KNOWLEDGE AND ATTITUDES TOWARDS PROSTATE CANCER SCREENING AMONG MALES AT DZINGAHE VILLAGE, LIMPOPO PROVINCE

by

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DECLARATION

I, Maladze Ndivhuwo Trevor hereby declare that this mini-dissertation entitled "**Knowledge and Attitudes Towards Prostate Cancer Screening Among Males At Dzingahe Village, Limpopo Province**" hereby submitted for the degree of Master in Public Health (MPH) to the University of Venda has not been submitted previously by me at this university or any other institution; it is my own work in design and in execution, and that all the materials have been cited and duly acknowledged.

Student signature: **Date: 09 September 2020**

DEDICATION

I dedicate this dissertation to God the Almighty who gave me the strength and wisdom to achieve to this great level. A special dedication to my parents, Mr. M.A Maladze and Mrs T.J Maladze, my pastor, Mr Maudu T.W and my family who have always motivated and supported me in my education. My last dedication goes to all those who were there to support me throughout my study.

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Contents

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

AJCC	American Joint Committee on Cancer
ASIR	Age Specific Incidence Rate
ASMR	Age Specific Mortality Rate
DRE	Digital Rectal Examination
IHME	Institute for Health Metrics and Evaluation
PSA	Prostate Specific Antigen
PC	Prostate Cancer
WHO	World Health Organisation.
NGOs	Non-Governmental Organisations
SPSS	Statistical Package for Social Scientists

ABSTRACT

Prostate cancer (PC) screening is a strategy to identify cancer before it causes symptoms. However, men's participation in prostate cancer screening seems inadequate and remains a public health concern worldwide. This leads most men to be diagnosed with an advanced prostate cancer where cancer cells spread to other parts of the body. The aim of this study was to assess the knowledge and attitudes of males towards prostate cancer screening at a selected village in Thulamela Municipality, Limpopo province. The study adopted a quantitative approach using a descriptive cross-sectional survey. A well-structured questionnaire was used to collect data from 245 men who are 40 years and above. The sample was selected using the simple random sampling technique. The Statistical Package for Social Scientists (SPSS) version 25.0 was used to analyse the collected data; and the results were presented in percentages, frequencies and tables. Cross tabulation, Chi square and Phi and Cramer's V test were also utilised to test for association and effects size respectively at .05 level of significance. Respondent's knowledge as an explanatory variable, screening practices as response variable was assessed. The findings of this study showed that 64.1% of respondents had inadequate knowledge about prostate cancer. About 62.4% respondents had no prior knowledge regarding prostate cancer and 69% of respondents didn't know the age at risk for the development of PC, while 81.9% of respondents had never heard about PC, and 35.9% didn't know that PC can be treated. 84.9% of respondents had positive attitudes towards PC screening, however, 96.7% had never undergone screening for prostate cancer and 46.9% indicated that they will never undergo PSA test. Furthermore, the study found a significant association between men's knowledge of PC and their willingness to undergo PC screening, $X2$ (3, N=245) = 48.44, p = .001; men's knowledge of PC was significantly related to their attitudes towards PC, $X2$ (1, N = 245) = 17.63, p = .001. The effect size was moderate, ϕ = .27. Knowledge was significantly associated with all the demographic variables. Therefore, this study recommends widespread public health campaigns focusing on educating men about prostate cancer risk factors, symptoms, treatment and ways to prevent and manage it through healthy lifestyles.

Keywords: *Cancer, Primary Health Care Facility, Prostate gland, reluctance, Screening and Testing.*

CHAPTER ONE: INTRODUCTION

1.1 INTRODUCTION AND BACKGROUND OF THE STUDY

Prostate cancer is the most common malignancy affecting men (after lung cancer) worldwide (WHO, 2014). The first case of prostate cancer was discovered through histological examination in 1853 by Adams in London hospital (Denmeade and Isaacs, 2002). During that time, the disease was still regarded as a very rare condition. Remarkably, the disease started to become a significant health problem during early 1990s with an increasing rate every year (WHO, 2014). Prostate cancer is now the second most diagnosed type of cancer and declared the 5th leading cause of male cancer deaths worldwide (Mofolo et al., 2015). According to Ferlay et al. (2019), 1,276,106 prostate cancer new cases and 358,989 prostate cancer related deaths were registered worldwide in 2018. The incidence for prostate cancer varies from country to country with the highest reported in developed countries. Based on the age-standardized rate (ASR) the incidence rate was highest in Oceania (79.1 per 100,000), followed by North America (73.7 per 100,000) and Europe (62.1 per 100,000). However, in developing countries like Africa and Asia, the incidence rate was lower, sitting at 26.6 and 11.5 per 100,000 (Ferlay et al., 2019). This difference might be attributed to limited prostate cancer screening services for early detection in developing countries as compared to developed countries. Although there is a noted high prostate cancer incidence rate in developed countries, there is a reported lower mortality rate as compared to developing countries due to early detection and treatment (Mofolo et al., 2015).

In fighting prostate cancer, the government and health professionals have established two methods of screening prostate cancer to effectively detect and treat cancer early with the aim of reducing the burden for morbidity and mortality for all population groups (Adonis, An, Luiz, Mehrotra, Patel, Basu and Sturm, 2013). These methods are the Prostate Specific Antigen (PSA) test and the Digital Rectal Examination (DRE) (WHO, 2014). In the PSA test, the physician measures the level of the Prostate Specific Antigen (substance produced by the prostate) in the blood. Therefore, higher levels of PSA in the blood may symbolise prostate cancer. With the DRE, the physician inserts a lubricated and gloved finger into the rectum to determine the size of the prostate and detect if there are any abnormalities (Winterich et al., 2009 as cited by Akbarizadeh,

Gheibizadeh, Fereidoonimoghadam, Jahanis and Malehi, 2015). The DRE is quick to administer with quick results than the PSA, however, PSA is the most commonly used compared to the DRE because the DRE is associated with humility and embarrassment as the physician inserts his finger into the rectum (WHO, 2014).

Although the government got these two methods put into place to reduce prostate cancer-related mortality and morbidity resulting, black males still present higher PSA levels, late, advanced and more aggressive cancer than any other ethnic groups (Tindall et al., 2014). Several reasons such as low level of knowledge/awareness, negative attitudes towards screening services, negative beliefs about prostate diseases, poverty and poor healthcare-seeking behaviour (Mbonu, 2014). Research shows that there is poor knowledge and attitudes regarding prostate cancer and its screening service across the world more especially developing countries as compared to developed countries (WHO, 2015). In a study conducted by Ojewola, Oridota, Balogun, Ogundare, Alab, Banjo, et al., (2017) among males older than 40 years in Nigeria, less than half (47.5 %) of respondents were aware of prostate cancer while only 25.1 % have heard about PSA. The study reported poor level of knowledge, attitudes and screening practices towards prostate cancer. Another study conducted by Nakwafila (2017) among men in Namibia also reported poor knowledge and low screening among respondents. Another study was conducted in South Africa by Mofolo, Betshu, Kenna and Koroma, (2015) which found that more than half (54.4%) of respondents had not heard of prostate cancer.

In contrast, a study conducted amongst men in Italy found that majority of respondents about 72.7% had adequate knowledge regarding prostate cancer and positive attitudes towards prostate cancer screening services (Morlando, Pelullo and Di Giuseppe, 2017). Similar findings were reported in a study conducted among male teachers in a high-risk age group in Ghana. The study reported adequate knowledge and attitudes towards prostate cancer and its screening services (Yeboah-Asiamah and Ackumey, 2017). The educational status is perceived as an influential factor (Nakwafia, 2017). Generally, adequate knowledge and understanding of any disease is associated with better healthcare seeking attitude and behaviour (Kanungo, Bhowmik, Mahapatia, Bhadra and Sarkar, 2015). In attempting to reduce prostate cancer-related mortality and morbidity, the study seeks to examine the knowledge and attitudes towards prostate cancer screening among men at selected village.

1.2 PROBLEM STATEMENT

Prostate cancer is considered the second most frequent diagnosed cancer among men and the fifth leading cause of death worldwide (Rawla, 2019). The incidence and mortality rate for prostate cancer is on a significant increase with 1,276,106 new cases and 358,989 deaths reported in 2018 worldwide (Bray, Ferlay, Soerjomataram, Siegel, Torre & Jemal, 2018). It is estimated that there would be 1,017,712 new cases of prostate cancer and 379,005 prostate cancer related deaths by the year 2040 worldwide, with the highest incidence being recorded in Africa (Ferlay, Lam, Colombet, Mery, Pineros & Soerjomataram, 2019). Similarly, prostate cancer mortality and incidence rates are also showing an increase in South Africa. In 2007, South Africa's prostate cancer prevalence rate was sitting at 29.4 per 100 000 yet increased to about 67.9 per 100 000 in 2012 (Babb, Urban, Kielkowski & Kellett, 2014). This high rate of prostate cancer prevalence may be attributed to lack of knowledge and access to prostate cancer health service. It is also assumed that prostate cancer may remain under-reported (Heyns et al., 2011); therefore, it means that the prevalence of prostate cancer in South Africa may be actually higher than it is documented. Babb, Urban, Kiekowski and Kellett (2014) maintained that about 2331 mortality rate was recorded in 2009 as compared to 1954 mortality rate recorded in 2004. This could be due to less-effective policies and strategies to manage and control the illness. South Africa like many other developing countries' prostate cancer has been reported to be diagnosed at an advanced stage due to poor participation in screening services. Unfortunately, prostate cancer is associated with several health-effects such as deep pain in the lower back, blood in urine/semen, burning sensation during urination/ejaculation, frequent urination especially at night and difficulty starting or stopping urination when detected at an advanced stage.

Prostate cancer is also a public health challenge affecting males in Vhembe district. The researcher witnessed two male deaths caused by prostate cancer within the study setting. There may be more who are suffering from this cancer and others who have passed on from this cancer within the study setting. It might be possible that males lack information and knowledge regarding prostate cancer screening services available, where to go for screening and the importance of screening, and perhaps they are afraid of check-ups (fear of positive results) (WHO, 2015). It is in this light that

the researcher embarked on this study in order to assess the community knowledge of the screening services and importance of screening.

1.3 RATIONALE OF THE STUDY

There is high prevalence and mortality rate of prostate cancer in South Africa (Mofolo et al. 2015), yet there is low uptake of prostate cancer screening (WHO, 2016). Egbera (2015) noted that beliefs, knowledge and attitudes about prostate cancer and its screening services among men are vital for early detection and management of the disease. Unfortunately, there is a lack of prostate cancer knowledge and screening among men in South Africa, more especially within rural communities (Tindall et al., 2014). Hence, this is one of the reasons why black South African men are diagnosed with more aggressive and advanced prostate cancer (Le Roux, Urry, Sartorius and Aldous, 2015). Therefore, understanding the level of knowledge, attitudes and screening practices regarding prostate cancer amongst men is crucial in order to control and manage it. In South Africa, little is known about the level of knowledge about prostate cancer and attitudes towards the screening services in the male population. Hence, this study seeks to examine men's knowledge and attitudes towards prostate cancer screening. This study is important in trying to curb the high prevalence and death rate resulting from prostate cancer.

1.4 SIGNIFICANCE OF THE STUDY

The findings may bring awareness and insight to participants and the community of Dzingahe village. The study may also raise awareness to men regarding the disease, testing and screening services available and the need for early detection and treatment of the disease. This might increase the chances of survival through early detection and treatment of the cancer (Le Roux, Urry, Sartorius and Aldous, 2015).

The findings might also provide insight to health care workers of men's attitudes towards PC screening and practices, as a result aligned intervention may be implemented to improve the level of knowledge amongst men.

The findings from this study may inform the government and public health sector of the level of knowledge, attitudes and screening practices regarding prostate cancer at Dzingahe village. This data may help the government in the development and

implementation of effective and appropriate strategies to prevent, manage and control the disease. Thus, this might reduce prostate cancer-related morbidity and mortality/deaths.

Furthermore, the study might positively impact the economy of our country. As the government agencies, non-governmental agencies and other stakeholders implement effective measures, it will not only save lives but also might reduce the country's economic burden of the cancer.

The findings from the present study may also assist policy makers in the review and amendments of policies and ACTS concerning prostate cancer screening and testing, to ensure equality, cost-effective and accessible prostate cancer services to all in our country. The present study's recommendations may play a role in improving and increasing prostate cancer service provision in the region and entire country.

1.5 AIM AND OBJECTIVES

1.5.1 The aim of the study

- To assess the knowledge and attitudes towards prostate cancer screening among adult males at a selected village in Thulamela Municipality.

1.5.2 Objectives of the study

- To assess males knowledge regarding prostate cancer at Dzingahe village in Thulamela municipality.
- To describe males attitude towards prostate cancer screening at Dzingahe village in Thulamela municipality.
- To determine males practices regarding prostate cancer screening and testing at Dzingahe village in Thulamela municipality.
- To determine the association between knowledge and screening practices for prostate cancer among males at Dzingahe village in Thulamela municipality.

1.5.3 Hypothesis

- Hypothesis 1 - H_0 – There is poor (inadequate) knowledge among males.

- Hypothesis 2 - H_0 – Males have a negative attitude towards prostate cancer.
- Hypothesis 3 - H_1 – There is a significant association between knowledge and screening practices for prostate cancer among males.

1.6 DEFINITION OF TERMS

1.6.1 Attitude refers to individual's predisposed state of mind regarding value which triggered by a responsive expression toward a person, place or thing and this influences the individual's thought and action (Oxford Dictionary, 2018). In this study, attitude refers to how respondents think or feel about prostate cancer and screening services.

1.6.2 Knowledge refers to facts, information and skills acquired through experience or education (Oxford Dictionary, 2018). In this study, it is the general understanding and information respondents have about prostate cancer, its cause, symptoms, screening and treatment services.

