthy eating practices (Satia, 2009).

Occupations that demand long working hours compromise healthy diet practices (Escoto, Laska, Larson, Neumark-Sztainer & Hannan, 2012). A study that evaluated work hours and perceived time barriers to healthful eating habits in young adults suggests lack of time and fatigue after work as some of the major factors leading most adults to settle for convenient meals that do not require them to cook (Escoto et al., 2012). Nutrient intake also differs by occupational group. According to Kachan et al. (2012), poor dietary patterns are prevalent across all social groups but have a higher prevalence among less paying inferior occupations for unskilled or less skilled individuals in the USA, Australia, France and many other countries.

2.3.2.4. Physical inactivity by employment status

Physical inactivity is identified as one of the most important health risk factors. Strong evidence in literature acknowledges the importance of physical activity for a healthy lifestyle, and employment status is one of the determining factors for physical inactivity (Nugent, 2008; Panagiotakos et al., 2008). An analysis of cross-sectional data from the National Health and Nutrition Examination Survey (NHANES) in the USA reports that there is a positive relationship between physical activity and employment among men who are employed in sedentary and active occupations compared to those who are not working (Van Domelen et al., 2011). In addition, a study on health, physical activity level and employment status in Canada shows comparable levels of physical activity between the employed and the unemployed but finds that the unemployed individuals are

less healthy compared to the employed, based on the adequacy of the household income (Grayson, 1993).

In describing the relationship between occupational and non-occupational physical activity, JaKa, Haapala, Wolfson & French (2015) are of the view that individuals who are not very active at work are also less likely to engage in much physical activity after work. There is evidence in literature that individuals employed in occupations that demand long working hours, and those employed in occupations with low levels of physical activity are at an increased risk of overall physical inactivity (Kirk & Rhodes, 2011) compared to those individuals in blue collar occupations.

Contrary to Kirk and Rhodes' (2011) findings, a secondary analysis of the cross-sectional data from the 1995 Australian Health Survey finds individuals participating in blue collar occupations as 50 per cent more likely to be classified as insufficiently active (Burton & Turrell, 2000).

Occupational physical activity is imposed by work dynamics on employees and may not optimally satisfy the role played by voluntary physical activity in pursuit of a good lifestyle. In fact, individuals exposed to demanding and stressful occupational physical activity tend to be at a higher risk for non-communicable diseases such as high blood pressure (Clays et al., 2012).

2.3.4. Household wealth

Wealth is one of the important social determinants of health, and the risk factors for NCDs are observed among the rich and among the poor. However, there are variations in terms of the prevalence levels of the risk factors for NCDs, dependent on each household's wealth. Poorer households generally have a poor health status (Imamura et al., 2015), and the poverty related stresses that usually lead to poor health choices are not prevalent among wealthier households. The

prevalence of the modifiable NCD risk factors therefore differs between richer and poorer households (Imamura et al., 2015).

2.3.4.1. Smoking by household wealth

Different studies conducted in low-income and middle-income countries report a significantly higher prevalence of smoking in lower socio-economic groups in comparison to the wealthy (Hosseinpoor et al., 2012; Sreeramareddy et al., 2014). Many poor and working class people from different countries in the low income and middle-income groups, and mostly males, are smokers (Hosseinpoor et al., 2012). Smoking is more common among the poor than it is among the rich across the board, according to Depa, Hilzendegen, Tinnemann & Stroebele-Benschop (2015). Research reveals that smoking is responsible for the greatest number of mortalities among poor men in Canada, England, Wales, Poland and the United State of America (Jha et al., 2006). In South Africa, findings from a study on poverty and NCD associated risk factors link smoking and domestic exposure to smoky fuels to poverty (Schneider Bradshaw, Steyn, Norman & Laubscher, 2009; Ayo-Yusuf & Szymanski, 2010).

2.3.4.2. Harmful use of alcohol by household wealth

An individual's financial muscle usually regulates their patterns and frequency of alcohol consumption (Assari & Lankarani, 2016). Higher earnings are generally associated with increased alcohol consumption among adult Americans (Assari & Lankarani, 2016), however, a study conducted in low income and middle-income countries using self-reported data derived from the

2002–2004 World Health Survey observes different patterns of heavy alcohol consumption (Hosseinpoor et al., 2012).

A study on alcohol consumption, alcohol related problems, problem drinking and socio-economic status in Rotterdam, the Netherlands, reveals that lower socio-economic groups report more frequent drinking than higher socio-economic groups (Crowley, 1991), yet other research findings report individuals from higher economic status groups as the heavier alcohol consumers.

According to Hosseinpoor et al. (2012), people from wealthy, middle class and poor households consume large quantities of alcohol; the difference is mainly the type of alcohol consumed. For example, the poor and the middle class usually purchase beer, while the wealthy usually purchase wines, beer and spirits. There are also different findings from other studies. For example, a study on poverty and non-communicable diseases in South Africa has found that alcohol dependency is associated with poverty (Schneider et al., 2009), because of the high prevalence of harmful use of alcohol among the poor.

2.3.4.3. Poor diet by household wealth

A study on dietary quality among men and women in 187 countries reveals that healthy dietary patterns have become an important health concern towards the reduction of the high prevalence of NCDs (Imamura et al., 2015). The country's income level mirrors the households' income levels in a country. Food choices shift towards cheaper, but more energy dense foodstuffs when income drops and when there is no income in a household (Drewnowski and Eichelsdoerfer, 2010) leading to higher obesity rates among the poor. Fatty and energy dense food are relatively cheap sources of energy according to Temple and Steyn (2011), but these are very low in nutrient density.

There is an existing relationship between poverty and food security. Poverty and food insecurity describe lower food expenditure and poor dietary patterns (Drewnowski and Specter, 2004). Low-income households cannot afford a healthy diet; they have difficulty accessing nutritional diets because a healthy diet is expensive (Milway, Chan, Stapleton & Cook, 2010). A large number of South Africans cannot afford a healthy diet. The majority of the population studied in a rural town in the Western Cape reports that the high food prices are unaffordable for poor households in the country (Temple et al., 2011).

2.3.4.4. Physical inactivity by household wealth

Socio-economic factors, especially in large cities, lead to changes in individuals' lifestyles including their physical activity levels (Trinh et al., 2008). Physical inactivity increases more in high-income countries because of the advancements in technology that reduce the physical labour needed to accomplish different tasks at home and at workplaces (Hallal et al., 2012). A similar observation is reported in cities that experience an industrial revolution (Chung, Domino, Stearns & Popkin, 2009). Hosseinpoor et al. (2012) report less prevalence of general physical inactivity among low socio-economic status populations, especially in the low-income countries, and higher prevalence in populations with a high socio-economic status. A positive relationship is observed between physical inactivity and greater household wealth in men in Vietnam (Trinh et al., 2008). Obesity is often reported less in the lower socio-economic groups which are dominantly the poor in society, but the other risk factors are distributed equally across all socio-economic groups (Garg et al., 2014).

2.4. Metabolic risk factors for NCDs

2.4.1. Body mass index

As mentioned in chapter one, BMI is a tool used to measure nutritional status (Bailey & Ferro-Luzzi, 1995; Ranneileng, 2013). BMI measurements are closely associated with obesity and malnutrition. For instance, a lower BMI (below 18.5) is associated with malnutrition while a BMI greater or equal to 30 defines being overweight (Sarlio-Lähteenkorva & Lahelma, 1999).

According to Ford, Moriarty, Zack, Mokdad & Chapman (2001), when BMI increases or decreases from the normal range, health-related quality of life diminishes. Physical activity is one of the important determining factors for BMI measurements. For example, adult men who no longer participate in physical activities generally have higher chances of an increase in BMI compared to those who regularly participate in physical exercises (Sundquist & Sven-Erik, 1998).

2.4.1.1. BMI by age

According to Stevens et al. (1998), a high BMI increases the risk of death from different causes comprising cardiovascular diseases, especially in adults aged between 30 and 74 years of age. In their study on the effect of age on BMI, Stevens et al. (1998) report a higher BMI among younger adults in England, and a study on BMI by age, gender and SES in Norway also reports younger adults aged 20 and 29 years to have higher BMI measurements compared to other age categories (Reas, Nygård, Svensson, Sørensen & Sandanger, 2007).

2.4.1.2. BMI by marital status

BMI increases are generally reported among married and cohabiting individuals, while decreases in BMI are often noted when marriage or cohabitation is dissolved and through widowhood (Averett, Sikora & Argys, 2008; Umberson, Liu & Powers, 2009). Similar findings are described in a USA study that examines the relationship between BMI and both marital status and changes in marital status. In this study, a lower BMI is closely associated with living without a partner (through either divorce, separation, spousal death or never having been married), while those who cohabit and those who are married usually have higher BMI measurements (Teachman, 2016).

2.4.1.3. BMI by place of residence

An individual's social position in urban Canada plays an important role in their BMI (Ross et al., 2007). Urban extensions are associated with a higher BMI for Canadian men, which supports recent evidence of this same association among American men (Ross et al., 2007). From a study that investigates BMI by age, gender and SES in Norway, in both 1990 and 2001, wealthy men from rural areas have greater BMIs compared to other rural men from a lower wealth quintile (Reas et al., 2007).

2.4.1.4. BMI by the level of education

A study on the relationship between BMI and the level of education in Iranian men indicates a positive relationship between them (Maddah, Eshraghian, Djazayery & Mirdamadi, 2003). A European cohort studied to determine an association of education with BMI and waist circumference (WC) reports an inverse relationship between a higher BMI as well as a higher WC

and a lower education level. BMI and WC are significantly lower for higher education groups compared with the lowest education level (Hermann et al., 2011).

2.4.1.5. BMI by wealth

In some contexts, an increase in BMI is a reflection of an increase in wealth. For instance, the increase in BMI observed in South Africa by Morris (2011) reflects an increase in the wealth of southern African countries compared to eastern and central African countries. Men in Finland are not challenged by obesity; however, a lower BMI (thinness) is associated with a lower social economic status SES in men (Sarlio-Lähteenkorva & Lahelma, 1999). From a large American longitudinal socio-economic survey on the relationship between obesity and individuals' wealth, the results are presented according to different racial groups: for instance, there is a large negative association between BMI and White females' net worth, a smaller negative association for Black women and White males, and no relationship for Black males (Zagorsky, 2005).

2.4.2. Hypertension

High blood pressure is an important global health challenge intimidating both the developed and the developing countries (Kishore, Gupta, Kohli & Kumar, 2016). It is described as the leading risk factor for mortality increases owing to the increase in urbanisation and lifestyle changes (Anderson, Sanders, Nguyen & Nguyen, 2012; Ashaye & Giles, 2003; Kishore et al., 2016; Peng et al., 2017; van de Vijver et al., 2013). Hypertension used to be prevalent in the developed countries, yet today the condition's prevalence in some sub-Saharan African countries is among the highest in the world (Campbell & Lemogoum, 2015; Opie et al., 2005). A study on hypertension in Nigeria has

found increased blood pressure as one of the major causes of cardiovascular diseases, morbidity and mortality in that country (Ifunanya, 2010). Previous studies have revealed higher levels of hypertension among men compared to women, owing in particular to less health care use by men compared to women (Everett & Zajacova, 2015).

2.4.2.1. Hypertension by age

As age increases, research describes a significant prevalence of systolic hypertension (Anderson, 1999). The risk of developing hypertension increases with age due to structural changes of arteries, especially the stiffness of large arteries as individuals age (Addo et al., 2007; Anderson et al., 2012; Laxmaiah et al., 2015; Peng et al., 2017; Pinto, 2007; Rigaud & Forette, 2001; Schwandt, Coresh & Hindin, 2010). Physical inactivity and poor diet are some of the important risk factors for hypertension and are most prevalent in older individuals in the USA (Schwandt et al., 2010).

2.4.2.2. Hypertension by marital status

Marital status is an important determinant of health (Schwandt et al., 2010). In exploring blood pressure and the risk of hypertension among Polish study participants, using marital status in men, a study has found that Polish men who are not married have a higher prevalence of hypertension than married men do (Lipowicz & Lopuszanska, 2005). Schwandt et al. (2010) describe similar findings, where mortality caused by cardiovascular diseases comprising hypertension is reported as significant among single (never married, divorced and widowed) men compared to married men in Britain.

2.4.2.3. Hypertension by education

Education is associated with greater health care and awareness of different health issues. Research reports hypertension and its risk factors as relatively unknown among individuals with little or no education (Tedesco et al., 2001). A study on hypertension and the level of education in European countries has found interesting results indicating an increasing prevalence of hypertension among individuals with high levels of education (Tedesco et al., 2001). One of the reasons cited for this finding is that the study subjects mostly participate in sedentary occupations (Tedesco et al., 2001) which expose them to an increased risk of hypertension.

2.4.2.4. Hypertension by wealth

Wealth is an important risk factor related to hypertension (Olack et al., 2015). A health survey in Serbia reports hypertension as the most prevalent disease among richer men in particular in this country (Vuković, Bjegović & Vuković, 2008). However, this demographic group has higher awareness, treatment and control of hypertension compared to the poor (Vuković et al., 2008). Hypertension used to be described as a disease for the rich but recent literature shows a drastic change, with average hypertension now higher in Africa compared to Europe and the USA, especially among poor people (van de Vijver et al., 2013).

2.4.2.5. Hypertension by place of residence

The incidence of hypertension is often expected to be higher in urban than in rural areas, however, in India, the incidence of hypertension in a rural community has been found to be similar to the incidence of hypertension in high-income countries and in urban areas in India (Bansal et al.,

2012). A study on hypertension in sub-Saharan Africa has found a higher prevalence of the condition in urban than in rural settings (Addo, Smeeth & Leon, 2007). A study on the determinants and treatment of hypertension in South Africa also reveals the lower prevalence of hypertension in rural areas (Steyn, Bradshaw, Norman & Laubscher, 2008). A study in Iran, however, describes similar findings to the study conducted in India, where high blood pressure is more prevalent in the rural areas than in the urban areas (Malekzadeh et al., 2013).

2.6. Summary

This chapter has spelt out the contextual and historical factors related to the current study. It has explored literature from different contexts focussing on the prevalence of risk factors for NCDs related to demographic and socio-economic factors. A number of demographic characteristics work together in determining preferences and lifestyle patterns in adult men from various backgrounds. Based on this review, NCDs undoubtedly play an important role in defining different countries' health profiles. The chapter has acknowledged modifiable NCDs risk factors as important contributors to the escalating prevalence of NCDs. Lack of in-depth NCD knowledge and attitudes towards modifiable NCD risk factors have the potential to contribute to the high prevalence of NCDs.

CHAPTER THREE

HEALTH, ILLNESS, MEN AND MASCULINITY MODEL (HIMM) AND THE HEALTH BELIEF MODEL (HBM)

3.1. Introduction

Masculinity is an important health determinant and one of the key health risks factors for men (Courtenay, 2000). Men from different backgrounds who subscribe to masculinity traits tend to lead risky lifestyles. In comparison to their female counterparts, the risky lifestyle practiced by men exposes them to higher chances of developing NCDs caused by modifiable and avoidable risk factors. For instance, the death rate among Canadian men leads in fourteen of the primary causes of death (cancer and heart diseases caused by tobacco smoking, among other factors) in the country (Statistics Canada, 2005). Similar patterns have been described in Nova Scotia where men die at an average of 5.1 years earlier than women (i.e. about 1.3 years less than the Canadian average) from illnesses caused by modifiable NCDs risk factors (Statistics Canada, 2005).

African studies used to be behind with studies focussing on masculinity; however, there is currently a growing body of literature on this subject in the region (Ratele, Shefer, Strebel & Fouten, 2010; Shefer, Stevens & Clowes, 2010). The concept masculinity is multifaceted in nature. It is both socially and culturally constructed, therefore described differently between cultures and societies (Chesebro & Fuse, 2001; Evans et al., 2011; Ratele, 2008b; Ratele et al., 2010; Schrock & Schwalbe, 2009; Shefer et al., 2010; Vigoya, 2001). In addition to the social and cultural constructs of masculinity, Hoffman (2001) adds that the concept is further psychologically constructed.

This chapter explores the concept of masculinity from different backgrounds. The chapter also investigates the relationship that exists between masculinity and health. Different studies have

developed masculinity scales; this chapter reviews how these studies developed these masculinity measures. The chapter further explores the effect that masculinity has on NCDs' modifiable risk factors. It concludes by evaluating the HIMM and the HBM in more detail, and their application in the current study.

3.2. The concept and definition of masculinity

Life events and activities in most societies determine the definition of masculinity (Evans et al., 2011; Ratele et al., 2010). A set of role behaviours that men are especially socialised to perform an important part in describing masculinity (Brown et al., 2005). A number of studies refer to masculinity as a set of traits, behaviours and roles generally associated with the male sex, however, the concept is not absolutely restricted to males; females can also demonstrate masculine characteristics and behaviour (Connell, 1995; Ratele et al., 2010; Schrock & Schwalbe, 2009; Shefer et al., 2010; Sloan, Conner & Gough, 2015). Francophone African authored literature describes masculinity as norms, values and behavioural patterns of men and the manner in which men present themselves in society (Mutunda, 2009). These definitions emphasise the physical appearance of men as important in constructing masculinity. They further indicate men's behaviour in society, and the role they play at home as well as in their communities as important factors contributing to the definition of masculinity.

Furthermore, the norms the men uphold and the manner in which they present themselves are also important in constructing masculinity. For example, Native Americans perceive Asian American men as asexual and too sensitive because of their physical appearance and behaviour (they do not appear physically strong). These Asian American features have led to inferences that Asian American men do not hold traditional masculine characteristics valued among men in the USA

(Good & Brooks, 2005). Critical scholars describe masculinity as a power relation, not only between males and between females on the subjects of dominance and subordination, but also a power struggle between various facets of masculinity (Greene, Robles & Pawlak, 2011; Ratele, 2008a; Martin, 1998 in Schrock & Schwalbe, 2009; Shefer et al., 2010). There are multiple definitions for this concept globally and they change from time to time and in different circumstances (Mutunda, 2009) because different societies have diverse notions and expressions of masculinity.

In their study on “*Men and Masculinities*”, Thompson et al. (1992) found two widespread theoretical methodologies to masculinity studies, namely the trait and the normative perspectives. The trait approach primarily analyses the personality and behaviour associated with men rather than women. This school of thought actually considers normative masculinity rooted in the actual differences between men and women (Thompson, Pleck & Ferrera, 1992). Different from the trait approach to masculinity; the normative approach views masculinity as a socially constructed gender phenomenon. This approach examines beliefs and institutions involved in maintaining different masculinity standards (Thompson et al., 1992). Out of these two ideologies underpinning masculinity studies, the existing writings reveal diverse forms of masculinity in every society (Courtenay, 2000; Evans et al., 2011; Powell et al., 2016; Schrock & Schwalbe, 2009; Sorrell & Raffaelli, 2005; Thompson et al., 1992). Examples of masculinity given by Schrock and Schwalbe (2009) in the context of the USA comprise Black masculinity, Latino masculinity, gay masculinity, Jewish masculinity and working-class masculinity. Previous studies have outlined the four most popular forms of masculinity influenced by the example in Schrock and Schwalbe (2009). These are hegemonic masculinity, complicit masculinity, marginalised masculinity and subordinate masculinity (Evans et al., 2011; Connell, 1995).

The dominant type of masculinity with qualities including heterosexuality, Whiteness, superiority, physical strength and suppression of emotions is hegemonic masculinity (Connell, 1995). Media in different societies plays an important role in constructing masculinity. For instance, American magazines usually display images depicting hegemonic masculinity, mostly in a negative light, when they promote undesired men's health behaviours consisting of harmful use of alcohol, excessive red meat consumption, reliance on convenience foods, unprotected sex practices and general aggressive behaviour by men (Stibbe, 2004).

A relatively more passive expression of masculinity that does not have all the characteristics of hegemonic masculinity describes complicit masculinity (Connell, 1995; Evans et al., 2011; Gómez, 2007). Men in this category of masculinity do not necessarily fulfil all the characteristics of hegemonic masculinity but are not doing much to challenge the system. Since they are not challenging the existing gender systems in society, they still receive the benefits of being male to some degree (Connell, 1995; Gómez, 2007).

Marginalised masculinity, on the other hand, is a subculture of hegemonic masculinity because it does not possess some qualities of the dominant masculinity such as race (Connell 1995; Evans et al., 2011; Gómez, 2007). Individuals in this category, e.g. disabled men and men of colour often demonstrate similar traits as the hegemonic masculinity, e.g. aggressiveness, physical strength and suppression of emotions (Connell, 1995; Evans et al., 2011; Gómez, 2007).

The last category, subordinate masculinity, exhibits the opposite characteristics from those of hegemonic masculinity. Individuals in this group demonstrate feminine traits including physical weakness and they easily exhibit their emotions (Connell 1995). According to Connell (1987), many men from different backgrounds pursue and affirm hegemonic masculinity.

3.3. The measurement of masculinity

Masculinity is an abstract concept which researchers still find difficult to measure accurately (Hoffman, 2001). Besides the complexity associated with measuring masculinity, Hoffman (2001) has realised that a good number of the masculinity measures that have been designed define the concept stereotypically. The process of developing masculinity scales varies: there are scales used to assess the beliefs and attitudes about men, or masculinity standards; while other masculinity scales measure attitudes towards sex roles; attitudes towards gender relations; attitudes towards women; attitudes towards feminism; attitudes towards men; as well as attitudes towards masculinity (Thompson et al., 1992). In order to assess masculinity, even though measurements receive superficial attention from researchers, recent studies are developing a number of instruments and scales that will assist in the process (Hoffman, 2001). The '*Perceived Masculinity Questionnaire*' is one of the tools used to gather indexed data that eventually derives masculinity scales (Chesebro & Fuse, 2001).

Individuals who are determined and willing to evaluate their own masculine self-conception and to measure corporate sexuality may use the '*Perceived Masculinity Questionnaire*' (Chesebro & Fuse, 2001). It is important to note that instruments often used to measure masculinity have restricted utility because they usually do not differentiate between gender orientation and masculinity (Thompson et al., 1992). Race, sexual orientation, socio-economic status and the possession of certain traits determine the masculinity measure in America (Griffith et al., 2012).

Measuring scales for masculinity documented in different studies in America and in other countries include assertiveness, impassiveness, dominance and aggressiveness, control, self-sufficiency,

physical strength and emotional restraint (Addis & Mahalik, 2003; Evans et al., 2011; Griffith et al., 2012; Roos, Prattala & Koski, 2001; Sloan et al., 2015; Sorrell & Raffaelli, 2005; Williams, 2003;). An ability to take risk is one of the measures used to determine masculinity. In South Africa, mostly due to society's expectation, some men (or anyone bestowing masculinity characteristics) engage in various risky behaviours to prove their masculinity (Shefer et al., 2010). These risky behaviours comprise of smoking, heavy alcohol drinking, drug taking, gangsterism, having multiple sexual partners, fighting or 'dicing' with motorcars (Shefer et al., 2010).

Different studies describe complicated masculinity characteristics. They describe contradictory societal expectations from those who subscribe to masculinity traits. For example, in order for a male to be considered masculine, he has to be aggressive, dominant and violent, may not show any emotions except anger and may not complain during difficult times; yet he is also expected to be compassionate and a caretaker and breadwinner in his household (Moynihan, 1998; Ratete, 2008; Mutunda, 2009; Greene et al., 2011).

Similar to the findings from developed countries; masculinity measures observed in Africa comprise ambitiousness, analytical ability, assertiveness, invulnerability, competitiveness, sexual promiscuity, fearlessness, independence, leadership and control, pain endurance, self-reliance, the ability to be the sole decision maker in their household, the avoidance of anything that makes men look like women, and physical strength (Greene et al., 2011; Moynihan, 1998; Ratete, 2008; Mutunda, 2009). The only difference observed from the literature on some African countries/societies, compared to that of the developed countries, is that most African societies believe that men should also go through a traditional initiation school in order to transition into manhood (Mutunda, 2009). Loss of masculinity is a tragedy for most men in the world (Rosaleen,

2006). Besides natural phenomena such as aging, other factors that could lead to the loss of masculinity among men include amputation of the testicles due to testicular cancer (Rosaleen, 2006).

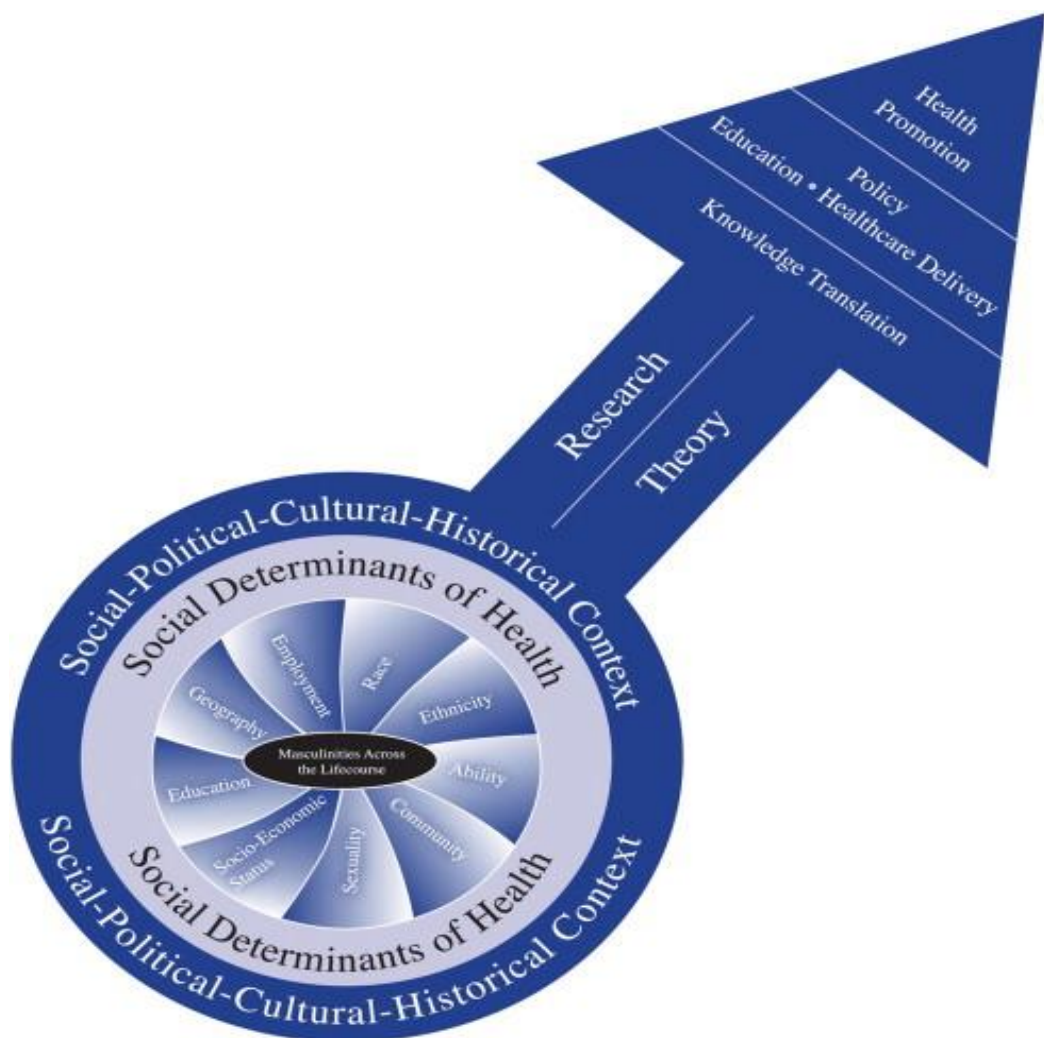
3.4. The HIMM model

Masculinity and Health, Illness, Men and Masculinity Model is a theoretical framework used to understand men and their health (Evans et al., 2011). The HIMM model presents masculinity as a social health determinant that intersects other health determinants (Evans et al., 2011). The model is made up social constructs that determine masculinity types in which men are socially grouped into. The constituents of the HIMM comprise men's socio-economic status, race, ethnicity, sexuality, ability, geography, community, education, and employment status (Evans et al., 2011). As seen earlier (Section 3.2), the constructs cited as constituents in HIMM determine the level of masculinity and its impact on health.

It is a ground breaking theoretical framework for men's health, developed within the Canadian context. It exists to promote the health of men through the development of a conceptual framework that informs research and theory development (Evans et al., 2011). Men's health appears intersected with masculinity (Evans et al., 2011). In order to promote better health outcomes for men, this concept (masculinity) gets challenged and transformed using models such as the HIMM model. The model provides direction for health education, health care delivery and policy development initiatives aimed specifically at men (Evans et al., 2011). The use of this model increases understanding of the ways in which masculinities intersect with other social determinants of health to create health disparities among men (Evans et al., 2011). The benefits derived from the application of the HIMM model in health research related to men include the generation of

knowledge on masculinities as a determinant of men’s health and health care practices. Moreover, the model promotes greater understanding of the meanings and experiences of health and illness for men in its application (Evan et al., 2011). Individual men who can promote and maintain good health practices are recognised and mobilised when the HIMM model is employed (Evan et al., 2011).

Figure 3.1: Health, Illness, Men and Masculinity Model



Source: Source: Evans et al. (2011)

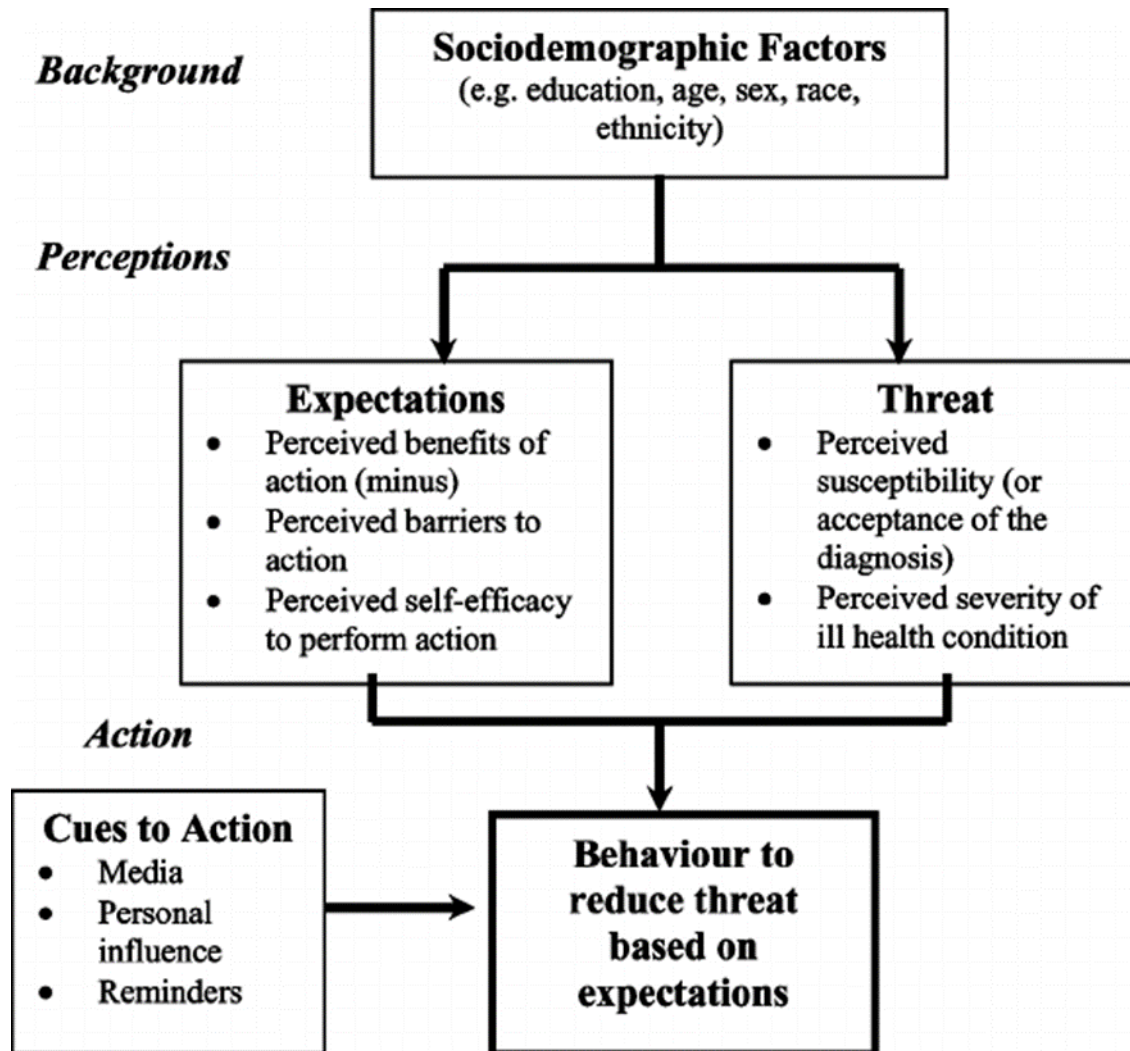
3.5. The Health Belief Model

The current study explores men's knowledge and attitudes to lifestyle behaviours guided by two models including the HBM. The HBM was developed by social psychologists in the early 1950s to assist in systematically explaining and predicting health behaviours (Rosenstock et al., 1994). HBM is made up of six constructs. Of the six constructs, the first four were developed during the original phase of the model, i.e. (perceived susceptibility, perceived severity, perceived benefits and perceived barriers). The last two constructs (cue to action and self-efficacy) were added as studies about the HBM advanced. Different from the HIMM, the HBM is psychological in nature. It mostly focuses on attitudes and beliefs individuals have on health behaviours, practices and utilisation of health services (Rosenstock et al., 1994). In order to distinguish illness and sick role behaviour from health behaviour, the model was later revised to include general health motivation (Rosenstock et al., 1994). The HBM helps in explaining whether individuals perceive themselves at risk of developing a disease in question (Rosenstock et al., 1994). It further assists in establishing if the individuals being studied think there will be serious consequences if they develop the disease or condition under study (Rosenstock et al., 1994). The model helps researchers to establish whether the research subjects believe that there are ways to reduce their susceptibility to the disease or condition (Vaidya, 2014; Rosenstock et al., 1994), and assists in asking study participants if the benefits of actions taken against a disease or condition outweigh the costs and barriers perceived (Vaidya, 2014; Rosenstock et al., 1994).

Limitations observed in the application of HBM include that different questions for different studies are used to determine the same beliefs; consequently, it becomes difficult to design appropriate tests of the model and to compare results across studies (Rosenstock et al., 1994). Moreover, health behaviour practices are influenced by other factors other than health beliefs, e.g.

cultural factors which are not accounted for in the application of HBM (Rosenstock et al., 1994). Furthermore, not everybody has the same knowledge about health behaviours; however, the HBM assumes that everyone has access to equal amounts of information on the illness or disease (Rosenstock et al., 1994). It does not take account of behaviours that are habitual and thus may inform the decision-making process to accept a recommended action (e.g., smoking). In recent years, Orji, Vassileva, and Mandryk (2012) proposed further conceptual extensions of HBM after realising that the effectiveness of the model is limited. One of the limitations cited demonstrates that the model with six variables has low predictive capacity coupled with the small effect size of individual variables (Orji, Vassileva, and Mandryk, 2012). The other limitation is lack of clear rules of combination and relationship between the individual variables (Orji, Vassileva, and Mandryk, 2012). The scholars proposed an introduction of four new variables to the model: Self-identity, Perceived Importance, Consideration of Future Consequences, and Concern for Appearance as possible determinants of healthy behavior (Orji, Vassileva, and Mandryk, 2012).

Figure 3.2. Health Belief Model



Source: Rosenstock et al. (1994)

3.5.1. Knowledge

NCDs are a global health threat. They are the main causes of preventable deaths in the world and are responsible for over 60 per cent of global mortality (Lingwang, Lam, Keiwu & Fielding, 2014; WHO, 2011). Basic knowledge of what they are, their signs and symptoms, their general causes and their treatment is vital in order to be able to keep these conditions under control. Behavioural

change and change to a healthy lifestyle are the most important factors in addressing the challenge of NCDs, and it is therefore vital to acquire some knowledge about NCDs. Sometimes it is difficult for an individual to change or adapt to a new healthy behaviour that reduces exposure and risk to developing NCDs. For example, lifelong smokers generally find it extremely difficult to break the habit even though they have knowledge about the harmful effects and the negative consequences of smoking (Eklund, Nilsson, Hedman & Lindberg, 2012). Those who feel the pressure from other people demanding instead of providing the necessary support towards a healthy lifestyle also find it difficult to change their risk behaviour because they feel patronised (Eklund et al., 2012).

Different studies report the existence of ignorance concerning NCDs and sometimes-inadequate knowledge about these diseases, both in individuals who have NCDs and those who do not have any NCDs. For instance, a recent study in Nepal reports on the existing health knowledge, attitude, and practice/behaviour gaps between cardiovascular diseases and diabetes, even among individuals already affected or living with these conditions (Vaidya, 2014). Lesotho is characterised by inadequate local research and data on the NCD burden, thereby making it difficult to measure the population's knowledge of NCDs. The WHO's STEP survey published in 2013 reports the presence of NCD patients in Lesotho who are not on medication, most likely because they do not know that they have a chronic illness that requires them to be on medication.

3.5.2. Perceived susceptibility

Lack of or little knowledge about NCDs and their risk factors, as well as the perceived vulnerability to these conditions, may influence the willingness to adhere to recommendations to engage in a healthy lifestyle. Adherence to medication is critical to improving the quality of life and for preventing complications e.g. of hypertension, (Venkatachalam, Abrahm, Singh, Stalin &

Sathya, 2015) but it could be neglected if individuals do not perceive themselves at risk and therefore vulnerable. Venkatachalam et al. (2015) conducted a community-based cross-sectional study using the HBM in one of the rural areas in India. The study findings report that the respondents who perceive their high susceptibility, the severity of the condition, and the benefits of treatment and lifestyle change show better adherence to the recommended treatment compared to those respondents who have moderate and low susceptibility, and who do not understand the severity of their condition and the benefits of improving their health (Venkatachalam et al., 2015).

3.5.3. Perceived severity

Perceived severity talks about the degree to which individuals believe a certain health condition or a disease is severe. This includes how individuals perceive the harmful consequences of a serious health condition such as an NCD and their health outcomes. A study which assesses the perceptions of type 2 diabetes and lifestyle change in Uganda describes diabetes as a ruthless kind of disease (Mayega Etajak, Rutebemberwa, Tomson & Kiguli, 2014), due to the fact that it is incurable and has numerous negative health effects. For example, men who participated in the study are concerned about reduced sexual performance should they be diagnosed with diabetes (Mayega et al., 2014). In addition to a low sex drive resulting from diabetes, participants are concerned about the limb amputation performed on some diabetes patients (Mayega et al., 2014). The perceived severity of a health condition should ideally motivate individuals to change their lifestyle for the better, and Mayega et al. (2014) did perceive the concerns among the participants related to the severity of diabetes reflected in their lifestyles.

3.5.4. Perceived benefits

Individuals may change and adapt to a new behaviour based on the perceived benefits attached to the intervention or treatment provided. For example, a positive attitude as well as the right internal motivation to make the right decision play a significant role in smoking cessation (Eklund et al., 2012). Literature describes smoking cessation as one of the important steps taken by individuals to decrease their risk and exposure to developing NCDs (Eklund et al., 2012). A study using the HBM on healthy eating patterns in Canada reports the prevention of diseases associated with poor diet, as well as weight loss, as some of the perceived benefits that lead to changes from poor to healthier dietary patterns (Deshpande, Basil & Basil, 2009).

3.5.5. Perceived barriers

The perceived barriers to the application of the HBM in the study of the risk factors for NCDs could be the individuals' opinions based on the tangible and psychological costs of the advised action against their existing conditions. Studies from different countries report similar barriers to physical activities. These barriers include busyness due to the social and work environment, laziness, lack of time for exercises, lack of interest and lack of motivation (Daskapan, Tuzun & Eker, 2006; Martínez-Lemos et al., 2014; Sjörs, Bonn, Lagerros, Sjölander & Bälter, 2014).

Research generally reports a positive relationship between alcohol consumption and smoking. A study conducted among alcohol dependent patients in the USA on the perceived barriers to quitting smoking cites withdrawal-related barriers such as expecting to feel irritable, anxious and agitated; intolerable urges to smoke; uncertainties about the effects of abstinence from smoking; and craving cigarettes to cope with feeling down (Asher et al., 2003).

3.6. Masculinity and health

“...*masculinity is implicated in men’s health defeating practices*” (Sloan et al., 2015:208) as it influences health-related behaviour. Griffith et al. (2012) acknowledge that currently research is paying improved attention to the implications of gendered expectations and gender roles on men’s health which were neglected in the previous years. Varied and complex relationships between health and masculinity were observed by these authors in a study that studied masculinity and health among men of colour in America (Griffith et al, 2012).

Research on men’s experiences of health and illnesses appears slow compared to women’s, however, the concept of masculinity is becoming increasingly theorised as one of the key health risk factors for men (Courtenay, 2000). Masculinity regulates behaviour and approaches to health (Biddulph, 2010). For example, individuals who identify themselves as masculine are more likely to adopt risk behaviours, and these are less likely to promote good health and longevity (Courtenay, 2000). Among adults, those with masculine characteristics are usually the ones who are less likely to use preventative health care services (Hammond, Matthews, Mohottige, Agyemang & Corbie-Smith, 2010), and this behaviour noticed among men especially has led to increased global mortality rates. It is important to note that it is not all aspects of masculinity that are associated with negative health behaviour (Sloan et al., 2015). Attempts by men to live up to a masculine image often result in their poorer health and health defeating lifestyles (Rosaleen, 2006). Research contends that in order to understand the male disadvantage in health, the pressure placed on men to take part in masculinising practices that are often harmful to their health in order to prove masculinity should be explored (Rosaleen, 2006; Watson, 2000).