1.6.3 Prostate gland cancer refers to the development of cancer in the prostate gland within the male reproductive system (WHO, 2014). For this study, it means malevolent tumour occurring in the prostate.

1.6.4 Prostate cancer screening refers to an attempt to identify individuals with prostate cancer in a broad segment of the population, those for whom there is no reason to suspect prostate cancer (Hayes & Barry, 2014). In this study, it means going through principal screening tests (such as the PSA and DRE) to detect the presence of prostate cancer.

1.7 CHAPTERS OUTLINE

This study is divided into six chapters as follows:

Chapter one: General overview of the study

The chapter offers an overview of the study. It gave an insight on important aspects such as the background of the study, problem statement, rationale and significance of the study. The aim and objectives of the study were also articulated. Lastly, it also covered the definition of certain important terms.

Chapter two: Literature review

This chapter reviewed literature on important topics relevant to the study. The researcher reviewed relevant literatures on prostate gland cancer, screening services and the prevalence of prostate cancer in different countries. Male's knowledge, attitudes and screening practices were also discussed in detail. Factors that hinder males from seeking prostate cancer screening were also discussed. Lastly, the researcher also outlined theoretical framework that guided the study.

Chapter three: Research methodology

The chapter described different methods used in conducting the study. Aspects such as the research design, research approach, study setting, study population, sample and sampling method were discussed in this chapter. The chapter also covered detailed information regarding the research instrument, data collection, data management and analysis methods. Ethics adhered to were outlined in this chapter.

Chapter four: Presentation of results

Chapter four discussed the presentation of the findings of the study. The Statistical Package for the Social Science (SPSS) version 25 was used to analyse data (Gunarto, 2019). The findings were presented in a form of tables.

Chapter five: Discussions of results

This chapter focused on the discussion of the findings of the study. The current findings are discussed against previous studies and the theoretical framework.

Chapter six: Conclusion, limitations and recommendations

This chapter summarised the findings of the study, strengths and limitations of the study and the recommendations to various stakeholders are made.

CHAPTER TWO: LITERATURE REVIEW

2.1. INTRODUCTION

This chapter reviewed literature on important topics relevant to the study. The researcher reviewed relevant literatures on prostate gland cancer, screening services and the prevalence of prostate cancer in different other countries. Male's knowledge, attitudes and screening practices were also discussed. Factors that hinder males from seeking prostate cancer screening were also discussed. Lastly, the researcher also outlined the theoretical framework that guided the study.

2.2. THE CONCEPT OF PROSTATE GLAND CANCER

Prostate gland cancer develops within the prostate gland; however, researchers found that if not diagnosed and treated early, the cancer cells can spread to other body parts such as bones and the lymph nodes, which will cause other health complications (Hayes and Berry, 2014; Djulbegovic et al., 2010).

2.2.1 The symptoms or signs of prostate cancer

Various studies show that the initial/early stages of prostate cancer may show no signs/symptoms, hence it is regarded as an asymptomatic disease (Bray et al, 2018; WHO, 2016). However, it has been found that prostate cancer may present symptoms similar to those of Benign Prostatic Hyperplasia (BPH) such as nocturia (frequent urination at night), hematuria (blood in urine or semen), and pain during urination, etc. (Urology Care Foundation, 2019). Research shows that prostate cancer has a direct effect on the urinary function which may lead to urinary dysfunction, causing problems with sexual function and performance such as pains during ejaculation, achieving and maintaining erection (Urology Care Foundation, 2019). Prostate cancer symptoms are mostly present at a later/metastatic stage and may include dull pain in the lower pelvic area, painful urination/ejaculation, blood in urine/semen, difficulty starting and/or stopping urination, and frequent urination especially at night. In addition, when the cancer has spread to other parts of the body like the bones and lymph nodes may cause additional symptoms such as deep pain in the lower back, hips and upper thighs (Rawla, 2019). However, when discovered and treated early through prostate cancer screening services the client may not experience these symptoms.

2.2.2 Prostate cancer stage grouping

The stage of PC is determined by combining the T (Tumor), N (Node) and M (metastasis) classification, (AJCC Cancer Staging Manual, 2017). The stages are as follows:

STAGE I: This is the early stage whereby the cancer is usually growing slow. At this stage the tumor can't be felt and involves one-half of 1 side of the prostate or less. The cancer cells look like the healthy cells.

STAGE II: At this stage, the tumor is only found in the prostate. The cancer is still small, yet it is more likely to grow and spread. The Prostate Specific Antigen (PSA) levels at this stage are low or medium.

Stage II A: At this stage, the tumor can't be felt and it involves half of 1 side of the prostate or less, the PSA levels are medium and the cancer cells look like healthy cells. This stage can also include large tumors that are confined in the prostate.

Stage II B: At this stage, the tumor is only found in the prostate and may be large enough to be detected through DRE examination. Furthermore, the PSA levels are medium and the cancer cells can be poorly differentiated.

Stage II C: The tumor is found inside the prostate, can be detected via DRE examination and the PSA levels are medium. The cancer cells may be moderately differentiated.

STAGE III: This stage is characterised by a growing tumor and high levels of PSA. The cancer is now locally advanced and likely to grow and spread.

Stage III A: At this stage, the PSA levels are high and cancer has now spread to the nearby tissues from the prostate. The cancer may also have spread to the seminal vesicles.

Stage III B: At this stage, the tumor has developed outside the prostate and may have affected the nearby structures like the bladder/rectum.

Stage III C: This stage is characterised by the cancer cells that are very different from the healthy cells.

STAGE IV: At this stage, the cancer cells have now spread beyond the prostate gland.

Stage IV A: The cancer at this stage, had spread to the regional lymph nodes.

Stage IV B: At this stage, the cancer cells have spread to the distant lymph nodes and other parts of the body such as the bones.

Recurrent: This is the prostate cancer that has returned after it was treated. This cancer may return to the prostate again or other parts of the body (AJCC Cancer Staging Manual, 2017).

2.2.3 Prostate cancer screening services

PC screening is a strategy used by physicians to detect prostate cancer in men who show no symptoms. However, between the two, the mostly used/preferred prostate cancer screening method is the PSA. Nevertheless, there are controversies surrounding these screening methods. It is believed that PSA screening method might lead to unnecessary disruption and possible negative health consequences (Rendon et al., 2017). Report shows that PSA screening method may have disadvantages that overweigh the advantages as it may detect latent cancers that are harmless and symptomless (Rendon et al., 2017).

Evidence shows that prostate cancer screening is beneficial and crucial for men at high risk from a family with history of prostate cancer (Hayes and Barry, 2014). In South Africa, prostate cancer screening is recommended for men from 40 years only if there is a family history of prostate cancer in the first-degree relative, and from 45 years for all other males (Prostate Cancer Foundation of South Africa, 2013). In addition, the National Medical Association (NMA) and the American Urology Association (AUA) recommends the use prostate cancer screening for early detection as a means to support health promotion, particularly for black men as they have higher cases of prostate cancer (American Cancer Society, 2016). However, the American Society of Clinical Oncology suggested that individuals who are expected to live less than 15 years should not undergo screening for prostate cancer considering the risks associated with screening (American Cancer Society, 2016). Furthermore, the United States Preventive Services Task Force made a suggestion that screening for prostate cancer should be based on a mutual decision-making between the physician and the patient for men who are 55 years and above (Catalona, 2018). Therefore, it is vital that men are offered education about the benefits and risks surrounding screening services

by the health care providers to be able to make an informed decision as to whether or not they should undergo screening.

2.2.4 Risk factors for prostate cancer

It is not yet clear what causes prostate cancer, however, the primary risk factors associated with prostate cancer include age, family history and obesity (WHO, 2016). Research shows that 99% of prostate cancer cases occur in men above the age of 50 years and remain less common in men below the age of 45 (WHO, 2014). Furthermore, it has been found that men with a family history of prostate cancer face a higher risk of developing the cancer (Urology Care Foundation, 2019). Obesity is also associated with an increased risk for the development of prostate cancer in men. Although there is no specific cause of prostate cancer, hereunder are various risk factors associated with the development of this cancer:

Age

Age is regarded as one of the primary risk factors to prostate cancer. Research shows that prostate cancer develops mainly in older men, with 6 cases in 10 being diagnosed in men aged 65 years or older and rare before the age of 40 (Nordqvist, 2017). An explanation to age as a risk factor can be directed towards the damage to the genetic material (DNA) of the prostate cells which is more likely to occur in men above the age of 55 years. These damaged/abnormal prostate cells can start to grow out of control and form tumours leading to prostate cancer (Urology Care Foundation, 2019). Age increases the risks for the development of prostate cancer in men.

Family history

Family history of prostate cancer also increased the likelihood for the development of prostate cancer. Research shows that men with a family history of prostate cancer especially of the first-degree relative (father or brother) have twice the risk of developing prostate cancer compared to men from family with no history of prostate cancer (Nordqvist, 2017; Zeegers, Jellema and Ostrer, 2003). However, the greater risk seems to be high for men with an affected brother compared to those with an affected father.

Ethnicity

It appears that ethnicity is also a risk factor to the development of prostate cancer. Prostate cancer incidence varies across populations worldwide (Nordqvist, 2017). For example, in America, African American men have the highest prostate cancer incidence rate. They are also more likely to have more aggressive cancer than other ethnic groups (Ferlay et al., 2019). It is still not yet clear why African American men have the highest cases of prostate cancer, but it may be because of their socio-economic status and other environmental factors.

Diet

Diet and lifestyle also increase the risks for the development of prostate cancer in men. High consumption of red and processed meat has been associated with the likelihood of men developing prostate cancer (National Cancer Institute, 2018). In addition, consumption of food high in calories, animal fats, refined sugar and less fruits and vegetables increase the risks of prostate cancer development (Urology Care foundation, 2019). Men should eat a well-balanced diet and do exercise in order to reduce the risk of developing prostate cancer.

Infection

Infection or inflammation of the prostate may lead to the development of prostate cancer. There seem to be an association between prostate cancer development and sexually transmitted infections such as Gonorrhoea, syphilis and chlamydia (Caini, Gandini, Dudas, Bremer, Severi and Gherasim, 2014).

2.3 THE PREVALENCE OF PROSTATE CANCER

2.3.1 The prevalence of prostate cancer internationally

Prostate cancer incidence and mortality rate is relatively high in developed countries. According to the WHO (2015), prostate gland cancer is rated the most common and slow-growing cancer in American men. In the United States of America, prostate cancer is rated the 5th leading cause of cancer deaths in men (Banerjee and Kaviani, 2015). In 2012, the overall prostate cancer incidence rate was sitting at 138 per 100 000 annually for all races (Canadean Cancer Institute, 2015). This means that 1 in 7 men are affected by prostate cancer in the US. In 2014, men living with prostate cancer were estimated to be 3 085 205 in US cancer statistics 1994-2914 (Scher,

Solo, Valant, Todd and Mehra, 2015). Furthermore, in 2015, about 220 800 new cases of PC were recorded with an estimation of 27 540 mortality rate (Canadean Cancer Institute, 2015). Comparatively, in Canada, during 2012, the rate of PC incidence was sitting at 99 per 100 000 men. In addition, estimated new cases of PC were about 24 000 with estimated 4 100 mortality rate reported (Banerjee and Kaviani, 2016).

Europe and the United Kingdom are also found with high rate of prostate cancer incidence, but with low mortality rate. However, between the two countries, European countries have higher rates compared to the United Kingdom countries. In 2012, the age-standardized incidence rate (ASIR) in Europe was sitting at 92.1 with mortality rate of 19.3 per 100 000 (Ferlay, Shin, Bray, Forman, Mathers and Parkin, 2015). Comparatively, in the United Kingdom during the year 2011 about 41 736 new cases of PC and 10 837 deaths were recorded. The ASIR in the United Kingdom was as high as 111.1 with mortality rate of 22.8 in 2012 (Ferlay et al., 2015). In 2015, an estimated 47 151 new cases of prostate cancer and in 2014 only 11 287 deaths were reported in the United Kingdom (Scher, Solo, Valant, Todd and Mehra, 2015). Although the incidence rate of prostate cancer in these countries is high, its mortality rate is relatively low. Factors such as adequate public health infrastructure, adequate health care services, health care insurances, availability of screening services, adequate knowledge about prostate cancer and positive attitude towards screening might be responsible for this low mortality rate (Ferlay, Shin, Bray, Forman, Mathers and Parkin, 2015).

2.3.2 The prevalence of prostate cancer in Africa

Prostate cancer had been declared a serious public health issue in Africa (WHO, 2014). An increase on the incidence and mortality rate of prostate cancer with advancing age has been observed also in African countries (Adeloye, David, Aderemi, Iseolorunkanmi, Oyedokun, Omoregbe and Ayo, 2016). According to Ikuerowo et al. (2013), African men suffer disproportionately from prostate cancer than men from other parts of the world. In 2012, the GLOBOCAN 2012 report, an estimation of 23.2 per 100,000 prostate cancer incidence rate and 17.0 per 100,000 mortality rates has been reported in Africa only (Ferlay et al., 2015). In another study conducted by Adeloye, et al. (2016) on the incidence rate of prostate cancer in 16 African countries, 22 pooled prostate cancer incidence rates per 100,000 were estimated. In addition, it

has been noted that describing the burden of prostate cancer accurately in Africa is still a challenge due to poor registration systems in Africa (Ferlay et al., 2015). This shows that prostate cancer incidence and mortality rate in Africa may actually be higher than estimated.

Prostate cancer prevalence and mortality rates vary geographically in Africa. These rates are relatively higher in Sub-Saharan African region and lower in Northern African region. The Institute for Health Metrics and Evaluation (IHME) reported a steady increase on the prevalence rate of prostate cancer from 100,200 to 219,700 and increased prostate cancer related mortality rate from 5,600 to 12,300 from the year 1990-2010 in Sub-Saharan Africa (Murray et al., 2012). Furthermore, according to GLOBOCAN 2012 report, an estimation of 10.6 per 100 000 incidence rate and 7.0 mortality rate were found compared to 34.3 and 22.1 per 100 000 in Sub-Saharan African region (Ferlay et al., 2015). In another study, the Caribbean region had 79.8 per 100,000 prevalence rate and Southern Africa with 61.8 per 100,000 prevalence rate. Comparatively, the Eastern and South-central Asia had low prevalence rate of 10.5 and 4.5 per 100,000 (WHO, 2015). Nigeria is one of the Sub-Saharan African regions with higher prevalence and mortality rate of prostate cancer (WHO, 2015). In a study conducted in Nigeria by Ebughe, Ekanem, Omoronyia, Nnoli, Ikpi, and Ughem (2016), an estimation of 279 new cases of prostate cancer were recorded. Recent data shows that the age specific incidence of prostate cancer in Nigeria is as high as 89 per 100 000 (Ebughe, et al., 2016). Factors such as lack of cost-effective screening services, health promotion programmes, inadequate public health infrastructure, reluctance towards seeking medical intervention etc. might be responsible for this high prevalence rates in Nigeria.

2.3.3 The prevalence of prostate cancer in South Africa

In South Africa, very little has been published regarding prevalence of prostate cancer. There is lack of evidence regarding provincial statistics of prostate cancer. However, according to the WHO (2014), prostate cancer incidence and mortality in South Africa is on the rise. In 20 years period (between 1986 and 2006) on the National Cancer

Registry 63 886, prostate cancer incidence was recorded, with 68 years as an average age at diagnosis and 74 at death (Babb, Urban, Kielkowski and Kelleti, 2014). During the same period, the age-standardized incidence rate increased from 16.8 to 30.8 per 100 000, the age-standardized mortality rate on the other hand increased from 12.3 in 1997 to 16.9 in 2009 per 100 000 (Babb et al, 2014). In addition, more recent data shows that the incidence rate has further increased to 67.9 per 100 000 in South Africa (Adeloye et al., 2016). This evidence marks a steady increase of prostate cancer incidence and mortality rate in South Africa. However, due to poor cancer registration system, inadequate health care system, lack of adequate knowledge regarding prostate cancer, poor participation on screening, and poor screening services may not be a true reflection of prostate cancer incidence and mortality rates in South Africa (Mofolo et al., 2015).

2.4 MEN'S KNOWLEDGE, ATTITUDES AND SCREENING PRACTICES REGARDING PC

2.4.1 Men's knowledge regarding PC and screening services

Knowledge about prostate cancer is vital and entails having adequate knowledge and good understanding regarding the epidemiology of prostate cancer (what it is, causes/risk factors, signs, treatment and health-seeking options). The level of knowledge about prostate cancer has the power to influence men's decision to seek for early screening and treatment for this cancer. According to Lloyd (2013), knowledge about prostate cancer is an independent predictor of the uptake of screening for prostate cancer and health-seeking behaviour. Similarly, Yeboa-Asiamah et al. (2017) in their study reported that poor perceptions and knowledge about prostate cancer screening remains some of the reason why majority of men, especially black men report late for screening and treatment of prostate cancer.

Poor level of knowledge about prostate cancer has been documented in previous studies more especially in developing countries like Africa as compared to developed countries (Ojewola et al., 2017). In several African countries such as Nigeria, Ghana and Uganda, low levels of knowledge, attitudes and screening practices regarding prostate cancer has been documented among African population. In a study conducted amongst male university students in Benin City, Nigeria, low levels of knowledge about prostate cancer, it's screening and treatment were observed

(Egbera, 2015). Similar findings were observed in population-based study in Southwest Nigeria among men older than 40 years where low levels of knowledge about prostate cancer and screening services were reported. The study revealed that less than half of respondents (47.5 %) were aware of prostate cancer whereas 53.1 % of respondents had poor knowledge regarding prostate cancer, available screening services and treatment services (Ojenola, Oridota, Balogun, Ogundare, Alabi, Banjo, Laoye, Adetunmbi, Adebayo and Olugndare, 2017). The study recommended a widespread public health education to improve knowledge, attitudes and screening practices for prostatic disease.

Another study conducted in Uganda revealed poor knowledge about prostate cancer and a low uptake of prostate cancer screening among Ugandan men. The study revealed that 54.1% of respondents heard about prostate cancer while 45.9% had never heard about prostate cancer, risk factors, screening services and treatment services (Nakandi, Kirabo, Semugabo, Kittengo, Kitayimbwa, Kalungi and Maena, 2013). Similar results were noted in a study by Ellison et al. (2014), wherein 59.4% of men heard about prostate cancer, only 9% knew about PSA, whereas only 3.5% had undergone PSA testing. In a study conducted in the Sunyai Municipality, Ghana, 90 % of respondents had never undergone prostate cancer screening and only 58.8% heard about prostate cancer (Yeboah-Asiamah, Yirenya-Tawiah, Baafi and Ackumey, 2016).

In South Africa, there is a low level of knowledge about prostate cancer and screening services among men. A study conducted among males attending a urological clinic in South Africa revealed that more than half (54.4 %) of respondents had never heard of prostate cancer, with those who had heard about it having moderate level of knowledge (Mofolo, Betshu, Kenna, Koroma, Lebeko, Claassen and Joubert, 2015). The above result clearly shows that low level of knowledge about prostate cancer exists among African black men, such that awareness programs regarding prostate cancer, risk factors, symptoms, available screening services, benefits and risks of screening and treatment services are vital to manage and control the disease.

High levels of knowledge about prostate cancer have also been documented more especially in developed countries including some of the African countries. For example, study conducted among male staff of the University of Nigeria on knowledge,

attitudes and perceptions reported favourable results. The study revealed that more than half (60.8%) of respondents had positive and appropriate knowledge regarding prostate cancer screening and treatment services (Adibe, Aluh, Isah and Anosike, 2017). Level of education is found to have a positive influence on prostate cancer screening and treatment (Egbera, 2015). In a study conducted in Italy, 72.7% of respondents had heard about the PSA test, with the physicians being the most source of information (Morlando, Pelullo and Di Giu Seppe, 2017). This high knowledge was found among men with older age and those with higher level of education. This shows that there is high significance between level of education and knowledge about prostate cancer. Similar results were revealed in a study conducted among men living in Southern Italian Peninsula. The study revealed that 79.2% of respondents reported knowing about prostate cancer prevention programs, whereas 59.5% of respondents knew of risk factors associated with prostate cancer (Mirone et al., 2017). Most men in developed countries have adequate knowledge about prostate cancer risk factors, screening services available, benefits and risks for early detection and treatment as compared to men in developing countries (Bray, Jemel, Grey, Ferlay and Forman, 2012). It is a fact that knowledge about prostate cancer, its screening and treatment services has an influence man's attitudes and decisions towards prostate cancer screening and treatment.

2.4.2 Men's attitudes towards PC screening

Prostate cancer screening helps detect cancer before any symptom occurs. Prostate cancer screening is an effective means for early detection and successful treatment of prostate cancer, thus reducing mortality and morbidity rate (WHO, 2016). Positive attitudes and participation in screening services lead to early detection and treatment. However, negative attitudes and poor participation would lead to diagnosis of the cancer at an advanced/metastatic stage, complication during treatment and which could also lead to death (Loud and Murphy, 2017). It is interesting that research has found a correlation between the level knowledge about prostate cancer and attitude towards screening services for prostate cancer. In addition, Zhang et al. (2017) also found significant association between attitude towards prostate cancer screening and level of education, income and age. Most men with adequate knowledge about prostate cancer and screening services had positive attitudes towards screening whereas those with inadequate knowledge having negative attitudes towards

screening (Mirelman et al., 2016). The above shows that there is still a lot to be done to raise awareness and educate the public about prostate cancer in developing countries.

Several studies more especially in developed countries have reported positive attitudes towards screening for prostate cancer among men. Morlando, Pelullo and Di Guiseppe (2017) conducted a study on prostate cancer in Italy among men and found that 59.4% of respondents had positive attitudes and were willing to undergo prostate cancer screening. Furthermore, in the same study about 29.6% of respondents had received PSA-test. Another study conducted in Spain yielded similar results when about 59.9% showed positive attitudes towards screening for prostate cancer (Carrasco-Garrido, Hernandez-Barrera, Lopez de Andres, Jimenez-Trujillo, Gallardo Pino, and Jimenez-Garcıa, 2014). The level of education, type of occupation, income, level of knowledge and other socio-economic factors might have influenced these results. In addition, Baaitse (2018) conducted a study in South Africa (Johannesburg) on knowledge, attitudes and practices of men concerning prostate cancer and found that 72% of respondents had positive attitudes towards prostate cancer screening.

Negative attitudes towards prostate cancer screening have also been documented in some studies more especially in developing countries where there is inadequate level of knowledge about prostate cancer. For example, a study conducted in Ghana by Korley (2018) on knowledge, attitudes and practices about prostate cancer, more than half of respondents had negative attitudes towards prostate cancer screening. Similarly, a study conducted by Ojewola et al. (2017) on knowledge, attitudes and screening practices regarding prostatic diseases in Nigeria reported that 55.7% of respondents showed negative attitudes towards prostate cancer screening. Evidence shows that the level of knowledge about prostate cancer, education, age, socio-economic status and occupation both influence an individual's level of attitudes towards prostate cancer screening (Korley, 2018; Yeboah-Asiamah et al., 2017; Ojewola et al., 2017; Mofolo, 2015).

2.4.3 Men's screening practices

There is a high level of participation in prostate cancer screening services in developed countries (WHO, 2015). For example, a study conducted in South America, Brazil revealed that 86.3% of respondents had undergone PSA testing (De Paiva, Salvador

da Motta and Griep, 2010). In another study conducted among Italian men, 29.6% of respondents had undergone PSA test and 54.4% of respondents were willing to do so in future (Morlando, Pelullo and Di Giu Seppe, 2017). There is high knowledge and utilization of prostate cancer screening services in developed countries maybe due to high level of education, health insurance, access to adequate healthcare services and access to information. In contrast, prostate cancer screening in most of developing countries is significantly low probably due to low level of awareness about prostate cancer, screening and treatment (WHO, 2016). In a study conducted among men in Dar Es Salaam (Tanzania), only 8% of respondents had done screening for prostate cancer (Bugoye, Leyna, Moen, and Mmbaya, 2019). Ojewola et al. (2017) in their study among Nigerian men found that only 10.2% of respondents had ever carried out prostate cancer screening. However, it is surprising that even in studies where adequate knowledge regarding prostate cancer and screening was reported, there is a low uptake of screening for prostate cancer. For example, in a study conducted in Italy by Morlando et al. (2017) about 72.7 had adequate knowledge about PSA-test but surprisingly only 29.6% of respondents had undergone PSA screening. Another study conducted in Namibia on knowledge and attitudes towards prostate cancer screening among men reported adequate knowledge and attitudes but screening practice was relatively low sitting at 4.7% of respondents (Nakwafila, 2017). The above clearly shows that there is still a lot to be done in order to raise screening rate for prostate cancer worldwide as the high level of knowledge about prostate cancer screening on its own does not automatically predict participation in screening services. There are various factors including perceived susceptibility, benefits and risks that may influence one's decision whether or not to undergo prostate cancer screening (Yeboah-Asiamah et al., 2017; Adebimpe and Fashina, 2019).

2.4.4 Demographic influence on prostate cancer screening practices

Various research findings have varied outcomes with regard to association of socio-demographic variables to prostate cancer knowledge and screening practices. Below the summary of some findings will be discussed. Richardson et al., (2007) maintains that factors such as age, education, employment status, income, marital status and ethnicity was associated with cancer screening practices. It was confirmed in their

study that high income increased health care access or knowledge of the PSA screening and testing (Richardson et al., 2007).

It has been found that the level of education can influence men's knowledge and attitudes regarding prostate cancer and its screening practices (Morlando et al., 2017; Ojewola et al., 2017). In Tanzania, a study found that the level of knowledge was extremely low and utility of screening services was are and associated with low income, lack of knowledge and younger age (Bugoye et al., 2019). Adequate knowledge about prostate cancer was associated with maximum healthcare seeking behaviour and attitudes (Kaboro et al., 2013). Odebimpe and Sashina (2018) found that age, marital status, and education status were all significantly associated with good knowledge and practice of prostate cancer screening. Being educated predicted good knowledge and practice of prostate cancer screening, including age <45 years, being married and being in polygamous situation.

2.5 Factors that may prevents men from seeking PC screening and testing early

Socio-economic status

There is a positive association between poor/low socio-economic status and the low uptake of prostate gland cancer screening and testing. According to the WHO (2014) an individual's and community's socioeconomic status may have an influence on people's attitude and knowledge regarding prostate gland cancer. Individuals from disadvantaged communities are more likely to lack access to adequate health care services and lack information on health issues including prostate cancer leading to their lack of participation on prostate cancer screening and testing. In contrast, individuals from developed communities have access to adequate health care services and better information regarding prostate cancer and other health issues, thus increasing their likelihood to participate in prostate cancer screening. According to Ogunsanya (2014), individuals from socio-economically disadvantaged communities, irrespective of their race are less likely to go for prostate cancer screening due to lack of information of the importance of screening.

Fear/Anxiety

Another factor that is associated with lack of men's participation in prostate cancer screening and testing is fear. According to Carter, Tippett, Anderson and Tamer,

(2010) as cited in Ogunsanya (2014) fear of cancer death was the main barrier to prostate cancer screening and testing. People are afraid of testing positive for prostate cancer, living knowing that they have cancer and that they will eventually die. However, this kind of perception emanates from lack of knowledge regarding the epidemiology of prostate cancer because if they knew that early detection result in early and successful prostate cancer treatment they probably would regularly go for screening. Fatalism related to developing prostate cancer negatively affects the intention to be tested for prostate cancer (WHO, 2015). In addition, another fear is linked with post-operation complications. Research shows that men believe that prostate cancer treatment would affect their sexuality which increases their fear of going for screening (Nnoko, 2017).