There is a distinct male disadvantage in health observed from epidemiological data, and an example of this is the fact that in 2016, UK men were expected to live an average of five years less than women (Rosaleen, 2006). Ignorance relating to men's health and the fact that men are indifferent and resistant to the suggested healthy living practices describes the fundamental reasons for their poorer health status that often leads to their premature deaths (Rosaleen, 2006). Men characterised by traditional masculinity are reluctant to ask for help and underutilise health care services (Addis & Mahalik, 2003; Garfield, Isacco & Rogers, 2008). Many studies have reported the finding that men usually shy away from seeking help from medical officers; they wait long after the onset of disease symptoms before they seek medical attention (Addis & Mahalik, 2003; Hammond et al., 2010). Examples include African-American men who often delay health care consultations and screenings due to mistrust of the medical fraternity (Hammond et al., 2010). White adult men, on the other hand, delay their quest for medical help due to the fear of being perceived as weak (Galdas, Cheater & Marshall, 2007).

Health-promoting behaviours are commonly associated with femininity and this has resulted in masculine individuals disassociating themselves from any action perceived as feminine (Gordon et al., 2013). They would rather risk their health and well-being in avoidance of femininity (Garfield et al., 2008; Gordon et al., 2013; Griffith et al., 2012; Sloan et al., 2015). Previous studies have established that risky health behaviour is associated with being a 'real man' (Ratele, 2008b). Being ill is a sign of weakness and vulnerability from traditional masculinity's perspective. There is evidence that men who associate themselves with masculinity are often reluctant to seek medical help in avoidance of perceived femininity and emasculating experiences (Evans et al., 2011).

Research on masculinity and health focussing on HIV/AIDS has explored the impact of HIV on the constructions of masculinity among HIV-positive men in South Africa. The study found reckless and risky behaviour as a demonstration of masculinity (Sikweyiya, Jewkes & Dunkle, 2014). In one of the interviews, one of the subjects reported that he did not use condoms during his sexual intercourse encounters, yet he had had multiple sexual partners before contracting HIV (Sikweyiya et al., 2014). This reckless behaviour confirms the extent to which men identifying with traditional masculinity will go in proving their masculinity.

3.7. Masculinity and NCDs

There are different factors that influence the prevalence of NCDs. These factors include gender, aging, rapid unplanned urbanisation and globalisation (Ratete, 2008; WHO, 2014). According to Biddulph (2010), being born male is the biggest risk factor for healthy living. Biddulph (2010) further reports that on average, males live six years less than their female counterparts do. In comparison to women, many men in the USA seem to die early owing to their increased exposure to the leading preventable causes of death (Courtenay, 2000; Garfield et al., 2008). A similar observation by Evans et al. (2011) states that more men die from NCDs than women do because of their health defeating behaviours. Statistics Canada reports higher NCD mortality levels among men than in women (Evans et al., 2011). The early detection of NCDs is of paramount importance as it could help in slowing down the development of the NCD (WHO, 2014). Behavioural change is key to managing the global prevalence of NCDs effectively.

Men's negative response to healthy lifestyles is associated with a knowledge gap identified regarding NCDs and their risk factors. During a study of men suffering from coronary heart

diseases and type 2 diabetes mellitus, the target participants did not attend exercise-based cardiac rehabilitation programs designed to reduce the risk of recurring cardiac illness, disability and death, despite poor prognosis awareness. This was found to be mostly due to ignorance on their part (Dale et al., 2015). African-American men are experiencing an increasing burden of type-2 diabetes and its associated complications, mainly because of their unchanged behaviour even after diagnosis (Liburd, Namageyo-Funa & Jack, 2007). Brazil reports similar findings; a study conducted in one of the Brazilian cities evaluating the knowledge of diabetes in an adult population reports better knowledge among women than men (Santos, Santos, Ferrari, Fonseca & Ferrari, 2014).

Masculinity beliefs have socialised men to act strong, to be resilient and to doubt medical assistance (Addis & Mahalik, 2003; WHO, 2014). Based on masculinity beliefs, men are reluctant to visit medical facilities for disease screenings until it is too late. Colorectal cancer is one of the common cancers and one of the major contributing causes of death among men in the United States of America (Christy, Mosher & Rawl, 2014). Adult men are encouraged to go for screening that could help reduce the incidence of colorectal cancer but very few men go for these screenings due to embarrassment and perceptions that screening processes performed for colonoscopy are invasive and emasculating (Evans et al., 2011; Christy et al., 2014). Furthermore, men do not effectively follow their doctors' instructions and recommendations on how to lead healthy lifestyles (Evans et al., 2011), perhaps because they want to feel in control of situations and not feel controlled or commanded by others.

Diabetes research specifically focused on men as subjects is generally scarce, as most studies focus on women (Jack, 2004). A study on diabetes and men's health in the USA found diabetes mellitus among the top ten causes of death among men in that country, for reasons including poor personal

health practices by men and inadequate health care seeking behaviours (Jack, 2004). Research also finds that men generally develop heart related diseases earlier than women do (Weidner & Cain, 2003). Weidner and Cain (2003) establish additional factors that lead to heart diseases in men, other than the traditional risk factors for NCDs. Depression is one of these additional factors that can cause heart diseases over time. As a coping strategy, men usually resort to avoidant strategies comprising denial, distraction and harmful use of alcohol (Weidner & Cain, 2003). These behaviours may in turn contribute to men's susceptibility to deaths caused by cardiovascular diseases, more so and earlier than their female counterparts do (Weidner & Cain, 2003).

3.8. Masculinity and modifiable risk factors for NCDs

The main four risk factors for NCDs (smoking, harmful use of alcohol, poor diet consumption and physical inactivity) are behavioural in nature. Avoiding modifiable lifestyle risk behaviours can successfully manage NCDs (Boutayeb & Boutayeb, 2005). Gender is an important social determinant of health and an important demographic influence for NCD risk factors (Men et al., 2011), and previous studies observe that being manly or masculine is generally associated with risk. For instance, studies on NCDs' mortality rates reveal higher NCD mortality in men than in women (WHO, 2011; WHO, 2012; Stevens et al., 2012); perhaps due to the higher risky lifestyle observed in men. In pursuit of masculine traits such as bravery, risk taking and showing off physical strength, individuals who subscribe to hegemonic masculinity engage in risky behaviours comprising of smoking, harmful use of alcohol, poor dietary patterns and rigorous physical activities (Men et al., 2011). Positive modification of behaviour and healthy living practices are the key to effectively managing lifestyle risk factors to avoid the increased chances of developing NCDs (Courtenay, 2000).

3.8.1. Masculinity and smoking

Smoking is risky behaviour and it has the potential to yield overwhelming health outcomes, e.g. cancer, diabetes and cardiovascular illnesses (Tibbs & Haire-Joshu, 2002). Previous studies report that smokers are health risk takers (Jenks, 1992; Pfeifer, 2012), and traditional masculinity traits encourage risk taking. Literature maintains that smoking is one of the important risk behaviours that increase the risk for NCDs. The world experiences around six million annual deaths associated with direct and second-hand smoking (WHO, 2014a). Most men find it difficult to change their behaviour, even after an NCD diagnosis. A cross-sectional survey conducted in some parts of Nigeria reports a high burden for risk behaviours, as most men diagnosed with NCDs continued smoking (Ige et al., 2013).

3.8.2. Masculinity and harmful use of alcohol

Harmful use of alcohol ties in very well with masculinity construction (Landrine, Bardwell & Dean, 1988; Roos et al., 2001; Sloan et al., 2015; Zimmermann, Sieverding & Müller, 2010). A study conducted in England among men from different age groups reveals that some men believe that harmful use of alcohol makes them appear masculine (Harnett, Thom, Herring & Kelly, 2000). This belief, that heavy alcohol drinking characterises masculinity has contributed to increased alcohol consumption rates among men compared to women (Iwamoto, Cheng, Lee, Takamatsu & Gordon, 2011; Sloan et al., 2015). The masculine ideals of being a ‘playboy’, a risk-taker and endearing are risk factors cited in literature for heavy drinking and increased risks of alcohol related problems (Iwamoto et al., 2011; Landrine et al., 1988). Increased mortality defines one of the alcohol related challenges. Out of the six million annual deaths in the world, excessive and

harmful alcohol consumption is responsible for about 3.3 million of these annual global deaths (WHO, 2014).

3.8.3. Masculinity and poor diet

Out of the six million deaths (dominated by men), at least 1.7 million deaths are linked to poor dietary patterns (WHO, 2014b). Healthy eating is an important preventative measure for many diseases including NCDs (Wong & Lam, 1999), yet literature reports inconsistent healthy eating in men. In general, men characterise a gender that consumes unhealthy food more so compared to women (Sloan et al., 2015). Food choices are often associated with social norms and cultural beliefs and for men; food is mainly a source of energy (Roos et al., 2001). Being masculine does not support caring too much about food; for men, possessing especially traditional masculinity traits, preparing and cooking their own meals is optional (Roos et al., 2001). In a study that explores how Finnish men from different occupational groups describe food in their everyday lives, food is seen mainly as a feminine concern (Roos et al., 2001). These authors add that the purchasing of food, the preparation and the presentation of food are women's responsibilities (Roos et al., 2001) or that of their feminine partners. However, there are foodstuffs identified in different studies that are masculine. For example, the consumption of red meat in particular and alcoholic beverages marks masculinity in different cultures, whereas the consumption of salads, fruits, desserts and sweet foodstuffs is feminine (Jensen & Holm, 1999 in Roos et al., 2001). Eating a lot of red meat is associated with masculinity because it involves killing, butchering and eating of animals, demonstrating attributes of power and aggression (Roos et al., 2001).

3.8.4. Masculinity and physical inactivity

Lack of physical activity impacts negatively on life. Out of the six million global deaths (dominated by men), at least 3.2 million deaths are attributed to physical inactivity (WHO, 2014b). Characteristics of masculinity consist of physical strength and competitiveness. These two traits are usually shaped and nurtured through participation in rigorous physical activities, and individuals who aspire and subscribe to masculinity participate more in physical activities. Previous studies have found that physical activity is more prevalent among masculine individuals than it is among feminine people (Azevedo et al., 2007; Sloan et al., 2015). Engaging in some form of physical activity gives masculine individuals a chance to compete with others. It is evident in literature that different masculinity identities participate in different physical activities, and individuals who are interested in looking muscular usually engage in rigorous physical activities in order to build strong visible muscles (Verdonk, Seesing, & de Rijk, 2010).

3.8.5. Masculinity and BP

Masculinity has the potential to influence men's views and perceptions about health (Hammond et al., 2010; Torres-Pagán & Toro-Alfonso, 2016). According to Everett and Zajacova (2015), higher levels of hypertension and lower levels of hypertension awareness are recorded in men compared to women. The gender disparities that exist in the levels of hypertension diagnoses and awareness may be associated with reluctance or lack of medical visits by men (Everett & Zajacova, 2015), but contrary to what most studies report, Hammond et al. (2010) establish that there are fewer delays between African-American men's BP screening tests.

3.8.6. Masculinity and BMI

Many men from the developed nations are reportedly overweight and obese (Monaghan, 2007). A cohort study on gender expression associated with BMI carried out among 10 – 23 year old American youth ties a higher BMI in youth to masculinity (Austin et al., 2016). According to Austin et al. (2016), a lower BMI (thinness) is not associated with traditional codes of masculinity, therefore young people who conform to masculinity norms are most likely to engage in unhealthy behaviours, including overeating (especially high calorie food) and sedentary behaviours in order to gain weight.

3.8. Summary

The chapter has explored the concept of masculinity because it has been found as one of the important determinants of health. Life events and activities in most societies influence the definition of the concept of masculinity. Masculinity is also not exclusively a males' trait; females can also demonstrate masculine traits. The chapter has further investigated the general relationship that exists between masculinity and health. The chapter has also described the impact of masculinity on modifiable risk factors for NCDs. Based on masculinity traits such as the avoidance of femininity, the masking of emotions, toughness, as well as risk taking, masculinity fuels the prevalence of lifestyle risk factors. The chapter has also reviewed the scales used to measure masculinity from various backgrounds and described how different studies have developed these masculinity scales.

Lastly, the chapter has reflected on the effects of masculinity on risk factors for NCDs and discussed the HIMM model and the HBM in relation to lifestyle risk factors for NCDs. These two models were chosen because when they are employed together the study was able to tackle both the

psychological and social determinants of health among men in Maseru, Lesotho. As mentioned earlier, HBM focusses essentially on the psychological aspect of health behaviours. On the other hand, the HIMM demonstrates masculinity as an important determinant of health in men. The use of these two models together has assisted in broadening an understanding that adult men's health behaviours are not only influenced by beliefs and attitudes, but also by habitual health related behaviours including smoking and harmful use of alcohol. For example, within the culturally constructed knowledge about hegemonic masculinity, smoking, overconsumption of alcoholic beverages and poor dietary patterns are some of the behaviours expected of men. The blend of these two models helps in bridging the knowledge gap on NCDs among men and by interpreting NCD risk factors and attitudes in men's health behaviour better.

CHAPTER FOUR

METHODOLOGY

4.1. Introduction

The purpose of this chapter is to describe research methodology used in the current study. The chapter starts with a description of the research design used to guide the study. It then provides details on techniques used to collect primary data from the research setting. Furthermore, the chapter defines the methods used to analyse both the primary and secondary data to realise the main objectives of this study. The chapter finally stipulates ethical considerations and limitations for this study.

4.2. Methodology

The study used sequential explanatory mixed methods research design which prioritises and begins with collecting and analysing quantitative and then qualitative data in two sequential phases in one study (Creswell & Clark, 2011). This study began with a pilot study that provided a background understanding of masculinity scales and the prevalence of modifiable risk factors for NCDs. The pilot study was followed by an analysis of the 2014 LDHS data. This analysis informed the collection and analysis of the qualitative data subsequently. According to Creswell (2009) and Johnson & Onwuegbuzie (2004), an amalgamation of both qualitative and quantitative research, encompassing both gathering and analysing of quantitative and qualitative data in a single study assists in understanding a research problem better. A mixed methods research design has received much credibility over single research studies due to its scientific value and contribution (Creswell, 2009, 2012; Johnson & Onwuegbuzie, 2004). It is worth noting that a number of studies commend the use of a mixed methods research approach in social sciences, especially on multifaceted

subjects comprising gender (Maharaj & Cleland, 2005; Silberschmidt, 2005; Ulin, Tolley & McNeil, 2002; Varga, 2003;). This research approach considers multiple viewpoints, perspectives, positions and standpoints in its function, providing a more elaborate understanding of an occurrence (Johnson et al., 2007). According to Johnson & Onwuegbuzie (2004), the mixed methods approach has the ability to strengthen research and avoid the shortcomings that are entrenched in a single research methodology approach. A mixed methods research methodology allows the study to highlight the numerical trends from the quantitative methods, while at same time providing details derived from the qualitative procedures (Hanson et al., 2005; Plummer et al., 2004). Furthermore, using mixed methods in the current study allowed validation of the findings from each of the two methods (Campbell et al., 1999). Trade-offs of employing mixed methods in research are numerous, however, there are also disadvantages that are expected. Such include both the complexity of combining the different ideologies in a study, as well as the time consuming nature of a mixed methods type of a research.

4.3. Data related processes

The current study involved three data related phases. The first phase was a pilot survey in the study setting (Maseru) aimed at testing the validity and reliability of the masculinity scales in relation to NCDs. This phase also provided a background understanding of masculinity scales as well as the background understanding of the prevalence of modifiable NCDs risk factors in a small population sample. The second phase was a secondary data analysis of the 2014 LDHS data which provided a larger picture with regards to the prevalence of modifiable NCDs risk factors among adult men in Lesotho. The third phase comprised data collection through focus group discussions. This phase provided reasons behind the estimates and patterns seen from the pilot survey and LDHS analysis.

4.3.1. Phase one: Piloting the masculinity scales

The third phase was a quantitative pilot to test the validity and reliability of the masculinity scales in relation to NCDs. This phase was used to meet the last objective of the study which evaluated the effect of masculinity on lifestyle risk behaviours for NCDs, a primary quantitative pilot survey was used which collected data from adult men in Maseru, Lesotho. The findings from this phase of data processes provided a background understanding of masculinity scales and the prevalence of NCDs risk factors among men in Maseru, Lesotho. The researcher and an assistant worked together to collect this data. The research assistant was one of the men who was going to participate in the first focus group discussion. Before the research assistant actually started using the tool (questionnaire/masculinity scale), the researcher took him through some training using a role-playing approach, in order to prepare him to administer the pilot survey tool effectively.

Sampling design: Hertzog (2008) recommends pilot sample sizes of 40 per group to measure a Cronbach alpha reliability of 0.70 – 0.85 on scales containing 20 items. At least 50 men from each of the four age groups in Maseru participated in the piloted masculinity scales survey. The researcher aimed for a pilot sample size of 200 men; however, the actual number of men interviewed rose to 227, with more men in the 18 – 30 age group.

Inclusion and exclusion criteria: Participants in the pilot survey were strictly adult men (18 years and older) living in Maseru, Lesotho. These men could be from any racial group, ethnicity, sexuality, employment status, social class, educational background, etc.

Field procedures: A piloted masculinity scales survey questionnaire was formulated which assisted the researcher to collect data that the 2014 LDHS did not collect from adult men in Maseru, Lesotho. The pilot survey questionnaires were pre-tested among colleagues and friends from Maseru to identify any unanticipated problems with specific items. The aim of the pre-testing process was to assist the researcher to refine the questionnaire where necessary. Data collected included information on alcohol consumption in the pilot survey questionnaire. Furthermore, the researcher collected additional and updated data on other risk behaviours, e.g. tobacco use in order to allow for the performance of the masculinity scales in relation to the modifiable risk factors assessed. During the actual survey, the researcher first briefed respondents about the purpose of the study. After the briefing, the researcher asked all the respondents if they were willing to participate in the survey. Respondents who were willing to participate in the survey were then given an informed consent form to sign as a confirmation for their willingness to participate in the study. Some of the respondents were not comfortable in signing the consent form. However, they gave their verbal consent to participate in the study. Both the primary investigator and his research assistant worked together in the survey.

Data processing and analysis: During the data analysis phase of the current study, the researcher used STATA 13 to capture and analyse the data collected. The researcher used the following variables to create the household wealth score:

- **Do you personally own any land?** (1 = Yes / 2 = No).
- **Do you jointly own any land with somebody else?** (1 = Jointly with wife / 2 = Jointly with someone else / 3 = Both jointly and alone).

- **Type of toilet used at home:** (1 = Flush or pour flush, flush to sewer flush system / 2 = Flush to septic tank / 3 = Flush to pit latrine / 4 = Flush to somewhere else / 5 = Ventilated improved pit latrine / 6 = Pit latrine with slab / 7 = Bucket toilet / 8 = No toilet).

Items household owns:

- Electricity connected: (1 = Yes / 2 = No)
- A battery or generator: (1 = Yes / 2 = No)
- A radio in working condition: (1 = Yes / 2 = No)
- A television in working condition: (1 = Yes / 2 = No)
- A landline telephone in working condition: (1 = Yes / 2 = No)
- A mobile telephone in working condition: (1 = Yes / 2 = No)
- A refrigerator: (1 = Yes / 2 = No)
- A computer: (1 = Yes / 2 = No)
- Internet access: (1 = Yes / 2 = No)

Table 4.1: The outcome variables from the pilot survey

Outcome variables	Pilot survey questions	Categories
Tobacco use	Do you currently smoke cigarettes?	1 = Currently smoking cigarettes 2 = Not currently smoking cigarettes
Type of tobacco	What kind of tobacco do you currently smoke?	1 = Pipe 2 = Chewing tobacco 3 = Snuff 4 = Other (specify)

Heavy tobacco use	How many cigarettes in a day (on average) do you smoke?	1 = Ten or less 2 = Eleven to twenty 3 = Twenty-one to thirty 4 = Thirty or more
Alcohol use	Have you ever drunk an alcohol-containing beverage?	1 = Have drunk an alcoholic beverage 2 = Have not drunk an alcoholic beverage
Type of alcohol drunk	Type of drink	1 = Beer/lager 2 = Ciders 3 = Spirits 4 = Wine 5 = Other (specify)
Heavy drinking	Have you ever gotten drunk from drinking an alcohol-containing beverage?	1 = Have gotten drunk 2 = Have not gotten drunk
Heavy drinking	How frequently do you drink alcohol-containing beverages?	1 = Almost daily 2 = 5/6 days a week 3 = 3/4 days a week 4 = Once/twice a week 5 = Once/twice a month 6 = Once every couple of months 7 = Once/twice a year 8 = Never
Healthy diet	What does eating healthy mean to you?	1 = Low calorie foods 2 = Low carbs 3 = Low fat 4 = Low sugar 5 = Eating fresh food

		6 = Well balanced 7 = Organic foods 8 = Natural foods 9 = Whole grains
Poor diet	Do you eat healthy when eating out?	1 = Almost always 2 = Usually 3 = Sometimes 4 = Rarely 5 = Never
Poor diet	Would you say you have been eating healthy in the past 6 months?	1 = Definitely healthier 2 = A little healthier 3 = Unchanged 4 = Less healthy
Physical inactivity	Which transport mode do you use most often?	Distance less than 1km: 1 = Car 2 = Walk 3 = Public transport Distance of 1.5km: 1 = Car 2 = Walk 3 = Public transport Distance more than 5km: 1 = Car 2 = Walk 3 = Public transport
Physical inactivity	Activities in and around home	Cooking: 1 = Does not cook 2 = Cook for less than 1 hour a week

		<p>3 = Cook for 1-3 hours a week 4 = Cook for 3-6 hours a week 5 = Cook for 6-10 hours a week 6 = Cook for more than 10 hours a week</p>
		<p>Laundry:</p> <p>1 = Does not do laundry 2 = Does laundry for less than 1 hour a week 3 = Does laundry for 1-3 hours a week 4 = Does laundry for 3-6 hours a week 5 = Does laundry for 6-10 hours a week 6 = Does laundry for more than 10 hours a week</p>
		<p>Shopping:</p> <p>1 = Does not do shopping 2 = Does shopping for less than 1 hour a week 3 = Does shopping for 1-3 hours a week 4 = Does shopping for 3-6 hours a week 5 = Does shopping for 6-10 hours a week 6 = Does shopping for more than 10 hours a week</p>
		<p>Cleaning:</p> <p>1 = Does not clean 2 = Cleans for less than 1 hour a week 3 = Cleans for 1-3 hours a week 4 = Cleans for 3-6 hours a week 5 = Cleans for 6-10 hours a week 6 = Cleans for more than 10 hours a week</p>
		<p>Gardening:</p> <p>1 = Does not do gardening</p>

		<p>2 = Does gardening for less than 1 hour a week</p> <p>3 = Does gardening for 1-3 hours a week</p> <p>4 = Does gardening for 3-6 hours a week</p> <p>5 = Does gardening for 6-10 hours a week</p> <p>6 = Does gardening for more than 10 hours a week</p>
		<p>Sports:</p> <p>1 = Does not do any sport</p> <p>2 = Does sports for less than 1 hour a week</p> <p>3 = Does sports for 1-3 hours a week</p> <p>4 = Does sports for 3-6 hours a week</p> <p>5 = Does sports for 6-10 hours a week</p> <p>6 = Does sports for more than 10 hours a week</p>
		<p>Gym</p> <p>1 = Does not do gym</p> <p>2 = Does gym for less than 1 hour a week</p> <p>3 = Does gym for 1-3 hours a week</p> <p>4 = Does gym for 3-6 hours a week</p> <p>5 = Does gym for 6-10 hours a week</p> <p>6 = Does gym for more than 10 hours a week</p>
		<p>Playing with kids</p> <p>1 = Does not play with kids</p> <p>2 = Plays with kids for less than 1 hour a week</p> <p>3 = Plays with kids for 1-3 hours a week</p> <p>4 = Plays with kids for 3-6 hours a week</p> <p>5 = Plays with kids for 6-10 hours a week</p>

		6 = Plays with kids for more than 10 hours a week
		Watching television: 1 = Does not watch tv 2 = Watches tv for less than 1 hour a week 3 = Watches tv for 1-3 hours a week 4 = Watches tv for 3-6 hours a week 5 = Watches tv for 6-10 hours a week 6 = Watches tv for more than 10 hours a week

Source: MOHSW (2014)

Table 4.2: The explanatory variables available from the pilot survey

Conceptual definition	Operational definition	Categories
Age	Age	1 = 18-30 years 2 = 31-45 years 3 = 46-59 years 4 = 60 years plus
Marital status	Marital status	1 = Married or living together with a partner 2 = Divorced or separated 3 = Widowed 4 = Never married and never lived together with a partner
Education	The level of education	1 = Primary 2 = Vocational/Technical Training after Primary

		3 = Secondary/High
		4 = Vocational/Technical Training after Secondary/High
		5 = College/University
		6 = Graduate/Post Graduate
Employment	Employment status	1 = Employed 2 = Self employment 3 = Unemployed
	Type of employment	1 = Full-time 2 = Part-time 3 = Casual 4 = Fixed term/contract
Wealth quintile	Household wealth index	5 quintiles: 1 = Poorest 2 = Poorer 3 = Middle (Affording) 4 = Richer 5 = Richest

Source: MOHSW (2014)

4.3.2. Phase two: 2014 LDHS

The Ministry of Health and Social Welfare (MOHSW) in Lesotho undertook the third LDHS in 2014 with support from different international organisations. The primary objective of the 2014 LDHS was to provide updated estimates of basic demographic and health indicators, as well as to

provide information on other health concerns comprising breast cancer, diabetes, hypertension and obesity (MOHSW, 2014). The survey was a follow-up of the 2009 LDHS survey. Intentions about the information collected during this survey included helping policy makers to evaluate and design effective strategies to improve the health of the country's population.

Sampling design (2014 LDHS): The sampling design used for the 2014 LDHS was an updated frame from the 2006 Lesotho Population and Housing Census (PHC) from the Lesotho Bureau of Statistics (BOS) (MOHSW, 2016). Populations comprising individuals in hotels, barracks, and prisons were not included in the sample design. A two-stage sample design was used for 2014 LDHS and was planned to allow estimates of key indicators at the national level, in urban and rural areas, the four ecological areas, and in each of the ten districts in Lesotho (MOHSW, 2016). The sample was not self-weighting at the national level because the sample size was approximately equal in all the ten districts (MOHSW, 2016). Weighting factors were therefore added to the data file for results to be proportional at the national level (MOHSW, 2016). In half of the households chosen, all men aged 15-59 who were permanent residents in the selected households, or visitors in the household and had stayed the night before the survey qualified to be interviewed (MOHSW, 2016).

Inclusion and exclusion criteria: During the first stage, sample points were selected which comprised enumeration zones. Four hundred clusters were selected (MOHSW, 2016). Of the 400 clusters, 118 were in urban areas and 282 in rural areas (MOHSW, 2016). The second stage involved systematic sampling of households and a household listing operation undertaken in all of the selected areas followed this. From these lists, households to be included in the survey were randomly selected (MOHSW, 2016). Approximately 25 households were selected from each sample point for a total sample size of 9,942 households (MOHSW, 2016).

Fieldwork procedures: Three questionnaires (the household questionnaire, the woman's questionnaire, and the man's questionnaire) were developed and used for the 2014 LDHS. These questionnaires were revised to reflect the population and health issues relevant to Lesotho based on the DHS program standards (MOHSW, 2016). Input was requested from various stakeholders representing government ministries and agencies, non-governmental organisations, and international donors. After the preparation of the definitive questionnaires in English language, the questionnaires were translated into Sesotho (MOHSW, 2016). The Man's Questionnaire was administered to all men aged 15-59 in the sub-sample of households selected for the male survey (MOHSW, 2016). The Man's Questionnaire collected similar information as the Woman's Questionnaire; however, it was shorter because it did not incorporate questions that needed reproductive history or questions on maternal and child health (MOHSW, 2016).

Data processing and analysis: A secondary analysis was performed on the data from Lesotho's 2014 Demographic Health Survey to achieve objectives one and two of the current study (examining the prevalence of the modifiable risk factors for NCDs among adult men in Lesotho, and an investigation of the association of the demographic factors and the socio-economic factors with the modifiable risk factors for NCDs). After downloading and importing the 2014 LDHS data into the STATA statistical software. The analysis and investigation of this data provided descriptive and inferential statistics to explain occurrences. Questions related to lifestyle risk behaviours for NCDs, especially focused on men in the 2014 LDHS survey conducted in Lesotho, sought information on body mass index and tobacco use. Table 4.3 details the derivation of these outcome variables. Demographic and socio-economic related questions in the survey asked participants about their area of residence, age, religion, marital status, education, occupation,

employment status, types of employment, continuity of employment and the form of earnings, and household wealth.

Housing indicators are markers of material conditions, and are in general the key component of wealth for many people (Galobardes, Shaw, Lawlor, Lynch & Smith., 2006). Accurate Information on housing indicators is easy to collect compared to income and expenditure information and it is a useful indicator of the household social-economic status (Galobardes et al., 2006). According to Galobardes et al. (2006), household ownership of consumer durables/assets that tend to be associated with household economic status determines the household wealth indices. These indices are usually constructed using principal component analysis (PCA) and are a composite measure of the cumulative living standard of the household, which places households on a continuous scale of relative wealth (Galobardes et al., 2006). The use of PCA ensures that the items or assets which are more unequally distributed between households, and therefore more likely to differentiate social economic status (SES), are given more weight and therefore contribute more to the overall score than items which are more commonly available and of lesser variability (Vyas & Kumaranayake, 2006). In the context of a developing country, the asset based wealth index has been shown to produce superior results; equal and greater distinctions in health outcomes than household expenditure based measures (Morris, Carletto, Hoddinott & Christiaensen, 2000; Rutstein & Johnson, 2004). The 2014 LDHS used the following variables to create the household wealth scores:

What is the main source of water for members of your household?

Piped water (1 = Piped into dwelling, 2 = Piped to yard/plot, 3 = Public tap/Standpipe, 4 = Neighbour's tap, 5 = Tube well/borehole, 6 = Protected well, 7 = Unprotected well, 8 = Protected

spring, 9 = Unprotected spring, 10 = River/Dam/Lake/Ponds/Stream /Canal/ Irrigation channel, 11 = Rainwater, 12 = Tanker truck, 12 = Bottled water).

What kind of toilet facility do members of your household usually use?

(1= Flush to piped sewer system, 2 = Flush to septic tank, 3 = Flush to pit latrine, 4 = Flush to somewhere else, 5 = Ventilated improved pit latrine, 6 = Pit latrine with slab, 7 = Pit latrine without slab/Open pit, 8 = No facility/Bush/Field, 9 = Compositing toilet).

Does your household have?

- Electricity (1=Yes, 2=No)
- Battery/Generator (1=Yes, 2=No)
- Solar panel (1=Yes, 2=No)
- Radio (1=Yes, 2=No)
- Television (1=Yes, 2=No)
- Mobile telephone (1=Yes, 2=No)
- Non-mobile telephone (1=Yes, 2=No)
- Refrigerator (1=Yes, 2=No)
- Bed/Mattress (1=Yes, 2=No)
- Computer (1=Yes, 2=No)
- Internet access (1=Yes, 2=No).

What type of fuel does your household mainly use for cooking?

(1= Electricity, 2 = LPG, 3 = Biogas, 4 = Kerosene, 5 = Coal, Lignite, 6 = Wood, 7 = Straw/Shrubs/Grass, 8 = Agricultural crops, 9 = Animal dung, 10 = No food cooked in the household).

Main material of the floor

(1= Earth/Mud/Dung, 2 = Wood planks, 3 = Parquet or polished wood, 4 = Vinyl tile/Vinyl carpet, 5 = Ceramic tiles, 6 = Cement, 7 = Carpet, 8 = Other).

Main material of the roof

(1= Thatch/Grass, 2 = Wood planks, 3 = Cardboard, 4 = Metal/Corrugated iron, 5 = Wood, 6 = Asbestos/Cement fibre, 7 = Ceramic/Clay tiles, 8 = Cement, 9 = Roofing shingles).

Main material of the exterior walls

(1= Cane/Tree trunks, 2 = Sod, 3 = Stone with mud, 4 = Cardboard, 5 = Reused wood, 6 = Cement, 7 = Stone with lime/cement, 8 = Bricks, 9 = Cement blocks, 10 = Wood planks/Shingles/Metal/Corrugated iron).

Does any member of this household own:

- Watch (1=Yes, 2=No)
- Bicycle (1=Yes, 2=No)
- Motorcycle/Scooter (1=Yes, 2=No)
- Scotch cart (1=Yes, 2=No)
- Car/Truck (1=Yes, 2=No)

Does any member of this household own any agricultural land? (1=Yes, 2=No)

Does this household own any livestock, herds, other farm animals or poultry? (1=Yes, 2=No)

Does any member of this household have a bank account? (1=Yes, 2=No)

Table 4.1 provides details of the derivation of the other explanatory variables. The 2014 LDHS did not measure the prevalence of alcohol consumption in Lesotho (MOHSW, 2014). All procedures used in the data analysis were conducted using survey (SVY) procedures in Stata to take into account the stratified, clustered study design (Kreuter & Valliant, 2007). The analysis process tested categorical and ordinal independent variables to determine if there were significant differences between the groups in lifestyle risk behaviours using the Chi-squared test. The T-test established scalar independent variables. Independent variables with a significant relationship with lifestyle risk behaviours were then included in the multivariate logistic regressions.

Table 4.3: Definition of dependent variables

Outcome variables	2014 LDHS questions	Categories
Any tobacco use	Question 809. Do you currently smoke cigarettes, either manufactured or hand rolled?	1 = Currently smoking cigarette/hand rolled tobacco
		0 = Not currently smoking cigarette/hand rolled tobacco
	Question 811. Do you currently smoke or use any (other) type of tobacco?	1 = Use any tobacco currently
		0 = No current tobacco use reported

Source: MOHSW (2014)

Table 4.4: Modifiable risk factors for NCDs and measures

Modifiable behavioural risk factors and measures at which they become health hazards	
Tobacco use	The two main tobacco indicators that are associated with an increased risk of developing chronic diseases are: <ul style="list-style-type: none"> • Current use of tobacco • Daily use of tobacco
Alcohol consumption	Binge drinking is defined as: <ul style="list-style-type: none"> • Drinking ≥ 5 drinks in a row for men, and ≥ 4 drinks in a row for women
Physical inactivity	A person not meeting any of the following criteria is considered being physically inactive: <ul style="list-style-type: none"> • 3 or more days of vigorous-intensity activity of at least 20 minutes per day; • 5 or more days of moderate-intensity activity or walking of at least 30 minutes per day; • 5 or more days of any combination of walking, moderate or vigorous intensity activities achieving a minimum of at least 600 metabolic equivalent (MET) minutes per week.
Biological risk factors	
Obesity and being overweight	A BMI ≥ 25 indicates that a person is overweight, while a BMI ≥ 30 indicates that the person is obese
Raised blood pressure	The systolic value (SBP) ≥ 140 mmHg and/or the diastolic value (DBP) ≥ 90 mmHg describes a person mildly hypertensive. SBP ≥ 160 mmHg and/or DBP ≥ 100 mmHg (108) defines moderate hypertension.

Source: WHO (2002, cited in WHO, 2013b)

Table 4.5: Definition of demographic variables

Conceptual definition	Operational definition	Categories
Age	Derived from the questions: How old were you at your last birthday?	1 = 15 – 19
		2 = 20 – 24
		3 = 25 – 29
		4 = 30 – 34
		5 = 35 – 39
		6 = 40 – 44
		7 = 45 – 49
		8 = 50 – 54
		9 = 55 – 59
Marital status	Derived from the questions: <ul style="list-style-type: none"> • Are you currently married or living together with a woman as if married? • Have you ever been married or lived together with a woman as if married? 	1 = Married/Living together
		2 = Divorced/Separated
		3 = Widowed
		4 = Never married/Never lived together
Religion	Derived from the questions: <ul style="list-style-type: none"> • What religion do you belong to? • If Christian, what church do you go to? 	1 = None
		2 = Traditional Christian church
		3 = Other Christian churches
		4 = Other religions
Place of residence	Place of residence: Urban or rural?	1 = Urban
		2 = Rural

District	District	1 = Butha-Buthe
		2 = Leribe
		3 = Berea
		4 = Maseru
		5 = Mafeteng
		6 = Mohale's Hoek
		7 = Quthing
		8 = Qacha's Nek
		9 = Mokhotlong
		10 = Thaba-Tseka

Source: MOHSW (2014)

Table 4.6: Definition of socio-economic variables

Conceptual definition	Operational definition	Categories
Education	Derived from the questions: What is the highest level of school you attended: primary, secondary, or higher?	1 = Primary
		2 = Vocational/Technical Training after Primary
		3 = Secondary/High
		4 = Vocational/Technical Training after Secondary/High
		5 = College
		6 = Graduate/Post Graduate
Occupation	Derived from the question: What is your occupation, that is, what kind of work do you mainly do?	1 = Not employed or self-employed
		2 = Elementary
		3 = Skilled

		4 = Professional
		5 = Employed, but work not specified
Wealth quintile	Household wealth index	5 quintiles:
		1= Most deprived
		2 = Deprived
		3 = Middle (Affording)
		4 = Wealthy
		5 = Wealthiest

Source: MOHSW (2014)

4.3.3. Phase three: Focus group discussions

Creswell & Clark (2011) describe focus group discussions as exploratory research method used to explore people's thoughts and feelings. Focus group discussions are useful if the discussion among participants helps provide insight, the group atmosphere stimulates honest response, the discussion is limited to well-defined topics, and the logistics are managed. Focus group discussions for this study were conducted in Maseru, Lesotho from December 2016 to February 2017. This primary qualitative data was collected from adult men in Maseru, Lesotho through focus group discussions was used to meet objectives three and four (exploring men's perceptions of lifestyle risk behaviours and studying how masculinity is defined) of the current study.

Developing focus group discussion guide: Based on the study's objectives the researcher developed a four staged focus group discussion guide (with the introduction, rapport/relationship building, in-depth discussion and conclusion). During the introductory stage, the researcher provided an overview of the goals of the discussion and created an environment to introduce participants to each other. The second stage was the rapport building which comprised the development of easily answered questions related to the study in order to encourage participants to begin to talk and share ideas/thoughts. The third stage was an in-depth discussion of the topic where the researcher asked participants the main questions on lifestyle. These questions encouraged conversation that revealed participants' feelings and thoughts on smoking, alcohol consumption, diet and physical activity. After an in-depth discussion, the focus group discussion guide allowed the researcher to summarise the impressions or conclusions gathered. At this stage, the researcher gave participants an opportunity to clarify, confirm, elaborate or add on the information collected. All the focus group discussions were digitally recorded. A note taker (a research assistant) accompanied the researcher in all the focus group discussions. The roles played by a note taker included taking additional notes based on his observations during the focus group discussion. Before the actual fieldwork, the focus group discussion guide was piloted with three different groups of colleagues and friends to test its strengths and weakness in collecting information. Following the three pilot focus group discussions, the necessary revisions (mainly for clarity's sake) were made.

Sampling design: Different research disciplines and almost all fields of behavioural and social sciences regularly use focus group discussions (Guest et al., 2016). Eight focus group discussions with adult men aged 18 and above were decided for the current study. Saturation was the key

determinant to decide when to stop adding more focus groups. According to Glaser & Strauss (1967), qualitative studies usually continue recruiting participants into the study until saturation is reached. At saturation point during data collection, similar themes start to reoccur and the researcher does not see the likelihood of generating new themes from additional interviews. The questions that were asked in the current study certainly generated reoccurring themes across the eight focus group discussions in Maseru.

Recruitment: The researcher used two strategies to recruit participants to participate in focus group discussions for the current study. The first strategy was the purposive sampling technique. This was where the researcher targeted the existing social groups in and around Maseru, i.e. where men convened for various purposes. This included religious groups, recreational and sports clubs, business cooperatives, as well as job seekers in Maseru (men from different places who usually gathered at one place seeking employment from different companies, e.g. construction companies). The second strategy used to recruit focus group participants was the identification of ‘neutral parties’ from different communities in Maseru. The researcher asked these ‘neutral parties’ for the names of adult men who would be willing and available to partake in the focus group discussions planned. These ‘neutral parties’ were local school principals and local small business owners who knew many men in their respective communities. The researcher briefed the potential participants during the recruitment phase on the nature of the focus group discussion and they had the chance to decide whether they wanted to participate or not.

Inclusion and exclusion criteria: Two factors, i.e. gender and age informed the inclusion and exclusion criteria in the current study. In order to participate in the focus group discussions for this study, prospective participants were supposed to be adult males (18 years and older) living in

Maseru, Lesotho. Participants included men from any racial group, ethnicity, sexuality, educational background, employment status, social class, etc.

Fieldwork procedures: Qualitative data provides the opportunity to explore the participants' views as well as to understand complex social phenomena effectively and thoroughly. Eight focus group discussions consisted of men who were in tertiary institutions in Maseru, men who were employees in the corporate world (both private and public sectors), men who were self-employed in various fields, men who were unemployed during the study and those who were pensioners.

Table 4.7: Description of focus group participants

Focus group one: 18 – 30 year old men

Participant	Age	Marital status	Education	Occupation
1	27	Never married	Degree	Pharmacist
2	24	Never married	High School	Self-employed
3	23	Never married	Secondary School	Unemployed
4	25	Never married	Secondary School	Taxi conductor
5	25	Never married	Diploma	Mechanic
6	19	Never married	High School	Student
7	30	Never married	High School	Farmer
8	28	Never married	Primary School	Self-employed
9	27	Never married	High School	Unemployed
10	23	Never married	High School	Student
11	25	Never married	High School	Taxi driver
12	24	Never married	Certificate	Unemployed
13	26	Never married	High School	Unemployed
14	25	Never married	Degree	Teacher

15	23	Never married	High School	Machine operator
16	26	Never married	Chartered Accounted	Accountant

Table 4.8: Description of focus group participants

Focus group two: 18 – 30 year olds

Participant	Age	Marital status	Education	Occupation
1	20	Never married	High School	Student
2	21	Never married	High School	Student
3	25	Never married	High School	Student
4	23	Never married	High School	Student
5	22	Never married	High School	Student
6	26	Never married	High School	Student
7	23	Never married	High School	Student
8	23	Never married	High School	Student

Table 4.9: Description of focus group participants

Focus group three: 31 - 45 year olds

Participant	Age	Marital status	Education	Occupation
1	33	Married	Diploma	Teacher
2	45	Married	Degree	Student
3	30	Never married	Diploma	Messenger
4	36	Never married	Diploma	Self-employed
5	40	Cohabiting	Diploma	Teacher
6	30	Married	High School	Taxi driver
7	34	Never married	Diploma	Teacher

Table 4.10: Description of focus group participants

Focus group four: 31 - 45 year olds

Participant	Age	Marital status	Education	Occupation
1	38	Married	Diploma	Farmer
2	37	Married	Certificate	Teacher
3	40	Married	Diploma	Engineer/Business
4	31	Never married	High School	Student
5	33	Married	High School	Student
6	44	Never married	Diploma	IT Specialist
7	38	Never married	Degree	Journalist

Table 4.11: Description of focus group participants

Focus group five: 46 - 59 year olds

Participant	Age	Marital status	Education	Occupation
1	47	Married	Degree	Engineer
2	51	Married	Diploma	Pastor
3	46	Married	Diploma	Teacher
4	50	Married	Diploma	Teacher
5	56	Never married	Degree	Psychologist

Table 4.12: Description of focus group participants

Focus group six: 46 - 59 year olds

Participant	Age	Marital status	Education	Occupation
1	47	Married	Degree	Nurse/Soldier
2	68	Married	Primary School	Pensioner
3	48	Married	Degree	Journalist

4	46	Married	High School	Business man
5	45	Married	High School	Unemployed
6	50	Married	High School	Farmer

Table 4.13: Description of focus group participants

Focus group seven: 60 years plus

Participant	Age	Marital status	Education	Occupation
1	62	Married	No education	Pensioner (Miner)
2	63	Married	Primary School	Pensioner (Miner)
3	61	Separated	Primary School	Self-employed
4	64	Divorced	Secondary School	Self-employed
5	60	Married	Primary School	Self-employed
6	60	Separated	Secondary School	Pensioner

Table 4.14. Description of focus group participants

Focus group eight: 60 year olds plus

Participant	Age	Marital status	Education	Occupation
1	60	Married	No education	Unemployed
2	60-65	Married	No education	Pensioner (Miner)
3	60-65	Divorced	No education	Unemployed
4	61	Married	Secondary School	Unemployed
5	63	Separated	College	Self-employed

Focus group discussions are characterised by interactions between the researcher and the group, as well as the interaction between participants. They provide the researcher with an understanding of the participants' perspective on the topic discussed. If used correctly and wisely, focus group

discussions may yield high quality data (Wong, 2008). During the qualitative data collection, the researcher recorded the discussions and kept these recorded discussions safe during the whole process. These focus group discussions created an environment where participants felt comfortable with each other, even in cases where none of them knew each other.

Some researchers encourage large groups for focus group discussions, for lively discussions (Morgan, 1997). Contrary to this view, during the course of the focus group discussions for this study, smaller groups worked better than large groups. Bigger groups are often dominated by very few, i.e. one or two participants who are naturally talkative, resulting in most participants holding back their views and opinions on the topic(s) discussed. In smaller groups, the group dynamics are easier to handle, allowing for effective and easy management of the group and the discussions.

In some cases, the researcher had to transport focus group participants to and from the central place where the group met. Furthermore, participants received refreshments after every focus group discussion as a gesture of gratitude from the researcher. Again, smaller and not larger groups worked better; they did not put a strain on the researcher in terms of providing refreshments and transported when needed. The current study focused only on adult men, and this created a free environment for participants to express themselves freely without fear of judgement, especially by the opposite sex.

As highlighted earlier on, age was a determining factor for participants in these focus groups. Age brackets assisted in overcoming possible intimidation by senior participants, and it is important to note that the researcher did not notice any negative impacts of the age differences in the focus groups discussions that had participants from varied age categories. The researcher tried as much as possible to avoid having participants from the same cliques, to avoid the negative influence such could have had on other participants. The data collected assisted the researcher to identify the

factors associated with NCD risk behaviours among adult men. The data further assisted the researcher to establish relevant masculinity identities in Lesotho's context.

During each focus group discussion, the researcher used a digital recorder after seeking permission from the participants and took notes (points) during the discussion to assist him to effectively probe for more information. The largest focus group discussion held had 16 participants. This group initially had ten participants, but grew bigger a few minutes after the discussion had started. The smallest focus group discussion had five participants because other potential participants pulled out at the last minute owing to other prioritised commitments. Sesotho was the main language used in all the focus group discussions because it is the local language. However, participants were free to express themselves in any language they preferred. Some participants used English language in their responses to questions, some used Sesotho and some mixed the two languages in their expressions.

Before each focus group discussion took place, the researcher reminded and re-briefed participants on the nature of the discussion, emphasising that participation was voluntary. Participants were also encouraged to feel free to express themselves as truthfully as possible and confidentiality was guaranteed. The researcher transcribed and translated the recorded discussions in the English language.

Data processing and analysis: Data was analysed in different stages in the current study. An inductive approach was used to create a coding frame for the analysis of data. In this approach, the researcher uses the data itself as a basis for creating a codebook (Braun & Clarke, 2006). The first phase involved the familiarization of the researcher with the data collected through reading notes taken during interviews and precise transcripts. This process allowed the researcher to get used to the respondents' remarks and views in the data. The second stage was a generation of initial codes

from the data collected. During the third stage, the researcher searched for themes emerging from the data collected. The fourth stage-involved revision of the themes created. During the fifth stage, the researcher defined and named themes. The last stage was producing the report from the data collected. The researcher used thematic concept analysis for all qualitative data collected (King, 2004). Its analysis was therefore continuous during data collection process as the researcher started creating themes based on the data collected. The NVIVO software assisted the researcher to code themes used. This process allowed the researcher to organize and categorize those themes into different groups. Lastly, during the discussion of the analysis, relationships between data collected and the existing literature was established and described.

4.4. Ethical Considerations

4.4.1. Institutional

The ethics form for the DHS data was publicly available online for any researcher willing to use the data. For qualitative data collection, the researcher recruited participants from varied social groups and settings comprising sports groups, churches, bars, taverns and colleagues from different workplaces. The respondents/participants interviewed in the current study did not ‘belong’ to any institution or an organisation. For this reason, the researcher did not need any approval or gatekeepers’ letters to approve the data collection processes. Participants/ respondents in the current study were ordinary members of society, and the interviews took place at convenient times for the participants. Full approval for ethical clearance was obtained from the University of KwaZulu-Natal Ethics Committee (Protocol reference number: HSS/0697/015D), which allowed the researcher to conduct research on human subjects.

4.4.2. Informed consent forms

The attainment of informed consent from the community of people researched is fundamental in the research process. Research subjects who showed interest in the study signed informed consent letters after a detailed brief about the current study. Prior to the focus group discussions, the researcher asked the participants for permission to record the discussions. The research participants knew that their participation was voluntary and that they could withdraw from the study if they felt uncomfortable, without incurring any negative consequences. They were, however, encouraged to participate in the study. The participants were also encouraged to respect the other focus group discussion participants and their views during the discussions. Confidentiality of the focus group discussion was also encouraged among the participants.

4.5. Summary

This chapter described the explanatory mixed methods research design employed for this study. The chapter further described the methodology employed in conducting this study. An amalgamation of both the qualitative and quantitative approaches was employed in realising the main objectives of the study. The qualitative method took the form of focus group discussions, while the quantitative aspect analysed the latest 2014 LDHS data set to address some of the research objectives. Focus group discussions provided meaning to the beliefs, values, experiences and norms concerning the NCD risk factors among adult men in Maseru, Lesotho. The questionnaire for the pilot masculinity scale used during the first phase of study allowed the researcher to determine the masculinity scales among adult men in Maseru, Lesotho. The chapter also described the ethical considerations observed in the current study and concluded by summarising the limitations of the study.

CHAPTER FIVE

MASCULINITY MEASURES: A PILOT SURVEY

5.1. Introduction

Masculinity is an abstract concept, and it is both a psychological and a social construct that researchers still struggle to measure satisfactorily (Hoffman, 2001). A pilot survey to test the validity and reliability of the masculinity scales among adult men in Maseru, Lesotho was undertaken. This pilot survey also provided a background understanding of the masculinity scales and prevalence of modifiable NCDs risk factors in a small population sample. The findings from the qualitative data collected during the second phase of the study informed this pilot survey. The pilot questionnaire was divided into four sections. The first section collected the demographic information of the men who had participated in the survey. The second section collected data that assisted in determining the masculinity scales among the adult men in Maseru, Lesotho. The third section collected information on the men's lifestyles and focussed mainly on the four primary lifestyle risk factors for NCDs, i.e. smoking, harmful use of alcohol, poor dietary patterns, and physical inactivity. The final section collected data on preventative health checks among the adult men in the survey. These preventative checks included the family health history related to NCDs and disease screening, predominantly for NCDs. Preventative health screening for various diseases helped in detecting illnesses at an early stage when treatment was most likely to work best. Section four of the survey further covered questions relating to medical check-ups and patient counselling which were practices used to prevent diseases and other health challenges.

5.2. Demographic information

Almost three quarters (72%) of the adult men in the survey were in tertiary institutions or had graduated from a tertiary institution. This was one of the key limitations of this pilot survey. The sample was not representative of the adult male population in Maseru. According to the 2006 Lesotho Population and Housing Census Analytical Report, Lesotho reported high literacy levels. The researcher expected high levels of education attainment at primary school level, followed by the secondary/high school, with the lowest levels of education attainment for the tertiary level of education. Less than a quarter (24%) of the men in the survey had secondary/high school education, while less than five per cent (4%) had only finished primary school (Table 5.1). The mean age for the participants in this pilot survey was 25 years. Among the men who participated in the survey, more than half (55%) were currently in unions, i.e. they reported being married or cohabiting with a woman during the survey. Less than five per cent (3.5%) of the men had previously been in unions, i.e. they reported being widowed or separated, while more than two fifths (42%) of the men had never been in a union, i.e. they had never been married or cohabited with a woman.

Table 5.1: - Demographic factors

Age	%
18 - 30	43.6
31 - 45	46.7
46 - 59	4.4
60 plus	5.3
Marital status	
Currently in union	54.6

Formerly in union	3.5
Never in union	41.9
Religion	
Traditional Christians	59.0
Other Christians	38.8
Other religions	2.2

Source: Researcher's calculations from the primary pilot survey

Table 5.2: Socio-economic factors

Education	%
Primary school	4.4
Sec/High school	23.8
Tertiary/Post-Graduate	71.8
Employment status	
Employed	77.1
Self-employed	5.3
Unemployed	17.6
Wealth index	
Poorest	21.0
Poorer	19.2
Middle	21.6
Richer	19.2
Richest	19.2

Source: Researcher's calculations from the primary pilot survey

Close to three fifths (59%) of the participants reported that they were Christians and less than five per cent (2%) indicated that they were not Christians. Christians were divided into the traditional Christian churches, i.e. the Roman Catholic Church (34%), the Lesotho Evangelical Church (14%) and the Anglican Church (11%), followed by the Pentecostal Church (20%) and Seventh Day

Adventist Church (<5%). Less than five per cent of the participants were non-Christians; they came from Islam, the Hindu faith, or they did not belong to any religious group.

Maseru is the capital city in Lesotho, with better life opportunities than the rest of the districts.

Many residents in this city had migrated from other districts in the country for better education and employment opportunities. More than three quarters (77%) of the men in the pilot study reported being employed, while less than a fifth (18%) were unemployed at the time of the pilot survey and only about five per cent reported being self-employed.

From of the 77 per cent who were reportedly employed, more than three fifths (66%) of the men reported full-time employment, about 10 per cent were employed on a part-time basis, and around 14 per cent were on fixed term contracts, with close to 11 per cent as casual employees. When asked about their form of earnings, most men (73%) reported being on a fixed monthly salary and less than ten per cent (6%) were paid on a commission basis during the survey. Looking at the participants' wealth index, which was accumulated from the men's assets using the Principal Component Analysis, two fifths (40%) of the men were poor, more than a fifth (20%) fell in the middle wealth quintile, while less than two fifths (40%) were rich men (Table 5.2).

5.3. The validity and reliability of masculinity measures

Gender is one of the important lifestyle determinants. It influences the manner in which people live and confront health issues. The aim of this section was to establish and test the validity and reliability of the masculinity scales in Maseru, based on the qualitative findings of the study.

Reference was made to different studies on masculinity scales from different research settings, e.g. the Brannon Masculinity Scale (Pleck et al., 1993) to construct a masculinity test chart in Table

5.3. The data collected during the survey was Likert scale in nature with two extremes, strongly agree, agree, disagree and strongly disagree. Each of the items on the Likert scale was given a numeric value, i.e. strongly agree = 5, agree = 4, moderate = 3, disagree = 2 and strongly disagree = 1. The numeric values for each item made those who strongly agreed with the item have a stronger masculinity identity. The item 'emotional' on the scale was reversed because a high score on the item before it was reversed would not equate to greater identification with masculinity identity.

Table 5.3: Masculinity test scale

Can stand physical pain	A-----B-----C-----D-----E	Cannot stand physical pain
Does not cry easily	A-----B-----C-----D-----E	Cries easily
Does not give up easily	A-----B-----C-----D-----E	Gives up very easily
Does not know how to cook	A-----B-----C-----D-----E	Knows how to cook
Emotional	A-----B-----C-----D-----E	Not at all emotional
Enjoys taking risks	A-----B-----C-----D-----E	Shies away from risks
Feelings not easily hurt	A-----B-----C-----D-----E	Feelings easily hurt
Hates grocery shopping	A-----B-----C-----D-----E	Likes grocery shopping
Invulnerable	A-----B-----C-----D-----E	Vulnerable
Resilient (strong)	A-----B-----C-----D-----E	Not at all resilient
Very aggressive	A-----B-----C-----D-----E	Not at all aggressive
Very competitive	A-----B-----C-----D-----E	Not at all competitive
Very rough	A-----B-----C-----D-----E	Very gentle
Masks emotions	A-----B-----C-----D-----E	Does not mask emotions
Have to be a bread winner	A-----B-----C-----D-----E	Does not mind who the bread winner is
Want to be admired	A-----B-----C-----D-----E	Does not really mind
Likes to be respected	A-----B-----C-----D-----E	Does not really mind
Adventurous	A-----B-----C-----D-----E	Less adventurous

Violent	A-----B-----C-----D-----E	Less violent
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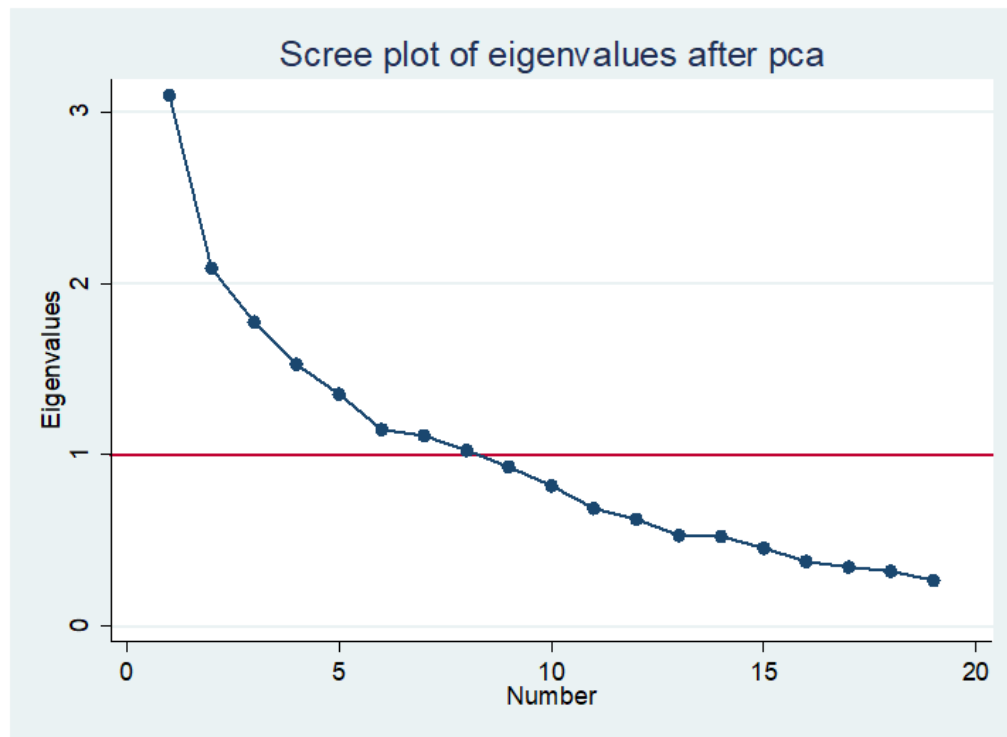
Source: Researcher's compilation from different studies on masculinity traits, e.g. Pleck et al. (1993)

The 19 items in the masculinity test chart (Table 5.3) were subjected to Principal Component Analysis (PCA) using STATA 13. The PCA is a data reduction technique whose approach to data reduction is to create one or more index variables from a large set of variables. The PCA was employed to create a total score which weighted the items from the Likert scale in Table 5.3. PCA allowed items which were the most important to contribute more to the total score created. As part of the PCA process, survey data was analysed to assess its suitability for the PCA process.

Reviewing of the correlation matrix showed a sufficient number of coefficients of 0.3 and above. The Kaiser-Meyer-Olkin value was 0.5946, which matched the recommended value of 0.6 (Kaiser, 1970, 1974; Bartlett, 1954).

In order to explain the variance between variables, the researcher generated eigenvalues. According to the Kaiser Rule for eigenvalues, components with values greater or equal to one are considered for further analysis in the PCA. Eight components with eigenvalues exceeding one, comprising 16 per cent, 27 per cent, 37 per cent, 45 per cent, 52 per cent, 58 per cent, 64 per cent and 69 per cent of the variance respectively were revealed by the PCA process (Table 5.4). The other technique applied here was the scree test (Figure 5.1). The scree test essentially plots all the components' eigenvalues, drawing a dividing line between eigenvalues that are equal to one and those less than one. An assessment of the scree plot (Figure 5.1) indicated a clear break after the sixth component. However, all eight of the components with eigenvalues greater than one were considered for further analysis.

Figure 5.1: The Scree plot of eigenvalues after PCA



Source: Researcher’s calculations from the primary pilot survey

Table 5.4: Principal component/correlation - Eigenvalues

Components	Eigenvalues	Difference	Proportion	Cumulative
Component 1	3.09613	1.00889	0.1630	0.1630
Component 2	2.08724	0.31186	0.1099	0.2728
Component 3	1.77538	0.247548	0.0934	0.3663
Component 4	1.52783	0.175179	0.0804	0.4467
Component 5	1.35265	0.207095	0.0712	0.5179
Component 6	1.14556	0.0356442	0.0603	0.5781
Component 7	1.10991	0.0839755	0.0584	0.6366
Component 8	1.02594	0.0972018	0.0540	0.6906
Component 9	0.928737	0.110355	0.0489	0.7394

Component 10	0.818382	0.131258	0.0431	0.7825
Component 11	0.687124	0.0620129	0.0362	0.8187
Component 12	0.625111	0.0930404	0.0329	0.8516
Component 13	0.532071	0.00807161	0.0280	0.8796
Component 14	0.523999	0.0675474	0.0276	0.9072
Component 15	0.456452	0.0802738	0.0240	0.9312
Component 16	0.376178	0.321115	0.0198	0.9510
Component 17	0.344066	0.0251162	0.0181	0.9691
Component 18	0.31895	0.506665	0.0168	0.9859
Component 19	0.268284	.	0.0141	1.0000

Source: Researcher's calculations from the primary pilot survey

For this survey, the researcher used oblique rotation because it produces results that are more accurate given that the research involves human behaviours (Pallant, 2011). There are two rotations used to maximise high item loadings and minimise low item loadings, thereby producing a more interpretable and simplified solution at the end of the PCA process. These two common rotation techniques are the orthogonal rotation that produces uncorrelated factors and oblique rotation that produces correlated factors. The oblique rotation solution showed the presence of simple structure with components showing a number of strong loadings and all variables loading on different components.

Table 5.5: Pattern and structure matrix for PCA with Oblimin Rotation

Variable	Comp1	Comp2	Comp3	Comp4	Comp5	Comp6	Comp7	Comp8	Unexplained
Can stand physical pain	0.0565	0.0710	0.1910	-0.0244	0.3426	0.5146	-0.1884	-0.1940	0.2912

Doesn't cry easily	0.1128	0.2351	-0.1880	0.0215	0.0237	0.0189	-0.3224	0.0086	0.4743
Doesn't give up easily	-0.0986	0.6613	0.2169	0.0383	-0.0566	-0.0354	0.1190	-0.1019	0.3194
Can't cook	0.0033	-0.0827	0.0641	0.0205	-0.0107	0.6927	0.0093	0.0649	0.2735
Unemotional	-0.0692	0.4914	-0.1156	-0.2076	0.0598	-0.1422	0.0973	-0.0230	0.4068
Enjoys taking risks	0.0193	0.0174	-0.1207	-0.0426	0.6798	0.0932	0.2006	0.0653	0.2907
Feeling not hurt easily	0.1262	0.3607	-0.0009	0.1690	-0.0241	0.0548	-0.0915	0.1389	0.5004
Hates grocery shopping	-0.0595	-0.0634	0.0670	-0.0080	-0.0099	-0.0037	-0.0082	0.8670	0.1444
Invulnerable	0.0297	-0.1288	-0.0200	-0.0642	0.0537	0.0468	-0.5812	0.2757	0.3653
Resilient	0.0699	0.2645	0.1113	0.0414	0.0601	-0.3866	-0.1580	0.01474	0.338
Aggressive	0.4324	-0.0726	0.3697	-0.0419	-0.0994	-0.1367	0.0199	-0.1340	0.2763
Competitive	-0.1711	0.0753	0.5059	-0.0181	0.3209	0.0109	0.0814	0.0780	0.2624
Very rough	0.5853	-0.1653	0.1098	-0.0254	0.0292	-0.0825	0.0467	0.0897	0.2391
Conceals emotions	0.2045	0.0689	0.0475	0.0473	0.2413	0.0169	0.6706	0.1822	0.3119
Have to be bread winner	0.0167	0.1374	0.6522	-0.0194	-0.2143	0.1437	0.0239	0.0636	0.344
	-0.0762	0.0126	0.0589	0.6702	-0.0966	0.0580	-0.0114	-0.0271	0.2165

Want to be admired									
Likes to be respected	0.0196	-0.0232	-0.1094	0.6830	0.0783	-0.0563	0.1248	0.0098	0.1835
Adventurous	-0.0443	-0.1953	-0.0292	0.0921	0.4673	-0.1935	-0.1076	-0.1632	0.3677
Violent	0.6126	0.0456	-0.2090	-0.0142	-0.0023	0.1361	0.1295	-0.1246	0.2741

Source: Researcher's calculations from the primary pilot survey. Note: Major loadings (≥ 0.3) for each variable are bolded

After creating a total score, three masculinity groups were generated using PCA. The masculinity groups created comprised of the low masculinity score, the moderate masculinity score and the high masculinity score. Different outcome variables were tested using these masculinity scores in order to see whether there was a significant association with high masculinity identity. The results revealed significant relationships for two of the social risk factors for NCDs. The results on harmful use of alcohol and unhealthy diet in particular were interesting, because they addressed two of the crucial gaps observed in the DHS data analysed in chapter six of the current study.

Cross-tabulations using items from the masculinity test chart (Table 5.3) and the three masculinity scores (low, moderate and high masculinity identity) revealed a significant relationship except for 'violent', 'conceals emotions', 'hates grocery shopping' and 'unemotional'. It was unexpected that masking or concealing of emotions showed insignificant association with masculinity scores, given that literature accessed has indicated that men in general conceal their emotions as a sign of being 'strong' (Evans et al., 2011). However, this item (masking of emotions) was covered in some of the masculinity characteristics, e.g. 'does not cry easily'. All the other fifteen items from the masculinity test chart revealed a significant cross-tabulation output. The results from the current

study coincided with what literature from different settings has reported, and adult men in Maseru, Lesotho appeared to subscribe to similar masculinity traits as other men from different backgrounds/countries.

Masculinity traits comprised of endurance for physical pain, not crying easily (hiding emotions), not giving up easily, being adventurous, enjoying respect and admiration (Addis & Mahalik, 2003; Evans et al., 2011; Griffith et al., 2012; Roos et al., 2001; Sloan et al., 2015; Sorrell & Raffaelli, 2005; Williams, 2003). Masculine individuals had to be the breadwinners in their households, they were competitive, resilient and enjoyed taking risks (Addis & Mahalik, 2003; Evans et al., 2011; Griffith et al., 2012; Roos et al., 2001; Sloan et al., 2015; Sorrell & Raffaelli, 2005; Williams, 2003). It was important to note that there was little variation in terms of masculinity scores. This limitation could be linked to the biasness in the sample, as stated in the beginning of the chapter. Many men in the pilot study appeared to have attained a high level of education, and individuals with high levels of education often did not identify with traditional masculine identity.

5.4. The prevalence of lifestyle risk factors for NCDs

5.4.1. Smoking

Table 5.11 depicts the prevalence of modifiable risk factors among adult men in Maseru, Lesotho. The prevalence of smoking appeared to be generally low (19%) in Maseru. Of the 19 per cent current smokers, more than three quarters (78%) of them reported having ten or less smokes a day. The researcher expected peer pressure to be the main reason for smoking among men, however, more than a quarter (27%) of the men who reported current smoking during the survey said they smoked in order to feel relaxed. Cigarettes seemed to be the most popular kind of tobacco smoked

among these adult men in Maseru, as more than three quarters (88%) of the men who reported current smoking smoked cigarettes. When asked if they smoked even when they were ill, only about a fifth (20%) indicated that they still smoked when they felt ill.

Although the prevalence of smoking generally appeared low among adult men in Maseru, smoking seemed to increase significantly with age and then declined after age forty-five. The researcher had not expected that the decline would go down to zero though, and this finding confirmed the sample limitations spoken about earlier.

The findings from this pilot survey revealed a significantly higher prevalence of smoking (50%) among men who had been in unions prior to the study. Adult men who had never been in unions recorded the lowest prevalence (10%) of smoking. Regarding the level of education, the highest prevalence of smoking (56%) was observed among men with the lowest level of education (primary school education), while the lowest prevalence (13%) was seen among men with the highest level of education (tertiary education). Smoking seemed more prevalent (25%) among adult men who reported membership of traditional Christian churches in Maseru compared to other religious groups.

Table 5.6: Factors associated with smoking – Demographic factors

	n	Smokers %	p-value
Age			0.038
18 - 30	98	14	
31 - 45	106	26	
46 - 59	10	0	
60 plus	12	8	
Marital status			0.002

Currently in union	124	24	
Formerly in union	8	50	
Never in union	94	10	
Religion			0.024
Traditional Christians	133	25	
Other Christian	88	11	
Other religions	5	0	

Source: Researcher's calculations from the primary pilot survey

Table 5.7: Factors associated with smoking – Socio-economic factors

	n	Smokers %	p -value
Education			<0.001
Primary school	9	56	
Sec/High School	54	31	
Tertiary/Post-Graduate	163	13	
Employment status			0.142
Employed	174	22	
Self-employed	12	8	
Unemployed	40	10	
Wealth index			0.021
Poorest	35	9	
Poorer	32	16	
Middle	36	19	
Richer	32	38	
Richest	32	34	

Source: Researcher's calculations from the primary pilot survey

5.4.2. Harmful use of alcohol

Harmful use of alcohol was defined in this study as drunkenness. This was where men consumed more than two units (alcoholic drinks) per day (Bobo & Husten, 2000). Male binge drinking was defined here as drinking \geq five alcoholic drinks in a row. Participants in the survey were asked if they had ever gotten drunk from alcohol containing beverages, and the number of men surveyed who had done so were used to measure the prevalence of alcohol consumption. A good number of men in the study had drunk an alcoholic drink before, but not every one of them had gotten drunk from these drinks. The prevalence of harmful use of alcohol was measured at about 61 per cent during the survey among adult men. The expectation was that men with a high masculinity score would be more likely to drink five or more alcoholic drinks in a row, compared to those men with lower masculinity scores, but the findings showed the opposite. Adult men with a low masculinity identity (39%) reported significantly more experiences of ever having been drunk, compared to those adult men with medium (35%) and high (27%) masculinity identities.

With regards to the frequency of alcohol consumption; men with high masculinity scores were expected to consume alcohol more frequently than their counterparts with middle and lower masculinity identities. Contrary to what was expected, less than half (33%) of the men with low masculinity identity reported daily consumption of alcoholic drinks; close to two fifths (28%) of the men with the middle masculinity identity reported daily consumption of alcohol; while almost a quarter (26%) of the men with high masculinity identities reported consuming alcoholic drinks almost daily. Just over two fifths (41%) of the men with low masculinity scores indicated that they consumed alcohol a few days in a week compared to nearly 36 per cent and 37 per cent of the men with middle and the high masculinity scores respectively. The majority (37%) of the men with high masculinity identities indicated periodical consumption of alcoholic drinks a few days per month.

Roughly 36 per cent of the men with the middle masculinity score consumed alcoholic beverages a few days each month and about 26 per cent of the men with a low masculinity score also consumed alcohol a few days each month.

Table 5.8: Frequency of drinking by masculinity scores

Frequency of drinking	Low masculinity	Medium masculinity	High masculinity
Almost daily	24 (33%)	19 (28%)	52 (26%)
Few days a week	30 (41%)	24 (36%)	74 (37%)
Few days a month	19 (26%)	24 (36%)	73 (37%)
Total %	100	100	100

Source: Researcher's calculations from the primary pilot survey. $p = 0.039$

From all the age groups in the survey, i.e. 18 – 60 years plus, alcohol consumption seemed a norm and the most cited reason for drinking was pleasure (76%). Beer consumption was the most prevalent (74%) among the listed alcoholic beverages, especially the locally brewed beer, i.e. 'Maluti'. Harmful use of alcohol appeared more prevalent (48%) among younger adult men aged 18-30 years and the lowest among older adult men. Regarding the level of education, men who had the highest level of education showed the highest prevalence (74%) of harmful use of alcohol, compared to men who reported lower levels of education with less than ten per cent (6%) reporting harmful use of alcohol.

Table 5.9: Demographic factors associated with harmful use of alcohol

	n	Excessive drinking %	p-value
Age			0.045
18 - 30	99	68	
31 - 45	106	52	
46 - 59	10	80	
60 plus	12	75	
Marital status			0.151
Currently in union	124	56	
Formerly in union	8	75	
Never in union	95	67	
Religion			0.149
Traditional Christians	134	63	
Other Christian	88	57	
Other religions	5	80	

Source: Researcher's calculations from the primary pilot survey

Table 5.10: Socio-economic factors associated with harmful use of alcohol

	n	Excessive drinking %	p-value
Education			0.037
Primary school	10	90	
Sec/High school	54	50	
Tertiary/Post-graduate	163	63	
Employment status			
Employed	175	62	
Self-employed	12	67	
Unemployed	40	58	
Wealth index			<0.001
Poorest	35	34	

Poorer	32	66	
Middle	36	81	
Richer	32	75	
Richest	32	63	

Source: Researcher's calculations from the primary pilot survey

5.4.3. Poor diet

Dietary patterns played a crucial role in pursuing a healthy lifestyle. Three questions on the survey questionnaire became key to determining the prevalence of poor diet among the adult men in Maseru. *'Do you eat healthy when eating out?'*; *'Would you say you have been eating healthy in the past six months?'* and *'What does eating healthy mean to you?'* More men with moderate masculinity identities (35%) than others with low (34%) and high (31%) masculinity identities reported eating healthy as an important practice ($p = 0.020$).

About 45 per cent of the men with low masculinity identities said they had definitely been eating healthy in the previous six months, compared to 32 per cent of the men from the middle of the masculinity identity scale and more than a fifth (23%) of the men with high masculinity identities. When asked if they ate healthy when they ate out, more than two fifths (44%) of the men with low masculinity identities reported that they always ate healthy meals when eating out. Those respondents with moderate masculinity scores (about 34% of the men) indicated that they always ate healthy when eating out, while only about 22 per cent of the men with high masculinity scores reported always eating healthy when eating out. Approximately 36 per cent of the men, again with low masculinity identities, indicated that they sometimes ate healthy when they ate out. Half (50%) of the men with high masculinity identities said that they never ate healthy when they ate out,

compared to close to two fifths (39%) of the men with middle masculinity scores who never ate healthy when eating out and about 11 per cent of the men with low masculinity scores.

The researcher asked the participants various questions to determine men's attitudes towards food preparation and dietary patterns in general. More than two quarters (60%) of the men, especially those who reported being married or cohabiting, reported that their spouses/partners prepared their meals. This was not necessarily just because the men did not know how to cook, as about two fifths (40%) of the men reported that they also prepared meals at home although more than half (54%) of the men in the study reported that they hated grocery shopping.

5.4.5. Physical inactivity

5.4.5.1. Mode of transport

During the study, the researcher used the mode of transport that the adult men used in and around Maseru, as well as the activities that they participated in around their homes, to measure the prevalence of physical inactivity. Regarding the mode of transport used; the researcher asked adult men to indicate the mode of transport they used for distances less than 1km, 1.5km and for those more than 5km. For short distances of less than one kilometre and one and a half kilometres, many of the men (96% and 63% respectively) walked from one point to the other, while most men used public transport (93%) for a distance exceeding five kilometres. Very few men had their own private cars that they used for almost all the distances mentioned.

5.4.5.2. Activities in and around home

Manual work is a form of physical activity (Thorne, 2005) and participation in manual work exercises the body's muscles and bones. Table 5.11 shows a wide range of physical activities in the form of manual work, that adult men from the survey participated in. These activities were re-categorised into four categories. The first classification comprised of men who were involved in cooking, laundry and cleaning. Almost two-thirds (63%) of the men reported cooking as one of the manual household chores they participated in for less than three hours a week. Less than 20 per cent (16%) of the men reported cooking for three or more hours in a week, while about 22 per cent of the men reported not participating in cooking. Regarding doing laundry; similar to cooking, a lot of men (56%) spent less than three hours a week doing laundry. The second highest group (34%) with reference to doing laundry comprised of the men who reported that laundry was done by their wives/partners and mothers/sisters in their households. More than half (52%) of the men participated in cleaning for less than three hours a week.

The second category was physical activities such as gardening, gym and sports. From this group, almost half (47%) of the men were involved in gardening for one to three hours per week, about 30 per cent did not do gardening, while nearly 23 per cent did gardening for three or more hours weekly. With regards to sports activities, two fifths (40%) of the men reported not participating in sports, almost two fifths of the men reported their participation in sports for one to three hours per week and almost a quarter of the men participated in sports for three and more hours per week. Two fifths (40%) of the men did not go to gym, two fifths of the men did gym for one to three hours weekly and about a fifth (20%) reported doing gym for three and more hours in a week.

The third group consisted of 'other home' activities that comprised of playing with kids and shopping. More than two fifths (41%) did not take part in playing with kids and of those who

reported that they did take part in playing with kids; almost 29 per cent only did so for less than three hours, while 31 per cent reported spending more than three hours on this activity weekly. Less than 20 per cent (15%) did not take part in grocery shopping and of those who reported that they did shop for groceries, more than two-thirds (68%) only did so for less than three hours weekly, while only 16 per cent reported spending more than three hours on this activity. The last category was of adult men who reported watching television and videos. Less than ten per cent (6%) did not watch television and of those who reported that they watched television and videos; only 34 per cent did so for less than three hours, while more than half (59%) reported spending more than three hours on this activity weekly.

Table 5.11: The prevalence of modifiable risk factors for NCDs among adult men in Maseru

Risk factor	Prevalence (%)
Smoking	
Current smoking	19.2
Number of smokes a day:	
Ten or less	77.9
More than ten	22.1
Harmful use of alcohol	
Ever gotten drunk	61.2
Frequency of drinking:	
Almost daily	26.1
Few days a week	37.2
Few days a month	36.7
Poor diet:	

Been eating healthy in the past six months?	
Definitely	24.3
Moderate	68.3
Less healthier	7.1
Do you eat healthy when eating out?	
Always	20.3
Sometimes	63.9
Never	15.9
Physical inactivity (by physical activities):	
Popular mode of transport for less than 1km:	
Car	3.5
Walk	96.5
Popular mode of transport for 1.5km:	
Walk	62.6
Car	37.4
Popular mode of transport for more than 5km:	
Car	3.5
Public transport	92.5
Walk	4.0
Cooking:	
Does not cook	21.6
1-3 hours	62.6
3 hours and more	15.9
Laundry:	
Does not do laundry	33.9
1-3 hours	56.4
3 hours and more	9.7

Shopping:	
Does not do shopping	15.4
1-3 hours	68.3
3 hours and more	16.3
Cleaning:	
Does not do cleaning	24.7
1-3 hours	52.4
3 hours and more	22.9
Gardening:	
Does not do gardening	30.4
1-3 hours	46.7
3 hours and more	22.9
Sports:	
Does not do sports	39.7
1-3 hours	36.6
3 hours and more	23.8
Gym:	
Does not do gym	39.7
1-3 hours	40.1
3 hours and more	20.3
Playing with kids:	
Does not play with kids	40.5
1-3 hours	28.6
3 hours and more	30.8
Watching television:	
Does not watch television	6.2
1-3 hours	34.4

3 hours and more	59.5
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Source: Researcher's calculations from the primary pilot survey

5.5. The health preventative checks among adult men in Maseru, Lesotho

5.5.1. Health screening

Disease screening is one of the practices intended to improve people's future quality of life.

Family health history plays an important role in predicting an individual's risk of developing certain illnesses, including NCDs. Participants in the pilot survey were asked if they had a family history of heart diseases, diabetes, strokes, alcohol related illnesses, cancer and HIV/AIDS. Less than a quarter (22%) of the men reported family a history related to heart diseases; while more than a quarter (26%) indicated that their family history had reports of diabetes. Less than fifteen per cent (12%) of the men reported a family history of strokes and less than ten per cent (9%) had a family history of alcohol related illness. Only about 13 per cent of the participants revealed that their family history included cancer cases and close to two-fifths (37%) reported an HIV/AIDS history in their families.

5.5.2. Medical check-ups

Regular medical check-ups are a healthy practice, even if individuals feel healthy (Takemura, Hida, Sasaki, Sugawara & Sen, 2005). Through thorough physical health examination, illnesses are detected early and severe organ damage is prevented (Roesler, 2005). One of the critical conditions that needs regular monitoring and frequent medical check-ups is blood pressure. Close to three quarters (70%) of the men reported having had their blood pressure checked in the 12 months prior

to the pilot study. Participants who were 45 years of age and older were asked if they had undertaken a cholesterol test in the past 12 months, and almost none of them (97%) had.

5.5.3. Patient counselling

Patient counselling could be used to prevent diseases and other health issues. It could involve health education and advice, as well as encouraging patients to undertake health screening and the proper use of prescribed medication for disease treatment (M'Imunya, Kredo & Volmink, 2012).

On the question as to whether men regularly bought and used over the counter medication, less than two-fifths (37%) of the men reported that they usually did so. The men were further asked if they wore sunscreen when outside and less than 20 per cent (14%) of them indicated that they wore sunscreen. The majority of the men (86%) did not wear sunscreen when they were out in the sun.

The prevalence of prostate cancer was on the rise globally, and health education to promote knowledge and prevention of the disease was deemed critical (Grönberg, 2003). The researcher asked participants in the survey if they had discussed prostate cancer with their medical doctors. The number of men from the survey who had discussed a prostate cancer test with their doctors was generally low. Less than a quarter (19%) of the men had had a discussion with their doctors about prostate cancer testing prior to the pilot study, while more than three quarters (82%) had not had this discussion at all.

5.6. Summary

The chapter assumed to test the validity and reliability of the masculinity characteristics that prevailed among the adult men in Maseru, Lesotho using data collected during the first phase of the

study. The chapter has provided a background understanding of the masculinity scales and the prevalence of NCDs risks. The survey findings revealed many similarities between the men in Maseru, Lesotho and other men from other research settings in terms of masculinity characteristics. Similar to men from other countries/settings, men in Maseru, Lesotho felt that they had to be breadwinners in their households. They perceived themselves as resilient, adventurous, competitive, not giving up easily, not crying easily and having the ability to withstand physical pain. Respect was an important part of the hegemonic masculine identity. Men desired respect and admiration. Based on the masculinity scores created through the PCA, middle and low masculinity identities, not the high masculinity identities, predicted most behaviour among the adult men in Maseru.

Out of the four major modifiable risk factors for NCDs (smoking, harmful use of alcohol, poor diet and physical inactivity), smoking seemed to have the lowest prevalence (19%) among the adult men in Maseru, Lesotho; with cigarettes as the most common tobacco consumed. The most prevalent risk factor for NCDs in Maseru was the harmful use of alcohol (61%), with beer as the most common alcoholic beverage consumed. The results have shown a lot of alcohol consumption among the younger age groups, followed by the middle-aged men and the least among the harmful alcohol consumers were the older men.

Men generally identified food preparation as a woman's task therefore did not participate much in grocery shopping and food preparation. For those who ate out, about a half (50%) of them, also with high masculinity scores, never ate healthy when eating out and thereby exposed themselves to the health risks associated with unhealthy diets. Physical activity was also not prevalent among adult men in Maseru across all age groups. Many of these men did not participate in sports or train at a gym. Men who did engage in any form of physical activity reported a lack of consistency in

doing so. Furthermore, the majority of the men did not perceive the manual work done at home such as gardening, cleaning and cooking as physical activities. In relation to transport from one place to another, many men indicated that they walked for distances less than five kilometres and generally used public transport for distances exceeding five kilometres.