Inadequate knowledge

Inadequate knowledge is another factor that is associated with low uptake of prostate cancer screening and testing. According to Wray et al (2009) as cited in Nnoko (2017), limitation about the knowledge of prostate cancer, prevention and treatment were associated with lack of prostate cancer screening among black Americans. If people have little or no knowledge regarding the cancer, risk of developing the disease and screening obviously they are less likely to seek screening for the cancer. Lack of knowledge that screening was needed was number one barrier for prostate cancer screening (WHO, 2015). This clearly shows that inadequate knowledge about the disease negatively affects an individual's intention to seek the cancer screening.

Lack of access to health care services

Lack of access to health care services also influences individual's intention to seek prostate cancer screening and testing. Nnoko (2017) in his study indicated that one of the most challenging aspects of seeking medical attention in the access to care. Lack of access can be approached from the perception of being uninsured. Nnoko (2017) on his study found that uninsured people have poor access to health care; on the other hand, insured people have access to adequate health care. Furthermore, uninsured patients are more likely to be diagnosed with advanced cancer, thus reported that they do not participate in prostate cancer screening because it is expensive and they are not insured (Reynolds, 2008).

Embarrassment

Research evidence shows that embarrassment as one of the factors that influence men's low uptake of PC screening and testing. it was found that embarrassment specifically associated conducted the DRE technique was a barrier to PC screening among Black American men (Catalona, 2018). Most men find this screening technique to be humiliating, thus preventing them from participating in PC screening.

Absence of symptoms

Another factor that hampers most men from seeking PC screening and testing is the asymptotic part of the cancer. According to Buyoye., et al (2019), the absence of symptoms associated with PC hampers men from seeking PC screening. This is based on human's belief that the absence of symptoms indicates absence of illness, thus influencing lack of intentions to seek PC screening. WHO (2015), indicated that it is common for black population in developing countries to perceive that there is no need to consult the physician if you do not feel sick. This clearly indicates that the absence of symptoms with the PC influence individual's decision to seek PC screening.

Time

Time constrains is another factor that was found to influence an individual's likelihood to participate in prostate cancer screening and testing. Nnoko (2017) on his study found that black American men's failure to participate on prostate cancer screening was attributed to the idea that the screening may take a long time to complete. However, this is based on the Prostate Specific Antigen (PSA) method as the Digital Rectal Exam (DRE) method does not take time to conduct.

Discomfort with the Digital Rectal Examination (DRE)

Another significant factor that leads to poor participation on prostate cancer screening is the discomfort associated with the DRE screening method. This screening method is considered to affect individual's masculinity as it leads to physical and psychological discomfort, embarrassment, humiliation and beliefs that it is related to homosexuality (WHO, 2015). This is because the method involves the doctor putting a gloved finger into the rectum (penetration) to examine the prostate gland which is perceived as

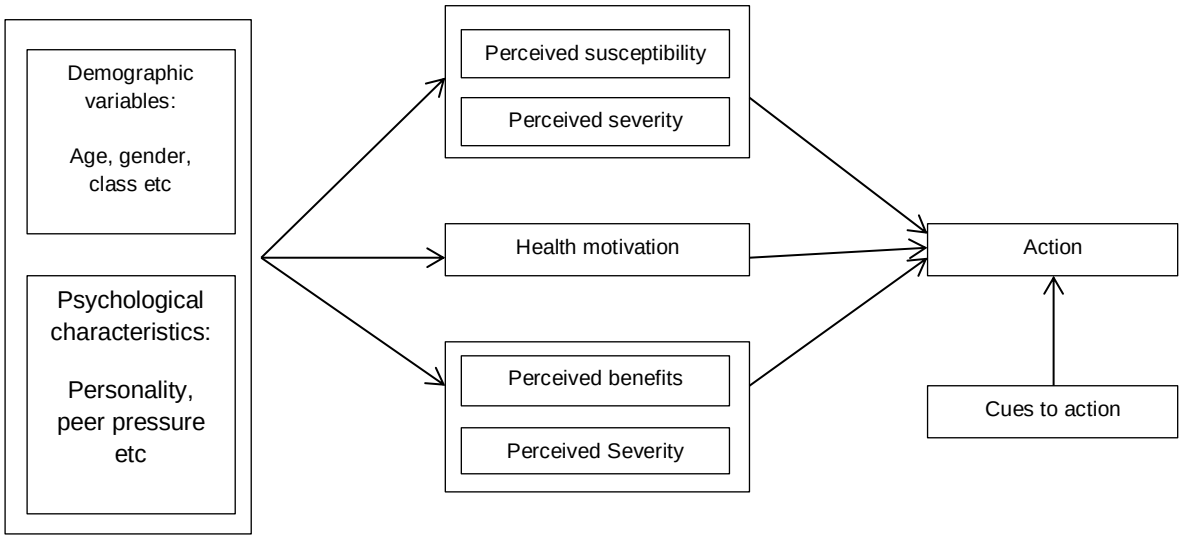
invasion of privacy. The discomfort of DRE and the concerns about sexual problems were found to be the barriers to prostate cancer screening and testing (Ogunsanya, 2014).

2.6 THEORETICAL FRAMEWORK

2.6.1 The Health Belief Model (Karen, 2015)

This study was guided by the Health Belief Model. The Health Belief Model was developed in 1950s by the social psychologists Rosenstock Irwin, Kegeles Stephen, Hochbaum Godfrey and Leventhal Howard working in the Public Health Services in United States of America (Karen, 2015).

Figure 2.1: The Health Belief Model



It is widely used in understanding health behaviours (Abraham and Sheeran, 2016). This method can be used to guide health promotion and disease prevention programs (Karen, 2015). It has key elements that focus on individual beliefs about health conditions, which predict individual health-related conditions (Ruba, Saima, Safia, Waquaruddin and Fareeha, 2016). These key elements are believed to have an influence on an individual's health behaviour whether or not to seek medical intervention (Ruba et al., 2016). These key elements are perceived susceptibility (individual's perceived threat of the disease), perceived severity (belief of consequences), perceived benefits (potential positive benefits of action), cues to action (perceived barrier to action, exposure to factors that prompt action) and self-

efficacy (confidence in ability to succeed) (Abraham and Sheeran, 2016). Therefore, these key elements of the Health Belief Model can also be used in understanding the knowledge, attitudes and screening practices of males regarding prostate cancer in order to plan and design prevention interventions.

Basic components of the Health Belief Model

Perceived susceptibility: It refers to the subjective assessment of the risk of developing a health problem (Glanz, Barbara and Viswanath, 2008). The model suggests that an individual who perceives that they are susceptible to a particular illness will engage in behaviours to reduce their risks of developing such illness. In contrary, individual who believes they are at low risk of developing an illness are more likely to engage in unhealthy behaviours (Carpenter, 2010).

Perceived severity: it is the subjective assessment of the seriousness of a health problem and its potential consequences (Janz and Marshell, 1984). The model proposes that individuals who view a particular health problem as serious are more likely to engage in healthy behaviours to prevent the occurrence of such a health problem (Glanz and Bishop, 2008).

Perceived Barriers: It is an individuals' assessment of the value or rewards of engaging in a health promoting behaviours to reduce the risk of disease (Carpenter, 2010). The model suggests that if an individual believes that a particular action will reduce their risk to a particular disease they are likely to engage in that behaviour (Carpenter, 2010).

Perceived barriers refer to an individual's assessment of the obstacles to change behaviour (Glanz and Bishop, 2008). In order for an individual to engage in health-promoting behaviours, the perceived benefits must outweigh the perceived barriers (Glanz and Bishop, 2008).

Cues to action: The Health Belief Model proposes that a cue /trigger is required for prompting engagement in health-promoting behaviours (Carpenter, 2010). Examples of these cues to action would include pain, symptoms, information from media, friends or health care providers promoting engagement in healthy-behaviour change (Glanz and Bishop, 2010).

Self-efficacy: It is an individual's perception of his/her competence to successfully perform a particular behaviour (Glanz and Viswanath, 2008). The model believes that confidence in one's ability to effect change in outcomes is a key component of health-behaviour change.

Modifying variables: These are individual characteristics such as demographics (sex, age, race etc.), psychosocial (Personality, social class, peers etc.) and structural (Knowledge about the diseases etc.) variables that can affect perceptions of health-related behaviours (Carpenter, 2010).

Perceived susceptibility refers to an individual subjective assessment of the risk of developing a particular health problem such as prostate cancer. It is clear that if men don't view themselves as being susceptible to prostate cancer, they won't have any reason to go for prostate cancer screening and testing. However, if they perceive themselves as being susceptible to the cancer, they are more likely to seek screening services for the cancer. Perceived benefits are the individual's assessment of the value or efficacy of engaging in a health promoting behaviour to reduce the risk of the disease. For example, attaining prostate cancer screening will increase the chances of discovering prostate cancer at an earlier stage, thus decreasing morbidity and mortality. Therefore, this is more likely to influence an individual to seek information regarding prostate cancer, its screening services, utilization and attitudes towards these screening services. However, if the individual sees no benefits the chances of him seeking for screening services are very low. Perceived barriers are individual's assessment of the obstacles to behaviour change. According to this model, an individual's greater perception of being susceptible to prostate cancer, severity of the cancer and the benefits of prostate cancer screening would lead to a greater possibility of such an individual seeking prostate cancer screening. However, an individual's higher perceptions of barriers to prostate cancer screening would lead to higher possibilities of not seeking prostate cancer screening.

2.7 CONCLUSION

This chapter discussed prostate gland cancer and prostate cancer screening as concepts. It also gave an overview of the prevalence of prostate cancer internationally, in Africa and in South Africa. It also discussed gaps, similarities and contradictions on studies conducted on men's knowledge, attitudes and screening practices

internationally and in Africa. Factors that hinder men from seeking prostate cancer screening and testing were also discussed. The theoretical framework was also covered in this chapter.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

Research methodology is a section that explains all research methods that the researcher used to achieve the objectives of the study (Babbie, 2016). This chapter discussed in detail the research design, study setting, study population, sample and sampling procedures. Data collection methods, measurement instrument, reliability and validity, pre-testing, data management and analysis were also covered. In addition, the ethical considerations, respondents' rights and results dissemination methods were also discussed.

3.2 RESEARCH APPROACH

According to Creswell (2018), a research approach is a plan and procedure that consists of the steps of broad assumptions to detailed method of data collection, analysis and interpretation. Selecting a research approach is a critically important decision. The present study adopted a quantitative approach in order to assess the knowledge and attitudes towards prostate cancer screening among adult males. Creswell (2019) maintains that a quantitative research approach is used to quantify the problem through generating numerical data or data that can be transformed into usable statistics. This method is appropriate because it allowed the researcher to study a larger sample with all respondents having an equal chance of being selected for the study. Furthermore, it also allowed the researcher to make inferences of findings to the entire population under investigation (Babbie, 2016).

3.3 STUDY DESIGN

A research design is a plan or blueprint of how researchers intend conducting the research (Babbie, 2016). For the purpose of this study, a descriptive cross-sectional survey was adopted to achieve the goal of the study. A cross-sectional survey is a type of observational research design that seeks to study a defined population at a given point in time (Babbie, 2018). This design is described as a 'snapshot' of the frequency and characteristics of a condition in a population at a particular point in time (Babbie, 2016). This research design was used because the researcher wanted to collect data at one point in time. Furthermore, it is cost-effective, easy and quick to

conduct. The researcher wanted to describe men's knowledge and attitude towards prostate cancer screening at Dzingahe village.

3.4 THE STUDY SETTING

The study setting is the area where the study is conducted (Babbie, 2016). This study was conducted at Dzingahe village (Thulamela Municipality). Dzingahe village is situated 11.7 Km East of Thohoyandou. The village has one public clinic where residents and nearby villages consult for health issues. In case of serious illness and injuries, patients are transferred to either Donald Fraser or Tshilidzini hospital as the nearest public hospitals. The village is divided into eight sections/blocks (Block A-F, Vhutshini and Marikana). According to the records from the traditional council leadership, the village has an estimate of 570 males who are 40 years and above. Some residents from this village practice agriculture for survival while others work in different departments near and far to support their families.

FIGURE 3.1: Dzingahe village map

From: Google map (www.google.co.za/maps/search/dzingahe/village/)

3.5 STUDY POPULATION

Brink, van der Walt and van Rensburg (2017) defined population as the entire group of persons or objects that are of interest to the researcher who meet the criteria that

the researcher is interested in studying. The estimated adults population (36+) in Thulamela municipality is about 20.9% (Stats South Africa, 2011). The target population for this study consisted of males from Dzingahe Village who are 40 years and above irrespective of their educational level, working experience, and marital status. The total population of 40 years and above males at Dzingahe village was 570 across all blocks as shown in the population frame below. This population was composed of black males from Venda culture who speak Tshivenda as their home language. It is a rural settlement in which they still practice and abide by their customs and norms although bit by bit others are adopting a western culture. The target population was composed of both literate individuals with qualifications and uneducated individuals.

TABLE 3.1: Population frame of Dzingahe Village males (40 years and above)

Section	Number of males	Percentage %
Block A	124	22%
Block B	93	16%
Block C	86	15%
Block D	99	17%
Block E	117	21%
Block F	22	4%
Marikana	10	2%
Vhutshini	19	3%
TOTAL	**570**	**100%**

3.6 SAMPLING

A sample refers to a manageable subset of a population that represents the entire population (Creswell, 2018). Brink et al. (2017) stated that there is no fixed number or percentage of subjects that determine the size of an adequate sample and studies have indicated that the bigger the sample, the more significant the results.

Sampling method: Probability sampling method was used to sample the respondents. The simple random sampling technique was used to draw a sample from

the entire population. Each unit from the target population was chosen randomly and entirely by chance giving each unit the same probability of being chosen for the sample of the study. The researcher chose the methods to ensure that the appropriate number of elements was drawn from the entire population in an unbiased manner. This method reduces the probable sampling error (Babbie and Mouton, 2018).