CHAPTER SIX

THE PREVALENCE OF RISK FACTORS FOR NCDs AMONG MEN IN LESOTHO

6.1. Introduction

This chapter provides results on the prevalence of the risk factors for NCDs among adult men in Lesotho. This secondary analysis of the Lesotho Demographic Health Survey (LDHS) provides a larger picture relating to the prevalence of modifiable NCDs risk factors in Lesotho. The 2014 LDHS data has been analysed, specifically using data collected using the men's questionnaire. The chapter further presents the results on the relationship between the NCD risk factors and the demographic and socio-economic factors among men in Lesotho. Logistic regression is used to determine the relationship between the NCD risk factors and the demographic factors.

Demographic variables include age, marital status, religion, region (district) and the place of residence (urban/rural). Socio-economic variables such as the level of education, occupation, and the household wealth index are included. The three dependent variables are any form of smoking, BP diagnoses and BP readings to determine hypertension, and the men's BMI readings.

6.2. Demographic characteristics of the sample

A total of 2, 658 men from different parts of the country participated in the 2014 LDHS. Table 5.1 shows the age distribution of the men who participated in the survey. Almost one quarter (24.4%) of the men were 15 – 19 years old, 18.8 per cent were 20 – 24 years old, 12.9 per cent of the men were aged 25 – 29 years and 11.7 per cent were aged 30 – 34 years. The other age groups, i.e. age

35 through to age 59 were represented by less than ten per cent of the men in their respective categories.

In order to ease the analysis process, the variable marital status was re-categorised into three groups: *never in union* referring to participants who had never been married nor cohabited with a woman; *currently in union* for participants who reported being married or cohabiting with a woman; and *formerly in union* for those participants who were divorced, separated, widowed, as well as the men who no longer cohabited with a woman. More than half (51.6%) of the survey participants had never been in a union at the time of the survey. The second highest in number (40.4%) were the men who were in a union or cohabiting with a woman. The smallest group (8.0%) was of the men who were formerly in a union or who had formerly cohabited with a woman.

Religion played a critical role in shaping people's lifestyles. Out of eleven categories coded for religion in the 2014 LDHS questionnaire, the variable (religion) was re-categorised into four groups for this analysis: *none* for men who reported no religious affiliation during the survey, *traditional Christians* for men who reported membership of one of the three main traditional Christian churches in Lesotho (the Roman Catholic Church, the Lesotho Evangelical Church and the Anglican Church), *other Christians* for men who reported that they were Christians but not from the main traditional Christian churches in the country and *other* for men who reported that they belonged to religions other than Christianity. Such religions included Islam and Hinduism. A lot of men (47.5%) came from the main traditional Christian churches in Lesotho and the smallest number (1.2%) came from 'other' religions.

A large percentage of the population in Lesotho seemed to reside in rural areas. An approximated 69.2 per cent of the men who participated in the 2014 LDHS lived in rural areas, while only about

30.9 per cent of the participants were from the urban areas (Table 5.1) (MOHSW, 2014). Table 6.1 shows that the majority (15.7%) of the men who participated in the 2014 LDHS came from the Maseru district. It was the most developed in comparison to other the districts and generally hosts more of the country's population, as seen in chapter one. The least represented district with regards to the number of male participants from the 2014 LDHS was Quthing (7.1%).

The level of education consisted of four categories namely; participants who did not have primary school education (11.0%), those who had primary school education (47.1%), men who had secondary school education (35.0%) and those who had high school and tertiary education (6.9%). The variable occupation was made up of both the men who were working and those who were not working during the survey. Over a quarter (33.6%) of the men who participated in the 2014 LDHS reported that they were not working. The second highest group comprised of the men whose occupation was in the agricultural sector (24.9%), and the smallest group comprised of the men who stated that they did not know what their occupations were (classified as), at 3.4 per cent.

The variable wealth was derived from the kind of consumer goods owned by the survey participants. Such goods included a television set, a bicycle, a car, a mobile phone, a telephone, etc. The other important information in determining wealth was the housing characteristics of the participants lived; their source of drinking water, their toilet facilities and the flooring materials. The scores accumulated from these components were then used to calculate the men's wealth index (LDHS, 2014). According to the 2014 LDHS, the wealthiest (first two wealth quintiles) households were found in the urban areas of the country (MOHSW, 2014). About 37.4 per cent (Table 6.1) of the country's poor population fell into the lowest two wealth quintiles and were mostly found in rural areas (MOHSW, 2014).

Table 6.1: Demographic characteristics of the sample

(N = 2658)	n	%
Age group		
15 – 19	649	24.4
20 – 24	499	18.8
25 – 29	343	12.9
30 – 34	310	11.7
35 – 39	243	9.1
40 – 44	200	7.5
45 – 49	141	5.3
50 – 54	147	5.5
55 – 59	126	4.7
Marital status		
Never in union	1371	51.6
Currently in union/living with a woman	1074	40.4
Formerly in union/living with a woman	213	8.0
Religion		
None	196	7.4
Traditional Christians	1262	47.5
Other Christians	1163	43.8
Other religions	37	1.4
Place of residence		
Urban	820	30.9
Rural	1838	69.2
District		
Butha-Buthe	227	8.5
Leribe	288	10.8
Berea	332	12.5

Maseru	416	15.7
Mafeteng	264	9.9
Mohale's Hoek	244	9.2
Quthing	188	7.1
Qacha's Nek	218	8.2
Mokhotlong	258	9.7
Thaba-Tseka	223	8.4

Source: Researcher's calculations from the 2014 LDHS data

Table 6.2: Socio-economic characteristics of the sample

Level of education	n	%
No education	292	11.0
Primary School	1251	47.1
Secondary School	931	35.0
Higher	184	6.9
Occupation		
Not working	892	33.6
Professional, clerical	151	5.7
Sales	123	4.6
Agriculture	661	24.9
Unskilled	201	7.6
Services	173	6.5
Skilled	359	13.5
Do not know	98	3.7
Household wealth index		
Poorest	468	17.6
Poorer	535	20.1
Middle	554	20.8
Richer	533	20.1

Richest	568	21.4
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Source: Researcher's calculations from the 2014 LDHS data

6.3. The prevalence of smoking among adult men in Lesotho

To assess the prevalence of smoking among adult men in Lesotho, the 2014 LDHS participants were asked four questions: *Do you currently smoke cigarettes, either manufactured or hand rolled? In the last 24 hours, how many cigarettes did you smoke? Do you currently smoke or use any (other) type of tobacco? What (other) type of tobacco do you currently smoke or use?* The first question was meant to establish whether the participants smoked or not. This question helped in collecting data used to measure the prevalence of cigarette smoking among men, while the second question was used to establish the number of cigarettes smoked by each participant in a day. The third question was meant to find out if the participants used or smoked other types of tobacco, and as a follow-up question to the third, the fourth question requested participants to name the other types of tobacco they smoked or used. The main tobacco indicator that was associated with an increased risk of developing chronic diseases was *current use of tobacco* (current smoking). During the process of data analysis, a new variable (any smoking) that put together all the types of tobacco smoked or used by different men was created, particularly to address the third question. A little more than two fifths (40.7%) of the men in Lesotho reported that they were smoking cigarettes during the 2014 LDHS (MOHSW, 2014).

6.4. The prevalence of smoking by demographic factors

The prevalence of smoking seemed to be increasing generally in Lesotho, both in men and in women. It is important to note that there is a huge gap in the prevalence of smoking found between the analysis of the 2014 LDHS data and the primary pilot survey data collected during the current

study. The reason for this huge gap may be related to differences in sample sizes, as well as the approaches used to collect each of the two data sets. The 2014 LDHS used a bigger sample whereas the pilot survey used a smaller sample size. Looking at the Maseru district in particular; the 2014 sample size was 416 men from the whole district (urban and rural parts of the district), while the pilot survey had 227 men from in and around Maseru.

6.4.1. The prevalence of smoking by age

Table 6.2 presents the prevalence of smoking by the different demographic factors. Current smoking appeared to fluctuate through different age groups, with the highest prevalence (52.8%; CI: 46.3% – 59.2%; $p = 0.0000$) at the ages between twenty-five and twenty-nine. The confidence intervals between all the age groups except for the first two categories were overlapping. These overlaps indicated that the decrease in smoking seen as the men got older was not statistically significant.

6.4.2. The prevalence of smoking by marital status

The prevalence of smoking was significantly higher among men who were formerly in a union. More than half, 60.7 per cent (52.7% – 68.2%; $p = 0.0000$) of the men who were previously in a union reported current smoking during the 2014 LDHS. Current smoking is seen in Table 6.2 as less prevalent among men who reported that they had not been in union (34.4%; CI: 31.5% – 37.5%; $p = 0.0000$).

6.4.3. The prevalence of smoking by religion

Table 6.2 shows statistically insignificant results. Nonetheless, current smoking appeared to be more prevalent among men who reported no religious affiliation during the survey (50.4%; CI: 42.2% - 58.2%; $p = 0.0797$). The second highest prevalence of current smoking was among the men who belonged to traditional Christian churches during the survey (42.2%; CI: 39.0% - 45.4%; $p = 0.0797$). The men who came from *other* religions comprised 40.5 per cent (CI: 23.0% - 60.7%; $P = 0.0797$). The lowest prevalence of current smoking was seen among men who belonged to the other non-traditional Christian category (38%; CI: 35.1% - 41.8%; $P = 0.0797$).

6.4.4. The prevalence of smoking by place of residence

More than two fifths (42.8%; 40.2% – 45.3%; $p = 0.0441$) of the men who reported current smoking during the 2014 LHDS came from the rural areas in Lesotho, compared to about 37.6 per cent (33.4% – 41.9%) of the men who came from the urban areas in the country. Table 6.2 also presents an insignificant prevalence of current smoking by districts ($p = 0.9189$).

6.4.5. The prevalence of smoking by the level of education

In Table 6.2, the highest prevalence of smoking was observed among adult men who reported no formal education during the survey (63.5%; CI: 57.1% – 69.4%; $p = 0.0000$). The next highest prevalence of current smoking was observed among men who had primary school education (47.0%; CI: 43.8% – 50.2%; $p = 0.0000$). Men who had secondary school education comprised about 31.3 per cent (CI: 27.8% – 35.0%; $p = 0.0000$) prevalence for current smoking. The lowest

prevalence of smoking (25.1%; CI: 18.5% – 33.0%; $p = 0.0000$) was realised among men with a higher education.

6.4.6. The prevalence of smoking by occupation

A significant number of unskilled men in Table 6.2 reported the highest prevalence of smoking (55.9%; CI: 47.6% – 63.9%; $p = 0.0000$), followed by skilled men at 51.1 per cent (CI: 45.0% – 57.3%; $p = 0.0000$). Using occupation as an indicator variable, the least prevalence of current smoking was observed among men who reported that they were not working (27.6%; CI: 24.3% – 31.0%; $p = 0.0000$) during the 2014 LDHS.

6.4.7. The prevalence of smoking by wealth

From Table 6.2 it is evident that smoking was more prevalent among poor men (first two categories of the wealth index). For example, 47.5 per cent (42.7% – 52.4%; $p = 0.0000$) of the men who were found to be poorer reported a higher prevalence of current smoking compared to the richer men who reported the lowest prevalence of smoking during the 2014 LHDS.

Table 6.3: The prevalence of smoking by demographic factors

Indicator (N = 2869)	n	Yes (95% CI)	p – value
Age group			<0.001
15 - 19	649	18.2 (14.9 – 22.1)	
20 - 24	499	44.5 (39.4 – 49.7)	
25 – 29	343	52.8 (46.3 – 59.2)	

30 – 34	310	51.8 (45.3 – 58.3)	
35 – 39	243	52.5 (45.0 – 59.9)	
40 - 44	200	49.6 (41.4 – 57.8)	
45 – 49	141	47.9 (38.6 – 57.4)	
50 – 54	147	49.1 (39.9 – 58.5)	
55 - 59	126	33.2 (24.6 – 43.0)	
Marital status			<0.001
Never in union	1371	34.4 (31.5 – 37.5)	
Currently in union/living with a woman	1074	45.9 (42.5 – 49.5)	
Formerly in union/living with a woman	213	60.7 (52.7 – 68.2)	
Religion			0.0797
None	196	50.4 (42.2 – 58.5)	
Traditional Christians	1262	42.2 (39.0 – 45.4)	
Other Christians	1163	38.4 (35.1 – 41.8)	
Other	37	40.5 (23.0 – 60.7)	
Place of residence			0.0441
Urban	820	37.6 (33.4 – 41.9)	
Rural	1838	42.8 (40.2 – 45.3)	
District			0.9189
Butha-Buthe	227	46.2 (39.1 – 53.4)	
Leribe	288	40.4 (34.6 – 46.4)	
Berea	332	41.9 (36.5 – 47.6)	
Maseru	416	40.3 (35.4 – 45.5)	
Mafeteng	264	40.6 (34.6 – 46.9)	
Mohale's Hoek	244	39.4 (32.5 – 46.8)	
Quthing	188	37.7 (30.6 – 45.4)	
Qacha's Nek	218	40.7 (34.0 – 47.7)	
Mokhotlong	258	40.5 (34.5 – 47.3)	
Thaba-Tseka	223	44.7 (38.0 – 51.7)	

Source: Researcher's calculations from the 2014 LDHS data

Table 6.4: The prevalence of smoking by socio-economic variables

Education			<0.001
No education	292	63.5 (57.1 – 69.4)	
Primary school	1251	47.0 (43.8 – 50.2)	
Secondary school	931	31.3 (27.8 – 35.0)	
Higher	184	25.1 (18.5 – 33.0)	
Occupation			<0.001
Not working	892	27.6 (24.3 – 31.0)	
Professional, Clerical	151	32.6 (23.8 – 42.9)	
Sales	123	33.2 (24.2 – 43.6)	
Agriculture	661	50.2 (45.9 – 54.5)	
Unskilled	201	55.9 (47.6 – 63.9)	
Services	173	41.6 (33.1 – 50.7)	
Skilled	359	51.1 (45.0 – 57.3)	
Do not know	98	46.7 (34.8 – 59.0)	
Wealth			<0.001
Poorest	468	47.3 (42.2 – 52.4)	
Poorer	535	47.5 (42.7 – 52.4)	
Middle	554	44.2 (39.4 – 49.1)	
Richer	533	40.9 (36.0 – 46.0)	
Richest	568	29.9 (25.6 – 34.6)	

Source: Researcher’s calculations from the 2014 LDHS data

Table 6.5 contains the adjusted odds ratios of the variables included in the final model, namely age group, marital status, religion, place of residence, men’s level of education, occupation and wealth. Men from all age groups, except those aged 55 - 59 were significantly more likely to smoke than men in the first age group (15 – 19 years). Looking at the marital status, men who were previously in a union were significantly more likely to smoke than the men in the first group (those who had never been in a union). All the men who had attained more education by the time of the survey

were significantly less likely to smoke compared with the men in the first group (those without formal education). When examining the prevalence of smoking by occupation, men from all occupations except those from professional and clerical occupations, sales as well as services, were significantly more likely to smoke than those who were not working (first group).

Table 6.5: The prevalence of smoking (Multivariate Odds Ratio) in Lesotho

(N = 2658)	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	p-value
Age group			
15 - 19	1.00	1.00	
20 - 24	3.60 (2.61 – 4.95)	3.79 (2.71 – 5.30)	<0.001
25 - 29	5.02 (2.52 – 7.17)	4.84 (3.20 – 7.32)	
30 - 34	4.84 (3.39 – 6.92)	4.31 (2.78 – 6.68)	
35 - 39	4.97 (3.38 – 7.32)	4.23 (2.60 – 6.86)	
40 - 44	4.42 (2.93 – 6.66)	3.55 (2.10 – 5.99)	
45 - 49	4.13 (2.63 – 6.49)	3.41 (2.01 – 5.79)	
50 - 54	4.34 (2.78 – 6.80)	3.16 (1.86 – 5.35)	
55 - 59	2.23 (1.38 – 3.62)	1.67 (0.94 – 2.99)	0.083
Marital status			
Never in union	1.00		
Currently in union	1.62 (1.33 – 1.97)	0.82 (0.61 – 1.10)	0.188
Formerly in union	2.95 (2.07 – 4.20)	1.53 (0.99 – 2.36)	0.054
Religion			
None	1.00	1.00	
Traditional Christians	0.72 (0.50 – 1.02)	0.97 (0.66 – 1.41)	0.856
Other Christians	0.61 (0.43 – 0.88)	0.83 (0.56 – 1.21)	0.330
Other	0.67 (0.28 – 1.62)	0.82 (0.36 – 1.87)	0.644
Place of residence			

Urban	1.00	1.00	
Rural	1.24 (0.01 – 1.53)	0.85 (0.64 – 1.12)	0.246
Education			
No education	1.00		
Primary school	0.51 (0.38 – 0.69)	0.59 (0.43 – 0.82)	0.002
Secondary school	0.26 (0.19 – 0.36)	0.36 (0.25 – 0.53)	0.000
Higher education	0.19 (0.12 – 0.31)	0.23 (0.13 – 0.40)	0.000
Occupation			
Not working	1.00		
Professional, clerical	1.27 (0.80 – 2.04)	1.31 (0.80 – 2.16)	0.282
Sales	1.31 (0.82 – 2.10)	1.33 (0.70 – 1.84)	0.613
Agriculture	2.65 (2.08 – 3.37)	2.12 (1.65 – 2.74)	0.000
Unskilled	3.33 (2.29 – 4.84)	2.30 (1.54 – 3.44)	0.000
Services	1.87 (1.25 – 2.80)	1.44 (0.91 – 2.28)	0.124
Skilled	2.75 (2.04 – 3.71)	2.00 (1.42 – 2.82)	0.000
Unknown	2.30 (1.36 – 2.88)	2.03 (1.10 – 3.73)	0.023
Wealth			
Poorest	1.00	1.00	
Poorer	1.01 (0.76 – 1.34)	1.14 (0.84 – 1.55)	0.394
Middle	0.88 (0.66 – 1.17)	1.17 (0.85 – 1.62)	0.326
Richer	0.77 (0.58 – 1.03)	1.00 (0.71 – 1.42)	0.988
Richest	0.48 (0.35 – 0.64)	0.70 (0.46 – 1.05)	0.085

Source: Researcher's calculations from the 2014 LDHS data. p-values: 0.0000 (significant), 0.023 & 0.054 (approaching significance)

6.5. The prevalence of obesity among adult men in Lesotho

The 2014 LDHS collected anthropometric data on height and weight for men with regards to men's nutritional status in Lesotho. This information (height and weight measurements) was used to calculate the men's BMI readings. The formula used to calculate the BMI was weight divided by

(height multiplied by height), i.e. weight divided by height squared. A BMI ≥ 25 indicated that a person was overweight, while a BMI ≥ 30 indicated that the person was obese. The prevalence of obesity and being overweight were generally low in Lesotho. Approximately 86.8 per cent of the men had a BMI measurement in the normal range, while 13.2 per cent were overweight.

6.5.1. The prevalence of obesity by age

According to the information in Table 6.4, a significant number of men across all age groups had BMI measurements in the normal range (97.9%; CI: 95.9% - 98.9%; $p = 0.0000$). The highest prevalence of those overweight (31.8%; CI: 23.4% - 41.6%; $p = 0.0000$) was observed among older adult men aged 55 – 59. The next highest prevalence of those overweight was seen among men aged 45 – 49 years (31.0%; CI: 22.8% - 40.5%; $p = 0.0000$). The lowest prevalence of those overweight was recognised among the youngest age category (15 – 19 years), at less than five per cent (2.1%; CI: 1.1% - 4.1%; $p = 0.0000$).

6.5.2. The prevalence of obesity by marital status

Men who were currently in a union during the survey showed a higher prevalence of being overweight compared to men in the other categories of marital statuses (22.8%; CI: 20.0% – 25.9%; $p = 0.0000$). The second highest group of those overweight were men who had formerly been in a union (16.7%; CI: 11.6% - 23.5%; $p = 0.0000$), while the lowest prevalence, less than five per cent (5.3%; CI: 4.1% - 6.8%; $P = 0.0000$) was observed among adult men who reported that they had never been in a union.

6.5.3. The prevalence of obesity by religion

Table 5.4 shows a statistically insignificant relationship between obesity and religion ($p = 0.130$). However, obesity seemed more prevalent among adult men in the “other Christians” category (15.1%; CI: 12.8% - 17.8%), closely followed by men who did not belong to any religion (15.0%; CI: 10.4% - 21.3%). The lowest prevalence of obesity was seen in men from traditional Christian churches (11.3%; CI: 4.1% - 34.8%).

6.5.4. The prevalence of obesity by place of residence

The prevalence of obesity varied between male residents of the urban and rural areas. Close to 20 per cent (19.2%; CI: 16.1% - 22.6%; $p = 0.0000$) of the adult men in the survey from the urban areas in Lesotho were found to be overweight, and 80.8 per cent (CI: 77.4% - 83.9%; $p = 0.000$) of the men had normal BMI measurements. The lowest prevalence of being overweight was seen among men who lived in rural areas (10.2%; CI: 8.7% - 11.9%; $p = 0.0000$).

6.5.5. The prevalence of obesity by district

The highest prevalence of being overweight was observed in the Berea district (16.1%; CI: 12.4% - 20.5%; $p = 0.0390$). The second highest prevalence of this condition occurred in Maseru (15.3%; CI: 12.0% - 19.3%; $p = 0.0390$). The two districts (Berea and Maseru) showing high numbers of overweight men were both urban districts.

6.5.6. The prevalence of obesity by the level of education

The results shown in Table 6.4 indicate the highest prevalence of being overweight among men with a higher education (36.0%; CI: 28.3% - 44.6%; $p = 0.0000$), while the lowest prevalence was observed among men with no education (11.7%; CI: 8.1% - 16.7%; $p = 0.0000$).

6.5.7. The prevalence of obesity by occupation

The highest prevalence of being overweight in Lesotho, categorised by occupation (34.1%; CI: 25.2% - 44.3%; $p = 0.0000$), occurred among adult men in the professional and clerical occupations in the country. The lowest prevalence was observed among adult men from agriculture related occupations (6.6%; CI: 4.7% - 9.2%; $p = 0.0000$).

6.5.8. The prevalence of obesity by wealth

The highest prevalence of being overweight was shown among the rich men, while the lowest prevalence was seen among poor men. Table 6.4 shows 25.9 per cent (CI: 21.9% - 30.4%; $p = 0.0000$) of the richest quintile as the group with the highest prevalence for being overweight. The second highest prevalence of being overweight was observed among the second quintile (the richer) with a reported prevalence of 11.4 per cent (CI: 11.4% - 8.8%; $p = 0.0000$). The lowest prevalence of being overweight was seen among the poorer (5.9%; CI: 3.9% - 8.8%; $p = 0.0000$) and the poorest (7.4% CI: 4.9% - 10.9%; $p = 0.0000$) quintiles.

Table 6.6: The prevalence of obesity in Lesotho

N = 2658	Normal	Overweight	p-value
Age group			
15-19	97.9 (95.9 – 98.9)	2.1(1.1 - 4.1)	<0.001
20-24	93.7 (90.9 – 95.6)	6.3 (4.4 – 9.1)	
25-29	89.3 (84.3 – 92.8)	10.8 (7.2 – 15.7)	
30-34	84.0 (78.5 – 88.3)	16.0 (11.7 – 21.5)	
35-39	77.0 (70.5 – 82.4)	23.0 (17.6 – 29.5)	
40-44	77.7 (70.0 – 83.8)	22.3 (16.1 – 30.0)	
45-49	69.1 (59.5 – 77.2)	31.0 (22.8 – 40.5)	
50-54	75.2 (66.7 – 82.0)	24.8 (18.0 – 33.3)	
55-59	68.2 (58.4 – 76.6)	31.8 (23.4 – 41.6)	
Marital status			
Never in union	94.7 (93.2 – 95.9)	5.3 (4.1 – 6.8)	<0.001
Currently in union	77.2 (74.1 – 80.0)	22.8 (20.0 – 25.9)	
Formerly in union	83.3 (76.5 – 88.4)	16.7 (11.6 – 23.5)	
Religion			
None	85.0 (78.7 – 89.6)	15.0 (10.4 – 21.3)	0.1302
Traditional Christians	88.7 (86.5 – 90.5)	11.3 (9.5 – 13.5)	
Other Christians	84.9 (82.2 – 87.2)	15.1 (12.8 – 17.8)	
Other	87.0 (65.2 – 96.0)	13.0 (4.1 – 34.8)	
Place of residence			
Urban	80.8 (77.4 – 83.9)	19.2 (16.1 – 22.6)	<0.001
Rural	89.8 (88.2 – 91.3)	10.2 (8.7 – 11.9)	
District			
Butha-Buthe	86.1 (81.3 – 89.8)	13.9 (10.2 – 18.7)	0.0390
Leribe	87.8 (83.4 – 91.1)	12.2 (8.9 – 16.6)	
Berea	83.4 (79.5 – 87.6)	16.1 (12.4 – 20.5)	
Maseru	84.7 (80.7 – 88.0)	15.3 (12.0 – 19.3)	
Mafeteng	87.9 (83.5 – 91.2)	12.1 (8.8 – 16.5)	

Mohale's Hoek	89.7 (83.0 – 94.0)	10.3 (6.0 – 17.0)	
Quthing	85.6 (80.2 – 89.7)	14.4 (10.3 – 19.9)	
Qacha's Nek	86.3 (80.9 – 90.4)	13.7 (9.6 – 19.1)	
Mokhotlong	94.5 (90.7 – 96.8)	5.5 (3.3 – 9.3)	
Thaba-Tseka	90.7 (86.3 – 93.7)	9.3 (6.3 – 13.7)	
Level of education			
No education	88.3 (83.3 – 91.9)	11.7 (8.1 – 16.4)	<0.001
Primary school	89.3 (87.1 – 91.1)	10.7 (8.9 – 12.9)	
Secondary school	88.2 (85.5 – 90.3)	11.9 (9.7 – 14.5)	
Higher institution	64.0 (55.4 – 71.8)	36.0 (28.3 – 44.6)	
Occupation			
Not working	92.8 (90.6 – 94.4)	7.2 (5.6 – 9.4)	<0.001
Professional	65.9 (55.7 – 74.8)	34.1 (25.2 – 44.3)	
Sales	71.7 (61.7 – 79.9)	28.3 (20.1 – 38.4)	
Agriculture	93.4 (90.8 – 95.4)	6.6 (4.7 – 9.2)	
Unskilled	88.6 (83.4 – 92.3)	11.4 (7.7 – 16.6)	
Services	74.6 (66.6 – 81.1)	25.4 (18.9 – 33.4)	
Skilled	85.3 (80.1 – 89.2)	14.8 (10.8 – 19.9)	
Don't know	75.1 (64.3 – 83.5)	24.9 (16.6 – 35.7)	
Wealth			
Poorest	92.6 (89.1 – 95.1)	7.4 (4.9 – 10.9)	<0.001
Poorer	94.1 (91.2 – 96.1)	5.9 (3.9 – 8.8)	
Middle	89.3 (86.2 – 91.7)	10.7 (8.3 – 13.8)	
Richer	88.6 (85.3 – 91.2)	11.4 (8.8 – 14.7)	
Richest	74.1 (69.6 – 78.1)	25.9 (21.9 – 30.4)	

Source: Researcher's calculations from the 2014 LDHS data

6.7. The prevalence of hypertension among adult men in Lesotho

Hypertension/elevated BP is determined by BP readings where the SBP \geq 140 mm Hg and/or the diastolic blood pressure (DBP) \geq 90 mm Hg (Lipowicz & Lopuszanska, 2005). Five questions related to high blood pressure were asked during the 2014 LDHS: *Before this survey, has your blood pressure ever been checked? When was the last time you had your blood pressure checked? Who took your blood pressure? Have you ever been told by a doctor or a nurse that you have high blood pressure?* The last question assisted in exploring the prevalence of hypertension among participants based on their BP results. A person would be considered as being mildly hypertensive if their systolic value (SBP) was \geq 140 mmHg and/or the diastolic value (DBP) was \geq 90 mmHg. Moderate hypertension has been defined as a SBP \geq 160 mmHg and/or a DBP \geq 100 mmHg (108). The diagnosis of high blood pressure varied significantly by demographic factors such as marital status and socio-economic variables such as education. A combination of the BP diagnosis and the high BP readings measured in the survey were used to determine whether men were hypertensive or not. More than a quarter (29.4%) of the men in the 2014 LDHS reported ever having been diagnosed with hypertension by a medical doctor or ever having a nurse inform them that their BP readings were high, indicating a positive result for high blood pressure. The other 70 per cent had their blood pressure within normal ranges which meant that their medication was effective in lowering their BP readings.

6.7.1. The prevalence of hypertension by age

The prevalence of hypertension seemed to increase with age (Table 6.7). Table 6.7 shows the highest prevalence (23.7%; CI: 15.03% - 35.32%; $p = 0.0034$) of hypertension among men who were 55 – 59 years old. Looking at the BP readings, the highest number (six men) came from the

35 – 39 year age category. The majority of the participants, i.e. a quarter of the men aged 50 – 54 years and 55 – 59 years respectively, had elevated BP readings.

6.7.2. The prevalence of hypertension by marital status

The results presented in Table 6.7 show the highest prevalence of hypertension among adult men who were in a union during the survey. Less than 20 (16.0%; CI: 12.84% - 19.74%; $p = 0.0028$) of the men who were in a union at the time had been diagnosed with hypertension. About 34 per cent of the 44 men who had previously been diagnosed with hypertension had their BP elevated during the 2014 LDHS. The second highest prevalence of hypertension was realised among adult men who had formerly been in a union at the time of the survey (13.4%; CI: 7.46% - 22.85%; $p = 0.0028$). The lowest prevalence of hypertension was observed among men who had never been in union (7.4%; CI: 4.93% - 11.09%; $p = 0.0028$).

6.7.3. The prevalence of hypertension by religion

Hypertension appeared to be more prevalent among adult men who reported membership of religions other than Christianity. Approximately 43.2 per cent (CI: 16.69% - 74.18%; $p = 0.0149$) of the men in the 2014 LDHS reported that they had been diagnosed with hypertension by a nurse or a doctor. Even though the prevalence of hypertension looked high among these men from other religions, a wide confidence interval was observed; implying less confidence. There was only one man from the 'other' religious group whose BP reading was elevated during the survey. More than a third (35.3%) of the men from the group of traditional Christians had their BP readings elevated.

This group thus had a significantly high prevalence of hypertension (13.7%; CI: 10.62% - 17.45%; $p = 0.0151$).

6.7.4. The prevalence of hypertension by place of residence

Table 6.7 presents insignificant results concerning the prevalence of hypertension by place of residence ($p = 0.1285$). However, a higher prevalence appeared among the men in the urban settings than was seen with those from the rural settings (14.4%; CI: 11.0% - 18.7%). Those male participants from the rural areas had a 10.9 per cent (CI: 8.4% - 13.9%) prevalence of hypertension.

6.7.5. The prevalence of hypertension by district

Table 6.7 shows significant results for the prevalence of hypertension by the districts from which the men came ($p = 0.0390$). The highest prevalence of hypertension was observed in the Mokhotlong district (19.8%; CI: 11.4% - 32.3%) which was located in a rural area. The lowest prevalence of hypertension by district was seen in Thaba-Tseka (5.9%; CI: 2.6% - 13.0%); also a rural district. These results were interesting given that the prevalence of hypertension by place of residence above (though insignificant) indicated that hypertension was more prevalent in urban than in rural areas of the country.

6.7.6. The prevalence of hypertension by education

Table 6.7 shows a statistically insignificant relationship between hypertension and the level of education (0.0665). Nevertheless, the highest prevalence of hypertension was seen among men

with higher levels of education (19.7%; CI: 12.8% - 29.1%). Men with a primary school education (9.9%; CI: 7.3% - 13.3%) recorded the lowest prevalence of hypertension compared to the adult men with higher levels of education.

6.7.7. The prevalence of hypertension by occupation

A statistically insignificant relationship between hypertension and occupation is shown in Table 6.7 ($p = 0.0728$). The highest prevalence of hypertension by occupation was seen among sedentary professional and clerical occupations (24.1%; CI: 15.1% - 36.4%), while the lowest prevalence was observed among men in physically active occupations, e.g. agriculture (7.7%; 4.6% - 12.6%).

6.7.8. The prevalence of hypertension by wealth

The prevalence of hypertension appeared higher among the richest men (17.6%; CI: 13.29% - 22.92%; $p = 0.0189$). The richest adult men represented more than a quarter (26.9%) of the men diagnosed with hypertension, or whose BP readings were elevated (29.9%). The lowest prevalence of hypertension was seen (Table 6.7) among adult men from the middle wealth quintile (7.9%; CI: 4.74% - 12.84%). Looking at the BP readings, the poorer men had the second highest (26.7%) elevated BP readings.

Table 6.7: The prevalence of hypertension in Lesotho

(N = 2658)	n	Yes (95% CI)	p - value
Age group			
15 - 19	145	3.0 (1.1 - 7.9)	0.0034

20 - 24	173	7.5 (4.1 - 13.3)	
25 - 29	160	11.0 (5.8 - 20.0)	
30 - 34	162	11.9 (7.2 - 18.8)	
35 - 39	147	16.6 (10.6 - 24.9)	
40 - 44	122	15.1 (8.6 - 25.1)	
45 - 49	82	17.8 (10.2 - 29.3)	
50 - 54	96	17.0 (9.9 - 27.4)	
55 - 59	93	23.7 (15.0 - 35.3)	
Marital status			
Never in union	426	7.4 (4.9 - 11.1)	0.0028
Currently in union	634	16.0 (12.8 - 19.7)	
Formerly in union	120	13.4 (7.5 - 22.9)	
Religion			
None	58	7.0 (2.2 - 20.5)	0.0151
Traditional Christians	565	13.7 (10.6 - 17.5)	
Other Christians	543	10.7 (8.0 - 14.2)	
Other	14	43.2 (16.7 - 74.2)	
Place of residence			
Urban	1034	14.4 (11.0 - 18.7)	0.1285
Rural	146	10.9 (8.4 - 13.9)	
District			
Butha-Buthe	103	10.3 (5.4 - 19.0)	0.0390
Leribe	149	9.7 (5.5 - 16.5)	
Berea	163	10.8 (6.8 - 16.8)	
Maseru	220	10.7 (10.5 - 20.2)	
Mafeteng	123	15.0 (9.5 - 22.8)	
Mohale's Hoek	96	7.8 (2.3 - 23.4)	
Quthing	69	13.9 (7.3 - 24.9)	
Qacha's Nek	86	16.4 (9.8 - 26.4)	
Mokhotlong	77	19.8 (11.4 - 32.3)	

Thaba-Tseka	94	5.9 (2.6 - 13.0)	
Education			
No education	120	14.1 (7.8 - 24.0)	0.0665
Primary school	463	9.9 (7.3 - 13.3)	
Secondary school	459	12.0 (8.9 - 16.1)	
Higher	138	19.7 (12.8 - 29.1)	
Occupation			
Not working	294	11.2 (7.5 - 16.3)	0.0728
Professional, clerical	106	24.1 (15.0 - 36.4)	
Sales	75	10.9 (5.5 - 20.4)	
Agriculture	219	7.7 (4.6 - 12.6)	
Unskilled	112	10.1 (4.7 - 20.5)	
Services	117	13.0 (7.4 - 21.7)	
Skilled	185	14.7 (9.6 - 22.0)	
Do not know	64	14.5 (7.1 - 27.3)	
Wealth			
Poorest	141	10.6 (6.0 - 18.0)	0.0189
Poorer	209	12.0 (7.3 - 18.9)	
Middle	217	7.9 (4.7 - 12.8)	
Richer	269	9.8 (6.4 - 14.7)	
Richest	344	17.6 (13.3 - 22.9)	

Source: Researcher's calculations from the 2014 LDHS data

Table 6.8 comprises adjusted odds ratios of the variables included in the final model. These included the age group, marital status, religion, the place of residence, and the men's level of education, occupation and wealth. Men from all age groups, except those aged 20 - 24 years old, were significantly more likely to be diagnosed with hypertension than those in the first age group (15 – 19 years of age). Looking at the marital status; only the men who were currently in a union at the time of the survey were significantly more likely to be diagnosed with hypertension than the

men who had never been in a union (first group). Based on the men's occupations, it was only men from professional and clerical occupations who were significantly more likely to be diagnosed with hypertension than men who reported not working (first group).

Table 6.8: The prevalence of hypertension (Multivariate OR) in Lesotho

	Unadjusted OR (95% CI)	Adjusted OR (95% CI)	p-value
Age group			
15 - 19	1.00	1.00	
20 - 24	2.44 (0.70 - 8.54)	2.62 (0.79 - 8.71)	0.116
25 - 29	3.42 (0.80 - 14.57)	3.99 (1.16 - 13.77)	0.028
30 - 34	3.68 (0.85 - 15.90)	4.33 (1.37 - 13.75)	0.013
35 - 39	5.68 (1.29 - 24.98)	6.41 (2.05 - 20.05)	0.001
40 - 44	5.19 (1.08 - 24.91)	5.72 (1.72 - 18.99)	0.004
45 - 49	5.88 (1.20 - 28.88)	6.99 (2.09 - 23.41)	0.002
50 - 54	7.18 (1.54 - 33.36)	6.58 (2.00 - 21.65)	0.002
55 - 59	10.46 (2.28 - 47.99)	10.02 (3.13 - 32.10)	<0.001
Marital status			
Never in union	1.00	1.00	
Currently in union	1.25 (0.54 - 2.90)	2.37 (1.42 - 3.93)	<0.001
Formerly in union	0.94 (0.34 - 2.58)	1.92 (0.88 - 4.21)	0.103
Religion			
None	1.00	1.00	
Traditional Christians	2.24 (0.61 - 8.23)	2.09 (0.59 - 7.36)	0.250
Other Christians	1.60 (0.43 - 5.97)	1.59 (0.45 - 5.63)	0.474
Other	12.45 (1.84 - 84.39)	10.01 (1.64 - 61.14)	0.013
Place of residence			
Urban	1.00	1.00	
Rural	0.82 (0.48 - 1.40)	0.72 (0.48 - 1.10)	0.130

Education			
No education	1.00	1.00	
Primary school	0.79 (0.38 - 1.64)	0.67 (0.32 - 1.40)	0.284
Secondary school	1.23 (0.54 - 2.82)	0.84 (0.40 - 1.75)	0.634
Higher education	1.18 (0.42 - 3.29)	1.50 (0.65 - 3.46)	0.344
Occupation			
Not working	1.00	1.00	
Professional, clerical	1.54 (0.59 - 4.03)	2.53 (1.22 - 5.26)	0.013
Sales	0.65 (0.26 - 1.63)	0.97 (0.41 - 2.29)	0.946
Agriculture	0.57 (0.26 - 1.24)	0.67 (0.33 - 1.34)	0.252
Unskilled	0.74 (0.27 - 2.03)	0.89 (0.35 - 2.28)	0.816
Services	0.87 (0.37 - 2.07)	1.18 (0.55 - 2.53)	0.664
Skilled	1.04 (0.49 - 2.19)	1.37 (0.71 - 2.65)	0.340
Don't know	0.90 (0.33 - 2.42)	1.34 (0.54 - 3.33)	0.525
Wealth			
Poorest	1.00	1.00	
Poorer	1.14 (0.51 - 2.55)	1.14 (0.50 - 2.59)	0.748
Middle	0.74 (0.30 - 1.78)	0.72 (0.32 - 1.64)	0.434
Richer	0.83 (0.36 - 1.95)	0.91 (0.42 - 1.97)	0.814
Richest	1.27 (0.53 - 3.08)	1.80 (0.89 - 3.62)	0.100

Source: Researcher's calculations from the 2014 LDHS

6.8. Summary

The findings presented in this chapter have indicated that there was an increase in the prevalence of lifestyle risk factors for NCDs in Lesotho. The prevalence of smoking seemed to be higher among men aged between 25 – 29 years, then fluctuated around middle aged men and eventually declined as the men got older. The consumption of tobacco seemed to be higher in the rural areas than it was

in the urban areas. The findings in this chapter confirmed that smoking decreased as the level of education increased. A change in marital status was also found to have an influence on smoking. A positive change such as getting married or cohabiting with a woman seemed to lead to increased chances of smoking cessation while a negative change such as the death of a wife, separation and divorce led to an increased prevalence of smoking.

Religious views varied on smoking, however, the unhealthy habit of smoking seemed to be more prevalent among men who did not practice any religion at the time of the survey. Among the men who had a religious affiliation at the time of the survey, those whose religion fell under *other* had a higher prevalence of smoking. Among those who were reported to be Christians; the prevalence of smoking was prevalent among the men who belonged to traditional Christian churches.

With regards to occupation; stressful occupations and occupations that demanded long working hours were associated with a higher prevalence of smoking. Smoking also seemed to be practiced more among unskilled men. Looking at the effect of wealth on smoking; as wealth increased, the practice of smoking seemed to decline.

With regards to hypertension; the results generally showed a low prevalence of hypertension (elevated BP readings) among men in Lesotho. Increases in the risk for developing high blood pressure seemed to increase as BMI increased and was also prevalent among men who smoked. Men in Lesotho were generally not overweight, however, BMI readings which indicated that they were overweight appeared to prevail among the older adult men, among married men, among men who lived in urban areas, among men with a higher education level, among men in professional occupations, as well as among men who fell within the rich quintiles.