Sampling procedure: To avoid errors of unanswered questionnaires, the researcher added 10% of respondents to ensure validity and reliability of instrument and data. Therefore, 246 questionnaires were administered. Balloting technique was used to sample the respondents from the total population. The researcher wrote down piece of papers constituting of 485 papers written yes and 85 written no. The first 259 males who picked the yes piece of papers and who were willing to participate in the study formed part of the study. The piece of papers was placed inside the bowl in which all males had an equal chance to pick one piece of paper. Only those who picked a piece of paper written yes were selected to participate in the study. Those who picked a piece of paper written No did not form part of the study.

Sample size: The sample size for this study was 235 respondents from Dzingahe village. The study sample was determined following Slovin's formula (Vasudevan, 2020).

n = sample size of the adjusted population.

N= population size

e = accepted level of error set at 0.05.

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

$$n = \frac{570}{1 + 570\ (0.05)^2}$$

n= 235

INCLUSION CRITERIA: Male residents of Dzingahe village from the age of 40 years and above irrespective of their educational level, working experience, and marital status.

EXCLUSION CRITERIA: All males above 40 years who are mentally incapacitated to participate. For example, those who showed signs of obvious mental, behavioural or cognitive problems rendering them unable to consent, excessive distress, anxiety, or unusual behaviours, or inability to restate the purposes and activities of the study were excluded from the study.

3.7 RESEARCH INSTRUMENT

The collection of data is a systematic way of gathering information relevant to the research purpose or question. The present study used structured and close-ended questionnaire (See page 57, Appendix D) which were administered among males at Dzingahe village. This instrument was developed and used after a thorough review of literature and pre-existing instruments which were used to assess men's knowledge and attitude towards prostate cancer screening. This English self-administered structured questionnaire contained questions that were organised in four sections. Section A: socio-demographic information with 7 items; Section B: knowledge regarding prostate cancer with 11 items; Section C: attitude towards prostate cancer screening with 8 items of 4 point Likert Scale and Section D: screening practices with 7 items (see details of the instrument on Appendix D). Some of the items from the questionnaire were adapted from a research study conducted by Ojewola et al. (2017) on knowledge, attitudes and screening practices regarding prostatic diseases among Nigerian men. The researcher was also guided by the research objectives in the modification of the research instrument in order to achieve the study goal. The questionnaire was scrutinized by the supervisor to ensure relevance and quality. The questionnaire had two versions (English and Tshivenda) in order to ensure quality of data as the study is composed of both literate and illiterate respondents. It was developed in English and translated to Tshivenda language. Back-translation to the original version (English) was done to ensure the conceptual and cultural correspondents of the two versions, the quality and accuracy of the instrument. Furthermore, a pilot study was conducted with the back-translated version to ensure relevance. The process of translation to Tshivenda version and back-translation was

done by an expert to ensure quality. Both translations were done by an expert Mr L. Nendauni who has the following qualifications [Diploma in Intermediate English (WEI); BA in Media Studies (UNIVEN); BA, Hons in Linguistics (UNIVEN); MA in Linguistic (UNIVEN); and Certificate in copy-editing (UCT)].

3.8 VALIDITY AND RELIABILITY

3.8.1. Validity

Robinson (2014) defined validity as the degree to which an instrument measures what it is supposed to measure. Content validity of the questionnaire was determined by expert judgment. The questionnaire was checked by the supervisors to assess the relevance of the content of the questions and to determine which questions needed to be amended to achieve the objectives of the study. The questionnaire was structured in simple English to avoid ambiguity and respondents were given time to go through the questionnaire while the researcher was around to clear any misunderstanding.

3.8.2. Reliability

Reliability is defined as the extent to which results are consistently accurate over time. The test-retest reliability method was employed to ensure reliability through administering it at two different times to a neutral population but with same characteristics. The test-retest study utilised 10% (27) of the sample of men who are 40 years and above from Ngudza village, who did not form part of the actual study. The reliability of the instrument was carried out by checking the similarity of responses from the 27 men. Cronbach's alpha which measures the degree of internal consistency ($0 \leq \alpha \leq 1.0$) of the instrument was used to ascertain the reliability of the instrument. The researcher checked for internal consistency which is the degree to which every test item measures the same construct and Cronbach's alpha of .89 was found for this study.

3.9 PRE-TESTING

Pre-testing is a critical examination of the survey instrument that helps to test the validity and reliability of the research instrument (Babbie, 2016). A pre-test of the questionnaire was done among 27 respondents from Ngudza village who met the inclusion criteria. The pilot study sample did not form part of the main study. The researcher selected this village for a pilot study because it has similar characteristics with the target population for the study. These two villages have similar socio-economic status, educational level and ethnic group. Pre-testing helped in identifying any ambiguities, relevance, sensitivity and acceptability of the questions and probable duration of administering the questionnaire. After pretesting, the questionnaire was modified accordingly.

3.10 PROCESS OF DATA COLLECTION

Data collection method: The researcher used self-administered structured questionnaire (See page 66, Appendix D/ page 70, Appendix E) to collect data from respondents. The researcher modified the questionnaire and ensures that the questionnaire was scrutinised by an expert and supervisor for relevancy before collecting data.

Data collection procedure: Permission to conduct the study was obtained from the headman of Dzingahe village. In order to gain access to the headman/chief the researcher was assisted by the community civic structure and traditional council. The researcher first consulted the civic structure about the study. The role of the civic structure was to consult and arrange a meeting with traditional council for the presentation of the study. The researcher was granted permission to conduct the study by the traditional council after presentation. Informed consent provided and signed by respondents willing to partake in the study (See page 65 & 63, Appendix A and C). Prior to data collection, a place where the Tshivhidzo meetings are held at the Headman's place (Musanda) was visited and prepared for data collection. A date and time for data collection was arranged with respondents together with the leaders of the community (Civic structure and traditional council). The researcher also distributed the consent forms to the respondents so that they may have enough time to go through the consent form, sign it and submit it on the arranged date for data collection.

Process of data collection: The researcher introduced himself and briefly informed the respondents about important aspects of the study including the study's purpose, expectations, duration and voluntary participation. The researcher collected data from respondents in a form of a group. The researcher distributed different versions of the questionnaire (According to respondent's preference) among respondents individually to complete on their own; however, the researcher was present in order to collect completed questionnaires and to clarify respondents on aspects they needed clarity on. Afterwards, the researcher collected all the completed questionnaires from respondents.

3.11 DATA MANAGEMENT AND ANALYSIS

The collected data was coded and entered on excel and was analysed using the Statistical Package for Social Science (SPSS) version 25.0 (Gunarto, 2019). All collected data was complete. Descriptive statistical was used to summarize the data and the results were presented in a frequencies, tables and percentages. Inferential statistics through cross tabulation, Chi square and Phi and Cramer's V test were also utilised to test for association and effects size respectively at .05 level of significance. For two by two table, the relative risk was used to assess ratio of probabilities. Respondents knowledge as an explanatory variable, screening practices as response variable and demographic variables (age, education, marital status, socio-economic status, education and occupation) as confounding variables were used to ascertain the association between the factors contributing towards prostate cancer screening. Independent variables: level of knowledge (adequate/inadequate). Dependent variables: attitudes towards prostate cancer screening (positive/negative) and prostate cancer screening practices (good/poor). Confounding variables: demographic variables (age, education, marital status, occupation and socio-economic status, occupation and religion) (Cohen, 1988).

The knowledge domain consisted of 11 Multiple Choice Questions (MCQ) aimed at measuring respondents' knowledge regarding prostate cancer. For each correctly answered question the participant was scored '1' and for incorrectly answered question '0'. To ease the comparison, the knowledge status was divided into 'low' for inadequate and 'high' for adequate knowledge based on the scores obtained by each respondent. Out of the maximum score of 11, each respondent who scored 5 and less

was categorised as having “low” inadequate knowledge and each respondent who obtained 6 and more was categorised as having “high” adequate knowledge regarding prostate cancer.

To assess the attitudes regarding prostate cancer screening, the researcher used 8 statements on a 4 point Likert scale, strongly agree, agree, disagree and strongly disagree. The scale was scored as strongly agree ‘1’; agree ‘1’; disagree ‘0’ and strongly disagree ‘0’ for all the positive questions and strongly agree ‘0’; agree ‘0’; disagree ‘1’ and strongly disagree ‘1’ for all the negative questions. Out of the maximum score of 8, each respondent who scored 4 and more was classified as having positive attitude and each participant who scored 3 and less was classified as having negative attitude towards screening for prostate cancer. The style of Likert scale was adapted from Yeboah-Asiamah, Yirenya-Tawiah, Baafi and Ackumey (2017). Prostate cancer screening practices were assessed by calculating frequencies and percentages of those who have had screening done and the number of times it was done. Reasons for those who have not participated in screening were quantified and described descriptively.

3.12 ETHICAL CONSIDERATION

Ethics in research involves protecting the rights of respondents and institutions in which research is done, and maintaining scientific integrity (Babbie, 2016). A researcher is responsible for conducting research in an ethical manner and failure to do so undermines the scientific process and might have negative consequences.

3.12.1 Permission

Approval to conduct study was obtained from the University Higher Degree Committee, University of Venda. An ethical clearance letter was granted from the Research Ethics Committee, University of Venda *(Project no: SHS/19/PH/11/2903).* In addition, the researcher also obtained permission to conduct the study from the headman (Chief Tshabuse) and leadership committee (See page 53, Appendix A). A community civic structure and traditional council was used to gain access and consent to conduct the study from the headman/community leader. Participants’ wellbeing in this study was a priority. The researcher ensured that participants are treated with

respect and given enough information for them to make an informed voluntary consent (Babbie, 2016).

3.12.2 Informed consent

Respondents were provided with the information sheet (See page 65, Appendix B). The information sheet provided a detailed explanation of the purpose of the study, duration of the study, perceived benefits and risks of the study. Procedures to be followed in the study were also outlined in the information sheet. The information sheets were also made available in Tshivenda version for those respondents who were comfortable with their home language so that they could read and understand this important information. All respondents who gave consent to participate in the study were provided with a written consent form which they signed prior their participation in the study.

3.12.3 Voluntary participation

Babbie (2013) asserts that respondents in a research project should at all times be voluntary and no one should be forced to participate. Respondents were informed prior to the commencement of interviews that their participation in the study was voluntarily and that they can withdraw from the study whenever they feel they do not want to continue. Respondents also signed a written consent form prior participation (See page 56, Appendix C). This was necessary because the respondents should participate out of their willingness. This means that no one was forced to participate in the study.

3.12.4 Privacy and confidentiality

The researcher made it clear to the respondents that their information will be kept confidential. They were assured that information from this study was to be used for the study purposes only and would not be made available to a third party that is not involved in the study. Furthermore, findings from this study would not be linked to any respondents.

3.12.5 Anonymity

Pseudo names instead of respondent's real identity were used in order to ensure anonymity. Completed questionnaires were stored in a locked file cabinet while the electronic data file had a password protected and restricted to only the principal investigator.

3.13 CONCLUSION

This chapter discussed the design and methodologies used to conduct the study. It contains the root of the research which includes study setting, population, sample, sampling procedures, the data collection instrument, data management and analysis and steps taken to ensure that the results are valid and reliable. The chapter also covered the ethical consideration/principles that guided the study.

CHAPTER FOUR: FINDINGS

4.1 INTRODUCTION

This chapter explains the findings of the collected data and analysis of the questionnaires from male residents aged 40 years and above in Dzingahe village. Among male residents of Dzingahe village, two hundred and forty-five (n=245) male residents responded to the questionnaires. The results are presented according to objectives as stipulated in page 5. Respondents' demographic data will be presented first. Statistical assumptions were observed prior analysis to ensure that there is no violation and also to interpret findings accurately.

4.2 DEMOGRAPHIC INFORMATION

Table 4.1: Demographic profile of male (n245) at Dzingahe village

Variable	Frequency (n) = 245 & Percentage (%)
Age:	
40-49 years	108 (44.1%)
50-59 years	65 (26.5%)
60-69 years	18 (7.3%)
70-79 years	23 (9.4%)
80 years and above	31 (12.7%)
Marital status:	
Married	136 (55.5%)
Single	17 (6.9%)
Widowed	39 (15.9%)
Separated	25 (10.2%)
Divorced	28 (11.4%)
Occupation:	
Unemployed	62 (25.3%)
Employed	121 (49.4%)
Self-Employed	30 (12.2%)
Pensioner	32 (13.1%)
Income:	
Less than R2000.00	97 (39.6%)
R2001.00-R4000.00	20 (8.2%)
R4001.00-R6000.00	23 (9.4%)
R6001.00-R8000.00	35 (14.3%)
R8001.00 and above	70 (38.6%)
Educational status:	
None	27 (11%)
Primary level	39 (15.9%)
Secondary level	44 (18%)
Diploma (TVET)	112 (45.7%)
University (Degree)	23 (9.4%)
Religion:	
Catholic	49 (20%)
Protestant	32 (13.1%)
Muslim	5 (2%)
Traditional	63 (25.7%)
None	96 (39.2%)
Reported Health status:	
Excellent	95 (38.8%)
Good	72 (29.4%)
Fair	48 (19.6%)

Poor	30 (12.2%)
Reasons for poor health: Chronic illness Acute illness Disability	 20 (8.2%) 3 (1.2%) 7 (2.9%)

Table 4.1 presents the demographic profile of respondents. Majority of the respondents, 44.1% were aged between 40-49 years while only 12.7% were aged above 80 years old. Most of the respondents, 55.5% were married, while 6.9% were single. Furthermore, about half of the respondents, 49.4% were employed while a quota, 25.3% were unemployed. Most of respondents, 45.7% had formal education and obtained TVET diploma certificates. Surprisingly, 39.6% of men had <2000 monthly income while 38.6% received >8000. Of 245 men, 39.2% did not follow any specific religion; while 25.7% followed tradition. About 38.8% of respondents reported to be in excellent health status, while 12.2% admitted that their health is relatively poor. Amongst those who indicated having poor health, the majority, 8.2% suffered from chronic illness.

4.3 OBJECTIVE ONE: To assess men's knowledge regarding prostate cancer at Dzingahe village:

Table 4.2: Knowledge about prostate cancer among men at Dzingahe Village

Knowledge statements	**Frequency - (n) & Percentage (%)**
Have you ever heard about prostate cancer?	
Yes	92 (37.6%)
No	153 (62.4%)
If the above answer is 'yes', from who?	
Physician	30 (12.2%)
Mass media	20 (8.2%)
Internet	6 (2.4%)
Friend/Family	36 (14.7%)
What is prostate cancer?	
Cancer of the male reproductive organ	37 (15.1%)
Cancer of the prostate gland	149 (60.8%)
Inability to urinate	0 (0%)
Don't know	59 (24.1%)
Risk factors for the development of prostate cancer	
Family history	86 (35.1%)
Alcohol	26 (10.6%)
High-fat diet	42 (17.1%)
Older age	67 (27.3%)
Smoking	21 (8.6%)

Obesity	3 (1.2%)
Others	0 (0%)
Which gender is affected by prostate cancer?	
Men only	175 (71.4%)
Women only	5 (2%)
Both men and women	43 (17.6%)
Don't know	22 (9%)
Do you know which age is at risk for prostate cancer?	
Yes	76 (31%)
No	169 (69%)
What are the signs for prostate cancer?	
Fever	10 (4.1%)
Loss of appetite	37 (15.1%)
Blood in urine	73 (29.8%)
Pain during urination	51 (20.8%)
Loss of weight	30 (12.2%)
Headache	6 (2.4%)
Frequent urination	38 (15.5%)
Have you ever heard of the PSA and DRE?	
Yes	46 (18.8%)
No	199 (81.2%)
If the above answer is 'yes', from who?	
Internet	4 (1.6%)
Physician	23 (11.8%)
Friends/Family	19 (7.7%)
Mass media	0 (0%)
Others	0 (0%)
PSA & DRE are used to detect prostate cancer?	
Yes	77 (32.4%)
No	11 (4.5%)
I don't know	157 (64.1%)
Can prostate cancer be treated?	
Yes	127 (51.8%)
No	30 (12.2%)
I don't know	88 (35.9%)

More than a half of respondents (62.4%) had not heard, neither did they have prior knowledge about prostate cancer. Amongst the respondents who have heard about PC, 14.7% received such information from their family and friends and 12.2% from a physician. Majority of respondents (60.8%) were able to identify what is PC but 24.1% did not know what PC is. Regarding risk factors of PC, 35.1% of respondents identified family history as a risk factor while 27.3% of respondents thought that old age is one of the risk factors.

Majority of respondents (71.4%) were able to identify that PC affects males while17.6% thought it affects both genders and 9% had no idea which gender PC affects. About 69% of respondents were not aware of the age at risk for the

development of prostate cancer. Some of respondents managed to determine specific symptoms related to PC with 29.8% identifying blood in the urine, 20.8% identified pain during urination and frequent urination at 15.5%.

Majority of respondents, (81.2%) reported no prior knowledge about PSA and DRE screening methods. Among those who had knowledge about prostate cancer screening methods, 11.8% reported physicians as their source of information and 7.3% identified family and friends. Majority of respondents (64.1%) had no idea of the functions of PSA and DRE. Lastly, more than half (51.8%) of respondents believed that prostate cancer can be treated if detected and treated early while 12.2% said it cannot be treated, and 35.9% did not know if PC can be treated.

Table 4.3: Overall - Knowledge about prostate cancer at Dzingahe village.

Knowledge regarding prostate cancer.	**Frequency (N) & Percentage (%)**
Adequate knowledge	88 (35.9%)
Inadequate knowledge	157 (64.1%)
Total	245

The level of knowledge which was based on the Likert scale grading, refer to page no.28. Majority of respondents (64.1%) had inadequate knowledge about prostate cancer and available screening services while 35.9% had adequate knowledge.

Hypothesis 1: H_0 – There is poor (inadequate) knowledge among men – based upon the findings, hypothesis 1 was accepted.

Table 4.4: Associations between demographic variables and the level of knowledge about prostate cancer

Variable	**Level of knowledge**		**Significance**
	Inadequate n (%)	**Adequate n (%)**	**p-value**

Age			
40-49 years	58 (23.7%)	50 (20.4%)	<0.001
50-59 years	36 (14.7%)	29 (11.8%)	
60-69 years	17 (6.9%)	1 (0.4%)	
70-79 years	16 (6.5%)	7 (2.9%)	
80 +	30 (12.3%)	1 (0.4%)	
Education			
None	23 (9.4%)	4 (1.6%)	<0.001
Primary level	35 (14.3%)	4 (1.6%)	
Secondary level	34 (13.9%)	10 (4.1%)	
Diploma (FET College)	61 (24.9%)	51 (20.8%)	
Degree (university)	4 (1.6%)	19 (7.8%)	
Marital status			
Married	81 (33.1%)	55 (22.5%)	<0.002
Single	12 (4.9%)	5 (2.0%)	
Widowed	35 (14.3%)	4 (1.6%)	
Separated	11 (4.5%)	14 (5.7%)	
Divorced	18 (7.3%)	10 (4.1%)	
Occupation			
Unemployed	58 (23.7%)	4 (1.6%)	<0.001
Employed	59 (24.1%)	62 (25.3%)	
Self-employed	16 (6.5%)	14 (5.7%)	
Pensioner	24 (9.8%)	8 (3.3%)	

Table 4.4 above illustrates the findings on associations between respondent's socio-demographics and the level of knowledge about prostate cancer. Adequate knowledge was observed among higher proportions of men within the age range of 40-49 years (20.4%), educated with at least a diploma and certificate (20.8%), those who have a degree (7.8%), married (22.5%) and employed (25.3%). Furthermore, respondents' whose knowledge was inadequate were pensioners, those whose age range between 60-69, 70-79 and 80 and above, widowed, those who never went to school and those

who only have primary school. There was a significant association between all demographic variables and the level of knowledge about prostate cancer.

Hypothesis 1 - H_0 – There is poor (inadequate) knowledge among men – based upon findings, hypothesis 1 was accepted.

4.4 OBJECTIVE TWO: To describe men's attitude towards prostate cancer screening at Dzingahe village:

The results on attitudes towards prostate cancer are summarised in Table 4.5.. Data presented in frequencies (n=245) and percentages.

Table 4.5: Respondents' attitude towards prostate cancer screening at Dzingahe village

Statements	Strongly agree n (%)	Agree n(%)	Disagree n (%)	Strongly disagree n (%)
All adults should undergo prostate cancer screening	81 (33.1%)	85 (34.7%)	70 (28.6%)	9 (3.7%)
Early diagnosis of prostate cancer improves clinical outcome	50 (20.0%)	168 (68.6%)	27 (11.0%)	0
Early consultation with doctors for urinary symptoms is helpful	52 (21.2%)	151 (61.6%)	40 (16.3%)	2 (0.8%)
Drug treatment of prostatic diseases is effective	2 (0.8%)	20 (8.2%)	166 (67.8%)	57 (23.3%)
Medical and surgical treatment can cure prostatic problems	24 (9.8%)	202 (82.4%)	19 (7.8%)	0
Consultation with doctor is only necessary when home remedy fails	73 (29.8%)	56 (22.9%)	83 (33.9%)	33 (13.5%)
Screening for prostate cancer is not necessary if one is healthy and fit.	68 (27.8%)	98 (40.0%)	54 (22.0%)	25 (10.2%)
I will only consider going for prostate cancer screening when I get sick/ill.	40 (16.3%)	109 (44.5%)	67 (27.3%)	29 (11.8%)

Respondents were assessed on their attitudes towards prostate cancer screening in general, as well as treatment. The scores were coded and summed up to obtain results for respondents who had positive and negative attitudes towards prostate cancer. When asked if all adults should undergo prostate cancer screening, the majority of respondents (34.7%) agreed while 33.1% strongly agreed. 61.6 % of respondents agreed that early consultation with doctors regarding urinary symptoms is helpful, while 21.2% strongly agreed. Surprisingly, 40% agreed that screening for prostate

cancer is not necessary if one is healthy and fit, and 27.8% strongly agreed. More than half of respondents (16.3% and 44.5%) reported that they will only consider going for prostate cancer screening when they feel/get sick.

Table 4.6: Attitude level towards prostate cancer at Dzingahe village

Attitude levels towards prostate cancer	Frequency (n) & Percentage (%)
Positive attitude	208 (84.9%)
Negative attitude	37 (15.1%)
Total	245

Majority of respondents (84.9%) showed positive attitude towards prostate cancer whereas 15.1% displayed negative attitudes.

Hypothesis 2: H_0 – Men have a negative attitude towards prostate cancer - based upon the findings, hypothesis 2 was rejected.

4.5 OBJECTIVE THREE: To determine men's practices regarding prostate cancer screening at Dzingahe village

Table 4.7: Screening practices for prostate cancer among men

Screening practices questions	Frequency (n) & Percentages (%)
Ever consulted a physician regarding prostate cancer?	
Yes	**29 (11.8%)**
No	**216 (88.2%)**
Did the physician inform you about the disadvantages and advantages of taking PSA test?	
Yes	**29 (11.9%)**
No	**214 (88.1%)**
Ever undergo a PSA test?	
Yes	**8 (3.3%)**
No	**237 (96.7%)**
Would you undergo PSA test?	
Yes	**130 (53.1%0**
No	**115 (46.9%)**
How frequently have you consulted your physicians with regard to prostatic problems?	
Once	**19 (7.8%)**
Twice	**8 (3.3%)**

More than three times	**2 (0.8%)**
None	**216 (88.2%)**
Reasons why you have undergone PSA screening test?	
I felt sick	**4 (1.6%)**
I felt at risk	**4 (1.6%)**
Reasons why you have never undergone PSA screening test?	
Financial constrains	**62 (25.3%)**
I see no reasons since I have no symptoms	**45 (18.4%)**
I don't feel at risk	**32 (13.1%)**
Unaware of the screening	**30 (12.2%)**
It's a rare disease in our area/country	**21 (8.6%)**
Lack of interest	**18 (7.3%)**
Never advised by the physician	**16 (6.5%)**
It's a rare disease in our people	**13 (5.3%)**
Reasons why you would want to do PSA screening examination?	
To detect the cancer before symptoms occur	**61 (27.3%)**
To know my status	**45 (18.4%)**
If I am sick	**12 (4.9%)**
If I have knowledge about PSA screening	**6 (2.4%)**
Reasons why you would never have PSA screening done?	
I don't feel at risk	**47 (17.2%)**
I don't feel sick	**26 (10.6%)**
Lack of interest	**18 (7.3%)**
It's a rare disease	**18 (7.3%)**
Lack of time	**6 (2.4%)**

Table 4.8 indicates that 96.7% of respondents have never in their life undergone PSA test. The majority of respondents (88.2%) have never consulted a physician with regard to prostatic problems. More than half (53.1%) respondents were willing to undergo PSA test while 46.9% do not intend to go for PSA examination.

Amongst those who have consulted their physicians regarding prostatic problems (11.8%), majority (7.3%) have consulted only once while 0.8% reported that they have consulted more than three times. 11.9% reported that the physician informed them about the benefits and risks of taking PSA test while 88.1% were never informed by a physician.

1.6% of respondents had PSA examination done because they felt sick because they felt they are at risk respectively. Majority of respondents (25.3%) reported financial constraints as their reason for not participating on PSA screening test while 18.4% did

not see any symptoms of PC. 13.1% of respondents felt that they were not at risk and 12.2% were not aware of the PC screening.

18.4% of respondents would do PSA screening test to know their status while 4.7% would only wait till they are sick. 17.2% would not undergo PSA screening test because they don't feel like they are at risk to have PC, 10.6% felt they do not need PSA screening because they are not sick and 7.3% lack interest to undergo PSA screening test.

4.6 OBJECTIVE FOUR: To determine the association between knowledge and screening/practices for prostate cancer among men.