CHAPTER SEVEN

PERCEPTIONS ON SEVERITY AND SUSCEPTIBILITY TO MODIFIABLE RISK FACTORS FOR NCDS

7.1. Introduction

The manner in which modifiable risk factors for NCDs are perceived plays a significant role in successfully preventing and managing these NCDs. In cases where modifiable risk factors' severity and susceptibility are undermined, NCD prevention and management are compromised. According to Shivalli, Gupta, Mohaptra and Srivastava (2012), most societies tolerate the modifiable risk factors for NCDs. This has led to these risk factors barely being perceived as harmful, but over time they appear to lead to the ultimate development of lifestyle related diseases. Perception of NCDs as dangerous diseases is one of the greatest determinant factors for a change in lifestyle. Increased cessation of smoking, responsible alcohol consumption, improved dietary patterns and improved participation in physical activities are part of NCD prevention and management approaches resulting from a change in perception of these NCDs. This chapter explores the general perceptions of the severity of, and susceptibility to, lifestyle risk factors for NCDs using the qualitative data from the focus group discussions held in Maseru. The most important sub-themes identified from responses from focus group discussions include myths around NCD risk factors, challenges to healthy lifestyles by adult men, effects of NCD risk factors, determinants of NCD risk factors, the role of government in controlling smoking and perceptions on tobacco containers warning messages. The chapter dives deep into the reasons behind the estimates and patterns seen from the pilot study and the LDHS analysis. The chapter further explores definitions of masculinity among adult males in Maseru, as well as the impact of masculinity identity on lifestyle risk behaviours among adult males.

7.2. Perceived severity and susceptibility: Smoking

Smoking is a dangerous habit that leads to dreadful side effects comprising addiction to nicotine and an increased exposure to life-threatening chronic diseases (WHO, 2011). It is a health hazard responsible for most lung cancers, strokes and heart attacks (Bonita & Beaglehole, 2014; Reddy et al., 2015; Waldron et al., 1988; WHO, 2011; WHO, 2015). From the focus group discussions held in and around Maseru, almost all the participants sounded aware of the long term negative effects associated with smoking. An example of a negative effect mentioned included difficulty in breathing caused by damage to the lungs owing to smoking. A large number of adult men who reported current smoking detailed that they had initiated smoking during their teenage years and had since found it difficult to stop. There were, however, some participants who reported having been successful in quitting smoking.

“I was in secondary school when I started smoking and it was out of peer pressure and also wanting to be regarded as cool and as a man then. To tell you the truth, I was already convinced that smoking was not right from teachers at school. I think my religion also contributed in helping me to stop smoking. By the time I took religion seriously, I completely stopped smoking. I am not sure if I would have completely stopped smoking if I did not become a Christian because when I was smoking as I mentioned earlier, I already knew that I was not supposed to smoke from [a] health perspective”.

(Participant 1, FGD #4)

The significance of one’s belief system was evident from the quote above. Religion appeared to be an important source of support and a positive influence for behavioral change for some focus group participants. Some men felt differently though; religion was said to have deprived them the freedom to live the way they wanted. For example, some Christian men reported continued

smoking, but in secret because their religion did not approve of their smoking habit. Different reasons why the current smokers continued smoking even though they were aware of the health dangers associated with smoking were mentioned. Peer pressure, as seen in the quote above, was one of the key reasons why a lot of men started and continued to smoke. Almost all the men in the focus group discussions had tried to smoke before, especially during their teenage years for fun, to release stress, to socialise and to deal with different emotions (e.g. sadness/anger, happiness). A lot of focus group participants who had ever smoked reported that they were influenced by their social groups to start smoking (or to behave in a certain manner) in order to belong, to be accepted and to feel part of a desired social group. The other reason why some of the men interviewed had ever smoked was alluded to as having had too much leisure time, especially by those who were not working and by younger adult men who found themselves idling after completing high school, i.e. before they got jobs or admission to tertiary institutions. During these long hours of idleness and frustration, some men engaged in smoking as one of the ways in which they distressed. Lack of knowledge/ignorance concerning the negative health effects caused by smoking was the other reason why some men smoked. For instance, one participant who used to suffer from regular toothache said he smoked because he believed smoking decreased or stopped the pain he experienced.

“I used to believe cigarettes were somehow painkillers. My teeth used to trouble me a lot and somebody advised me to smoke. Every time after smoking the pain would go for a while, so I really believed there was a painkiller in cigarettes”.

(Participant 10, FGD #1)

One of the current smokers described one of the reasons for smoking:

“I cannot smell like a woman, smoking gives me that smell, different from a woman. There should be a difference between a man and a woman. We cannot smell the same...”

(Participant 3, FGD #5).

This quote highlights a dominant masculinity where subscribers to masculinity run away from any behavior that links them to femininity although the follow up comment from another member of the same group highlighted that this reasoning was flawed.

“Can I say something about women who smoke? Eish! We are seeing this habit growing even among our women. This was not a norm, but it is becoming popular especially here [in Maseru]. So it’s not only men who are smoking.”

(Participant 5, FGD#5)

Some men reported that they had always believed that smoking relieved stress. However, they had realised that if they went for two or three days without smoking, they felt healthier. One of them alluded:

“I have always said smoking helps me release stress, but honestly speaking, if I go for two or three days without smoking, I feel good. I usually would get back to it because of the strong cravings I get, but health wise it is not good to smoke. Sometimes I get confused as to whether smoking causes stress or reduces stress. I tried stopping to smoke; in fact at one point I stopped for six months. I can’t really tell what happened, but today I am back to smoking. I think there is something about smoking; it is not easy to stop smoking once you start”.

(Participant 4, FGD #2)

Based on this participant's view, there was still a need to educate people on the dangers of smoking. Health education and awareness regarding substance use needed to be strengthened in different societies. To this end, messages are printed on cigarette boxes and on tobacco packets (*'Smoking kills'* and *'tobacco causes cancer'*) warning users about the severity of tobacco smoking on health. During the focus group discussions, participants were asked to share their thoughts on these messages. All the men, irrespective of their education background, were aware of the warning messages written on cigarette boxes and tobacco packets, however, some of these men were not convinced that the messages were true. They described their mistrust in the warning messages written on tobacco containers. These men were of the view that the government would not have permitted tobacco to be sold freely in the country if it was a health hazard. This finding showed too much reliance on government by participants even with their lives. They had confidence that their government had capacity to protect them from harmful substances imported from outside their country.

"Messages on cigarette boxes aren't really helping. When one is addicted to smoking, it doesn't matter what's written on the boxes and the manufacturers know this fact, so they are writing these messages to act as though they care for us. I think these messages are just lies. I do not understand why it is being produced if it is really that dangerous. From my family for example, I see myself as old now. I was born and grew [up] seeing my father smoking, he still smokes even today but he is still well, so those messages for me are just lies. In my mind, anything can be dangerous if it is done too much, even papa can be dangerous if eaten too much. The same goes for smoking for me; if I get to a point where I smoke too much, then it will be dangerous. ... From these messages they say smoking kills, why is it continuing to be

manufactured if it is truly dangerous? Why are governments in different countries allowing this dangerous thing to be sold to people? Why is it not cut out from the market”? This thing [tobacco] is even not produced here [in Lesotho].

(Participant 5, FGD #4)

Different from the above view, some men in the study believed that the warning messages on cigarette boxes were creating the intended awareness with regards to the severity of the impact of smoking on health. However, some reported a language barrier as the major hindrance preventing this awareness strategy from being more effective and broad in its coverage. The messages were only written in English and therefore only clearly understood by those who were literate and understood the language. Translating these messages into the official languages in the country was recommended as one of the strategies for a more effective awareness strategy. Most research participants also noted the difference between hearing messages from others who could read and personally reading the messages in their native language. The latter was thought more effective and most likely to challenge the reader to change their behaviour. The suggestions presented by these men actually demonstrated their interest in a successful health education policy in the country and in a change in lifestyle.

In addition to increased bacterial infections caused by smoking, previous studies established that smokers were more susceptible than non-smokers to chronic diseases and conditions such as strokes, vascular diseases, chronic obstructive pulmonary disease, multiple cancers, periodontal diseases, hypertension, impotence and osteoporosis (Bagaitkar et al., 2008). Cigarette smoking appeared common among the working middle class and tertiary students among the men, while pipes and hand-rolled tobacco leaves seemed common among the older men, especially those who reported no or low levels of education. The other group of men who reported the use of pipes and

hand-rolled tobacco were men who were mostly labourers in construction companies in and around Maseru. Very few men from tertiary institutions reported smoking weed/marijuana (which was also hand-rolled). The difference between smoking cigarettes and hand-rolled tobacco was mainly that hand-rolled tobacco did not have a filter that to some degree reduced the tar produced from smoking.

From the interviews held, it was clear that the current smokers were aware of their vulnerability to diseases because of smoking, but continued to smoke anyway. Smoking weed/marijuana was illegal in Lesotho, but people still managed to consume it. For young men in tertiary institutions, smoking this substance (which they bought from illegal suppliers) had started before they had enrolled in higher education institutions, perhaps due to boredom, stress and idleness.

“For me, I usually smoke a ‘zolo’ in the morning and in the evening. During the day on campus it depends on the day and the company of friends I am with. I don’t really keep track of how many times I smoke a day but now I think I have decreased my smoking to roughly four times a day. One of the reasons why I have decreased the number of times I smoke is because I am now busy most of the time. Before I came here I had nothing to do for almost the whole day so I smoked a lot. Since I came here, I have really decreased my smoking because of being busy throughout the day with my schoolwork”.

(Participant 8, FGD #2)

Some marijuana consumers believed that the substance boosted their memories and that they got increased stamina to study for longer hours after smoking. Research has nullified this statement, however. A large longitudinal cohort study of college students in the USA revealed that smoking marijuana in college could actually be associated with poor academic performance due to poor

class attendance by weed consumers in those institutions of higher learning (Arria, Bugbee Caldeira, O'Grady, Vincent (2015).

Smokers were often aware of their vulnerability to diseases resulting from smoking but found it difficult to stop smoking because nicotine was an addictive drug (Benowitz, 2008; Cataldo, 2003). People who had been smoking for a long time found it too difficult to stop the habit regardless of their knowledge about the harmful effects and the negative consequences of smoking (Eklund et al., 2012). All the participants in the focus group discussions admitted that smoking put individuals' health in danger. The researcher asked the participants who reported having totally stopped smoking to share the reasons why they had stopped smoking. Some participants described better individual health choices, religious beliefs, health reasons and loss of interest in smoking among the reasons why they had stopped. In relation to health reasons, one of the men said he had started to have severe chest pains and difficulty in breathing. After being encouraged to visit the clinic nearby, the nurses there advised him to stop smoking. Some men had tried to stop smoking several times but had always reverted back to it.

"I don't know how many times I have tried to stop smoking. The other time I stopped for almost six months. Six months sir... Then I visited my cousin whom I went to school with. He also smokes. After a couple of drinks together I found myself smoking again and I have not stopped from that time. Maybe I should just give up and smoke in peace. I am tired of feeling guilty now".

(Participant 3, FGD #2)

7.3. Perceived severity and susceptibility: Harmful use of alcohol

Many studies have recognised harmful use of alcohol as one of the key risk factor for NCDs (Beaglehole & Yach, 2013; Kassu et al., 2012; Lucchetti et al., 2014; Nies et al., 2012). Reports of binge drinking were common among focus group discussion participants in Maseru, Lesotho. In fact when asked what men in Lesotho usually did during their leisure time, excessive periodic alcohol consumption was a common response in all the focus group discussions highlighting gaps between knowledge and the health risk associated with this unhealthy behaviour (harmful consumption of alcohol). This harmful use of alcohol was reported to take place in local bars, at friends' places and at social events. Evidence from literature has demonstrated clearly that binge drinking is linked with considerably higher health risks (Wechsler et al., 1995). Most men talked about social problems brought about by alcohol abuse, but the only health related result of heavy drinking mentioned was unprotected sexual intercourse from which most men feared catching sexually transmitted infections (STIs).

The fact that participants did not spontaneously identify harmful use of alcohol as a cause of chronic illnesses could have been partly related to efforts to undermine harmful consumption of alcohol as a cause of NCDs. Most men mentioned behavioural changes, with risky behaviour such as fights over minor issues, unprotected sex as mentioned, and reckless driving which often led to car accidents and deaths that could have been avoided. One of the participants showed the group some permanent scars on his face from falling while he was drunk. Too much alcohol in the body was reported by participants to change the way a person thought; a drunken person's judgement was described as poor and their behaviour usually changed for the worse. Furthermore, some men mentioned that violence increased due to drunkenness and a number of men reported having witnessed drunk people becoming violent after heavy drinking.

One of the participants alluded:

“Life itself gets in danger, for instance, walking is no longer straight and one may easily get into the road and get hit by a car”.

(Participant 5, FGD #1)

Too much alcohol consumption was further associated with a lot of relationship problems with spouses, family and friends, especially for the addicted drunkards. One of the reasons for binge drinking renowned by men was that alcohol consumption, mostly when together with friends, was perceived as a form of reward after a long day, week, month or year of hard work.

“I usually drink to reward myself. For instance, if I manage to achieve a goal I had planned for a week or for a month, I reward myself. So I would meet up with my friends and enjoy ourselves”.

(Participant 7, FGD #2)

A similar mind-set prevailed among university-going young men who reported that they celebrated their short and long-term achievements by getting drunk. Achievements mentioned included passing a test or an assignment well. The other reason for men to consume alcohol excessively was linked to social events at work and in the community. These events were said to be more frequent during the festive seasons and during major public holidays in the country. Other reasons for alcohol abuse included peer pressure in all the age groups, lack of better social activities in most communities and frustrations/stressful family issues where men, especially the married men and those who cohabited, preferred to get home drunk and lighthearted in avoidance of troublesome and nagging wives/partners.

One of the participants said he liked drinking excessively because for him excessive use of alcohol was a means to detox his body. He vomited and sometimes had diarrhoea the day after heavy drinking. This belief could be perceived as ignorance and highlighted the lack of knowledge of the fact that alcohol consumption dehydrated and intoxicated the body and required flushing from the system.

“For me I think consuming alcohol keep[s] me healthy. I would say it helps me detox my system in a way. I always vomit and have a running stomach to get rid of some dirt in my system a day after heavy drinking, so I like that about alcohol”.

(Participant 1, FGD #2)

Harmful use of alcohol leads to increased susceptibility to various diseases including the NCDs (Szabo, 1997). In the focus group discussions held for this study, adult men in Maseru, especially those between the ages of 18 and 40, reported frequent binge drinking during their leisure time. From 40 years and above men still reported occasional heavy consumption of alcohol but it was not as prevalent as it was in the younger group of participants. These older men mentioned that they even tried to avoid going to the bars to drink in order to avoid being found in the same places as the younger generation.

“... men of my age do take alcohol once in a while, some get really wasted but you cannot compare them to these younger ones. Those ones live on alcohol and are not even ashamed of themselves. You would not see any remorse in their faces when as an adult you find them drinking, it is bad. I have a couple of these young people renting in my yard and I tell you, it’s a headache. These days I prefer to buy my drinks and take them home. It is different though, drinking is fun when you are with other people”.

(Participant 3, FGD #8)

The local brewed beer, ‘*Maluti*’, appeared to be the most favored alcoholic beverage consumed by men in Maseru, Lesotho across all ages. Some men from the focus group discussions reported consuming wine and whisky occasionally. The older men (and some younger men), mostly those unemployed, reported the consumption of traditional beer sold in the different communities. There were different views among those on the health dangers of modern alcoholic beverages compared to the traditional beer. Those who favoured traditional beer expressed their ‘*fear*’ of modern beers.

“I prefer our traditional brewed beer because I know it is brewed from sorghum and sorghum is food. I do not trust these modern beers from shops and your wines. I think they are poisonous. I think these people are making us drink some chemicals from these modern alcoholic drinks. My grandparents were drinking this traditional fermented beer as I grew up and I think it was and is still a better option. They did not have these latest sicknesses that are associated with drinking alcoholic beverages you are talking about today”.

(Participant 4, FGD #8)

Those who did not consume the traditional beer were of the view that it was more dangerous than the commercial beer. During one of the focus group discussions, a participant remarked:

“Unlike beer which I know the percentage of alcohol I am consuming, this traditional beer does not show that. Look at the people who drink it; they look way older than their actual age. What does that tell you? This thing is dangerous”.

(Participant 3, FGD #4)

Other men acknowledged the possibility of putting their health in danger by consuming home brewed traditional beer based on its fermentation process, especially in the urban areas where there

were usually many people wanting to buy this beer, putting pressure on suppliers to produce faster. The implication of this increased demand was the possible compromise of the natural fermentation process by the addition of dangerous ingredients into the mix in order to speed up the process. Participants demonstrated a greater awareness of the health hazards that could be associated with alcohol drinking.

“You should be careful though, lately, especially here in town, there is hops, which is different from our own sorghum traditional beer. That one is dangerous. They put yeast in it to ferment it and maybe there are other things that they put in to make it ferment quicker and to be strong. Who knows? For our own traditional beer, there is no yeast but ‘litsoako’ which makes a huge difference in terms of the whole process and the way the final product affects those who drink it”.

(Participant 1, FGD #7)

The participants mentioned a number of settings in which lives could be endangered as a result of harmful use of alcohol. One of them was by socialising/entertainment. There seems to be a social value associated with social consumption of alcohol where drinking facilitates social bonds and problem sharing among men. After a long day, week or month of hard work, men preferred to gather in different social places such as bars and car wash facilities with other men and share drinks. During these sessions, men were reported to share their life experiences and advice with each other in a relaxed environment. These social drinking sessions were considered therapeutic by a lot of men:

“I always hangout with my boys, on weekends mostly. We drink and talk about life, I mean everything from our hurts and joys maybe from the family or girlfriends. It is funny that when

we are sober it is difficult to talk about some stuff. I for one cannot openly talk about family issues to my friends when I am sober, but when I am tipsy anything goes. I don't know why this happens so for me that is one of the reasons why I drink, I become free...".

(Participant 7, FGD #3)

From the FGD, the different types of masculinity were recognised. For instance, the avoidance of showing emotions, especially when men are sober, is related to the hegemonic masculine identity. This belief, alongside two other common beliefs that excessive consumption of alcohol was used to combat boredom, and that female partners were responsible for the harmful use of alcohol by their male partners are illustrated below:

"Men usually cannot stand pain. Not physical pain as such, this emotional pain. For example, a man who has a wife who is always shouting at him would rather be in a bar and get home drunk and care free. Unfortunately some women do not realise that they are the source of their husbands' bad drinking habits."

(Participant 2, FGD #8)

A good number of men further reported that it was difficult not to drink an alcoholic drink while among other men who consumed alcohol. One of the stereotypes perceived here was that the men who did not consume alcohol were seen as weak and not manly enough. In order to fit in and to be accepted in their preferred social groups, most men had given in to harmful use of alcohol, even though they knew of the increased chances of endangering their health in the process.

Another participant highlighted the difference between men and women (in relation to harmful use of alcohol), but he, like others, ascribed this difference to the competitive nature of the masculine identity

“Yeah, there is a huge difference. Men drink more alcohol containing beverages than women...Men like showing off what they can do. Somebody mentioned the issue of competition, that is one of the reasons. Men enjoy competition almost in everything they do”.

(Participant 1, FGD #6)

7.4. Perceived severity and susceptibility: Poor diet

Literature has shown poor dietary patterns as one of the contributing risk factors to the high prevalence of NCDs (Xu et al., 2016). Unfortunately, men from different countries have been documented as a gender that was ignorant and careless regarding healthy food consumption (Wong & Lam, 1999) thereby increasing their susceptibility to chronic diseases. Most men from the focus group discussions in and around Maseru were aware of the negative effects of poor diet on their health, but were adamant that it was very difficult to eat healthy at all times. Some believed that eating healthy was expensive, especially for individuals who bought food stuffs from food supermarkets. They were of the view that eating healthy could be relatively more affordable and easier for farmers because they could get almost all the foodstuff they needed from their farms. Besides the high cost of foodstuff, discipline in eating healthy was mentioned as the other challenge. A lot of men mentioned lack of time to prepare healthy food and being busy as some of the reasons for failure to adhere to a healthy dietary pattern. Participants seemed to underplay the long term effects of poor dietary patterns, possibly because the negative effects developed over a

'long' period of time. The other possible reason for underplaying the impact of poor dietary patterns could be linked to the cultural stereotypes promoting food preparation as a woman's responsibility.

From the focus group discussions, most men reported skipping breakfast due to lack of appetite, being late for work or because they were busy with their daily activities. They would only eat during the day when they started to feel their energy levels decreasing or when they remembered that they had not eaten anything. Some of these men were aware of the dangers of developing sugar diabetes by skipping some meals during the day, such as breakfast, yet still found themselves skipping meals. Most men reported buying convenience meals as a common practice. During their lunch times, their meals comprised mostly high energy content foodstuffs and not balanced meals. Their diets also contained little or no fruits and vegetables because their main interest was usually taste and filling. For instance, some men from different work environments such as construction sites reported fat-cakes, bread, fried chips, 'wors', and 'motoho' (fermented soft porridge) as their lunch most of the time.

"I am not staying with my wife here, so I always go for meals that are easy to get at work and even at home, except if my wife is around. I always have eggs or grilled chicken from the oven and prepare some papa and eat without vegetables. The only time when I eat healthy food is when my wife is around. On my own, I always go for fast food. Proper cooking is a mission".

(Participant 3, FGD #6)

The meals consumed by these men seemed to be rich in fats/oils and poor in fruits and vegetables, therefore they could lead to heart attacks. When asked who prepared or cooked their daily meals at

home, preparation of their own meals was reported as a rare activity, especially among the married men and those who stayed with their partners. Some of the men could not even remember the last time they had prepared their own meals.

“It is my wife who always prepares food for my family. I usually prepare my own meals when there is a need, [that is], when my wife is not around”.

(Participant 4, FGD #8)

Very few of the participants prepared their own meals, particularly those who were unmarried or were not living with their partners. Among the married men, those who habitually prepared their own meals were those whose wives were always away or working in a different town. Even when both a male and female partner were employed in a household, cooking was deemed to be the women’s responsibility. Even though the quote below illustrates that there was an underlying acknowledgement of the unfairness of the situation, it also illustrates that the participant perceived this to be a result of women undertaking roles that are meant for men:

“The fact that women are also working these days, they are doing men a huge favour, they should be staying at home nurturing babies and making sure that there is cooked food for the kids, men and the family at large while men are out at work. Strange enough when we get back home, both from work, I sit down and expect her to give me some food and even start complaining that she is too slow to prepare me some food.”

(Participant 3, FGD #3)

However, among unemployed men there was more willingness to share responsibility for meal preparation and other household tasks that were previously seen as the responsibility of women.

“It is not only women who should cook in the house. We should assist and share whatever house chore we have. Even doing laundry is one of the activities that I personally help with. I really do not mind.”

(Participant 1, FGD #5)

Men were also asked if they ever did grocery shopping. The married men and those who lived with their partners rarely did their own grocery shopping. They did, however, sometimes assist their wives and partners with grocery shopping, but their main task when this occurred was to assist their wives or partners by pushing the trolleys and lifting ‘heavy’ foodstuffs for them. Very few men participated in the choice of foodstuffs to be bought when grocery shopping or in the actual grocery shopping. Almost all the participants in the focus group discussions were aware of where their groceries were bought. Interestingly enough, the quality of the foodstuffs was mentioned as one of the determining factors for choice of grocery shop. One of the men who did grocery shopping for his family said:

“There are places where I’d never buy food from. I look around and observe how the food is kept and ‘treated’ or handled. I also check on the quality of the items I need and cleanness of the shop. If the shop is dirty I just walk out”.

(Participant 5, FGD #6)

This showed that some men were health conscious. Participants were further asked to share their thoughts with regards to men who prepared their own lunch boxes at home and avoided buying convenience food sold from different outlets. This was described as the best practice by most of the men; however, the majority reported that they never or rarely carried a home prepared lunch box to work. Most of them trusted home cooked meals based on good health and hygiene. They were aware of the health risks associated with fatty and unhealthy food.

“Home-made food is the best. The food we buy from these shops is not always to be trusted. The manner in which the food gets cooked is not known, but it is a good thing for one to prepare their own and avoid buying from elsewhere. Should I feel like junk food, I can always buy ingredients and prepare such, e.g. fried chips at home because I can use fresh ingredients. Those people in these shops we buy from do not really care; they can use the same cooking oil for many times. As long as they make money, they are happy”.

(Participant 5, FGD #5)

When asked to share their views on men who ate salads, almost all the men considered salads and vegetables as healthy options in a meal. Participants mentioned fruits and vegetables as the best elements in a meal and that they should be eaten daily. The majority of the men, especially those who were farmers, encouraged fresh fruits and vegetables from the garden or fields as the best options. The only complaint from most men with regards to eating salads was that salads were not filling, therefore were eaten for fun and not necessarily for hunger. With regards to vegetables, most men reported issues with the long process associated with preparing vegetables, i.e. cleaning or washing the vegetables, followed by cutting/chopping into smaller portions before the actual cooking started.

The main reason for poor dietary patterns among men in Maseru, Lesotho appeared to be dependency on their female counterparts for food preparation. Most men still considered food preparation as a feminine task. This stereotype has led to many men's poor dietary patterns which were health defeating and exposed them to chronic diseases. Married men who were not living with their wives in Maseru reported healthy eating only when their wives were around and when they had visited their wives. Some of the men who were single and not living with their partners during the study lived with their families and were dependent on their mothers and sisters for healthy food preparation. Those who were single and living without family or partners reported that they did not constantly prepare healthy meals for themselves. Convenient meals in the form of 'take-aways' were reported as a common alternative. Besides men's dependency on women for healthy food preparation, their ignorance of foodstuff was another factor of importance.

7.5. Perceived severity and susceptibility: Physical inactivity

Literature has described physical inactivity as an important lifestyle risk factor for chronic NCDs. Physical inactivity has been found responsible for a lot of global deaths (WHO, 2010) and as one of the leading causes of adult mortality (Booth, Roberts & Laye, 2012; Ranasinghe et al., 2013; WHO, 2010). With evidence of higher rates of morbidity and mortality among people who were not physically active (Daigle, 2003; WHO, 2008), physical exercise has been observed as an effective prevention strategy for chronic conditions including heart diseases, type 2 diabetes and hypertension, as well as the risk factors for NCDs such as obesity (Booth et al., 2012). From all of the focus group discussions held, almost all of the adult men of Maseru who participated in the study were aware that physical inactivity was detrimental to their health. These men were also aware of the fact that the lack of physical activity increased their vulnerability to different health

conditions. Many of the focus group participants were able to describe different activities which they viewed as physical exercises beneficial to their health. One of the men in his 50s described how he engaged in physical activities on daily basis:

“I am a farmer, I am always busy in my garden and I also feed my chickens and pigs and clean their shelters on [a] daily basis. In doing so, I believe I am engaging in physical activities that keep me healthy and active. What do you think”?

(Participant 4, FGD #6)

Lack of physical fitness and vulnerability to diseases were associated with physical inactivity among the men in the focus groups. There were various ways in which people could engage in exercises. These included walking, jogging and doing some form of manual work. The challenge found with a lot of the men was the lack of consistency with any form of exercise they reported engaging in. In addition to inconsistency with exercising, some physical activities such as jogging were perceived by some of the men as suitable for a certain social class and for sportsmen.

“It [jogging] is mostly done by the middle class people who are usually using cars as their mode of transport most of the time, so they try and do jogging as a physical activity to keep healthy. From there it would be those people who are actively participating in sports who go jogging to get their bodies ready for games”.

(Participant 2, FGD #6)

This view turned physical activity into a social class phenomenon and demonstrated limited understanding of exercise in general. The view also undermined the importance and the health benefits that could be gained by all from being physically active. There were professions in which

physical activity was mandatory, including farming and being a member of a law enforcement force such as the police force, the army and security guards. For some men from these occupations, physical activity was perceived as a job requirement rather than a lifestyle choice. Where exercises were not mandatory and not performed for work purposes, most of the men in these occupations reported doubting their consistent participation in physical activities. Involvement in sports such as soccer, tennis and volleyball by the men interviewed was rare and most men claimed a 'lack of time' to engage in sporting and any physical activity consistently. One businessman said:

"To be honest with you, for me there is no sport or games that I play. I don't have the time. The only time I get to do a physical activity is when I am at church. The type of music we do there makes us run around and jump up and down. I would therefore say that is the only chance I have for a physical activity in a week".

(Participant 1, FGD #5)

Most men seemed to justify their lack of physical activity with the reasoning that they were too busy, thereby increasing the severity of their susceptibility to NCDs associated with physical inactivity. Excess weight was generally not a challenge for most of the men in Lesotho, and the men were asked to report if there was any meaning attached to a man's weight in Lesotho. Most responses were that *being fat* used to be associated with wealth, however, the men reported that they were now aware that *being fat* was not necessarily healthy and that it was not an indication of wealth. In one of the focus group discussions, participants demonstrated an awareness of the health dangers associated with obesity. One of the men highlighted that there were diseases that were associated with *being fat*, and which could be avoided. It was further mentioned that being overweight was a constraint on a lot of physical activities, including simple walking. Among the younger men, being fat was usually mistaken for being old and that was said not to be 'cool' at all.

One of the men added: *'You cannot even satisfy your woman in bed if you are fat my man. These women talk...'* (Participant 4, FGD #7). The previous quote illustrates that the hegemonic masculinity may be protective in this respect as the sexual prowess of man is valued within this identity as is respect from others:

"I do not know, but personally I think a man should be physically fit. That helps him to be admired and respected by other men as well as women."

(Participant 1, FGD #1)

In one of the focus group discussions one of the participants ran his own brick manufacturing company, where he sometimes physically got involved in the production process or loading the bricks onto a truck for deliveries. He did not see his involvement as a physical activity that could be associated with a healthy lifestyle because he did not participate in such activities frequently. In fact, for some men manual work such as gardening and farming were not understood as physical activities. For these men, being physically active meant being involved in sports activities or gym. Men who reported working were asked about the nature of their work in relation to physical activity. Most white collar employees had sedentary jobs; they used their minds more than their physical strength at work. Many of these men reported sitting at work doing office work or sitting in meetings for long periods of time. The implication of these sedentary occupations for those workers who did not create time for exercise outside of work was an increased vulnerability to illnesses that could be avoided by being more physically active. Men who worked in occupations that demanded physical strength did not see their work activity as a healthy

lifestyle practice, as this kind of physical activity was forced rather than voluntary. One of the men working on a farm said:

“There are days when I do not enjoy this thing [farming]. If it was not work I would not be doing it”.

(Participant 2, FGD #4)

7.6. Perceived benefits and barriers to lifestyle risk behavior for NCDs

7.6.1. Perceived benefits: Smoking cessation

Smoking has been ranked among the leading preventable causes of mortality in the world (Bonita & Beaglehole, 2014; Mohammadnezhad, Tsourtos, Wilson, Ratcliffe & Ward, 2015; Twyman, Bonevski, Paul & Bryant, 2014). Quitting smoking is good for health but is reported as difficult due to the addictive nature of the nicotine content in tobacco. However, the chances of dying from tobacco related illnesses such as heart diseases, stroke and lung cancer decreased with successful smoking cessation (Eklund et al., 2012; Mohammadnezhad et al., 2015). When asked to give their views on the prevalence of smoking in Lesotho, most men’s observation was that the prevalence of smoking was generally increasing in the country.

“We are seeing this habit growing even among our women. This was not a norm, but it is becoming popular, especially here [in Maseru]”.

(Participant 3, FGD #7)

An exposure to media such as television was said to encourage smoking because it made smoking look good and fashionable. Travelling to other countries such as South Africa for work, study or

holidays was also mentioned as a factor that led to the rising prevalence of smoking, especially among the youth and women. Smokers were encouraged to use designated smoking areas/places in public areas in the country, however, it was difficult to enforce this recommendation on smokers. As a result everyone, including non-smokers, was affected by smoking. Focus group discussion participants were aware of second hand smoking and that non-smokers were exposed to health risks from second hand smoking. Those who reported smoking at the time of the focus group discussions mentioned strong and almost irresistible urges and cravings to smoke as the reasons why some smokers did not usually wait until they got to the next designated smoking area for their next cigarette. In fact, some smokers were not even aware that such areas existed in Maseru. They only mentioned that they avoided smoking indoors, and smoked anywhere outdoors.

“I know that smoking is dangerous to our health. The sad thing is that sometimes we are forced to smoke because people who smoke are just careless. They smoke whenever and wherever they feel like smoking. This thing of saying they should smoke at some places does not work. So we are all in danger even if we are not smoking”.

(Participant 5, FGD #1)

Barriers to smoking cessation included the high prevalence of the acceptance of smoking in society (Twyman et al., 2014). Maseru was one of the places in Lesotho where smoking had grown to be accepted, and it had become a social norm in most communities. To some degree this discouraged support for smoking cessation by family, health and other service providers (Mohammadnezhad et al., 2015). Easy access to cigarettes and other types of tobacco was alluded to as another barrier to smoking cessation in Maseru. Anyone could buy and smoke cigarettes/tobacco, regardless of their age. In fact some adults sent children to buy their cigarettes for them from the convenience stores

in their communities. Increased cigarette taxes and prices were perceived as ineffective in curbing smoking by some of the research participants (especially those who smoked).

“We cannot stop smoking because cigarettes [have] gone expensive. Once you start smoking, this thing gets into your blood, [and] it is difficult to stop. It is like you saying the maize meal prices have gone up, so you won’t eat. Trust me, we can still manage to smoke, even when cigarette prices go crazy, just as we would not stop eating when the food prices go high”.

(Participant 6, FGD #7)

A lot of men who participated in this study believed that there were health benefits associated with smoking cessation and these included a decrease in the chances of dying from smoking related diseases. Financial benefits were also mentioned, although this did not necessarily fall under health benefits; the money that a smoker used to waste on cigarettes could be better spent on something else.

7.6.2. Perceived benefits: Responsible alcohol consumption

Research has placed emphasis on the importance of alcohol abstinence, however, sensible consumption was encouraged if individuals decided to consume alcohol. Estimates for responsible alcohol consumption were not found for Lesotho, but in South Africa one alcoholic drink per day for women and a maximum of two alcoholic beverages a day for men was advised (Jacobs & Steyn, 2013). Benefits gained from moderate alcohol consumption included a lower prevalence of cardiovascular diseases and increased levels of high density cholesterol (Costanzo et al., 2010; Jacobs & Steyn, 2013). Benefits derived from moderate and responsible alcohol consumption were not mentioned by the focus group discussion participants for this study. Entertainment and

socialising were the major reasons for alcohol consumption. For these men, especially those who consumed alcoholic beverages, moderate consumption of alcohol was described as difficult and such practice demanded high discipline. Peer pressure was mentioned as one of the common barriers to responsible drinking.

“For me, drinking alone at home is better but boring. Every time I go out with friends to socialise, I end up drinking too much because I cannot refuse drinks. The only thing I hate is that I end up spending the money I am not supposed to spend. Oh! The other thing is I usually have to drive back home and I know that it is not good to drive while drunk, but what can I do? I always get home safe”.

(Participant 8, FGD #2)

Alcoholic drinks were consumed for entertainment, and for a lot of men being drunk was described as a form of entertainment and the reason for alcohol consumption. This was found as one of the reasons why most men consumed alcohol to get drunk. Moderate drinking did not make anyone drunk and it was therefore not considered a form of entertainment. Some of the men in the study acknowledged their lack of understanding pertaining to moderate alcohol consumption:

“Why would I drink an alcoholic drink if I do not want to get drunk? I don’t get it. I drink to get drunk”.

(Participant 3, FGD #2)

7.6.3. Perceived benefits: Healthy dietary patterns

Unhealthy dietary patterns are an important public health concern that has negative health implications observed in different types of cancers, cardiovascular disease, and diabetes (Deshpande et al., 2009). Focus group discussion participants indicated that they had an understanding of what a healthy dietary pattern meant. When asked what could be done by men to become healthier, one of the participants responded:

“I have lately realised that some men, like women, are too careful on the food they eat. They are so picky. It is a very small number of them that I have seen. I think that is a good thing to practice. I am not one of those men but hopefully I will be one day... For now, for me, being so selective on food to eat is too much admin. Maybe as time goes [by] I will be able to change. For now I eat whatever I lay my hands on. As long as I am full and the food is nice, I am a happy man”.

(Participant 4, FGD #4)

Barriers to healthy dietary patterns reported during the focus group discussions included ignorance and cultural beliefs, convenience and food costs. Most men described food preparation as a woman’s responsibility. Some of the men reported that they did not cook at all; if their wives were not around, they lived on ‘take-away’ meals.

“I do not know much about foodstuff and preparation. The truth is that I am not interested. Unfortunately my wife works and stays in a different town from here. I always go for quick and convenient meals at work and at the home, except during the days when she is around”.

(Participant 2, FGD #5)

For those who were not working at the time of the interview, food costs were an important barrier to healthy dietary patterns. The cost of food limited this group of men from buying healthy and nutritious foodstuff, and it was thus not always a priority when they went grocery shopping. They reported purchasing affordable foodstuff that would last longer (usually intended to last until the next anticipated income). Most of the time this meant buying a lot of energy providing food such as maize meal and sugar. The time required to prepare food was mentioned as another barrier to healthy eating. Most men were involved in daily activities which took the whole day, and by the time they got home, all they wanted to do was to rest and not spend time in the kitchen.

7.6.4. Perceived benefits: Physical activity

Physical activity played an important role in improving health, reducing the risk for NCDs and in improving individuals' quality of life, and a decline in physical activity played a significant role in the prevalence of health predictors such as being overweight (Brandes, 2012). There were lower rates of all causes of morbidity and mortality among individuals who were physically active (Daigle, 2003; WHO, 2008). Men in Maseru, Lesotho were aware of the benefits gained from being physically active, as mentioned. Literature described various benefits arising from physical activity. These included physical performance, psychological outlook, preventive health, life enhancement and social interaction (Zunft et al., 1999). Many people did not engage in adequate physical activity, owing to low perceived benefits and high perceived barriers to exercise.

The perceived reasons for less participation in exercise were multifaceted and comprised of personal, interpersonal, environmental and policy determinants, specific to an individual's country of residence (Geoff et al., 2010). From a nationally representative study sample in the European Union, the most important barriers to increased physical activity for younger adults were work or

study commitments (Zunft et al., 1999). This was also found to be true for most of the adult men in Maseru, Lesotho. Unless an individual reported being a sportsman, many of the working class men who participated in the study mentioned work commitments as a huge barrier to engaging in physical activities. The same view was prevalent among some participants enrolling/enrolled in tertiary institutions in and around Maseru; reporting a lack of time to exercise as a result of a lot of academic work.

Moreover, another important barrier to engaging in physical activity was physical exertion (Geoff et al., 2010). Similar to other studies on physical inactivity, other perceived barriers to physical activity in adult men in Maseru included time expenditure, the environment in which the individuals lived, lack of knowledge of the benefits gained from physical exercises and family discouragement (Geoff et al., 2010). Many individuals viewed activities such as manual work in and around the house lightly and not as an important tactic for a healthy lifestyle practice.

“The previous speaker spoke about manual work as a form of exercise. Hmm! Does that really count? I don’t remember when last I did some. I am a busy man. Besides that, we have people who help us with manual work because we are both [my wife and I] very busy at work”.

(Participant 5, FGD #5)

An increased access to cars was another important barrier to physical activity. When asked to share about their mode of transport around Maseru, one of the men in one of the focus group discussions said: *‘We are a mobile generation, there are cars everywhere’*. Very few of those who owned cars mentioned that they parked their cars at one point and moved around to different places on foot; only returning to their cars when they had finished their errands in town.

“I rarely walk to any place. I can simply say, I am not walking to any place because I have a car. I can afford to drive to any place I want to go to. If I had no car, somehow a plan would be made to get to different places. I would walk; in fact I used to before I owned a car”.

(Participant 1, FGD #4)

For the men who actually owned cars during the study, convenience was the main reason for not walking to different places around Maseru. They were able to describe the health benefits that they would gain from walking, however, the use of cars as a mode of transport helped them to reach appointments more quickly.

“Eish! You know what? Sometimes I do think about walking, but time does not allow that. It is the time issue that makes most of us not walk to any place while in town. Just yesterday I met a lady who stays near to my house, walking from her workplace to her house. Why was she walking? She has the time to do that while on the other hand I do not. When I wake up in the morning, I am usually already late. In the afternoon or after work, I always finish late and cannot walk home. I honestly do not have the time to walk. I am always chasing after time, I am never on time for anything, so walking is out”.

(Participant 4, FGD #3)

Most of the participants who reported walking around Maseru were those who used public transport to town. For them, it was cheaper to walk to all the places they wanted to visit in town and then return to their taxi rank for a taxi home. For these men, walking did not even feel like a physical activity. The only time that they would take a taxi to different places around town would be when they were carrying heavy stuff or were rushing to get somewhere.

7.7. Exploring definitions of masculinity among adult males in Maseru

This section examines the dominant views of masculinity in Lesotho, i.e. what it means to be a man in the context of Lesotho. The section looks at the interpretation or the defining characteristics of ‘a man’ in Maseru. In order to obtain the dominant notions of manhood in the study setting, the researcher asked the focus group discussion participants to give their definition of a man in the context of Lesotho. A variety of definitions were offered when participants were asked to define what a man is. Reflecting an extreme hegemonic masculinity, one participant said:

“When we talk of a man in Lesotho it usually gets aligned to sexuality. Maybe sexual behaviour. For one to be considered a man, one should be having a wife and also some concubines or girlfriends outside his marriage, then you are a man. If you just have one wife that you are faithful to, ahrgh, some men see you as weak and as a ‘woman’. Sometimes one is referred to as a man depending on his penis size and this could be its length or its thickness.... There is also this statement: ‘Be a man’, drive like a man, man up, etc. for you to be a man you should drive at a certain speed, at high speed basically, for you to be a man you should drink so many quarts [of beer] a day. The risky kind of behaviors one engages in, the man you are. The feminine part of a man who takes a good care of himself, respecting his family and wife is seen as not being man enough ...A man is a sheep, he does not cry. Even if you go through hardship, don’t cry, don’t let people know. A man can be sick, but cannot go to the hospital or clinic because that would be a sign of weakness. A man is expected to be resilient and able to stand the pain in any forms of it. A man should mask his emotions and emotional experiences he goes through and should always come out as strong.”

(Participant 2, FGD#2)

There was some support for this view, highlighting the physical strength and capabilities of man and also emotional strength demonstrated through suppression of emotions

“I can say a man is somebody who can work and provide for his family, one who can be able to protect the family and somebody who has control and works and protects the family...He can do tough/heavy jobs. He can work in the garden, prune trees. The other thought that comes to mind goes together with a Sesotho saying which says ‘a man is a sheep, he does not cry’. He does not display emotions.”

(Participant 3, FGD# 7)

In general participants did not define being a man in such a polarised fashion. Factors such as sex, age, marital status, fatherhood, and responsibility were generally discussed with varying emphasis on each of the factors. For example:

“A man is a male individual who is 18 years old and can take responsibility, married or not married. As long as he is old enough to be trusted to take responsibility in the family he is a man”.

(Participant 7, FGD #3)

By virtue of being born male, and being at least eighteen years old, one could be referred to as a man in Lesotho. However, although the previously mentioned participant did not emphasise the need for marriage, many of the participants strongly believed that a male person becomes a man only when they get married.

“A man is a married male person. When he is married, he is now having the responsibility of caring for other people - his wife and children, which he did not have before getting married. If you do not get married and start having children, you are still a boy...”

(Participant 2, FGD #8)

Based on this view, any male aged 18 years and above was still viewed as a ‘boy’ if they were not married. One of the males in one of the focus group discussions who had recently married stated:

“Just like me, before I got married. In my family the elders treated me like one of the boys in the family regardless of my age, especially for serious family matters. My opinions in any family matters were not taken serious[ly] until now. Now I am married and my wife is pregnant. My voice is heard in the family, my elders have started treating me like one of the family men and even listening to me. So for me, until a male person is married, in my opinion and experience he will always be a boy”.

(Participant 4, FGD #5)

From the above quotation, having a wife and children gave men a sense of pride and brought recognition in a man’s family. This finding coincided with the finding from one of the rural areas in South Africa where a male gained the status of manhood through marriage and child bearing (Sideris, 2005). The other factor that emerged as an important qualification for a male person to be regarded as a man was graduation from traditional initiation school. This belief was found especially among older men, who had grown up in the rural areas in the country,

“A male person who has gone for our Sesotho traditional initiation school (lebollo). When he gets back to the society, he is now referred to as a real man because we have now taught him how to be a man while he was in the mountain. He can even get married now”.

(Participant 3, FGD #7)

Young men were seen and believed to be men when they had graduated from the traditional initiation school. Upon their return from this school on the mountain, the older men in the community trusted these young men and even perceived them as ready to commit to marriage. Some of the men interviewed during the study admitted that over time the age of the young men who went to the initiation school had decreased and they thus did not necessarily allow those young men to get married when they returned to their communities. However, the teachings that they had been given while at the initiation school were believed to have shaped and equipped them well enough to be responsible men in their families, and in society at large. Contrary to the belief that a traditional initiation school transformed young men to manhood other males, especially those who were born and had grown up in towns, did not subscribe to the traditional initiation school and its teachings:

“Those people are not turning into men just because they have gone to the mountain. They are just full of theory of what a man should be like. They are still boys until they get married like everybody else. Some of them practice the worst behaviour when they come back to society. You cannot tell me that they have become men. Maybe they are referred to as men, just to praise them for having been brave enough to go to the mountain, otherwise nothing has changed”.

(Participant 2, FGD #6)

Good and brave deeds, and work were also associated with being defined as a man in Lesotho. Referring to an individual as a *man* based on what they have done is sometimes applied to both men and women. Women who perform duties that are expected to be carried out by men are

commended as 'men'. For example, women who are bread winners are said to be '*men*' or act like men. Although less common for some participants, males who perform good and acceptable deeds in their families and societies are defined as men, regardless of age and marital status. Common examples included those who were able to protect and provide for their families. According to this stereotypical ideology of manhood, men and not women were expected to take economic responsibility for their families. The situation in Lesotho at the time of the study was such that it seemed to have undermined this notion of manhood and men were no longer seen as the chief bread winners.

“When one is a hard worker and serious about his work, that person is usually called a man. So his hard work and good works lead others to referring to him as a man.”

(Participant 4, FGD#8)

“His conduct in the society, respect to other people. A man respects his nation. He does not do anything that is not acceptable to the people around him. A man takes responsibility in his family. If he is married, he protects his wife and children. If he is not married, he protects and caters for his parents and family members.”

(Participant 5, FGD#5)

However, as noted earlier for many there was an underlying certainty that these actions were not sufficient to be deemed a man all the time in the absence of marriage:

“One cannot become a father without bearing a child, at the same time; he cannot become a man unless he gets married. If he is not married, he can only be referred to as a man as

praise if he has done some good works associated with men. So in this case, his good actions can lead to referring to him as a man, but it will be temporary.”

(Participant 2, FGD#3)

A different context in which a man was defined as such in Lesotho was seen within the local popular cultures, and this was usually in a negative light. There was reportedly continued rivalry between Basotho male traditional artists. These rivalries sometimes went beyond just competing in song and escalated to a physical fight. Competition is strongly associated with hegemonic masculine identity. A male artist who was able to conquer his competition, and sometimes even kill his competition was seen as the man in the situation. This man then became feared by his colleagues and family members, including his wife and children if he was married. Basically the more casualties he had, the bigger the man he was.

Irrespective of other traits and behaviours associated with manhood, a heterosexual sexual orientation appeared to be a determining factor for one to be called a man. Hegemonic masculinity undermines homosexuality. Homosexual males were generally disqualified as men in most focus group discussions.

“... being born male does not necessarily mean that we are all men. There are [male] people who are 18 years old and above and who are responsible in their families; but whose [social] behaviour and the way they live does not say they are men. I have an example; the gay men were born males, but the way they conduct their lives does not reflect the way a man should live. They are women, they take [on a] women’s role even in sexual intercourse. Even their general behaviour in public is similar to that of women”.

(Participant 5, FGD #1)

7.8. The effect of masculinity identity on lifestyle risk behaviors

The effect of femininity and masculinity on lifestyle varies. Masculinity/manliness is in general associated with men's poor health practices (Courtenay, 2000). Traditional masculinity traits such as perseverance, bravery and strength have the potential to yield both negative and positive impacts on men's health and health improving behaviours (Hooker, Wilcox, Burroughs, Rheaume & Courtenay, 2012). Men have been socialised as a strong gender and society expects them to endure physical and emotional pain, including illness. This expectation may lead to men delaying or avoiding health appointments (Hooker et al., 2012) because being sick is often associated with weakness. In pursuit of masculinity, men usually seek to portray bravery, endurance of pain and engage in risky behaviour (Ratele, 2008b; Courtenay, 2000). There is little or no work in Lesotho that has studied the relationship between masculinity and lifestyle risk behaviours. This present study has therefore addressed this gap by examining the effect of gender on the relationship between elements of masculinity and positive and negative health behaviours.

During the focus group discussions held in Maseru, men were asked how often they visited their doctors or a clinic for a general health check-up. Almost all the men who participated in these focus group discussions only visited a doctor or a nurse at a nearby clinic when they were seriously ill. The men claimed that they endured pain until they felt the need to seek medical help. This meant that men postponed seeking medical attention until they felt that their illness was worsening. Besides the stubbornness that characterised men from different backgrounds, heavily burdened public health service providers were also mentioned as one of the determining factors for men not wanting to consult regularly with their doctors and nurses.

“I don’t get it. Going to a clinic or to a doctor’s office just for health examination? I don’t think I can do that. I would feel embarrassed. Won’t those people get surprised? They have too many sick people waiting to be attended because they are really sick and here comes my turn. When I get inside I tell them that I came for health examination? I am afraid I am not that bold. I feel like I will be wasting their time. I only go there when I am really sick. Maybe those who use private doctors can do such. In our public hospitals and clinics I do not see that happening. I don’t know. Plus we don’t set appointments like they do at private doctors”.

(Participant 6, FGD #6)

Having mentioned that they only sought medical help when they were ‘really’ sick, this confirmed the social construct that men could/would bear physical pain rather than seek treatment. A somewhat interesting and factual contention was brought up by some men about seeking medical help. They were of the view that it was not good to rush to seek medical attention whenever they felt sick. The assertion was that it was good to give the body a chance to fight the sickness naturally and only to go for medical attention if the situation got worse. Some of the men reported that the only time they went to the clinic or hospital was when they accompanied a sick person; when circumstances such as work travels forced them to get a medical examination; or when they went for HIV/AIDS testing. They reported that the HIV testing was not voluntary, but rather ‘forced’ on them by their wives/partners. In response to the same question regarding how often they visited their doctors or clinics for a general medical check-up, a respondent in one of the groups revealed:

“I also haven’t, but [I] usually go for these health campaigns done to test [for] HIV/AIDS in our communities. When you get there, those people usually test a lot of things including

blood pressure, sugar diabetes and then HIV/AIDS. My wife is a nurse, but she never examined me. The last time we went for a health examination together was before we got married, that was many years ago. If not through these health campaigns in different areas around town and our villages, lately I test through my wife because she always goes for these tests. After every test that she takes, if she says she is okay, then I believe that I am also healthy if she is”.

(Participant 6, FGD #3)

Based on the information given above, some men seemed to be health risk takers. Instead of going for medical check-ups themselves, they choose to live their lives on the assumption that they were well, based on the wellness of their spouses/partners. There was a possibility that those men with that mind-set of total reliance on their spouses were fearful. This analogy disputed the belief that men were fearless and strong. There was also the possibility that they did not consult regularly with health professionals because they were afraid of what they would be told by the doctors and nurses. Those men who depended on their wives/partners for their wellness were likely to remain ignorant concerning the NCDs that they could be at risk of developing or had developed over time. For example, males from the age of forty were encouraged to undergo health screening in order to detect conditions such as prostate cancer, so that any conditions detected could be managed successfully. Failure to participate in these screening programmes could result in them being diagnosed for certain conditions once it was too late for effective treatment.

During the focus group discussions, the researcher asked the men if they had heard about prostate cancer. The researcher further asked participants if they had gone for a medical examination specifically to screen for prostate cancer. Some men had heard about the

condition on the radio/television and some had read about the disease in pamphlets from the health campaigns around Maseru and from the local clinics. None of the men reported having had a medical examination for prostate cancer, predominantly because they feared a positive test result for this disease. They were of the view that it would be difficult to live if the screen test results were positive, so they preferred to stay in the dark about it. Very few of the men were willing to go for a prostate cancer examination in the near future.

A study that evaluated multinational patterns of gender and age-specific alcohol consumption in 35 countries between 1997 and 2007 discovered that consistent high-volume drinking was more prevalent among men than it was among women (Wilsnack et al., 2009). Men took risks, and were socialised as emotionless beings that were always strong. In reality however, men were human beings and had emotions as well. In the focus group discussions for this study, it was found that drinking alcohol made it easy for some men to share their emotions with others. When asked to share some of the reasons why they consumed alcoholic beverages, one of the men who was aged between 35 – 40 years said:

“I always hang out with my boys, on weekends mostly. We drink and talk about life. I mean everything from our hurts and joys, maybe from the family or girlfriends. It is funny that when we are sober it is difficult to talk about some stuff. I for one cannot openly talk about family issues to my friends when I am sober, but when I am tipsy, anything goes. I don’t know why this happens so for me that is one of the reasons why I drink, I become free...”

(Participant 7, FGD #3)

The previous quotation contradicted the view that masculinity did not value self-disclosure. It was also interesting that alcohol consumption created a favorable atmosphere that allowed men to be

vulnerable with one another. As much as some of the men interviewed claimed to be real and free when under the influence of alcohol, the fact remained that harmful use of alcohol exposed them to an increased risk of NCDs. With regards to smoking, men were a gender that had been found in literature to smoke tobacco more than females did (Adhikari et al., 2014; Bonita & Beaglehole, 2014; Peltzer et al., 2001; Reddy et al., 2015; Sánchez-López et al., 2012; Waldron et al., 1988; WHO, 2009a; WHO, 2011; WHO, 2015). This risk behaviour also added to the high chances of developing chronic illnesses such as lung cancer. Unfortunately, as mentioned earlier, non-smokers were also exposed to smoking related diseases from inhaling the tobacco smoke from those who smoked around them. Participants in the focus group discussions alluded to the fact that smoking was becoming more prevalent in Lesotho. Some men viewed smoking as ‘manly’ and an unacceptable practice for women. One of the men who reported current smoking during the study said: *‘I cannot smell like a woman! Smoking gives me that smell; different from a woman...’* (Participant 3, FGD #5).

7.9. Summary

The chapter has explored the general perceptions of the severity of, and susceptibility to, lifestyle risk factors for NCDs using the qualitative data from the focus group discussions held in Maseru. It has also provided reasons behind the estimates and patterns seen from the pilot study and the LDHS analysis. The chapter has further explored definitions of masculinity among adult males in Maseru, as well as the impact of masculinity identity on lifestyle risk behaviours among adult males. Smokers were more susceptible than non-smokers to chronic lifestyle diseases and conditions. Cigarette smoking appeared common, especially among middle class adult males and among tertiary students. There were various reasons cited for smoking. These reasons included

peer pressure, fun and stress, and a lot of the men had started smoking during their teenage years. Most participants in the focus group discussions were aware of the fact that smoking was dangerous and that it exposed both smokers and non-smokers to health related dangers. Previous studies have also stated that most smokers were usually aware of their vulnerability to diseases associated with smoking (Benonitz, 2008; Cataldo, 2003), but one of the key hindrances to the awareness of the dangers of smoking in Lesotho was the fact that the warnings on the tobacco containers were written in English. There was thus a language barrier as this language was not understood by everyone in Lesotho.

Harmful consumption of alcohol has been stated in literature as one of the key risk factors for NCDs (Beaglehole & Yach, 2013), and binge drinking has been linked to considerably higher health risks (Wechsler et al., 1993). Reports of binge drinking among adult men in Maseru were common during the focus group discussions and most of the binge drinking happened during the men's leisure time. Men did not spontaneously associate alcohol drinking with any health issues. They instead associated harmful use of alcohol with numerous social issues including violence, unnecessary fights, reckless driving and unprotected sex. Similar to smoking, most men started consuming alcohol at a younger age, mostly due to peer pressure. A locally brewed beer (Maluti) seemed popular among the men, especially the working class and those men in the tertiary institutions, while traditional beer seemed common among older adult men who were unemployed during the study. Harmful alcohol consumption was also associated with manliness. Those who did not drink alcoholic beverages excessively were seen as weak and as feminine by other men who drank alcohol excessively. In order to fit in and to be accepted as men, some of the men in the study had given in to harmful alcohol consumption.

Healthy eating has been acknowledged as critical for a healthy lifestyle (Xu et al., 2016). Most men in Maseru were aware of the negative effects of poor dietary patterns, however, they reported difficulty in consistently eating healthily due to the high cost associated with healthy eating and their lack of discipline. The most important finding regarding the poor dietary practices among most of the men was that food preparation was perceived as a woman's responsibility in Lesotho. A lot of them, especially those who were married or who staying with a woman, reported healthy eating only when their wives/partners were around. Convenience meals such as 'take-aways' and skipping meals such as breakfast were common among the adult male study participants in Maseru, Lesotho.

Physical inactivity has been found to be responsible for a lot of global deaths (WHO, 2010; Booth et al., 2012). Most men who participated in focus group discussions were aware of the benefits gained from physical activity. However, they reported a lack of consistency. Walking and manual work such as gardening, cleaning and cooking were not necessarily perceived as physical activities from a health benefit point of view. Fortunately, excessive weight and obesity were not a challenge for most of the Lesotho men in.

CHAPTER EIGHT

DISCUSSION AND CONCLUSIONS

8.1. Introduction

Non-communicable diseases are a serious health threat facing humanity today. Literature that speaks to this challenge is uncommon in some of the developing countries, including Lesotho. A large quantity of public health literature accessed in Lesotho focuses largely on communicable diseases such as HIV/AIDS and tuberculosis because the country used to be overwhelmed mostly by these diseases. This has resulted in less reliable data available on NCDs in the country. A rapid growth in both the communicable and non-communicable illnesses is anticipated to overwhelm Lesotho in the near future (WHO, 2009b) owing to epidemiological transition. The main objective of this study was to understand the lifestyle risk factors for chronic non-communicable diseases among adult men in Maseru, Lesotho. Men were chosen as the subjects for this study owing to reports that mortality from NCDs was higher among men than it was in women (WHO, 2012). The study investigated gender norms in order to better understand how dominant notions of masculinity influenced the prevalence of risk factors for NCDs among men.

Guided by the Health Belief Model (HBM) and the Health, Illness, Men and Masculinity Model (HIMM), both quantitative and qualitative research approaches were used to provide different perspectives on the study (Hanson et al., 2005). This blend of the cognitive and socio-ecological approaches was appropriate because men's health, similar to women's health is shaped by multi-level factors. The HIMM model presents masculinity as a social determinant of health that overlaps with other health determinants comprising socio-economic status, race, ethnicity, sexuality, ability, geography, community, education, and employment (Evans et al., 2011). The HBM on the other hand is a psychological model that explains and predicts health behaviour through better

understanding of individuals' health beliefs (Vaidya, 2014). Firstly, the study has examined the prevalence of lifestyle risk factors for NCDs among adult men in Lesotho. Secondly, it investigated the relationship between demographic factors and lifestyle risk factors for NCDs. Thirdly, the study explored men's perceptions of lifestyle risk factors for NCDs. Fourthly; it studied how masculinity was defined by adult men in Maseru, Lesotho and lastly evaluated the effects of masculinity on lifestyle risk factors. The purpose of this chapter is to present answers to the outlined research questions. The chapter explains how these answers fit in with the existing knowledge of the topic and points out similarities and differences. The chapter further explains the policy implications of the findings and makes suggestions for future research. Most importantly, the chapter highlights the contribution of this thesis in the study of NCD risk factors and masculinity in Lesotho.

8.2. The prevalence of risk factors for NCDs among adult men in Lesotho

8.2.1. The prevalence of smoking

The findings of this study showed a general increase in the prevalence of smoking among adult men in Maseru, Lesotho. From the qualitative results of the study it was evident that the prevalence of smoking was increasing in men because smoking was perceived as masculine. The quantitative results showed about seven per cent increase in the prevalence of smoking observed between 2009 (35%) and 2014 (42%). Consistent with the existing literature, the findings from this study indicated that the prevalence of smoking increases with age until middle age and eventually declined as men got older (LDHS, 2009; Nyabongo, 2014; Schoenborn, 2004; Screeramareddy et al., 2014). The prevalence of smoking seemed to be higher among men aged between 25 – 29 years, then fluctuated from 30 – 50 years and eventually declined as the men got older. The younger age group was greatly influenced by the media, and the media made smoking

look ‘cool’, thereby attracting a lot of younger men who wanted to impress others. This interpretation was consistent with Heatherton and Sargent (2009) who established increased odds of smoking among individuals who were exposed to movies with key characters who smoked, compared to those who were not exposed to smoking role models through media.

The current study found smoking more prevalent in the rural areas than it was in the urban areas in Lesotho. In their studies related to the prevalence of smoking, Nyabongo (2014) and Sreeramareddy et al. (2014) also reported similar findings confirming that smoking was more prevalent in rural than in urban settings. This finding was of interest, especially in the context of Lesotho. The media had minimum influence in rural communities due to the limited access that rural communities had to media resources. For instance, most households only owned a radio and not a television. Listening to the radio was imageless and did not provide the listener with visuals. There were possibly other underlying factors besides the media that influenced the higher prevalence of smoking in Lesotho’s rural areas compared to urban areas. There was a need for localised programmes focusing on raising greater awareness of the dangers of smoking and its link with non-communicable diseases.

The findings of the current study were consistent with previous studies (Hosseinpoor et al., 2012; Sreeramareddy et al., 2014) revealing that smoking declined as wealth increased (Table 5.2). The prevalence of smoking was reportedly higher among poor members of society globally compared to the rich (Depa et al., 2015; Hosseinpoor et al., 2012; Sreeramareddy et al., 2014). Similar results were observed in Lesotho where the first two categories of wealth (poorest and poorer) in Table 5.2 reported a high prevalence of smoking compared to the rich who appeared to have a low prevalence of smoking. This was an interesting finding given the cost of tobacco. It was expected that the poor would prioritise and limit their spending to basic needs such as food and restrict themselves from

purchasing tobacco products. Increased wealth was generally associated with a high level of education. The findings of the current study coincided with the literature that smoking decreased as the level of education increased (Beaglehole & Yach, 2013; Hosseinpoor et al., 2012; Kassu et al., 2012; Koning et al., 2010; Lucchetti et al., 2014; Nies et al., 2012; Nyabongo, 2014; Sreeramareddy et al., 2014), as expected. As individuals attained more education, smoking cessation was anticipated to increase because individuals' awareness of the health dangers associated with smoking increased.

There was a noticeable impact by marital status on smoking among adult men in Lesotho. Being married or cohabiting with a woman seemed to increase the chances of smoking cessation among men. This finding was consistent with previous studies. For example, some studies conducted in some parts of America and Asia reported a lower smoking prevalence and increased cessation rates among married couples compared with other categories of relationship status (Cho et al., 2008; Schoenborn, 2004). Literature has defined marriage as advantageous to health because many spouses, especially wives, constantly monitored and tried to control their husbands' health behaviours (Umberson, 1992). Transition from a married to an unmarried status, either through death, separation or divorce, was associated with an increase in negative health behaviour (Umberson, 1992) such as smoking. For example, the current study showed that losing a wife through divorce, separation or becoming a widower led to an increased prevalence of smoking among the men in Lesotho. This finding concurred with studies on daily smoking conducted in Sweden, where a considerably higher prevalence of smoking was observed among men who had previously been in relationships (Lindström, 2010).

Religion regulated people's lifestyles. Literature showed a lower prevalence of smoking among people who reported membership of religious groups in comparison with those who did not belong

to any religious groups (Koenig et al., 1998; Wang et al., 2015; Yong et al., 2009). Similarly, the current study found smoking more prevalent among men who did not practice any religion or belong to any religious groups during the 2014 LDHS. The qualitative data from the focus group discussions also indicated that smoking decreased among men who belonged to different religious groups, even though the men sometimes felt that they were being controlled by religion as it was perceived to dictate their lifestyle. Contrary to what previous studies and the 2014 LDHS found, the pilot survey carried out during the current study found the highest prevalence of smoking (25%) among adult men who reported membership of traditional Christian churches in Maseru, compared to other categories of religion.

The prevalence of smoking differed significantly by occupation and by the type of job (McCurdy et al., 2003; Smith & Leggat, 2007). The findings from this study indicated that men who worked in stressful occupations and stressful work environments, e.g. agriculture demanding long working hours, reported a high prevalence of smoking. A similar pattern was observed in the current study with regards to employees who were unskilled; they also reported a high prevalence of smoking (Table 5.2). These findings coincided with the existing literature which has shown a higher prevalence of smoking among unemployed research subjects and those working in stressful work environments (Jung et al., 2013; Lee et al., 1991). When men from different occupations were asked about the reasons why men smoked during the qualitative data collection process, men who were smokers reported stress relief as one of the reasons to smoke. This finding was similar to what previous studies have documented; some smokers, especially those working in a stressful environment, smoked to reduce work related stress (Azagba & Sharaf, 2011).

8.2.2. The prevalence of harmful use of alcohol

Harmful use of alcohol has been reported in various studies as one of the key health challenges (Beaglehole & Yach, 2013; Kassu et al., 2012; Lucchetti et al., 2014; Nies et al., 2012). In the current study, men spontaneously identified harmful use of alcohol with negative social behaviours comprising unnecessary fights, road accidents and strain on relationships. The only time where harmful use of alcohol was linked to health issues was in connection with unprotected sexual intercourse. Perceptions of harmful use of alcohol as a risk factor for NCDs came as an afterthought.

The findings from both the primary qualitative and quantitative data collected from Maseru showed a high prevalence of binge drinking among adult men, i.e. adult men in Maseru periodically consumed ≥ 5 alcoholic drinks in a row. Reports of detrimental periodical alcohol consumption appeared common from all the focus group discussions in and around Maseru, Lesotho. Heavy drinking was reported most prevalent on weekends, at month-end, during the festive season and at social events in Maseru. Two of the reasons for this high prevalence of binge drinking among men appeared to be the fact that on weekends most men did not work and used their leisure time to socialise with friends, i.e. catching up and sharing their life experiences over alcoholic drinks. The other reason for increased binge drinking was linked to weekly, biweekly and monthly wages that men got from their places of work.

The high prevalence of harmful use of alcohol was generally associated with masculinity. Most men drank to intoxication to prove the point that they were capable of taking risks; behaviour which was associated with masculinity (Iwamoto et al., 2011). Men who do not drink alcoholic beverages excessively were perceived as weak and feminine by those who excessively consumed alcohol. In order to fit in and to be accepted as masculine, some men gave in to harmful use of

alcohol. Similar to smoking, both the quantitative and qualitative analyses found harmful use of alcohol more prevalent among younger adult men and that the consumption declined as age increased. Younger adult men aged 18 - 30 years in the pilot survey reported the highest prevalence of harmful use of alcohol compared with the older adult men.

A complicated relationship between the harmful use of alcohol and the level of education has been documented in literature. Some studies reported increased consumption of alcohol among people with lower levels of education (Van Oers, 1999), while others reported harmful consumption of alcohol among people with higher levels of education (Dar, 2006). Similar to Dar (2006), the pilot survey in the current study found a high prevalence of harmful use of alcohol among adult men with high levels of education in comparison to men who reported lower levels of education. It was expected that people with higher education would consume alcohol more responsibly because they were expected to be aware of the health dangers related to heavy drinking. However, the current study showed some disconnect between knowledge and the actual behaviour. A study on alcohol consumption among students at one of the tertiary institutions in Australia reported similar findings of the high prevalence of heavy drinking as the level of education increased (Reavley, Jorm, McCann & Lubman, 2011).

The rate of alcohol consumption was complicated and varied across marital status categories (Power et al., 1999). Harmful use of alcohol was possible within any marital status category. However, different scholars have reported a high risk of heavy drinking and dependency on alcohol among the never married, widowed and separated or divorced individuals (Crum et al., 1993; Eng et al., 2005; Power et al., 1999; Schoenborn, 2004). From the qualitative data in the current study, men with different marital statuses had a lot of common reasons for heavy drinking. These reasons comprised of socialising, often with other men. For married/cohabiting men, the avoidance of a

nagging wife/partner was commonly mentioned as a reason for harmful drinking, with the aim to arrive home late and go straight to bed. The avoidance of a nagging spouse/partner described here could be understood as a coping strategy used by men to mask their emotions and to avoid confronting relationship challenges between themselves and their spouses/partners.

8.2.3. The prevalence of poor diet

While participants in this study reported taking responsibility as the key defining feature of being a man, their reported behaviours and rationales for these behaviours highlighted that men commonly abdicated responsibility for their health to women, particularly for healthy eating. The qualitative findings of the current study revealed poor dietary patterns among men in Maseru, Lesotho. Most men were aware of the health benefits gained from healthy dietary practices, but continued to consume unhealthy food. The study found two major reasons for poor diet consumption among adult men in Maseru. The first reason found was dependency by men on women for food preparation. This norm was related to a cultural stereotype where food preparation was a task for women. Men who prepared food were generally perceived by other men as being feminine. This could be interpreted as evidence showing that men in Lesotho were still traditional and upheld masculinity norms leading them to distance themselves from anything that was perceived as feminine.

The second reason for men's high prevalence of poor dietary patterns was the perceived high cost of healthy foodstuffs. The perceived high cost of healthy foodstuff was claimed as a barrier to healthy eating by a lot of men in and around Maseru. This claim came across as a convenient excuse and/or a sign of a lack of knowledge of healthy eating practices. Eating healthy did not necessarily mean that one had to buy the perceived expensive food stuff. Eating home prepared

balanced meals like ‘papa’, vegetables from the garden or wild vegetables and beans was healthy eating. In fact, before modernisation prevailed in Lesotho, especially in the urban areas, people in the country still managed to eat healthy from their food production in the fields and gardens (Ranneileng, 2013). Nutritional education specifically for men from different backgrounds was needed in order to encourage healthy dietary practices among the adult men in Lesotho.

Similar to the findings from the qualitative data from the focus group discussion, the pilot survey results also showed a high prevalence of poor dietary practices among adult men in and around Maseru. The majority of the men with a high masculinity identity revealed that they generally did not eat healthy, especially when they ate out. In fact many studies have described men as a gender that consumed unhealthy diets (Gough, 2007; Gough & Conner, 2005; Wong & Lam, 1999). The high prevalence of poor dietary patterns among adult men was a matter of interest. Continuous consumption of convenience meals increased men’s exposure to the risks for NCDs because the existing literature described poor diet as one of the contributing factors to the high prevalence of NCDs (Xu et al., 2016). The 2014 LDHS analysed in this study revealed interesting results. Even though men in Lesotho consumed health defeating diets, they generally reported a low prevalence of obesity and being overweight. Close to three quarters (74%) of the men in the 2014 LDHS had normal BMI measurements of 18.2 and an approximated 12 per cent of the men were overweight and obese (BMI greater than 25).

8.2.4. The prevalence of physical inactivity

Two types of physical activity were identified in the current study. These were work related physical activity and recreational/leisure time physical activity. The former was somehow forced on individuals because of the nature of their work, e.g. someone working in a brick manufacturing

company, while the latter was voluntary, e.g. jogging. Work related physical activity appeared most prevalent among poor and less educated men. This was actually not referred to as physical activity, but rather as work. Recreational physical activity, on the other hand, was most prevalent among middle class and richer men who were often in sedentary occupations. These interpretations concurred with the existing literature which described educated individuals as often able to afford access to resources and time to facilitate leisure time physical activity, while those with less education usually struggled to afford the resources used to facilitate recreational physical activities (He & Baker, 2005; Saffer et al., 2011). The qualitative results detailed in chapter seven of the study indicated that there was awareness among the adult men in Maseru that physical inactivity was detrimental to their health, however, its prevalence appeared high among these men. The study setting was an urban area, and this finding coincided with the existing literature that physical inactivity was more prevalent in urban areas due to increased modernisation (Dumith et al., 2011). Lack of consistency in physical activities, especially recreational types of physical activities, appeared to be one of the major reasons for an increased prevalence of physical inactivity among the participants in this study. Very few men were involved in any form of physical activities, including sports and gyming on daily basis. It was interesting to note that some adult men in and around Maseru associated some physical activities, e.g. jogging with the working class and wealthy people in their communities. Furthermore, a lot of men did not consider the manual work performed at home, e.g. gardening, cleaning, cooking, doing laundry and playing with kids as other forms of physical activities. For some men, walking was also not perceived as a physical exercise, but just as part of their daily lives to move from one place to another. Using the mode of transport used by the participants to determine the prevalence of physical inactivity during the pilot survey; a lot of men reported walking for distances shorter than five kilometers. For distances exceeding five

kilometers, a lot of them used public transport because they did not own cars. Men who owned cars reported driving almost all the time, even for short distances.

8.2.5. The prevalence of high BMI

Greater BMI (obesity) did not seem to be a problem for the adult men in Lesotho. Table 5.4 showed that many of the men in the country had BMI measurements in the normal range. Adult men aged 55 – 59 years had higher BMI readings, while younger adult men aged 15 – 19 years had lower BMIs. This finding differed from the existing literature, especially from the developed countries such as the USA, where high BMI measurements were prevalent in younger adults aged 20 – 29 years (Reas et al., 2007).

Similar to the existing scholarship, the current study found that men that were married or cohabiting at the time of the study recorded higher BMI measurements compared to those from the other marital status categories (Avertt et al., 2008; Umberson et al., 2009). The difference with some of the existing literature was observed in relation to those participants who had formerly been in a union and those that had never been married. This study found higher BMI measurements among those men who had formerly been in unions compared to those men who had never been in a union. Some of the existing literature reported these two groups concurrently. For instance, Teachman (2016) reported living without a partner (never married, divorced, separated or widowed) to be associated with a lower BMI.

The current study found adult men from the urban areas in Lesotho with higher BMI measurements compared to those of the rural adult men. This finding was consistent with what Ross et al. (2007)

reported from a study based in Canada; that higher BMI measurements were recorded for urban men compared to those from rural areas.

Table 5.4 in the current study showed high BMI measurements in men with higher levels of education. This finding was consistent with what Maddah et al. (2003) found in Iranian men, where there was a positive relationship between higher levels of education and higher BMI measurements. Hermann et al. (2011), on the other hand, reported different results in European countries. Adults with higher levels of education recorded lower BMI measurements compared to those adults with lower levels of education.

The current study also reported high BMI measurements in rich men compared to poor men. This finding was similar to what Morris (2011) found in South Africa, where BMI increased with wealth. Similarly, Sarlio-Lähteenkorva and Lahelma (1999) found lower BMI measurements in men who reported a lower SES in Finland.

8.2.6. The prevalence of hypertension

The findings from the 2014 LHDS revealed a low prevalence of hypertension or elevated BP readings among adult men in Lesotho. Men were identified in the current study as a gender which did not visit health service providers for medical checkups until it was too late. For this reason, it was possible that the general low prevalence of hypertension reflected in the findings of this study was lower than it was in reality and therefore not a true reflection, owing to the possible underdiagnoses of the condition in men. Increases in the risk for high blood pressure seemed to increase as an individual's BMI increased and the increased risk was also prevalent among those who smoked at the time of the study.

The prevalence of hypertension also appeared to increase with age (Table 5.7). Similar to previous studies, the current study results showed the highest prevalence of hypertension among older adult men aged 55 to 59 years in Lesotho (Ntuli et al., 2015). The prevalence of hypertension was high among adult men who were in a union, i.e. men who were married or cohabiting (Table 5.7). This was an interesting finding, especially because current literature described marriage as a positive health determinant (Cho et al., 2008; Schoenborn, 2004). This finding also coincided with the results reported in a study in a rural community of Limpopo province in South Africa, which revealed a lower prevalence of hypertension among the research subjects who were single compared to the other participants who were in other categories of marital status (Ntuli et al., 2015).

In the current study, hypertension appeared to be more prevalent among adult men who reported membership of religions other than Christianity. The current study also showed hypertension to be more prevalent among rich men compared to the poor. Literature has reported a positive relationship between physical inactivity and household wealth in men in Vietnam (Trinh et al., 2008). However, a lot of studies have shown that physical activity, especially leisure time physical activity involvement, increased with wealth because of easy access to advancements in technology (Trinh et al., 2008; Hallal et al., 2012) such as gym equipment. There have also been reports that the wealthy were more able to afford healthy food compared to the poor (Drewnowski & Eichelsdoerfer, 2010; Temple and Steyn, 2011), so it was surprising that hypertension was more prevalent in richer than poorer men because they were less exposed to NCD risk factors than the poor. This finding was inconsistent with the existing literature accessed. The prevalence of hypertension was reported higher among research participants from wealthy households compared to those from poorer households (Gupta et al., 2017).

8.3. Men's perceptions of lifestyle risk behaviors for chronic NCDs

8.3.1. Smoking

Perceptions of lifestyle risk behaviours for chronic non-communicable diseases were varied among the adult men in Maseru, Lesotho. For instance, with regards to smoking, there were men who saw smoking as a bad and an unhealthy habit. From this perspective, not only did smokers endanger their own lives, they also exposed other people around them to second hand smoking because, as reported from the qualitative findings, smokers smoked anywhere they felt like doing so, disregarding other people around them. Some men who were smokers at the time of the focus group discussions mentioned that they were aware of the health hazards related to smoking, however, they were finding it difficult to quit. This finding coincided with literature that smoking was addictive due to the nicotine in the tobacco (Cataldo, 2003). It was also found that there was a relationship between smoking and heavy alcohol consumption. There were men from the current study who reported that they only smoked when they were drunk. Previous studies have shown that men who were heavy alcohol drinkers usually smoked more (Bobo & Husten, 2000).

It was important to note that some men from the current study actually denied that smoking had negative health effects. Instead of perceiving smoking as a brutal and an unhealthy habit affecting people's lives negatively, these men perceived the habit as just a social activity practiced for fun and relaxation. They also claimed never to have witnessed any harm coming to other men from smoking, especially those in their families, even though they had been smoking for a long time. The media was partly to be blamed for this perception of smoking because in marketing tobacco products, it portrayed smoking as one of the ways to relax and socialise (Bobo & Husten, 2000). Masculinity identities seemed to contribute greatly to smoking initiation. Young men who desired

to be perceived as 'real men' and 'cool men' ended up getting addicted to smoking, thereby getting exposed to increased chances of developing NCDs.

8.3.2. Harmful use of alcohol

Similar views to those related to smoking were realised regarding alcohol consumption by the adult men in Maseru, Lesotho who participated in this study. There were men who were totally against alcohol consumption because they perceived it as increased exposure to numerous health and social risks. This perception was supported by previous studies where harmful use of alcohol was identified as an important risk factor for NCDs (Beaglehole & Yach, 2013; Kassu et al., 2012; Lucchetti et al., 2014; Nies et al., 2012). There was another group of men from the current study who saw nothing dangerous in consuming alcoholic drinks, as long as they were consumed responsibly. Another group of men did not have any restraints on alcohol consumption at all because it was perceived as a tool for socialising. This group of men was usually the one who consumed alcohol excessively. In fact, getting drunk was the primary reason that this group of adult men gave for consuming alcohol containing beverages. The current study found that heavy drinking was associated with masculinity, where men who did not consume alcohol excessively were perceived as feminine compared to their peers who drank heavily. Masculinity identity was acknowledged in this study as having a role to play in encouraging men to consume alcohol excessively because harmful drinking was associated with maleness, bravery and the ability to take risks by men and these were all traits for masculinity. This finding was supported by previous studies where heavy drinking among men demonstrated strength and masculinity (Caetano et al., 1998).

8.3.3. Poor diet

Literature has shown a poor dietary pattern as one of the contributing risk factors to the high prevalence of NCDs (Xu et al., 2016). Poor dietary pattern, especially among adult men in Maseru, was acknowledged by men as a general problem due to their dependence on women for food preparation. While participants reported that one of the key defining features of being a man was taking responsibility, their reported behaviours and rationales for these behaviours highlighted that men commonly abdicated responsibility for their health to women, particularly for healthy eating. From a gender point of view, women and not men were traditionally associated with food preparation and healthy eating in most nations (Courtenay, 2000; Gough and Conner, 2005; Wong & Lam, 1999). Men were reluctant to engage in any activity that was associated with being feminine. Some men, especially those who were married, mentioned that they did not cook and lived on convenience meals from food outlets, especially when their wives or partners were not around. The convenience meals that these men usually purchased were health defeating high energy content food and hardly balanced diets. A lot of men were aware of the health dangers of unhealthy dietary patterns; however, they claimed that preparing a healthy meal took time compared to just grabbing a convenient meal from a food outlet. Men seemed to undermine the long term effects of poor dietary patterns, perhaps due to the fact that negative effects developed over a long period of time.

8.3.4. Physical inactivity

Almost all the men who participated in the pilot survey ascribed to physical activity as a healthy lifestyle practice. They were aware of the fact that physical inactivity was detrimental to health. These men were further aware of the fact that lack of physical inactivity increased individual's

vulnerability to a number of diseases including NCDs. The challenge however, came with the actual participation in physical activities. There were adult men in Maseru who reported that they only sometimes engaged in physical activities, and this lack of consistency defeated the purpose of healthy living. In addition to inconsistency in physical activities, the perceptions held by some of the men from the study setting led to their increased physical inactivity. There were men who perceived physical activities such as jogging, hiking, cycling and gyming as activities for the rich or middle class members of the community. This finding was consistent with a study in Korea which found a strong relationship between physical activity and household income (Kim & So, 2014).

8.4. Masculinity defined by men in Maseru Lesotho

The concept (masculinity) may be described as a set of role behaviors that men are socialized to perform (Sorrell and Raffaelli, 2005). As a result definitions of what it means to be a man or masculine change from time to time, and in different circumstances, as different societies have diverse notions and expressions of masculinity (Mutunda, 2009). From the current study, the definition of a man in Lesotho was mostly derived from masculinity characteristics and was context based. Factors that determined definitions for a man included gender, age, marital status, deeds and cultural practices. Gender and age were often used simultaneously to define a man. By virtue of being male and being eighteen years of age and older, an individual was considered a man in Lesotho. Marital status was found to be another important characteristic determining who a man was in most communities in Maseru. Unmarried males were not taken seriously, especially in decision making in different families and in most communities. During the focus group discussions, when asked to give the definition of a man in Lesotho's context, a lot of the men

defined a man as the provider for his household. This was one of the most valued traits of masculinity in the study setting, i.e. the economic ability of a man to provide for his family.

This definition was founded on deeds performed in the family and sometimes in the community.

Honorable deeds including the ability to economically take care of their family gave them the status of a man. A man with secure employment or other reliable sources of income was respected and admired by both his family and the community. Men who were not the main bread winners in their families due to lack of employment felt their status as the heads of their households undermined because they had no means to provide for their households. A man was further described as a male figure that was able to protect his family from harm. This description of a man was associated with a number of masculinity traits provided by previous studies. Such masculinity characteristics comprised of physical strength and bravery (Courtenay, 2000). Even though the most common definition of a man was based on fatherhood, and taking care for others (responsibility), which was also associated with his ability to provide for his family through work, there was variation comprising definitions which distinguish between being a father and man. This view describes being a father was a more positive masculine identity as there was an element of irresponsibility to being just a man. This view is also proposes that a man did not have to be a father but he could be judged on his actions or his work.