Table 4.8: Association between explanatory variable and response variable

Variables	Undergone PC screening		df	χ2	p-value	ϕ
	Yes, n(%)	No, n(%)				
Knowledge						
Adequate	84(95.4)	4(4.5)	3	48.447	.001	.445
Inadequate	82(52.2)	75(47.7)				

Variables	Attitudes		df	χ2	p-value	ϕ	OR	95% CI	
	Positive, n(%)	Negative, n(%)						Lower	Upper
Knowledge									
Adequate	86(97.7)	2(2.3)	1	17.629	.001	.268	12.336	2,0890	52.665
Inadequate	122(77.7)	35(22.3)							

Variables	Attitudes		df	χ2	p-value	ϕ	OR	95% CI	
	Positive, n(%)	Negative, n(%)						Lower	Upper
Heard of PC									
No	118(77.1)	35(22.9)	1	19.204	.001	.280	.075	.018	.320
Yes	90(97.8)	2(2.2)							

Variables	Would you go for PSA		df	χ2	p-value	ϕ	OR	95% CI	
	Yes, n(%)	No, n(%)						Lower	Upper
Heard of PC									
No	58(37.9)	95(62.1)	1	37.561	.001	.392	.170	.094	.307
Yes	72(78.3)	20(21.7)							

Table 4.9: Association between knowledge and demographic variables among men

			AGE					
			40-49 years	50-59 years	60-69 years	70-79 years	80 years and above	Total
Knowledge	Adequate knowledge	Count	50	29	1	7	1	88
		Expected Count	38.8	23.3	6.5	8.3	11.1	88.0
		% within Knowledge	56.8%	33.0%	1.1%	8.0%	1.1%	100.0%
	Inadequate knowledge	Count	58	36	17	16	30	157
		Expected Count	69.2	41.7	11.5	14.7	19.9	157.0
		% within Knowledge	36.9%	22.9%	10.8%	10.2%	19.1%	100.0%

			EDUCATION					
			None	Primary level	Secondary level	Diploma (TVET)	University (Degree etc)	Total
Knowledge	Adequate knowledge	Count	4	4	10	51	19	88
		Expected Count	9.7	14.0	15.8	40.2	8.3	88.0
		% within Knowledge	4.5%	4.5%	11.4%	58.0%	21.6%	100.0%
	Inadequate knowledge	Count	23	35	34	61	4	157
		Expected Count	17.3	25.0	28.2	71.8	14.7	157.0
		% within Knowledge	14.6%	22.3%	21.7%	38.9%	2.5%	100.0%

			INCOME					
			less than R2000	R2001-R4000	R4001-R6000	R6001-R8000	R8001 and more	Total
Knowledge	Adequate knowledge	Count	17	0	8	7	56	88
		Expected Count	34.8	7.2	8.3	12.6	25.1	88.0
		% within Knowledge	19.3%	0.0%	9.1%	8.0%	63.6%	100.0%
	Inadequate knowledge	Count	80	20	15	28	14	157
		Expected Count	62.2	12.8	14.7	22.4	44.9	157.0

		% within Knowledge	51.0%	12.7%	9.6%	17.8%	8.9%	100.0%

			MARITAL					
			Married	Single	Widowed	Separated	Divorced	Total
Knowledge	Adequate knowledge	Count	55	5	4	14	10	88
		Expected Count	48.8	6.1	14.0	9.0	10.1	88.0
		% within Knowledge	62.5%	5.7%	4.5%	15.9%	11.4%	100.0%
	Inadequate knowledge	Count	81	12	35	11	18	157
		Expected Count	87.2	10.9	25.0	16.0	17.9	157.0
		% within Knowledge	51.6%	7.6%	22.3%	7.0%	11.5%	100.0%

			OCCUPATIONAL				
			Unemployed	Employed	Self employed	Pensioner	Total
Knowledge	Adequate knowledge	Count	4	62	14	8	88
		Expected Count	22.3	43.5	10.8	11.5	88.0
		% within Knowledge	4.5%	70.5%	15.9%	9.1%	100.0%
	inadequate knowledge	Count	58	59	16	24	157
		Expected Count	39.7	77.5	19.2	20.5	157.0
		% within Knowledge	36.9%	37.6%	10.2%	15.3%	100.0%

			RELIGION					
			catholic	Protestant	Muslim	Traditional	None	Total
Knowledge	Adequate knowledge	Count	30	13	2	17	26	88
		Expected Count	17.6	11.5	1.8	22.6	34.5	88.0
		% within Knowledge	34.1%	14.8%	2.3%	19.3%	29.5%	100.0%
	inadequate knowledge	Count	19	19	3	46	70	157
		Expected Count	31.4	20.5	3.2	40.4	61.5	157.0
		% within Knowledge	12.1%	12.1%	1.9%	29.3%	44.6%	100.0%

A chi-square test of independence was performed to examine the relation between knowledge and men's willingness to undergo PC screening. The relation between these variables was significant, X2 (3, N=245) = 48.44, p = .001. There is a significant association between men's knowledge of PC and their willingness to undergo PC screening. The effect size was strong, ϕ = .45. There is a significant association between men's knowledge of PC and their attitudes towards PC, X2 (1, N = 245) = 17.63, p = .001. The effect size was moderate, ϕ = .27. There is a significant association between the men who have heard of PC and their attitudes towards PC, X2 (1, N = 245) = 19.20, p = .001. The effect size was moderate, ϕ = .28. There is also a significant association between men who have heard about PC and their willingness to go for PC, X2 (1, N = 245) = 37.56, p = .001, The effect size was strong, ϕ = .39.

A chi-square test of independence was performed to examine the relation between knowledge and all demographic variables. The relation between these variables was significant, X2 (4, N=245) = 29.09, p = .001, knowledge was significantly associated with age and the effect size was moderate to strong at ϕ = .35; knowledge about PC was significantly related to education, X2 (4, N=245) = 45.99, p = .001, the effect size was strong at ϕ = .43; knowledge was significantly related to income, X2 (4, N=245) = 88.43, p = .001, the effect size was strong at ϕ = .60; Knowledge was significantly related to marital status, X2 (4, N=245) = 17.06, p = .002, the effect size was medium at ϕ = .26; knowledge was significantly related to occupation, X2 (3, N=245) = 38.89, p = .001, the effect size was moderate to strong at ϕ = .39; knowledge was also significantly associated with religion, X2 (4, N=245) = 19.42, p = .001, the effect size was medium at ϕ = .28; There is a significant association between men's knowledge of PC and all demographic variables.

Hypothesis 4: H1 – There is a significant association between knowledge and screening/practices for prostate cancer among men – based upon the findings, there is a significant association between knowledge, attitudes and screening practices among men, therefore this hypothesis is accepted.

4.7. CONCLUSION

This chapter covered presentation of findings. The data was analysed using SPSS version (25.0) and presented in the form of tables. The data was categorized and presented according to the study objectives. The findings showed that men have

inadequate knowledge towards prostate cancer, the attitudes towards prostate cancer screening were positive although screening practices for prostate cancer is relatively low among men.

CHAPTER FIVE: DISCUSSION OF THE STUDY FINDINGS

5.1. INTRODUCTION

The purpose of this chapter is to discuss the findings of the study. The discussion is structured according to study objectives and a general application of the theoretical framework at the end.

5.2. SOCIO-DEMOGRAPHIC INFORMATION OF RESPONDENTS

The current study shows that nearly half of respondents (44.1%) were aged between 40-49 years. This is comparable with Yeboah-Asiamah et al. (2017) whereby more than half (68.1%) of respondents were between the age 45-50 years. Majority of respondents in the current study were married, similarly more than half, 55.5% of respondents were married whereas the remaining 44.5% were either single, widowed, separated or divorced (Yeboah et al., 2017). Similar findings were observed in a study conducted in Nigeria where more than half (60.5%) of respondents were married (Adibe et al, 2017). The current study found that only 9.4% had a university degree, additionally, 45.7% had a diploma, whereas only 11.0% never went to school at all. This finding is in consistent with a study conducted in South Africa among males attending a Urology clinic (Free State, Bloemfontein, Northern and western Cape) where only less than a quarter (10.4%) of respondents had a tertiary qualification with majority having either a primary or secondary qualification.

Three thirds of the current study's respondents were non-Christians. About 64.9% of this study's respondents believe in either traditional or nothing at all. The current findings do not correspond with many other studies conducted in Africa, where majority of respondents were Christians. For example, in a study conducted by Korley (2018) in Ghana, 69.6% of respondents were Christians; a study by Yeboah-Asiamah et al. (2017), 90.6% were Christians; and in a study conducted by Ojewola et al. (2017), 84.3% of respondents were Christians. Half of the current study's respondents were employed with majority (39.6%) earning less than R2000.00 per month. Similarly, a study conducted in South Africa where only 25% of respondents were employed (Mofolo et al., 2015) but contrast with a study conducted in Italy whereby 90.7% of respondents were employed whereas only 9.3% were unemployed (Morlando et al.,

2017). This could be because unemployment in developed countries tends to be low as compared to developing countries.

5.3. OBJECTIVE ONE: TO ASSESS MEN'S KNOWLEGDE REGARDING PC AT DZINGAHE VILLAGE

The present study gave evidence that the respondents in this study had limited/inadequate knowledge about prostate cancer. The overall level of knowledge about prostate cancer was poor because third quarter of respondents (62.4%) reported that they have never heard of prostate cancer. Similar findings were also found in some studies conducted in South Africa among males attending a Urology clinic where more than half 54.4% of respondents had never heard about prostate cancer; Baaitse (2018), on her study conducted in Muldersdrift found 90.2% of respondents never knew of the existence of prostate cancer. By contrast, some of the African countries yielded better results about the level of knowledge regarding prostate cancer than has been reported in South Africa, Adibe et al. (2017) in their study among University of Nigeria male staff found that third quarter 94.9% had high level of knowledge about prostate cancer; Adebimpe et al. (2019), through a study carried out in South West Nigeria among commercial motorcyclists found that 54.1% of respondents were aware of prostate cancer. These results might have been influenced by high measures put into place in Nigeria to raise awareness about prostate cancer and that University male staff may be well informed on the basisi that they are educated as compared to males in a rural community. In South Africa, there is still a lot to be done to educate the public about prostate cancer due to reported low level of awareness about the disease.

Among those who had prior knowledge about prostate cancer, the common sources of information were friends/family (14.7%), physicians (12.2%) and mass media (8.2%). Similar findings have been observed in Italy where respondents reported that the source of information about prostate cancer were the physicians, TV/newspaper and family/friends (Morlando et al, 2017). However, the findings were slightly different from a study carried out in Nigeria where common sources were radio, TV and newspaper (Ojewola et al., 2017). About three quarter of respondents were able to identify what prostate cancer was. Furthermore, in the present study majority of respondents were able to identify high risk factors for the development of prostate

cancer as 35.1% were able to identify family history, age (27.3%) and high fat-diet (17.1%) as risk factors. Similar values regarding family history were found in a study carried out in South Africa where about 32.3% of respondents were aware that family history is a risk factor for prostate cancer development (Mofolo et al., 2015). However, high level of knowledge regarding the age as a risk factor was reported in a study conducted in Italy where three quarter of respondents correctly identified that age over 50 years is a risk factor for the development of prostate cancer (Morlando et al., 2017). Although knowledge about risk factors were better, knowledge regarding the age at risk for the development of prostate cancer was low, as three quarter of respondents had no idea which age is at risk for the development of prostate cancer.

About three quarter of respondents were able to identify the gender which is affected by prostate cancer and majority were also able to correctly identify the symptoms of this disease. Furthermore, majority had moderate level of knowledge regarding the signs/symptoms of prostate cancer. They were able to identify blood in urine, pain during urination and frequent urination as signs for the presence of prostate cancer. However, it is sad that about three quarter of respondents were not aware that the cancer can be present and show no symptoms at all. Similar findings were observed in a study conducted among men in Ghana where 69.6% of respondents reported that they were not aware that prostate cancer was an asymptomatic disease (Korley, 2018). This might be one of the reasons why most men are diagnosed with metastatic stage cancer (when it has spread to other parts of the body). This shows how important it is for strategies to be put into place to raise awareness about the cancer to the public if early detection and treatment is to be accorded.

The knowledge regarding screening services for prostate cancer was relatively low as only less than a quarter of respondents reported to have prior knowledge about PSA (Prostate specific antigen) and as high as (64.1%) of respondents had no idea that PSA and DRE are used to detect prostate cancer. These results correspond with some of the study carried out in some of the African countries. For example, a study conducted among men in Muldersdrift (South Africa) found that 76% of respondents were unable to identify any screening service for prostate cancer (Baaitse, 2018); another study conducted in Nigeria found that only a quarter (25.1%) had heard about PSA (Ojewola et al., 2017). In contrast, a study conducted among men in Italy reported high level of knowledge about prostate cancer screening services as majority of

respondents 72.7% had heard about PSA-test (Morlando et al., 2017). This huge difference might be influenced by the fact that Italy is a developed country with adequate health care facilities. Furthermore, among those who have heard about PSA-test, more than half of them indicated that their physicians were their source of information. These findings correspond with that of Morlando et al. (2017) who reported that 51.1% of respondents heard about PSA from their physicians. The physicians/primary health care providers have an important role to play in educating the public about the screening and treatment services for prostate cancer in order to achieve early diagnosis and successful treatment for this cancer. At least more than half of respondents had positive perceptions that prostate cancer can be treated.

The health belief model (HBM) beliefs that six individual constructs which are risk susceptibility, severity, benefits, barriers, self-efficacy and cues to action influences an individual's decision to either seek or not seek help. As such, an individual's level of knowledge about prostate cancer and its' screening services can be influenced by an individual's perceived susceptibility, severity, and benefits regarding the cancer and it's screening services available. For instance, if the person doesn't feel at risk/prone to the cancer, the chances of him seeking more understanding/knowledge about the aetiology and epidemiology of the cancer is very low. However, if one feels at risk for developing the cancer, he is more likely to seek more information about the cancer and help. Furthermore, if the person doesn't perceive prostate cancer as a serious health challenge, he is less likely to seek more knowledge about the cancer and its screening services available.

5.4. OBJECTIVE TWO: TO DESCRIBE MEN'S ATTITUDES TOWARDS PC SCREENING AT DZINGAHE VILLAGE

In this study, the results show that majority of respondents had positive attitudes towards prostate cancer, screening and treatment. About the third quarter of respondents (84.9%) had positive attitudes towards the cancer. These results were a little lower when compared to the study conducted among men in Namibia whereby almost all respondents (91.1%) in the study showed willingness to have screening done, their attitudes about the importance of prostate cancer and treatment were positive (Nakwafila, 2017). Furthermore, the positive attitudes were also observed in a study conducted among men in MuldersDrift (South Africa) as 72.0% of respondents

across all educational levels had positive attitudes towards prostate cancer (Baaitse, 2018). In contrast, a study conducted among Ugandan men found poor attitudes towards the prostate cancer screening (Nakandi et al., 2013). These differences might be attributed to the low level of knowledge about prostate cancer screening services, as it has been found that respondents with high level of knowledge about prostate cancer are more likely to have positive attitudes towards screening (Korley, 2018). This shows that knowledge influences attitudes. Furthermore, it could also be linked with the socio-demographic of the respondents, as majority of respondents (59.4%) were men between 18-28 years of age who are considered to be a low risk group for the development of prostate cancer.