Moreover, there were definitions that were more traditional or conservative. For instance, there were those who thought a man had been given God ordained headship over their family and wives, and here the emphasis was more about control than responsibility. There were those who thought that a man is one who had passed through the traditional initiation school, and such a man was culturally considered a man. Furthermore, there was definition that a man's masculinity was judged

on his sexual prowess, specifically his number of sexual partners, with the extreme version being related to the physical size of his penis.

Results from the focus group discussions indicated that some men did not accept all male persons aged 18 and older as men. Homosexual males were perceived by these men as not man enough. For these men, a 'real man' was not expected to be romantically involved with another man. Males who were married to the opposite sex were considered men, and their manhood status became even more dignified when they fathered children in that marriage. There were research participants who reported experiences of being undermined by both their senior male family members and their communities before they got married; but once they got married their status changed within their family and within their community. They started receiving respect and their voices started being listened to.

These findings concurred with those of Sideris (2005), where the status of manhood was achieved by having a wife and child in some communities in South Africa. According to the older adult men in Maseru, Lesotho, a male individual aged 18 years and above who had graduated from a traditional circumcision school was the one who qualified to be called a man. The traditional initiation and circumcision process was associated with bravery, and bravery as previously mentioned, was one of the qualities for masculinity. This rite of passage to manhood was said to provide initiates with teachings that equipped and prepared them to become men who were responsible in their families and communities. This finding clearly showed that traditional norms of masculinity still prevailed in Lesotho.

From the pilot survey undertaken in Maseru, a number of masculinity measures were tested amongst the adult men participants in and around Maseru, Lesotho to determine those that were relevant in Lesotho's context. Similar to what previous studies have reported from different

settings (Courtenay, 2000; Hooker et al., 2012; Ratele, 2008), a lot of adult men in Maseru subscribed to traditional masculinity traits comprising bravery, resilience, avoidance of femininity, ability to endure physical and emotional pain, risk taking, wanting to be bread winners and the ability to protect family members. From both the primary qualitative and quantitative data gathered in the current study, most men subscribed to traditional masculinity traits in Maseru. Among other views, traditional masculinity described men as key providers in their households. The self-esteem of the men who failed to meet this expectation became threatened, both in their households and in their community.

8.5. The effect of masculinity identity on healthy lifestyle

Masculinity varies across socio-demographic indices. Masculine men live risky lives more compared to their feminine counterparts who often lead healthier lifestyles. Younger masculine men live more riskily compared to older men. Married masculine men and masculine men who cohabit with women live less risky lifestyles. Educated masculine men lead fairly less risky lives compared to uneducated masculine men. Wealthy masculine men live healthier lifestyles compared to poorer masculine men. Masculine men who live in rural areas lead more risky lifestyles compared to masculine men residing in urban areas.

These variations influence the prevalence of NCD risks among men in Lesotho. Different masculine norms in the study were associated with health promoting and health undermining behaviors. Men from different marital status categories, who had higher scores on some masculine norms were more likely to engage in either health promoting or health undermining behaviors. For example, high prevalence of smoking, harmful alcohol consumption, poor diet and physical inactivity are more prevalent in younger masculine men compared to older masculine men. In

addition, divorced, widowed, separated and single masculine men, different from their feminine counterparts often lead risky lifestyles. Higher prevalence of smoking, harmful use of alcohol, poor dietary patterns and physical inactivity are prevalent among these groups of men.

While it has been noted that not all aspects of masculinity are associated with negative health behaviour (Sloan et al., 2015), this study found that the masculinity identity can be problematic as it has an impact on smoking initiation, harmful use of alcohol, and a lack of motivation for healthy dietary patterns and to engage in physical activities required to maintain a healthy life.

“...*masculinity is implicated in men’s health defeating practices*” (Sloan et al., 2015:208) as it influences health-related behaviour. Griffith et al. (2012) acknowledged that currently research is paying improved attention to the implications of gendered expectations and gender roles on men’s health which were neglected in the previous years. Varied and complex relationships between health and masculinity were observed by these authors in a study that studied masculinity and health among men of colour in America (Griffith et al, 2012). Masculinity qualities influenced men’s lifestyles, both negatively and positively (Hooker et al., 2012). With regards to healthy lifestyle, literature has shown that men led worse lifestyles compared to their female counterparts (Courtenay, 2000; Garfield et al., 2008).

Men who subscribed to traditional norms of masculinity were found to make less use of health facilities in their communities. Society expected men to be able to endure pain. When they were sick, the current study found that men would not rush to the health centres for help. They would instead wait for the illness to get more serious before they resorted to seeking medical attention. Literature confirmed similar findings from different settings, and one of the reasons for this behaviour was found to be the perception that being sick was a sign of weakness (Greene et al., 2011; Hooker et al., 2012; Moynihan, 1998; Mutunda, 2009; Ratete, 2008). Weakness was

associated with femininity, which masculine men went to great lengths to avoid. The notion that real men were brave and enjoyed taking risks also had a negative effect on men's lifestyles. The health risks relevant to the current study related to an increasing prevalence of negative behaviours including smoking and heavy drinking reported by most of the participants. Some current smokers in the current study described one of the reasons for smoking as not wanting to smell like women. Tobacco smoking provided them with a "manly smell" different from women's smell. This belief was however highlighted as flawed by other members of the same group in the study who had realised a growing prevalence of smoking among women as well.

Being masculine has been believed and associated with not caring too much about food and what to eat in the current study. For men possessing especially hegemonic masculinity traits, preparing and cooking their own meals is optional (Roos et al., 2001). Men's dependency on women for food preparation was an important negative effect of masculinity identity on healthy lifestyle identified in the current study. However, among unemployed men there was more willingness to share responsibility for meal preparation and other domestic tasks that were previously seen as the responsibility of women (especially by hegemonic masculinity subscribers). Both qualitative and quantitative results from the current study revealed that the majority of the men still considered food preparation a woman's duty. Men in the study agreed that salad and vegetable eating is a healthy dietary practice, however, they complained that salads and vegetables are not filling therefore eaten for enjoyment not necessarily to fill the stomach. With regards to vegetables and salads, most men further complained about the long process associated with their preparation, i.e. cleaning or washing the vegetables followed by cutting/chopping to smaller portions before the actual cooking or eating. Avoidance of this perceived long process led to most men avoiding cooking, eating salads and vegetables and as a result compromising their diet. This finding

coincided with previous studies which also revealed food preparation as a feminine task (Liebman et al., 2001; Tepper et al., 1997). This traditional belief has led to health defeating dietary patterns in men (Wong & Lam, 1999), especially in the absence of spouses/partners or mothers/sisters who were expected to prepare food for men. Men who upheld traditional characteristics of masculinity were therefore exposed more than women to the risk of developing chronic NCDs associated with poor diet.

The belief that heavy alcohol drinking characterises masculinity has contributed to increased alcohol consumption rates among men compared to women (Iwamoto et al., 2011; Sloan et al., 2015). The masculine ideals of being a “playboy”, risk-taker and endearing are risk factors cited in literature for heavy drinking and increased risks of alcohol-related problems (Landrine et al., 1988; Iwamoto et al., 2011). The avoidance of showing emotions, especially when men are sober, is related mostly to hegemonic masculinity. Social binge drinking was reported in the study as therapeutic by some men who subscribed to hegemonic masculinity. They reported to share life challenges with other men during their drinking sessions. This finding is interesting in that it shows the flexible side of hegemonic masculinity. Adult men, even those who subscribed to the dominant masculinity, who usually masked emotions when they were sober, reported that they freely express their emotions to their possibly drunk friends during their binge drinking sessions. This practice (of binge alcohol consumption) exposes men to risk of NCD's because harmful consumption of alcohol is one of the main risk factors for NCD's.

With regards to physical inactivity, almost all the participants in the study were aware of the increased vulnerability to diverse health conditions and negative health effects from physical inactivity. However, there were men who associated participation in physical activities as only relevant to middle class men and for professional sports men. These were mostly green collar

workers whose daily jobs involved intense physical activity. Unlike adult men in the middle class who usually had office/sedentary jobs, when these green collar workers arrived at home after long hours at work, they were usually tired and had no energy and time to engage in recreational physical activity. Besides the perception that physical activities are for middle social class members of society and sports men, some men in the study reported lack of consistency and being too busy as major hindrances to their engagement in physical activities.

8.6. Limitations of the study

- The current study was dependent on self-reported information. It was possible that some participants provided inaccurate information in their responses to questions asked during the study, out of embarrassment or wanting to impress other participants. Participants might have also been selective of the information they gave to the researcher. Moreover, some participants in the current study might have had trouble remembering their engagement in risky behaviours.
- The study setting was mostly Maseru and not the country as a whole. It would therefore not be advisable to assume that the findings are applicable to the whole country. Additionally, the key to effective management and prevention of NCDs depends on having information about these diseases. More national studies focused on NCDs and their risk factors are needed in order to best estimate the magnitude of the NCDs challenge in the country.
- The study was gender biased; it only focused on adult men as the primary subjects of inquiry and not on females at all. Women's perspectives on adult men's lifestyles could have added more insight to the study, given that they would have been external judges of men's risk behaviours. The results were not going to be generalised for the adult population

in Lesotho. However, the study encouraged further research on chronic lifestyle diseases inclusive of all genders and of a scope covering all ages in the future.

- A pilot survey was done to test the validity of the masculinity scales in Maseru. The sample for this pilot survey did not represent the male population in Maseru. The data collected through this pilot showed biases with regards to the subjects in the survey. For instance, there were too many adult men who had obtained tertiary education compared to the other categories of the level of education attained. The survey collected data mainly from the working class in and around the city and these men were graduates or still enrolling in tertiary institutions. This group of men was a minority in the male population and may not have subscribed fully to traditional traits of masculinity. Future research needs to broaden the scope and be more representative of the population being studied.
- Most references used in the study come from countries outside Africa as a continent. This could be a limitation in that comparisons between these countries may be biased due to differences in context.

8.7. Policy implications and recommendations

- The study has found that males in and around Maseru start smoking from an early age. Local ‘village’ health programmes focusing on health education for children are needed from an early age, to teach them about the health dangers associated with smoking. This will inform the children’s decisions against smoking as they grow older.
- The study has further established that middle aged adult men in Lesotho smoke more compared to other age categories. It is therefore important that emphasis on health education and awareness aimed at curbing the unhealthy habit of smoking is intensified in

this age group. Future research that could aid in coming up with more relevant approaches to behaviour change is also encouraged.

- The study has established that smokers expose non-smokers to second hand smoking which is a risk factor for NCDs. Health education on the effects of smoking targeting smokers in different communities is recommended. It is also vital that regulations against public smoking in Lesotho be firmly implemented to promote healthy living in different communities. Further studies focused on the smokers' social responsibility (in terms of behaviour) are encouraged in order to mitigate the prevalence of second hand smoking.
- Dependency on women for food preparation in Lesotho is a culture that needs to be transformed. It is critical that men transform from associating food preparation with feminineness. This culture could be changed through nutrition education in local communities, as well as through research focused on men and dietary patterns in the future to engage men in confronting the stereotypes associated with food preparation.
- The study has found that being physically active is sometimes associated with wealth. Those from lower wealth quintiles perceive some physical activities as practices for the wealthy. This perception shows a lack of awareness and ignorance of physical activity as a lifestyle. Relevant health education and physical activity programmes, as well as facilities, e.g. public gyms and sports facilities that would promote physical activities in different communities in and around the country are recommended.
- The study has found that homosexual men are not perceived as man enough by some of the adult men in Maseru, Lesotho; perhaps due to the cultural practices in the country. It is therefore important that future research also focuses on masculinity as confronted by

homosexuality, especially in an African context where most cultures still disapprove of homosexuality.

8.8. Conclusion

This study was aimed at understanding the lifestyle risk factors for chronic NCDs among men in Maseru, Lesotho. The use of the HBM and HIMM models to understand the lifestyle risk factors for NCDs proved appropriate and relevant for this study. The HBM highlighted men's perceptions and attitudes towards NCDs' risk factors, on one hand; while on the other, the HIMM highlighted the ways in which masculinity intersected with the other determinants of health comprising of age, gender, marital status, their level of education, occupation, place of residence and wealth in creating health disparities. A combination of a qualitative and a quantitative approach assisted in strengthening the study and avoiding shortcomings that could have been experienced if using a single research methodology.

It may be concluded that Lesotho is greatly threatened by the anticipated increase in mortality caused by NCDs. Based on the current study, masculinity is one of the principal determinants of men's health and men's health behaviours. Masculinity is an important health determinant that contributes greatly to the risky lifestyle practices by men, thereby increasing their exposure to NCDs. There is a need for high risk members of the population, especially men, to commit to adopting lifestyle changes that will mitigate the negative effects of lifestyle risk factors for NCDs. There is little or no work/literature on the relationship between masculinity and lifestyle risk factors for NCDs in the African context. This study is unique in that it bridges that gap in literature especially in Lesotho's context.

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APPENDIX

IDENTIFICATION										
PLACE NAME _____			<table border="1" style="width: 100%; height: 20px;"> <tr><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td></tr> </table>							
NAME OF HOUSEHOLD HEAD _____			EA NUMBER							
EA NUMBER			HH NUMBER							
HOUSEHOLD NUMBER			ECOLOGICAL ZONE							
LESOTHO ECOLOGICAL ZONE (LOWLANDS=1, FOOTHILLS=2, MOUNTAINS=3, SENQU RIVER VALLEY=4)			DISTRICT*							
DISTRICT CODE*			URBAN/RURAL							
URBAN/RURAL (URBAN=1, RURAL=2)										
INTERVIEWER VISITS										
	1	2	3	FINAL VISIT						
DATE	_____	_____	_____	DAY						
	_____	_____	_____	MONTH						
	_____	_____	_____	YEAR						
INTERVIEWER'S NAME	_____	_____	_____	INT. NUMBER						
RESULT CODE**	_____	_____	_____	RESULT CODE**						
NEXT VISIT: DATE	_____	_____		TOTAL NUMBER OF VISITS						
TIME	_____	_____								
**RESULT CODES:										
1 COMPLETED 4 REFUSED										
2 NOT AT HOME 5 PARTLY COMPLETED 7 OTHER										
3 POSTPONED 6 INCAPACITATED (SPECIFY)										
LANGUAGE OF LANGUAGE OF** LANGUAGE CODES			TRANSLATOR USED (YES = 1, NO = 2)							
QUESTIONNAIRE*** 2 INTERVIEW***1 SESOTHO2 ENGLISH										
LANGUAGE OF QUESTIONNAIRE*** English										
SUPERVISOR			*DISTRICT CODES:							
NAME DATE _____			01 BUTHA-BUTHE 05 MAFETENG 09							
<table border="1" style="width: 100%; height: 20px;"> <tr><td></td><td></td><td></td></tr> </table>						MOKHOTLONG				
			02 LERIBE 06 MOHALE'S HOEK 10 THABA-TSEKA							
			03 BEREA 07 QUTHING							
			04 MASERU 08 QACHA'S NEK							

INFORMED CONSENT

Hello. My name is _____. I am working with the Ministry of Health. We are conducting a survey about health all over the country. The information we collect will help the government to plan health services. Your household was selected for the survey. The questions usually take about 20 minutes. All of the answers you give will be confidential and will not be shared with anyone other than members of our survey team. You don't have to be in the survey, but we hope you will agree to answer the questions since your views are important. If I ask you any question you don't want to answer, just let me know and I will go on to the next question or you can stop the interview at any time.

In case you need more information about the survey, you may contact the person listed on the card that has already been given to your household.

Do you have any questions? May I begin the interview now?

SIGNATURE OF INTERVIEWER: _____ DATE: _____

RESPONDENT AGREES TO BE INTERVIEWED ... 1 RESPONDENT DOES NOT AGREE TO BE INTERVIEWED ... 2 END →

101	RECORD THE TIME.	HOUR MINUTES	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>				

101B

During the interview I would like to measure your blood pressure. This will be done three times during the interview. This is a harmless procedure. It is used to find out if a person has high blood pressure. If it is not treated, high blood pressure may eventually cause serious damage to the heart.

The results of this blood pressure measurement will be given to you after the interview together with an explanation of the meaning of your blood pressure numbers. If your blood pressure is high, we will suggest that you consult a health facility or doctor since we cannot provide any further testing or treatment during the survey.

Do you have any questions about the blood pressure measurement so far? If you have any questions about the procedure at any time, please ask me.

You can say yes or no to having the blood pressure measurement now. You can also decide at any time not to participate in the blood pressure measures.

Would you allow me to proceed to take your blood pressure measurement at this time?

Signature of interviewer: _____ Date: _____

..... 1 RESPONDENT DOES NOT AGREE

RESPONDENT AGREES _____

..... 2 → 102

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP												
101C	<p>Before taking your blood pressure, I would like to ask a few questions about things that may affect these measurements. Have you done any of the following within the past 30 minutes:</p> <p>a) Eaten anything?</p> <p>b) Had coffee, tea, cola or other drink that has caffeine?</p> <p>c) Smoked any tobacco product?</p>	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 60%;"></th> <th style="width: 20%; text-align: center;">YES</th> <th style="width: 20%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>a) EATEN</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>b) HAD CAFFEINATED DRINK</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>c) SMOKE</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> </tr> </tbody> </table>		YES	NO	a) EATEN	1	2	b) HAD CAFFEINATED DRINK	1	2	c) SMOKE	2	1	
	YES	NO													
a) EATEN	1	2													
b) HAD CAFFEINATED DRINK	1	2													
c) SMOKE	2	1													
101D	<p>May I begin the process of measuring your blood pressure?</p> <p>BEFORE TAKING THE FIRST BLOOD PRESSURE READING, MEASURE THE CIRCUMFERENCE OF THE RESPONDENT'S ARM MIDWAY BETWEEN THE ELBOW AND THE SHOULDER. RECORD THE MEASUREMENT IN CENTIMETRES.</p>	<p>ARM CIRCUMFERENCE (IN CENTIMETRES)</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>													
101E	<p>USE THE ARM CIRCUMFERENCE MEASUREMENT TO SELECT THE APPROPRIATE CUFF SIZE. RECORD THE CODE FOR THE CUFF SIZE.</p>	<p>SMALL: 17 CM – 22 CM 1</p> <p>MEDIUM: 23 CM – 32 CM 2</p> <p>LARGE: 33 CM – 42 CM 3</p>													
101F	<p>TAKE THE FIRST BLOOD PRESSURE READING. RECORD THE SYSTOLIC AND DIASTOLIC PRESSURE.</p>	<p>SYSTOLIC</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> <p>DIASTOLIC</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> <p>REFUSED 994</p> <p>TECHNICAL PROBLEMS 995</p> <p>OTHER 996</p>													
102	<p>In what month and year were you born?</p>	<p>MONTH</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> <p>DON'T KNOW MONTH 98</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div> <p>YEAR</p> <p>DON'T KNOW YEAR 9998</p>													
103	<p>How old were you at your last birthday?</p> <p>COMPARE AND CORRECT 102 AND/OR 103 IF INCONSISTENT.</p>	<p>AGE IN COMPLETED YEARS</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>													
104	<p>Have you ever attended school?</p>	<p>YES 1</p> <p>NO 2</p>	→ 108												
105	<p>What is the highest level of school you attended: primary, secondary, or higher?</p>	<p>PRIMARY 1</p> <p>VOCATIONAL/TECHNICAL TRAINING AFTER PRIMARY 2</p> <p>SECONDARY/HIGH 3</p> <p>VOCATIONAL/TECHNICAL TRAINING AFTER SECONDARY/HIGH 4</p> <p>COLLEGE 5</p> <p>GRADUATE/POST GRADUATE 6</p>													
106	<p>What is the highest (standard/form/year) you completed at that level? IF COMPLETED LESS THAN ONE YEAR AT THAT LEVEL, RECORD '00'.</p>	<p>STANDARD/FORM/YEAR . . .</p> <div style="border: 1px solid black; width: 40px; height: 20px; display: inline-block;"></div>													

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
107	CHECK 105: PRIMARY <input type="checkbox"/> SECONDARY <input type="checkbox"/> VOCATIONAL / TECH. OR HIGHER AFTER PRIMARY		→ 110
108	Now I would like you to read this sentence to me. SHOW CARD TO RESPONDENT. IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL 1 ABLE TO READ ONLY PARTS OF SENTENCE..... 2 ABLE TO READ WHOLE SENTENCE 3 NO CARD WITH REQUIRED LANGUAGE 4 (SPECIFY LANGUAGE BLIND/VISUALLY IMPAIRED 5	
109	CHECK 108: CODE '2', '3' <input type="checkbox"/> CODE '1' OR '5' <input type="checkbox"/> OR '4' RECORDED		→ 111
110	Do you read a newspaper or magazine at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK 1 LESS THAN ONCE A WEEK 2 NOT AT ALL 3	
111	Do you listen to the radio at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK 1 LESS THAN ONCE A WEEK 2 NOT AT ALL 3	
112	Do you watch television at least once a week, less than once a week or not at all?	AT LEAST ONCE A WEEK 1 LESS THAN ONCE A WEEK 2 NOT AT ALL 3	
113	What religion do you belong to? IF CHRISTIAN: What church do you belong to?	ROMAN CATHOLIC CHURCH 01 LESOTHO EVANGELICAL CHURCH 02 METHODIST 03 ANGLICAN CHURCH 04 SEVENTH DAY ADVENTIST... 05 PENTECOSTAL 06 OTHER CHRISTIAN 07 ISLAM 08 HINDU 09 NONE 10 OTHER RELIGION 96	
115	In the last 12 months, how many times have you been away from home for one or more nights?	NUMBER OF TIMES <input type="text"/> <input type="text"/> NONE 00	→ 122
116	In the last 12 months, have you been away from home for more than one month at a time?	YES 1 NO 2	→ 122
117	The last time you were away for more than a month, how many months were you away? IF 12 MONTHS OR MORE, RECORD '95.'	NUMBER OF MONTHS. <input type="text"/> <input type="text"/> 12 OR MORE MONTHS. 95	
118	Where did you go?	ELSEWHERE IN LESOTHO 1 RSA 2 OTHER 3	
120	Why did you go there? PROBE: What was the main purpose of your trip?	WORK 1 SCHOOL/UNIVERSITY 2 FAMILY/MARRIAGE 3 ACCESS HEALTH OR OTHER SERVICES 4 OTHER 6	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
121	CHECK 117: '1' or '2' MONTHS <input type="checkbox"/> '3' OR MORE MONTHS <input type="checkbox"/>		→ 125
122	In the last 5 years, how many times have you been away from home for three or more months at a time?	NUMBER OF TIMES <input type="text"/> <input type="text"/> NONE 00	→ 201
123	The most recent time you were away from home for three or more months, where did you go?	ELSEWHERE IN LESOTHO 1 RSA 2 OTHER 3	
124	Why did you go there? PROBE: What was the main purpose of your trip?	WORK 1 SCHOOL/UNIVERSITY 2 FAMILY/MARRIAGE 3 ACCESS HEALTH OR OTHER SERVICES 4 OTHER 5	→ 201
125	Including the time you already mentioned, in the last 5 years, how many times have you been away from home for three or more months at a time?	NUMBER OF TIMES <input type="text"/> <input type="text"/> ONE TIME 01	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP								
201	Now I would like to ask about any children you have had during your life. I am interested in all of the children that are biologically yours, even if they are not legally yours or do not have your last name. Have you ever fathered any children with any woman?	YES 1 NO 2 DON'T KNOW 8	<input type="checkbox"/> → 206								
202	Do you have any sons or daughters that you have fathered who are now living with you?	YES 1 NO 2	→ 204								
203	a) How many sons live with you? b) And how many daughters live with you? IF NONE, RECORD '00'.	a) SONS AT HOME <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> b) DAUGHTERS AT HOME ... <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									
204	Do you have any sons or daughters that you have fathered who are alive but do not live with you?	YES 1 NO 2	→ 206								
205	a) How many sons are alive but do not live with you? b) And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	a) SONS ELSEWHERE <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> b) DAUGHTERS ELSEWHERE . <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									
206	Have you ever fathered a son or a daughter who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES 1 NO 2 DON'T KNOW 8	<input type="checkbox"/> → 208								
207	a) How many boys have died? b) And how many girls have died? IF NONE, RECORD '00'.	a) BOYS DEAD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> b) GIRLS DEAD <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL CHILDREN <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									
209	CHECK 208: HAS HAD MORE THAN ONE CHILD <input type="checkbox"/> ↓ HAS HAD ONLY ONE CHILD <input type="checkbox"/> → HAS NOT HAD ANY CHILDREN <input type="checkbox"/> →		→ 212 → 301								
210	Did all of the children you have fathered have the same biological mother?	YES 1 NO 2	→ 212								
211	In all, how many women have you fathered children with?	NUMBER OF WOMEN <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									
212	How old were you when your (first) child was born?	AGE IN YEARS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									
213	CHECK 203 AND 205: AT LEAST ONE LIVING CHILD <input type="checkbox"/> ↓ NO LIVING CHILDREN <input type="checkbox"/> →		→ 301								
214	How old is your (youngest) child?	AGE IN YEARS <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table>									

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
215	CHECK 214: (YOUNGEST) CHILD <input type="checkbox"/> OTHER <input type="checkbox"/> IS AGE 0-2 YEARS		→ 301
216	What is the name of your (youngest) child? WRITE NAME OF (YOUNGEST) CHILD _____ (NAME OF (YOUNGEST) CHILD)		
217	When (NAME)'s mother was pregnant with (NAME), did she have any antenatal check-ups?	YES 1. NO 2. DON'T KNOW 8	→ 219
218	Were you ever present during any of those antenatal check-ups?	PRESENT 1 NOT PRESENT 2	
219	Was (NAME) born in a health facility?	HOSPITAL/HEALTH FACILITY. . . . 1 OTHER 2	2
220	When a child has diarrhoea, how much should he or she be given to drink: more than usual, about the same as usual, less than usual, nothing to drink at all?	MORE THAN USUAL 1 ABOUT THE SAME 2 LESS THAN USUAL 3 NOTHING TO DRINK 4 DON'T KNOW 8	8

301	Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. Have you ever heard of (METHOD)?		
1	Female Sterilization. PROBE: Women can have an operation to avoid having any more children.	YES NO 1 2	
2	Male Sterilization. PROBE: Men can have an operation to avoid having any more children.	YES NO 1 2	
3	IUCD. PROBE: Women can have a loop or coil placed inside them by a doctor or a nurse.	YES NO 1 2	
4	Injectables/Depo. PROBE: Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES NO 1 2	
5	Implants. PROBE: Women can have one or more small rods placed in their upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES NO 1 2	
6	Pill. PROBE: Women can take a pill every day to avoid becoming pregnant.	YES NO 1 2	

7	Male Condom. PROBE: Men can put a rubber sheath on their penis before sexual intercourse.	YES NO 1 2	
8	Female Condom. PROBE: Women can place a sheath in their vagina before sexual intercourse.	YES NO 1 2	
9	Rhythm Method. PROBE: To avoid pregnancy, women do not have sexual intercourse on the days of the month they think they can get pregnant.	YES NO 1 2	
10	Withdrawal. PROBE: Men can be careful and pull out before climax.	YES NO 1 2	
11	Emergency Contraception/Morning After Pill. PROBE: As an emergency measure, within five days after they have unprotected sexual intercourse, women can take special pills to prevent pregnancy.	YES 1 NO 2	
12	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES 1 _____ (SPECIFY) _____ (SPECIFY) NO 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
302	In the last three months have you: a) Heard about family planning on the radio? b) Seen anything about family planning on the television? c) Read about family planning in a newspaper or magazine? d) Read about family planning on billboards, posters, pamphlets?	YES NO a) RADIO. 2 b) TELEVISION 1 2 c) NEWSPAPER OR MAGAZINE..... 2 d) BILLBOARDS, POSTERS, PAMPHLET..... 12	
303	In the last few months, have you discussed family planning with a health worker or health professional?	YES 1. NO 2.	
304	Now I would like to ask you about a woman's risk of pregnancy. From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant when she has sex relations?	YES 1. NO 2. DON'T KNOW..... 8	→ 306
305	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS 1 DURING HER PERIOD 2 RIGHT AFTER HER PERIOD HAS ENDED. 3 HALFWAY BETWEEN TWO PERIODS 4 OTHER _____ 6 (SPECIFY) DON'T KNOW. 8	
306	I will now read you some statements about contraception. Please tell me if you agree or disagree with each one. a) Contraception is a woman's business and a man should not worry about it. b) Women who use contraception may become promiscuous.	DIS- AGREE AGREE DK a) CONTRACEPTION WOMAN'S BUSINESS 1 2 8 b) GET PROMISCUOUS 1 2 8	
307	CHECK 301 (07): KNOWS MALE CONDOM YES <input type="checkbox"/> NO <input type="checkbox"/>		→ 311
308	Do you know of a place where a person can get male condoms?	YES. 1. NO 2.	→ 311

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
309	Where is that? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)S	PUBLIC SECTOR GOVT. HOSPITAL A GOVT. HEALTH CENTER..... B GOVT. HEALTH POST..... C FAMILY PLANNING CLINIC..... D OTHER PUBLIC SECTOR _____ E (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC ... F PHARMACY G PRIVATE DOCTOR..... H LESOTHO PLANNED PARENTHOOD PSI/NEW START CENTER..... J OTHER PRIVATE MEDICAL SECTOR _____ K (SPECIFY) CHAL CHAL HOSPITAL..... L CHAL HEALTH CENTER..... M CHAL HEALTH POST..... N RED CROSS HEALTH CENTER..... O CBD..... P VILLAGE HEALTH WORKER..... Q SUPPORT GROUPS..... R FACILITY OUTSIDE LESOTHO ... S OTHER SOURCE SHOP..... T CHURCH..... U PEER EDUCATOR..... V FRIEND/RELATIVE..... W OTHER _____ X (SPECIFY)	
310	If you wanted to, could you yourself get a male condom?	YES..... 1. NO 2.	
311	CHECK 301 (08): KNOWS FEMALE CONDOM YES <input type="checkbox"/> NO <input type="checkbox"/> _____ → 401		
312	Do you know of a place where a person can get female condoms?	YES..... 1. NO 2. → 401	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
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313	<p>Where is that? Any other place?</p> <p>PROBE TO IDENTIFY EACH TYPE OF SOURCE.</p> <p>IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.</p> <hr/> <p>(NAME OF PLACE(S))</p>	<p>PUBLIC SECTOR</p> <p>GOVT. HOSPITAL A</p> <p>GOVT. HEALTH CENTER B</p> <p>GOVT. HEALTH POST..... C</p> <p>FAMILY PLANNING CLINIC D</p> <p>OTHER PUBLIC SECTOR E</p> <hr/> <p>(SPECIFY)</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC F</p> <p>PHARMACY G</p> <p>PRIVATE DOCTOR..... H</p> <p>LESOTHO PLANNED PARENTHOOD I</p> <p>PSI/NEW START CENTER J</p> <p>OTHER PRIVATE MEDICAL SECTOR K</p> <hr/> <p>(SPECIFY)</p> <p>CHAL</p> <p>CHAL HOSPITAL L</p> <p>CHAL HEALTH CENTER..... M</p> <p>CHAL HEALTH POST N</p> <p>RED CROSS HEALTH CENTER O</p> <p>CBD P</p> <p>VILLAGE HEALTH WORKER Q</p> <p>SUPPORT GROUPS R</p> <p>FACILITY OUTSIDE LESOTHO S</p> <p>OTHER SOURCE</p> <p>SHOP T</p> <p>CHURCH U</p> <p>PEER EDUCATORS..... V</p> <p>FRIEND/RELATIVE W</p> <p>OTHER X</p> <hr/> <p>(SPECIFY)</p>	
314	<p>If you wanted to, could you yourself get a female condom?</p>	<p>YES 1</p> <p>NO 2</p>	

SECTION 4. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP															
401	Are you currently married or living together with a woman as if married?	YES, CURRENTLY MARRIED 1 YES, LIVING WITH A WOMAN 2 NO, NOT IN UNION 3	<input type="checkbox"/> → 404															
402	Have you ever been married or lived together with a woman as if married?	YES, FORMERLY MARRIED 1 YES, LIVED WITH A WOMAN 2 NO 3	→ 413															
403	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED 1 DIVORCED 2 SEPARATED 3	<input type="checkbox"/> → 410															
404	Is your (wife/partner) living with you now or is she staying elsewhere? PROBE IF SHE IS STAYING ELSEWHERE: Elsewhere in Lesotho or outside of Lesotho?	LIVING WITH HIM 1 STAYING ELSEWHERE IN LESOTHO . 2 STAYING ELSEWHERE OUTSIDE LESOTHO 3	→ 405															
404A	Does she stay there for work or another reason?	WORK 1 OTHER REASON 2																
405	Do you have other wives or do you live with other women as if married?	YES (MORE THAN ONE) 1 NO (ONLY ONE) 2	→ 407															
406	Altogether, how many wives or live-in partners do you have?	TOTAL NUMBER OF WIVES AND LIVE-IN PARTNERS ... <input type="text"/>																
407	CHECK 405: <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>ONE WIFE/ PARTNER <input type="checkbox"/></p> <p>a) Please tell me the name of (your wife/the woman you are living with as if married).</p> </div> <div style="text-align: center;"> <p>MORE THAN ONE WIFE/ PARTNER <input type="checkbox"/></p> <p>b) Please tell me the name of each of your wives or each woman you are living with as if married.</p> </div> </div> <p>RECORD THE NAME AND THE LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE FOR EACH WIFE AND LIVE-IN PARTNER.</p> <p>IF A WOMAN IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.</p>	<table border="1"> <thead> <tr> <th>NAME</th> <th>LINE NUMBER</th> <th>AGE</th> </tr> </thead> <tbody> <tr> <td>_____</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>_____</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>_____</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> <tr> <td>_____</td> <td><input type="text"/></td> <td><input type="text"/></td> </tr> </tbody> </table>	NAME	LINE NUMBER	AGE	_____	<input type="text"/>	<input type="text"/>	_____	<input type="text"/>	<input type="text"/>	_____	<input type="text"/>	<input type="text"/>	_____	<input type="text"/>	<input type="text"/>	408 How old was (NAME) on her last birthday?
NAME	LINE NUMBER	AGE																
_____	<input type="text"/>	<input type="text"/>																
_____	<input type="text"/>	<input type="text"/>																
_____	<input type="text"/>	<input type="text"/>																
_____	<input type="text"/>	<input type="text"/>																
408	ASK 408 FOR EACH PERSON.																	
409	CHECK 405: <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>ONE WIFE/ PARTNER <input type="checkbox"/> (405 = 2)</p> </div> <div style="text-align: center;"> <p>MORE THAN ONE WIFE/ PARTNER <input type="checkbox"/> (405 = 1)</p> </div> </div>		→ 411A															
410	Have you been married or lived with a woman only once or more than once?	ONLY ONCE 1 MORE THAN ONCE 2	→ 411A															

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
411	In what month and year did you start living with your (wife/partner)?	MONTH <input type="text"/>	
411A	Now I would like to ask about your first (wife/partner). In what month and year did you start living with her?	DON'T KNOW MONTH 98 YEAR <input type="text"/> DON'T KNOW YEAR 9998	→ 413
412	How old were you when you first started living with her?	AGE <input type="text"/>	
413	CHECK FOR THE PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
414	Now I would like to ask some questions about sexual activity in order to gain a better understanding of some important life issues. How old were you when you had sexual intercourse for the very first time?	NEVER HAD SEXUAL INTERCOURSE 00 AGE IN YEARS <input type="text"/> FIRST TIME WHEN STARTED LIVING WITH (FIRST) WIFE/PARTNER 95	→ 501
415	Now I would like to ask you some questions about your recent sexual activity. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question.		
416	When was the last time you had sexual intercourse? IF LESS THAN 12 MONTHS, ANSWER MUST BE RECORDED IN DAYS, WEEKS OR MONTHS. IF 12 MONTHS (ONE YEAR) OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO 1 <input type="text"/> WEEKS AGO 2 <input type="text"/> MONTHS AGO 3 <input type="text"/> YEARS AGO 4 <input type="text"/>	→ 418 → 430

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
428	CHECK 420 (ALL COLUMNS): AT LEAST ONE PARTNER IS PROSTITUTE <input type="checkbox"/>	NO PARTNERS ARE PROSTITUTES <input type="checkbox"/> → 430	
429	CHECK 420 AND 418 (ALL COLUMNS): OTHER <input type="checkbox"/>	CONDOM USED WITH EVERY PROSTITUTE <input type="checkbox"/> → 433 → 434	
430	In the last 12 months, did you pay anyone in exchange for sexual intercourse?	YES..... 1. NO..... 2.	→ 432
431	Have you ever paid anyone in exchange for having sexual intercourse?	YES..... 1. NO..... 2.	→ 434
432	The last time you paid someone in exchange for having sexual intercourse, was a condom used?	YES..... 1. NO..... 2.	→ 434
433	Was a condom used during sexual intercourse every time you paid someone in exchange for having sexual intercourse in the last 12 months?	YES..... 1. NO..... 2. DON'T KNOW 3.	
434	In total, with how many different people have you had sexual intercourse in your lifetime? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS 95 OR MORE, WRITE '95'.	NUMBER OF PARTNERS IN LIFETIME <input type="text"/> <input type="text"/> DON'T KNOW..... 98	
435	CHECK 418, MOST RECENT PARTNER (FIRST COLUMN): CONDOM USED <input type="checkbox"/>	NOT ASKED <input type="checkbox"/> → 438 NO CONDOM USED <input type="checkbox"/> → 438	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
437	<p>You told me that a condom was used the last time you had sex. From where did you obtain the condom the last time?</p> <p>PROBE TO IDENTIFY TYPE OF SOURCE.</p> <p>IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE.</p> <p>_____</p> <p>(NAME OF PLACE)</p>	<p>PUBLIC SECTOR</p> <p>GOVT. HOSPITAL 11</p> <p>GOVT. HEALTH CENTER..... 12</p> <p>GOVT. HEALTH POST..... 13</p> <p>FAMILY PLANNING CLINIC..... 14</p> <p>OTHER PUBLIC SECTOR _____</p> <p>(SPECIFY</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE HOSPITAL/CLINIC ... 21</p> <p>PHARMACY..... 22</p> <p>PRIVATE DOCTOR..... 23</p> <p>LESOTHO PLANNED PARENTHOOD 24</p> <p>PSI/NEW START CENTER..... 25</p> <p>OTHER PRIVATE MEDICAL SECTOR _____</p> <p>(SPECIFY</p> <p>CHAL</p> <p>CHAL HOSPITAL..... 31</p> <p>CHAL HEALTH CENTER..... 32</p> <p>CHAL HEALTH POST..... 33</p> <p>RED CROSS HEALTH CENTER..... 41</p> <p>CBD 51</p> <p>VILLAGE HEALTH WORKER..... 52</p> <p>SUPPORT GROUPS 53</p> <p>FACILITY OUTSIDE LESOTHO ... 61</p> <p>OTHER SOURCE</p> <p>SHOP..... 71</p> <p>CHURCH..... 72</p> <p>PEER EDUCATOR..... 73</p> <p>FRIEND/RELATIVE..... 74</p> <p>OTHER _____ 86</p> <p>(SPECIFY</p>	
438	<p>The last time you had sex did you or your partner use any method (other than a condom) to avoid or prevent a pregnancy?</p>	<p>YES 1.</p> <p>NO 2.</p> <p>DON'T KNOW 3</p>	<p>→ 501</p>
439	<p>What method did you or your partner use?</p> <p>PROBE: Did you or your partner use any other method to prevent pregnancy?</p> <p>RECORD ALL MENTIONED.</p>	<p>FEMALE STERILIZATION..... A</p> <p>MALE STERILIZATION B</p> <p>CONDOM C</p> <p>INJECTABLES D</p> <p>IMPLANTS..... E</p> <p>PILL..... F</p> <p>FEMALE CONDOM G</p> <p>RHYTHM METHOD..... K</p> <p>WITHDRAWAL L</p> <p>OTHER MODERN METHOD..... X</p> <p>OTHER TRADITIONAL METHOD..... Y</p>	

SECTION 5. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	CHECK 401: CURRENTLY MARRIED OR LIVING WITH A PARTNER <input type="checkbox"/> NOT CURRENTLY MARRIED AND NOT LIVING WITH A PARTNER <input type="checkbox"/>		→ 509
502	CHECK 439: MAN NOT STERILIZED <input type="checkbox"/> MAN STERILIZED <input type="checkbox"/>		→ 509
503	(Is your (wife/partner)/Are any of your (wives/partners)) currently pregnant?	YES 1 NO 2 DON'T KNOW 8	→ 505
504	Now I have some questions about the future. After the (child/children) you and your (wife(wives)/partner(s)) are expecting now, would you like to have another child, or would you prefer not have any more children?	HAVE ANOTHER CHILD 1 NO MORE 2 UNDECIDED/DON'T KNOW 8	→ 506 → 509
505	Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children?	HAVE (A/ANOTHER) CHILD 1 NO MORE/NONE 2 SAYS COUPLE CAN'T GET PREGNANT 3 WIFE (WIVES)/PARTNER(S) STERILIZED 4 UNDECIDED/DON'T KNOW 8	→ 509
506	CHECK 407: ONE WIFE/PARTNER <input type="checkbox"/> MORE THAN ONE WIFE/PARTNER <input type="checkbox"/>		→ 508
507	CHECK 503: WIFE/PARTNER NOT PREGNANT OR DON'T KNOW <input type="checkbox"/> WIFE/PARTNER PREGNANT <input type="checkbox"/> a) How long would you like to wait from now before the birth of (a/another) child? b) After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS 1 YEARS 2 SOON/NOW 993 COUPLE INFECUND 994 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	→ 509
508	How long would you like to wait from now before the birth of (a/another) child?	MONTHS 1 YEARS 2 SOON/NOW 993 HE/ALL HIS WIVES/PARTNERS ARE INFECUND 994 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
509	<p>CHECK 203 AND 205:</p> <p>HAS LIVING CHILDREN <input type="checkbox"/> NO LIVING CHILDREN <input type="checkbox"/></p> <p>a) If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>b) If you could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>PROBE FOR A NUMERIC RESPONSE.</p>	<p>NONE..... 00</p> <p>NUMBER..... <input type="text"/> <input type="text"/></p> <p>OTHER _____ 96 (SPECIFY</p>	<p>→ 601</p> <p>→ 601</p>
510	<p>How many of these children would you like to be boys, how many would you like to be girls and for how many would it not matter if it's a boy or a girl?</p>	<p>BOYS GIRLS EITHER</p> <p>NUMBER <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>OTHER _____ 96 (SPECIFY</p>	

SECTION 6. EMPLOYMENT AND GENDER ROLES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
600A	CHECK 101B: AGREED TO MEASUREMENT <input type="checkbox"/> DID NOT AGREE TO MEASUREMENT <input type="checkbox"/>		601
600B	May I measure your blood pressure at this time? _____ INTERVIEWER SIGNATURE DATE RESPONDENT AGREES <input type="checkbox"/> RECORD OUTCOME OF BLOOD PRESSURE MEASUREMENT. ----- RESPONDENT DOES NOT AGREE <input type="checkbox"/> RECORD 994.	SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/> DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/> REFUSED 994 TECHNICAL PROBLEMS 995 OTHER 996	
601	Have you done any work in the last seven days?	YES 1 NO 2	604
602	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, or any other such reason?	YES 1 NO 2	604
603	Have you done any work in the last 12 months?	YES 1 NO 2	607
604	What is your occupation, that is, what kind of work do you mainly do?	_____ _____ <input type="text"/> <input type="text"/> _____	
605	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR 1 SEASONALLY/PART OF THE YEAR . . . 2 ONCE IN A WHILE 3	
606	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY 1 CASH AND KIND 2 IN KIND ONLY 3 NOT PAID 4	
606A	Where do you usually work? In your home community, elsewhere in Lesotho, or outside Lesotho?	HOME COMMUNITY 1 ELSEWHERE IN LESOTHO 2 OUTSIDE LESOTHO 3	607
606B	The last time you worked away from your home community, how long were you away from home?	DAYS 1 WEEKS 2 MONTHS 3 ONE YEAR OR MORE 996	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
607	CHECK 401: CURRENTLY MARRIED OR LIVING WITH A PARTNER <input type="checkbox"/>	NOT IN UNION <input type="checkbox"/>	→ 612
608	CHECK 606: CODE 1 OR 2 <input type="checkbox"/> RECORDED	OTHER <input type="checkbox"/>	→ 610
609	Who usually decides how the money you earn will be used: your (wife/partner), or you and your (wife/partner) jointly?	RESPONDENT 1 WIFE/PARTNER 2 RESPONDENT AND WIFE/ PARTNER JOINTLY 3 OTHER _____ 6 (SPECIFY)	
610	Who usually makes decisions about health care for yourself or your (wife/partner), you and your (wife/partner) jointly, or someone else?	RESPONDENT 1 WIFE/PARTNER 2 RESPONDENT AND WIFE/ PARTNER JOINTLY 3 SOMEONE ELSE 4 OTHER _____ 6 (SPECIFY)	
611	Who usually makes decisions about making major household purchases?	RESPONDENT 1 WIFE/PARTNER 2 RESPONDENT AND WIFE/ PARTNER JOINTLY 3 SOMEONE ELSE 4 OTHER _____ 6 (SPECIFY)	
612	Do you own this or any other house either alone or jointly with someone else?	ALONE ONLY 1 JOINTLY ONLY 2 BOTH ALONE AND JOINTLY 3 DOES NOT OWN 4	
613	Do you own any land either alone or jointly with someone else?	ALONE ONLY 1 JOINTLY ONLY 2 BOTH ALONE AND JOINTLY 3 DOES NOT OWN 4	
614	In your opinion, is a husband justified in hitting or beating his wife in the following situations:	YES NO DK	
	a) If she goes out without telling him?	a) GOES OUT 1 2 8	
	b) If she neglects the children?	b) NEGL. CHILDREN. 1 2 8	
	c) If she argues with him?	c) ARGUES 1 2 8	
	d) If she refuses to have sex with him?	d) REFUSES SEX . . . 1 2 8	
	e) If she burns the food?	e) BURNS FOOD 1 2 8	

SECTION 7. HIV/AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																
701	Now I would like to talk about something else. Have you ever heard of an illness called AIDS?	YES..... 1 NO 2	→ 723																
702	Can people reduce their chance of getting HIV by having just one uninfected sex partner who has no other sex partners?	YES..... 1 NO 2 DONT KNOW..... 8																	
703	Can people get HIV from mosquito bites?	YES..... 1 NO 2 DONT KNOW..... 8																	
704	Can people reduce their chance of getting HIV by using a condom every time they have sex?	YES..... 1 NO 2 DONT KNOW..... 8																	
705	Can people get HIV by sharing food with a person who has AIDS?	YES..... 1 NO 2 DONT KNOW..... 8																	
706	Can people get HIV because of witchcraft or other supernatural means?	YES..... 1 NO 2 DONT KNOW..... 8																	
707	Is it possible for a healthy-looking person to have HIV?	YES..... 1 NO 2 DONT KNOW..... 8																	
707A	Can AIDS be cured?	YES..... 1 NO 2 DONT KNOW..... 8	→ 708																
707B	What can cure AIDS? PROBE: Anything else?	MODERN DRUGS/ANTIRETROVIRALS A HERBS B PRAYER/GOD..... C OTHER X DONT KNOW..... Z																	
708	Can HIV be transmitted from a mother to her baby: a) During pregnancy? b) During delivery? c) By breastfeeding?	<table border="0"> <tr> <td></td> <td>YES</td> <td>NO</td> <td>DK</td> </tr> <tr> <td>a)DURING PREG.</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>b)DURING DELIVERY.</td> <td>1</td> <td>2</td> <td>8</td> </tr> <tr> <td>c)BREASTFEEDING</td> <td>1</td> <td>2</td> <td>8</td> </tr> </table>		YES	NO	DK	a)DURING PREG.	1	2	8	b)DURING DELIVERY.	1	2	8	c)BREASTFEEDING	1	2	8	
	YES	NO	DK																
a)DURING PREG.	1	2	8																
b)DURING DELIVERY.	1	2	8																
c)BREASTFEEDING	1	2	8																
709	CHECK 708: AT LEAST <input type="checkbox"/> ONE 'YES' ↓ OTHER <input type="checkbox"/>		→ 711																
710	Are there any special drugs that a doctor or a nurse can give to a woman infected with HIV to reduce the risk of transmission to the baby?	YES..... 1 NO 2 DONT KNOW..... 8																	
711	CHECK FOR PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.																		
712	I don't want to know the results, but have you ever been tested to see if you have HIV?	YES..... 1 NO 2	→ 716																
713	How many months ago was your most recent HIV test?	MONTHS AGO <input type="text"/> <input type="text"/> TWO OR MORE YEARS 95																	
714	I don't want to know the results, but did you get the results of the test?	YES..... 1 NO 2																	

717A	<p>Some individuals choose not to go for HIV testing and counseling. In your opinion, why is this so?</p> <p>PROBE: Any other reason?</p>	ALREADY KNOW STATUS A FEEL THEY ARE NOT AT RISK B FEAR OF RESULTS C FEAR OF STIGMA/DISCRIMINATION . D FEAR OF DEATH E FEAR OF DEPRESSION F DON'T KNOW WHERE TO GET HTC . G FEAR OF GETTING INFECTED DURING TEST H FEAR OF PARTNERS' REACTION ... I LACK OF KNOWLEDGE/IGNORANCE. J FATALISM/NO CURE K TOO EXPENSIVE L OTHER REASON X DON'T KNOW Z	
717B	CHECK 712: HAS NOT BEEN <input type="checkbox"/> TESTED FOR HIV HAS BEEN TESTED <input type="checkbox"/> FOR HIV		→ 718
717C	What is the main reason you have not been tested for HIV?	ALREADY KNOW STATUS 01 NOT AT RISK 02 FEAR OF RESULTS 03 FEAR OF STIGMA/DISCRIMINATION . 04 FEAR OF DEATH 05 FEAR OF DEPRESSION 06 DON'T KNOW WHERE TO GET HTC . 07 FEAR OF GETTING INFECTED DURING TEST 08 FEAR OF PARTNERS' REACTION ... 09 LACK OF KNOWLEDGE/IGNORANCE. 10 FATALISM/NO CURE 11 TOO EXPENSIVE 12 OTHER REASON 96 DON'T KNOW 98	
718	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had HIV?	YES 1 NO 2 DON'T KNOW 8	
719	If a member of your family got infected with HIV, would you want it to remain a secret or not?	YES, REMAIN A SECRET 1 NO 2 DK/NOT SURE/DEPENDS 8	
720	If a member of your family became sick with AIDS, would you be willing to care for her or him in your own household?	YES 1 NO 2 DK/NOT SURE/DEPENDS 8	
721	In your opinion, if a female teacher has HIV but is not sick, should she be allowed to continue teaching in the school?	SHOULD BE ALLOWED 1 SHOULD NOT BE ALLOWED 2 DK/NOT SURE/DEPENDS 8	
722	Should children age 12-14 be taught about using a condom to avoid getting AIDS?	YES 1 NO 2 DK/NOT SURE/DEPENDS 8	
723	CHECK 701: HEARD ABOUT AIDS <input type="checkbox"/> NOT HEARD ABOUT AIDS <input type="checkbox"/> a) Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact? b) Have you heard about infections that can be transmitted through sexual contact?		YES 1 NO 2

724	CHECK 414: HAS HAD SEXUAL INTERCOURSE <input type="checkbox"/> HAS NOT HAD SEXUAL INTERCOURSE <input type="checkbox"/>		→ 732	
725	CHECK 723: HEARD ABOUT OTHER SEXUALLY TRANSMITTED INFECTIONS? YES <input type="checkbox"/> NO <input type="checkbox"/>		→ 727	
726	Now I would like to ask you some questions about your health in the last 12 months. During the last 12 months, have you had a disease which you got through sexual contact?	YES..... 1 NO..... 2 DON'T KNOW..... 8		
727	Sometimes men experience an abnormal discharge from their penis. During the last 12 months, have you had an abnormal discharge from your penis?	YES..... 1 NO..... 2 DON'T KNOW..... 8		
728	Sometimes men have a sore or ulcer near their penis. During the last 12 months, have you had a sore or ulcer near your penis?	YES..... 1 NO..... 2 DON'T KNOW..... 8		
729	CHECK 726, 727, AND 728: HAS HAD AN INFECTION (ANY 'YES) <input type="checkbox"/> HAS NOT HAD AN INFECTION OR DOES NOT KNOW <input type="checkbox"/>		→ 732	
730	The last time you had (PROBLEM FROM 726/727/728), did you seek any kind of advice or treatment?	YES..... 1 NO..... 2	→ 732	
731	Where did you go? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT. HOSPITAL..... A GOVT. HEALTH CENTER..... B GOVT. HEALTH POST..... C FAMILY PLANNING CLINIC..... D OTHER PUBLIC SECTOR..... E (SPECIFY) PRIVATE MEDICAL SECTOR PRIVATE HOSPITAL/CLINIC..... F PHARMACY..... G PRIVATE DOCTOR..... H LESOTHO PLANNED PARENTHOOD..... I PSI/NEW START CENTER..... J OTHER PRIVATE MEDICAL SECTOR..... K (SPECIFY) CHAL CHAL HOSPITAL..... L CHAL HEALTH CENTER..... M CHAL HEALTH POST..... N RED CROSS HEALTH CENTER..... O VILLAGE HEALTH WORKER..... P SUPPORT GROUPS..... Q FACILITY OUTSIDE LESOTHO..... R OTHER SOURCE SHOP..... S CHURCH..... T FRIEND/RELATIVE..... U TRADITIONAL HEALER..... V OTHER..... X (SPECIFY)		
732	If a wife knows her husband has a disease that she can get during sexual intercourse, is she justified in asking that they use a condom when they have sex?	YES..... 1 NO..... 2 DON'T KNOW..... 8		
733	Is a wife justified in refusing to have sex with her husband when she knows her husband has sex with other women?	YES..... 1 NO..... 2 DON'T KNOW..... 8		

SECTION 8. OTHER HEALTH ISSUES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP															
801A	Now I would like to ask you about something else. Since age 15, have you ever had the following symptoms: a) Cough for two weeks or more? b) Fever for two weeks or more? c) Sweating at night? d) Weight loss?	<table> <tr> <td></td> <td align="center">YES</td> <td align="center">NO</td> </tr> <tr> <td>a) COUGH 2+ WEEKS.</td> <td align="center">1</td> <td align="center">2</td> </tr> <tr> <td>b) FEVER 2+ MORE.</td> <td align="center">1</td> <td align="center">2</td> </tr> <tr> <td>c) NIGHT SWEATING.</td> <td align="center">1</td> <td align="center">2</td> </tr> <tr> <td>d) WEIGHT LOSS.</td> <td align="center">1</td> <td align="center">2</td> </tr> </table>		YES	NO	a) COUGH 2+ WEEKS.	1	2	b) FEVER 2+ MORE.	1	2	c) NIGHT SWEATING.	1	2	d) WEIGHT LOSS.	1	2	
	YES	NO																
a) COUGH 2+ WEEKS.	1	2																
b) FEVER 2+ MORE.	1	2																
c) NIGHT SWEATING.	1	2																
d) WEIGHT LOSS.	1	2																
801B	CHECK 801A: <table> <tr> <td align="center">AT LEAST ONE</td> <td align="center"><input type="checkbox"/></td> <td align="center">NOT A SINGLE</td> <td align="center"><input type="checkbox"/></td> </tr> <tr> <td align="center">YES</td> <td align="center">↓</td> <td align="center">YES</td> <td align="center">↓</td> </tr> </table>	AT LEAST ONE	<input type="checkbox"/>	NOT A SINGLE	<input type="checkbox"/>	YES	↓	YES	↓		→ 801L							
AT LEAST ONE	<input type="checkbox"/>	NOT A SINGLE	<input type="checkbox"/>															
YES	↓	YES	↓															
801C	Did you seek consultation or treatment for the symptoms?	YES. 1 NO 2	→ 801E															
801D	What is the main reason you did not seek treatment for the symptoms?	SYMPTOMS HARMLESS 1 COST. 2 DISTANCE 3 EMBARRASSED. 4 LONG QUEUE 5 OTHER 6	→ 801L															
801E	The last time you had such symptoms, where did you first go for advice or treatment? PROBE TO IDENTIFY TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE MEDICAL SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)§	PUBLIC SECTOR GOVERNMENT HOSPITAL. 11 GOVT. HEALTH CENTER 12 GOVT. HEALTH POST 13 OTHER PUBLIC SECTOR 16 PRIVATE MEDICAL SECTOR PVT HOSPITAL/CLINIC. 21 PHARMACY 22 PVT DOCTOR. 23 OTHER PRIVATE MEDICAL SECTOR. 26 CHAL CHAL HOSPITAL 31 CHAL HEALTH CENTER. 32 RED CROSS HEALTH CENTER. 41 VILLAGE HEALTH WORKER 51 SUPPORT GROUPS 52 FACILITY OUTSIDE LESOTHO. 61 OTHER SOURCE SHOP. 71 CHURCH. 72 FRIENDS/RELATIVES 73 TRADITIONAL HEALER. 74 OTHER 96																
801F	How soon after the symptom(s) appeared did you first seek consultation or treatment?	DAYS 1 WEEKS 2 MONTHS 3 DON'T KNOW 998	<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>															
801G	Were you told by a doctor or a nurse that you had tuberculosis?	YES. 1 NO 2	→ 801L															
801H	Were you given any medicine to treat TB?	YES. 1 NO 2	→ 801J															

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801I	How long were you told to take the medicine?	NUMBER OF MONTHS <input type="text"/> <input type="text"/> DON'T KNOW/DON'T REMEMBER 98	
801J	Did you go anywhere else for advice or treatment after you were told that you had tuberculosis?	YES 1 NO 2	→ 802
801K	Where did you go? PROBE TO IDENTIFY TYPE OF SOURCE. IF UNABLE TO DETERMINE IF PUBLIC OR PRIVATE MEDICAL SECTOR, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL 11 GOVT. HEALTH CENTER 12 GOVT. HEALTH POST 13 OTHER PUBLIC SECTOR 16 PRIVATE MEDICAL SECTOR PVT HOSPITAL/CLINIC 21 PHARMACY 22 PVT DOCTOR 23 OTHER PRIVATE MEDICAL SECTOR 26 CHAL CHAL HOSPITAL 31 CHAL HEALTH CENTER 32 RED CROSS HEALTH CENTER 41 VILLAGE HEALTH WORKER 51 SUPPORT GROUPS 52 FACILITY OUTSIDE LESOTHO 61 OTHER SOURCE SHOP 71 CHURCH 72 FRIENDS/RELATIVES 73 TRADITIONAL HEALER 74 OTHER 96	→ 802
801L	Have you ever heard of an illness called tuberculosis or TB?	YES 1 NO 2	→ 805A
802	How does tuberculosis spread from one person to another? PROBE: Any other ways? RECORD ALL MENTIONED.	THROUGH THE AIR WHEN COUGHING OR SNEEZING A THROUGH SHARING UTENSILS B THROUGH TOUCHING A PERSON WITH TB C THROUGH SHARING FOOD D THROUGH SEXUAL CONTACT E THROUGH MOSQUITO BITES F OTHER X DON'T KNOW Z	
803	Can tuberculosis be cured?	YES 1 NO 2 DON'T KNOW 8	
804	If a member of your family got tuberculosis, would you want it to remain a secret or not?	YES, REMAIN A SECRET 1 NO 2 DON'T KNOW/NOT SURE/ DEPENDS 8	
804A	Would you be willing to work with someone who has been previously treated for tuberculosis?	YES 1 NO 2 DON'T KNOW/NOT SURE/ DEPENDS 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
804B	<p>What signs or symptoms would lead you to think that a person has tuberculosis?</p> <p>PROBE: Any other signs or symptoms?</p> <p>RECORD ALL MENTIONED.</p>	COUGHING A COUGHING WITH SPUTUM B COUGHING FOR SEVERAL WEEKS C FEVER D BLOOD IN SPUTUM E LOSS OF APPETITE F NIGHT SWEATING G PAIN IN CHEST OR BACK H TIREDNESS/FATIGUE I WEIGHT LOSS J OTHER X NO SYMPTOMS Y DON'T KNOW Z	
804C	<p>What do you think is the cause of tuberculosis?</p> <p>PROBE: Any other causes?</p> <p>RECORD ALL MENTIONED.</p>	MICROBES/GERMS/BACTERIA. . . . A INHERITED B LIFESTYLE C SMOKING D ALCOHOL DRINKING E EXPOSURE TO COLD TEMP. F DUST/POLLUTION G MINING H OTHER X DON'T KNOW. Z	
805A	<p>Some men are traditionally circumcised by a traditional practitioner, family member or friend. Are you traditionally circumcised?</p>	YES. 1 NO 2 DON'T KNOW.	8 → 805C
805B	<p>How old were you when you got traditionally circumcised?</p>	AGE IN COMPLETED YEARS. . . . <input type="text"/> <input type="text"/> DURING CHILDHOOD (<5 YEARS). 95 DON'T KNOW. 98	
805C	<p>Some men are medically circumcised, that is the foreskin is completely removed from the penis by a health worker. Are you medically circumcised?</p>	YES. 1 NO 2 DON'T KNOW.	8 → 806
805D	<p>How old were you when you got medically circumcised?</p>	AGE IN COMPLETED YEARS. . . . <input type="text"/> <input type="text"/> DURING CHILDHOOD (<5 YEARS). 95 DON'T KNOW. 98	
806	<p>Now I would like to ask you some other questions relating to health matters. Have you had an injection for any reason in the last 12 months? IF YES: How many injections have you had?</p> <p>IF NUMBER OF INJECTIONS IS GREATER THAN 90, OR DAILY FOR 3 MONTHS OR MORE, RECORD '90'. IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE</p>	NUMBER OF INJECTIONS. . . <input type="text"/> <input type="text"/> NONE. 00	→ 809
807	<p>Among these injections, how many were administered by a doctor, a nurse, a dentist, or any other health worker?</p> <p>IF NUMBER OF INJECTIONS IS GREATER THAN 90, OR DAILY FOR 3 MONTHS OR MORE, RECORD '90'. IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE</p>	NUMBER OF INJECTIONS. . . <input type="text"/> <input type="text"/> NONE. 00	→ 809
808	<p>The last time you got an injection from a health worker, did he/she take the syringe and needle from a new, unopened package?</p>	YES. 1 NO 2 DON'T KNOW.	8

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
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809	Do you currently smoke cigarettes, either manufactured or handrolled?	YES 1 NO 2	→ 811
810	In the last 24 hours, how many cigarettes did you smoke?	CIGARETTES <input type="text"/> <input type="text"/>	
811	Do you currently smoke or use any (other) type of tobacco?	YES 1 NO 2	→ 812A
812	What (other) type of tobacco do you currently smoke or use? RECORD ALL MENTIONED.	PIPE A CHEWING TOBACCO B SNUFF C OTHER X	
812A	Now I want to talk about diabetes. Have you ever heard of an illness called diabetes?	YES 1 NO 2	→ 812E
812AA	What are symptoms of diabetes? PROBE: Any other symptoms? RECORD ALL MENTIONED.	FREQUENT URINATION A FEELING VERY THIRSTY B FEELING VERY HUNGRY C EXTREME FATIGUE D BLURRY VISION E CUTS/BRUISES SLOW TO HEAL F WEIGHT LOSS G PAIN/TINGLING/NUMBNESS IN HANDS AND FEET H OTHER X DON'T KNOW Z	
812B	Have you ever been told by a doctor or a nurse that you have diabetes?	YES 1 NO 2	→ 812E
812C	Are you taking medications for diabetes?	YES 1 NO 2	→ 812E
812D	How do you take the medicine?	INJECTED 1 ORALLY 2 BOTH INJECTED AND ORALLY 3	
812E	Now I want to talk about blood pressure. Before this survey, has your blood pressure ever been checked?	YES 1 NO 2	→ 812J
812F	When was the last time you had your blood pressure checked?	LESS THAN 6 MONTHS AGO 1 6 - 11 MONTHS AGO 2 1 - 5 YEARS AGO 3 MORE THAN 5 YEARS AGO 6 DON'T KNOW 8	
812G	Who took your blood pressure?	DOCTOR/NURSE 1 PHARMACIST 2 SELF 3 OTHER 6 DON'T KNOW 8	
812H	Have you ever been told by a doctor or a nurse that you have high blood pressure?	YES 1 NO 2	→ 812J

812I		YES	NO	N/A
	To lower your blood pressure, are you now:			
	a) Taking prescribed medicine?	a) TAKE MEDICINE 3	1	2
	b) Controlling your weight or losing weight?	b) CONTROL WEIGHT 3	1	2
	c) Cutting down on salt in your diet?	c) CUT DOWN SALT 3	1	2
	d) Exercising?	d) EXERCISE 3	1	2
	e) Cutting down on alcohol consumption?	e) CUT DOWN ALCOHOL 3	1	2
	f) Stopping smoking?	f) STOP SMOKING 3	1	2
	g) Taking traditional medicine/herbs?	g) TRAD. MED./HERBS 3	1	2

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
812J	Have you ever heard of a disease called breast cancer?	YES 1 NO 2	→ 814
812K	Who can get breast cancer: women only, men only, or both men and women?	WOMEN ONLY 1 MEN ONLY 2 BOTH 3	
814	Are you covered by any health insurance?	YES 1 NO 2	→ 816
815	What type of health insurance are you covered by? RECORD ALL MENTIONED.	MUTUAL HEALTH ORGANIZATION/ COMMUNITY-BASED HEALTH INSURANCE A HEALTH INSURANCE THROUGH EMPLOYER B OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE. C OTHER X	
816	CHECK 101B: AGREED TO MEASUREMENT <input type="checkbox"/> DID NOT AGREE TO MEASUREMENT <input type="checkbox"/>		→ 818
817	May I measure your blood pressure at this time? INTERVIEWER SIGNATURE _____ DATE _____ RESPONDENT AGREES <input type="checkbox"/> RECORD OUTCOME OF BLOOD PRESSURE MEASUREMENT. RESPONDENT DOES NOT AGREE <input type="checkbox"/> RECORD 994.	SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/> DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/> REFUSED 994 TECHNICAL PROBLEMS 995 OTHER 996	
818	RECORD THE TIME.	HOURS <input type="text"/> <input type="text"/> MINUTES <input type="text"/> <input type="text"/>	

SECTION 9. AVERAGING BLOOD PRESSURE MEASURES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP	
901	CHECK Q600B AND Q817: SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD <input type="checkbox"/> PRESSURE RECORDED IN BOTH Q600B AND Q817 ↓	SYSTOLIC <u>AND</u> DIASTOLIC BLOOD <input type="checkbox"/> PRESSURE MEASURES NOT RECORDED IN BOTH IN BOTH Q600B AND Q817 →	907	
902	RECORD AND CALCULATE THE AVERAGE OF THE SYSTOLIC AND DIASTOLIC BLOOD PRESSURE FROM Q600B AND Q817.			
903	BLOOD PRESSURE MEASUREMENTS FROM Q600B	SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	
904	BLOOD PRESSURE MEASUREMENTS FROM Q817	SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	
905	RECORD THE SUM OF THE SYSTOLIC AND DIASTOLIC MEASURES.	SUM SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	SUM DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	
906	CALCULATE THE AVERAGE SYSTOLIC AND DIASTOLIC PRESSURES BY DIVIDING THE SUM IN Q905 BY 2.	AVERAGE SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	AVERAGE DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	→ 911
907	CHECK Q817: SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD <input type="checkbox"/> PRESSURE NOT RECORDED IN Q817 ↓	BOTH SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD PRESSURE RECORDED IN Q817 →		910
908	CHECK Q600B: SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD <input type="checkbox"/> PRESSURE NOT RECORDED IN Q600B ↓	BOTH SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD PRESSURE RECORDED IN Q600B →		910
909	CHECK Q102F: SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD <input type="checkbox"/> PRESSURE RECORDED IN Q102F ↓	BOTH SYSTOLIC <u>AND</u> <input type="checkbox"/> DIASTOLIC BLOOD PRESSURE <u>NOT</u> RECORDED IN Q102F →		913
910	RECORD THE SYSTOLIC AND DIASTOLIC PRESSURE.	SYSTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	DIASTOLIC <input type="text"/> <input type="text"/> <input type="text"/>	

USE THE TABLE BELOW TO DETERMINE THE CORRECT CODE TO RECORD ON THE BLOOD PRESSURE REPORT AND REFERRAL FORM.

CIRCLE THE **ROW** IN WHICH THE VALUE FOR THE **SYSTOLIC** BLOOD PRESSURE FROM Q906 OR Q910 IS FOUND.

THEN CIRCLE THE **COLUMN** IN WHICH THE VALUE FOR THE **DIASTOLIC** BLOOD FROM Q906 OR Q910 IS FOUND.

THE VALUE WHERE THE ROW AND COLUMN YOU HAVE RECORDED INTERSECT IN THE TABLE WILL BE USED IN COMPLETING Q912.

AVERAGE SYSTOLIC PRESSURE	AVERAGE DIASTOLIC PRESSURE					
	<80	<85	85-89	90-99	100-109	≥110
<120	1	2	3	4	5	6
<130	2	2	3	4	5	6
130-139	3	3	3	4	5	6
140-159	4	4	4	4	5	6
160-179	5	5	5	5	5	6
≥ 180	6	6	6	6	6	6

RECORD THE NUMBER YOU RECORDED IN Q911 IN THE CHART BELOW. THEN USE THE INSTRUCTIONS TO THE RIGHT OF THAT NUMBER TO COMPLETE A BLOOD PRESSURE FINDINGS REPORT FORM FOR THE RESPONDENT. GIVE THE FORM TO THE RESPONDENT AND ANSWER ANY QUESTIONS HE/SHE MAY HAVE.

	RESPONDENT'S BLOOD PRESSURE CATEGORY	CONSULT HEALTH PROVIDER TO CHECK BLOOD PRESSURE <u>WITHIN</u> :
1	NORMAL/OPTIMAL	1 YEAR
2	NORMAL/MILDLY HIGH	1 YEAR
3	NORMAL/MODERATELY HIGH	2 MONTHS
4	ABNORMAL/MILDLY ELEVATED	1 MONTH
5	ABNORMAL/MODERATELY ELEVATED	1 WEEK

COMMENTS ON SPECIFIC QUESTIONS

NAME OF THE SUPERVISOR ----- DATE -----

OTHER COMMENTS

INFORMED CONSENT FORM (FOR FOCUS GROUP DISCUSSION)

My name is Nkeka Peter Tseole from Ha-Abia, Maseru. I am currently studying in the University of KwaZulu-Natal in Durban, South Africa. As part of my research, I am interviewing (via focus group discussions) adult males aged 18 and above, married or not. The study aims to gain a better understanding of men's lifestyle risk behaviours related to chronic non-communicable diseases in Maseru, Lesotho. I would like to ask you to participate in this study.

I am going to ask you questions on lifestyle (smoking, alcohol consumption, dietary pattern and physical activity). All information will be confidential and no one will see/hear it except the study team and participants in the case of focus group discussions. Participation in this research is absolutely voluntary; you may withdraw participation at any point if you feel uncomfortable. Should you refuse or withdraw from participating in the study, you will not incur penalty or ill-treatment. It will take about 45 minutes to 1 hour to answer the questions.

If you have any questions about the study please feel free to contact Dr Kerry Vermaak (my study supervisor) in the School of Built Environment & Development Studies in UKZN. Her contact details are as follows:

Office telephone: +2731 260 2285

E-mail address: Vermaak@ukzn.ac.za

Study Participant's Statement

I have been given an opportunity to ask any questions I may have, and all such questions or inquiries have been answered to my satisfaction. I further understand that my participation in the study is voluntary. I have been informed orally and in writing of whom to contact in case I have any questions. I voluntarily agree to participate in this study.

Date:

Signature (Participant):

FOCUS GROUP QUESTIONS

Engagement questions:

1. What is your definition of what it means to be a man in the context of Lesotho?
2. What impact has this definition on the manner in which men in Lesotho live their lives?

Testing the masculinity scales

If the following are not mentioned spontaneously, probe for thoughts around:

Life style related questions:

3. Tell me about the meals you've had today. Did you prepare them yourself?
4. What is your view on smoking? Is it men or women who smoke more in Lesotho? Why?
5. When do men typically drink alcohol?
6. Normally, how much would they drink?
7. What effect has alcohol consumption on men?
8. What is your opinion on alcohol consumption by men in Lesotho with regards to their health?
9. When last were you engaged in a physical exercise/activity? Why?
10. How often do you visit your doctor for a general check-up? Why?
11. What do you think of the following?
 - a. Men preparing their own food rather than buying readymade food.
 - b. Men eating salad.

Exit question:

12. Is there anything else you would like to say about men in Lesotho and their lifestyle related to healthy living?

INFORMED CONSENT FORM (FOR PILOT SURVEY)

My name is Nkeka Peter Tseole from Ha-Abia, Maseru. I am currently studying in the University of KwaZulu-Natal in Durban, South Africa. As part of my research, I am interviewing (survey questionnaire) adult males aged 18 and above, married or not. The study aims to gain a better understanding of men's lifestyle risk behaviours related to chronic non-communicable diseases in Maseru, Lesotho. I would like to ask you to participate in this study.

I am going to ask you questions on lifestyle (smoking, alcohol consumption, dietary pattern and physical activity). All information will be confidential and no one will see/hear it except the study team and participants in the case of focus group discussions. Participation in this research is absolutely voluntary; you may withdraw participation at any point if you feel uncomfortable. Should you refuse or withdraw from participating in the study, you will not incur penalty or ill-treatment. It will take about 45 minutes to 1 hour to answer the questions.

If you have any questions about the study please feel free to contact Dr Kerry Vermaak (my study supervisor) in the School of Built Environment & Development Studies in UKZN. Her contact details are as follows:

Office telephone: +2731 260 2285

E-mail address: Vermaak@ukzn.ac.za

Study Participant's Statement

I have been given an opportunity to ask any questions I may have, and all such questions or inquiries have been answered to my satisfaction. I further understand that my participation in the study is voluntary. I have been informed orally and in writing of whom to contact in case I have any questions. I voluntarily agree to participate in this study.

Date:

Signature (Participant):

Place of residence -----

Section A – Demographic information

PLEASE circle the number that best represent your response to the question

Age 1. 18-30 2. 31-45 3. 46-59 4. 60 plus	
--	--

Marital status: 1. Married or living together with a partner 2. Divorced or separated 3. Widowed 4. Never married and never lived together with a partner	Education: 1. Primary School 2. Vocational/Technical training after primary school 3. Secondary/High School 4. Vocational/Technical after Secondary/High School 5. College/University 6. Graduate/Post-Graduate
--	--

Religion: 1. Roman Catholic Church 2. Lesotho Evangelical Church 3. Methodist 4. Anglican 5. Seventh Day Adventist 6. Pentecostal 7. Other Christian 8. Islam 9. Hindu 10. None 11. Other religion
--

What is your occupation?-----

Employment status: 1. Employed 2. Self employed 3. Unemployed	Type of employment: 1. Full-Time 2. Part-Time 3. Casual 4. Fixed term/contract
---	---

<p>Form of earnings:</p> <ol style="list-style-type: none"> 1. Fixed monthly salary 2. Paid on commission 3. Not earning a salary 	<p>Do you personally own any land?</p> <ol style="list-style-type: none"> 1. Yes 2. No
---	---

<p>Do you jointly own any land with somebody else?</p> <ol style="list-style-type: none"> 1. Jointly with my wife 2. Jointly with someone else 3. Both jointly and alone 	<p>Type of a toilet used at home:</p> <ol style="list-style-type: none"> 1. Flush or pour flush, flush to sewer flush system 2. Flush to septic tank 3. Flush to pit latrine 4. Flush to somewhere else 5. Ventilated improved pit latrine 6. Pit latrine with slab 7. Bucket toilet 8. No toilet
--	--

<p>Circle all the items that your household own from the following list:</p> <ol style="list-style-type: none"> 1. Electricity connected 2. A battery or generator 3. A radio in a working condition 4. A television in a working condition 5. A landline telephone in a working condition 6. A mobile telephone in a working condition 7. A refrigerator 8. A computer 9. Internet access
--

Section B - Masculinity measures

Who is a man (definition) in your culture? -----

Each item consists of a pair of characteristics, with the letters A-E in between.

For example:

Very artistic A.....B.....C.....D.....E Not very artistic

The letters form a scale between the two extremes. You are to choose a letter which describes where “you” fall on the scale. From the example above, if you think that you have artistic ability, you would choose “A”. If you think that you are pretty good, you might choose “B”. If you are only medium, you might choose “C”, and so forth.

1. Can stand physical pain	A----B----C----D----E	Cannot stand physical pain
2. Does not cry easily	A----B----C----D----E	Cries easily
3. Does not give up easily	A----B----C----D----E	Gives up very easily
4. Does not know how to cook	A----B----C----D----E	Knows how to cook
5. Emotional	A----B----C----D----E	Not at all emotional
6. Enjoys taking risks	A----B----C----D----E	Shied away from risks
7. Feelings not easily hurt	A----B----C----D----E	Feelings easily hurt
8. Hates grocery shopping	A----B----C----D----E	Like grocery shopping
9. Invulnerable	A----B----C----D----E	Vulnerable
10. Resilient (strong)	A----B----C----D----E	Not at all resilient
11. Very aggressive	A----B----C----D----E	Not at all aggressive
12. Very competitive	A----B----C----D----E	Not at all competitive
13. Very rough	A----B----C----D----E	Very gentle
14. Conceals emotions	A----B----C----D----E	Masks emotions
15. Have to be a bread winner winner is	A----B----C----D----E	Does not mind who the bread winner is
16. Want to be admired	A----B----C----D----E	Does not really mind
17. Likes to be respected	A----B----C----D----E	Does not really mind
18. Adventurous	A----B----C----D----E	Less adventurous
19. Violent	A----B----C----D----E	Less violent

Section C- Lifestyle questions related to health

PLEASE circle the number that best represent your response to the question

Tobacco use

<p>Do you currently smoke cigarettes?</p> <ol style="list-style-type: none"> 1. Yes 2. No <p>Why do you smoke?</p> <ol style="list-style-type: none"> 1. Pleasure 2. Good taste 3. Relaxed feeling 4. Increased concentration/focus 5. Decrease stress 6. Addition 7. Peer pressure 8. Other reasons (specify) ----- <p>Where do you usually smoke?</p> <ol style="list-style-type: none"> 1. Anywhere 2. At home 3. At work 4. Bar/tavern 5. Social events 6. Other places (specify) ----- 	<p>What kind of tobacco do you currently smoke?</p> <ol style="list-style-type: none"> 1. Pipe 2. Chewing tobacco 3. Snuff 4. Other (specify) ----- <p>Do you smoke even when you are ill?</p> <ol style="list-style-type: none"> 1. Yes 2. No <p>How many cigarettes in a day (on average) do you smoke?</p> <ol style="list-style-type: none"> 1. 10 or less 2. 11-20 3. 21-30 4. 31 or more
--	---

Alcohol use

<p>Have you ever drunk an alcohol-containing beverage?</p> <ol style="list-style-type: none"> 1. Yes 2. No <p>Type of drink</p> <ol style="list-style-type: none"> 1. Beer/lager 2. Ciders 3. Spirits 4. Wine 5. Other (specify) ----- <p>Do you drink alcohol even when you are ill?</p> <ol style="list-style-type: none"> 1. Yes 2. No 	<p>Have you ever gotten drunk from drinking an alcohol-containing beverage?</p> <ol style="list-style-type: none"> 1. Yes 2. No <p>Why do you drink alcohol?</p> <ol style="list-style-type: none"> 1. Pleasure 2. Good taste 3. Relaxed feeling 4. Increased concentration/focus 5. Decrease stress 6. Addition 7. Peer pressure 8. Other reasons (specify) -----
---	--

<p>How frequent does a drinking man take alcohol?</p> <ol style="list-style-type: none"> 1. Almost daily 2. 5/6 days a week 3. 3/4 days a week 4. Once/twice a week 5. Once/twice a month 6. Once every couple of months 7. Once/twice a year 8. Never 	<p>Where do you usually drink alcohol?</p> <ol style="list-style-type: none"> 1. Anywhere 2. At home 3. At work 4. Bar/tavern 5. Social events 6. Other places (specify) -----
---	---

Diet

<p>Who prepares your meals at home?</p> <ol style="list-style-type: none"> 1. Myself 2. Spouse/partner 3. Other (specify) ----- <p>How important is eating healthy to you?</p> <ol style="list-style-type: none"> 1. Very important 2. Somewhat important 3. Not that important 4. Not at all important <p>Do you eat healthy when eating out?</p> <ol style="list-style-type: none"> 1. Almost always 2. Usually 3. Sometimes 4. Rarely 5. Never 	<p>What does eating health mean to you?</p> <ol style="list-style-type: none"> 1. Low calories foods 2. Low carbs 3. Low fat 4. Low sugar 5. Eating fresh 6. Well balanced 7. Organic foods 8. Natural foods 9. Whole grains <p>Would you say you have been eating healthy in the past 6 months?</p> <ol style="list-style-type: none"> 1. Definitely healthier 2. A little healthier 3. Unchanged 4. Less healthier
--	---

Physical activity

Which transport mode do you use most often?

Please a tick (√) in one box

Distance	Car	Walk	Public transport	Cycle	Other
Less than 1km					

1-5km(s)					
More than 5km(s)					

Activities in and around home

Please tick(s) (✓) in relevant box for each activity on the list

Approximated number of hours a week spent on:	None	Less than 1 hour a week	1-3 hours a week	3-6 hours a week	6-10 hours a week	More than 10 hours a week
Cooking						
Laundry						
Shopping						
Cleaning						
Gardening						
Sports						
Gym						
Playing with kids						
Watching TV/videos						

Preventative health checks

Do you have a family history of any of the following?

Circle **1** if “Yes” and **2** if “No”

	Yes	No
1. Heart disease	1	2
2. Diabetes	1	2

3. Stroke	1	2
4. Alcohol related illness	1	2
5. Cancer	1	2
6. HIV/AIDS	1	2

<p>Have you had your blood pressure checked in the past 12 months?</p> <p>1. Yes 2. No</p> <p>Do you regularly use any over the counter medication?</p> <p>1. Yes 2. No</p> <p>Are you covered in any health insurance?</p> <p>1. Yes 2. No</p> <p>When outside, do you wear sunscreen?</p> <p>1. Yes 2. No</p>	<p>Have you discussed prostate cancer test with your doctor?</p> <p>1. Yes 2. No</p> <p>When last did you take a test for HIV/AIDS?</p> <p>1. 3 months ago 2. 6 months ago 3. 9 months ago 4. 12 months ago 5. More than 12 months ago</p> <p>If aged 45 and older, have you had your cholesterol tested in the past 12 months?</p> <p>1. Yes 2. No</p>
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Thank you very much for your time!

4 September 2015

Mr Nkeka Peter Tseole - 205517499
School of Built Environment & Development Studies
Howard College Campus

Dear Mr Tseole

Protocol reference number: HSS/0697/015D

Project title: Understanding men's lifestyle risk behaviours related to chronic non-communicable diseases in Maseru, Lesotho

Full Approval — Expedited Application

In response to your application received on 5 June 2015, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted FULL APPROVAL.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully



.....
Prof Urmilla Bob
University Dean of Research
On behalf of Dr Shenuka Singh (Chair)e

/pm

Cc Supervisor: Dr Kerry Vermaak
Cc Academic Leader Research: Dr Cathyb Sutherland
Cc School Administrator: Ms R Naicker

Humanities & Social Sciences Research Ethics Committee

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