It is so interesting that in the current study more than half of respondents (53.1%) showed interest and willingness to undergo PSA examination. The similar findings were reported in a study conducted among men in Ghana where majority of respondents were willing to take the screening test (Korley, 2018). In addition, almost all respondents (94.6%) in a study conducted were men older than 40 years in Nigeria who were willing to undertake prostate cancer screening (Ojewola et al., 2017). This difference in the values might have been influenced by the population of the study as majority falls under the high-risk age group. This shows that most men are willing to take the screening tests for prostate cancer. In addition, influence from physicians and their recommendations during general consultations can play a crucial role in ensuring that a large number of men undergo regular screening for prostate cancer. Yeboah-Asiamah et al., (2017) found that out of those who are willing to undergo screening test, the majority of respondents mentioned “to detect the cancer before symptoms” as their reason. This shows that the majority of respondents were aware that prostate cancer can be present and not show any symptom until its’ advanced stage (Yeboah-Asiamah et al., 2017). However, in the current study (46.9%) sadly reported that they will never get screened for prostate cancer. These findings are comparable with a study conducted in Spain which reported that 42.1% of respondents were not willing to undergo screening test (Carrasco-Garrido, et al., 2014). However, by contrast, another study conducted in Nigeria had the lowest value (5.6%) of respondents who were not willing to have the screening done (Ojewola et al, 2017). These differences might have been influenced by an improved awareness of the cancer in general and screening services among men in Nigeria. Therefore, it is important that the South

African government develops strategies to raise awareness about prostate cancer to the public. Generally, the screening practice level in the current study is very low and this calls for the government and other NGOs to intervene if the cancer is to be managed and prevented.

Application of the Health belief Model will emphasise that there is an association between attitudes towards prostate cancer screening and an individual's perceived susceptibility, severity, barriers and benefits regarding prostate cancer screening. If an individual does not feel susceptible to prostate cancer, his attitudes towards screening services is more likely to be negative and vice versa. In addition, if an individual perceives prostate cancer as a serious health issue, he is more likely to seek more information about the epidemiology/aetiology of the cancer, its screening services and possess positive attitudes towards its screening services. Lastly, if an individual perceives screening for prostate cancer to have particular health benefits, he is more like to develop positive attitudes towards screening services and vice versa.

5.5. OBJECTIVE THREE: TO DETERMINE MEN'S PRACTICES REGARDING PC SCREENINIG AT DZINGAHE VILLAGE

In this study, although respondents had shown positive attitudes towards prostate cancer and their willingness to go for screening, less than a quarter (11.8%) had ever consulted their physician regarding prostate cancer and only a few number (3.3%) of respondents had undergone screening. Amongst those who reported to have ever consulted their physicians regarding this cancer, more than half reported to have done so only once. These results were different from a study conducted among South African men in MuldersDrift where only one man had been screened for prostate cancer (Baaitse, 2018). Similar to the current study is the study conducted among commercial motorcyclists in Nigeria whereby only few (less than one fifth) of respondents had ever been screened for prostate cancer (Adebimpe and Fashina, 2019). In contrast, findings were reported in a study which showed that almost a quarter of respondents had undergone prostate cancer screening (Weller at al. 1998 as cited in Adebimpe and FAshina, 2019). The poor screening in the study might be attributed to poor knowledge about this cancer amongst the respondents. In addition, this poor screening practice might also be influenced by lack of screening equipment/services in the primary health care facilities in rural communities. In order

to attain a sustainable effective control and treatment of this cancer, the health care sector together with other NGOs should incorporate and strengthen their services to focus more on raising awareness about prostate cancer to the public and the provision of screening services in primary health care facilities.

The findings in the study show that those who had undergone prostate cancer screening did so because some felt at risk while some felt sick. Similar findings were reported in the study conducted in Namibia where respondents who had undergone screening for the cancer indicated that it was because they were worried and felt sick (Nakwafila, 2017). By contrast, in a study conducted among Italian men, slightly more than half of those who had been screened for prostate cancer were recommended to do so by their physicians (Morlando, 2017). Physicians in developed country are able to refer for screening, in contrast, physicians in developing countries are burdened with patient load, operate in under resourced facilities making it difficult to refer for screening which lowers level of awareness about this type of cancer. This shows that physicians have a crucial role to play to influence men to go for early screening and treatment for this cancer. Among those who had never been screened for prostate cancer, about a quarter pointed to financial constraints as their challenge, some gave reasons such as having no symptoms and that they don't feel at risk to develop prostate cancer. Financial barriers were also highlighted from the findings of the study conducted in Nigeria whereby the majority of respondents indicated that they are ready to go for screening if it's free (Adebimpe and Fashina, 2019).These findings show the need that the government together with the health care practitioners should come up with a strategy to ensure that prostate cancer screening services are made accessible and affordable to all if effective management through early screening and treatment of this cancer is to be achieved in our country.

Application of the Health Belief Model emphasise that the level of practice with regard to prostate cancer screening is more likely to be influenced by an individual's perceived susceptibility to this cancer, perceived barriers to screening, perceived threat of the cancer and also the benefits of screening for the cancer. If a man does not feel at risk for developing prostate cancer and he doesn't perceive prostate cancer as a threat, the chances of him seeking the cancer screening is very low. Furthermore, if he is poor and the screening for prostate cancer is expensive, he is also more likely not to seek screening services. Lastly, if an individual does not perceive screening for

prostate cancer to yield any benefits, the chances for him seeking screening services are also very low.

5.6. OBJECTIVE FOUR: TO DETERMINE THE ASSOCIATION BETWEEN KNOWLEDGE AND SCREENING PRACTICES FOR PROSTATE CANCER AND SOME DEMOGRAPHIC VARIABLES

The current study's findings revealed that age and educational status influences the level of knowledge and attitudes towards prostate cancer. Respondents who are married, employed and with high level of education were found to be more likely to have adequate knowledge and positive attitudes about prostate cancer. This finding is supported by the study conducted among Nigerian men which found a significant correlation between educational status and knowledge and attitudes towards prostate cancer (Ojewola et al., 2017). Kabora, et al. (2014) in their study also reported that older men and those with a higher level of education had adequate knowledge and positive attitudes towards prostate cancer. Furthermore, the current study also found a correlation between respondent's occupation and the level of knowledge and attitudes about prostate cancer. Respondents who work as public servants and those who have retired were found to have adequate knowledge and positive attitudes towards prostate cancer than respondents in other occupations. This finding is comparable with a similar study conducted in Ghana, which revealed that large proportions of respondents with adequater knowledge and positive attitudes towards prostate cancer were civil servants (Korley, 2018). Similar findings were also reported in a study conducted in Nigeria (Ojewola et al., 2017). These findings might have been influenced by the fact that public servants have better access to education about health issues in their working environments as compared to unemployed or self-employed respondents. The current study also found that there was a significant association between knowledge about PC and income, marital status and religion. Men who knew about PC were more likely to have positive attitude, adequate knowledge and willing to undergo PSA screening as compared to their counterparts. Odibimpe and Fashina (2020) found that age, marital status, and education status were all significantly associated with knowledge and practice of prostate cancer screening. Predictors knowledge and practice of prostate cancer screening were being educated and being married. Iya at al., (2003) reported that inadequate awareness and poor knowledge of PC cancer screening led to late diagnosis in most developing

countries. Consequently, the current study also found that most men were not aware of PC screening resulting in high mortality rate observed among older men.

5.7 Conclusion

This chapter gave discussion of the findings according to study objectives. Previous studies were compared and contrasted to the current study and some of the rationales behind some contrary findings were also discussed.

CHAPTER SIX: RECOMMENDATION AND LIMITATION

This chapter seeks to discuss the study limitations, recommendations and conclusion of the study.

6. Summary of chapters

Chapter one: This chapter discussed the background of the study, problem statement, rationale and significance of the study. The aim and objectives of the study were also articulated. Lastly, it also covered the definition of certain important terms and chapters overview.

Chapter two: Chapter two reviewed literature. The researcher reviewed and discussed relevant literatures on prostate gland cancer as a concept, screening services and the prevalence of prostate cancer in different other countries. Men's' knowledge, attitudes and screening practices were also discussed. Risk factors for PC and some socio-demographic variables were detailed. Lastly, the theoretical framework that guided the study was also discussed.

Chapter three: In this chapter, the researcher described the methodology used in conducting the study. Methods such as the research design, research approach, study setting, study population, sample and sampling method were discussed in this chapter. The chapter also covered detailed information regarding the research instrument, pre-testing, data collection, data management and analysis methods. Ethics were also outlined in this chapter.

Chapter four: In this chapter, the researcher presented the findings of the study. The findings showed that there was inadequate knowledge about PC and screening services among respondents. Majority of respondents had never heard of PC, had no idea of the age at risk for the development of PC, had never heard of PSA/DRE and had no idea if PC can be treated. Majority of respondents had positive attitude towards PC screening, yet PC screening uptake was relatively low. Majority of respondents had never consulted a physician regarding PC, had never screened for PC and almost half of respondents showed no intention to get screened for PC.

Chapter five: In this chapter, the researcher discussed the findings of the study according to the study objectives, compare the current findings with previous similar studies and highlight the applicability of the Health Belief Model.

6.1. STRENGTHS AND LIMITATIONS

Strength of this study includes that the respondents from this study were selected randomly giving each unit an equal chance of being selected. The English version questionnaire was translated into Tshivenda version and provided respondents an opportunity to choose their preferred version which they would understand better as they are Tshivenda speaking people. The study had 245 respondents and they all managed to successfully complete their questionnaire and there was no default or incomplete questionnaire. This study also had certain limitations. The study used a cross-sectional design and therefore only measured the relationship between the variables at a single point in time. Thus, future or past relationships may not be easily inferred from the study. Furthermore, the sampling frame included only black men from Dzingahe village; thus, the results would not be generalizable to all men in South Africa but only to the population with similar characteristics. Lastly, no standardised norms used for pilot study hence the findings must be interpreted with caution.

6.2. RECOMMENDATIONS

Based on the findings of this study, the following are recommendations:

The findings from the present study revealed that there was inadequate knowledge regarding prostate cancer and screening services. Majority had never heard about PC, didn't know the age at risk for the development of PC, never heard of PSA/DRE, and didn't even know that PC can be treated. As such, this study recommend that the government and other Non-Governmental organisations should design and implement awareness campaigns that target to educate men in rural areas about the epidemiology of prostate cancer.

The primary health care providers at our local rural health care facilities should be trained and equipped with knowledge about PC and ways to manage it so that they can be able to impart this knowledge to men upon general consultations at primary health care facilities. This may reduce incidents and mortality cases related to PC in

our country as the public would be more aware of PC and how it can be managed and treated.

The policy makers should develop, strengthen and implement policies that will ensure that the media world includes programmes that focus on creating awareness to the public about prostate cancer so that it can reach large number of citizens.

The current study also revealed that there is positive attitude towards prostate cancer screening, however, this does not tally with the screening practice as the PC screening uptake was very low. Low uptake of PC screening may be attributed to lack of knowledge, accessibility, fear and financial constraints. As such it is recommended that the government ensures that PC screening services are available, accessible and affordable in primary health care facilities to those individuals who are at high risk. The policy makers should derive a policy that would offer an opportunity for a routine check-up/screen for prostate cancer when they seek care from any health facility. This might increase the uptake of PC screening.

The findings from the current study also showed PC screening practices were very poor. Majority of respondents had never consulted a physician regarding PC, had never undergone PC screening and about half of respondents had no intentions to undergo PSA examination. Due to this, it is recommended that policy makers should initiate policies and programs in clinics, research councils and schools that will encourage youths and adults into action towards screening. It recommended that availability and accessibility of prostate cancer screening services be established and improved. The public should also be equipped with knowledge about prostate cancer in general and the screening services. The public health department should create and plug posters in public places that demonstrate prostate cancer, its risk factors, health effects, management, prevention and screening. In order to ensure early detection and treatment of prostate cancer, it is vital for health care providers to teach the public about risk factors for the development of prostate cancer and the essence of early screening. The government and NGO's should also create and implement awareness campaigns that target on raising awareness about the importance of screening and influence men to regularly go for check-ups especially those at high risk. Women within the community should also be included, provided with education

on the epidemiology and aetiology of prostate cancer so that they can also be aware and encourage their spouse to go for regular screening especially those at high risk.

6.3. CONCLUSION

In conclusion, the findings of the present study suggest that the level of knowledge about PC and its screening services was low among men in Dzingahe village. Majority of respondents had never heard of PC, had no idea of the age at risk for the development of PC, had never heard of PSA/DRE and had no idea if PC can be treated. Although, the level of attitudes towards PC screening was positive, the screening practices were found to be extremely poor and this was influenced by poor knowledge regarding PC and accessibility of screening services. Majority of respondents had positive attitude towards PC screening, yet PC screening uptake was relatively low. Majority of respondents had never consulted a physician regarding PC, had never screened for PC and about half of respondents showed no intention to get screened for PC. Very few men had undergone prostate cancer screening of which none of them reported going for regular check-ups or testing. However, majority of men showed willingness to undergo screening for prostate cancer if screening services are made available and affordable. Therefore, this study recommends that prostate cancer screening services should be made available and accessible to men in villages, at local primary health care facilities. Furthermore, a widespread public health campaigns that focus on educating the public about prostate cancer risk factors, symptoms, treatment and ways to prevent and manage it through healthy lifestyles should be implemented.

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APPENDIX A: Requisition Letters for Permission to Conduct Study at Dzingahe village

University of Venda

P. BAG X 5050

Thohoyandou

05/11/17

Dzingahe Village Civic

P.O.BOX 2227

Sibasa

0970

Sir\Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH AT DZINGAHE VILLAGE:

I am a Master of Public Health student at the University of Venda. I desire to conduct a study at the Department of Health under the topic is “Knowledge and Attitudes towards Prostate Cancer Screening among Men at a selected Village in Thulamela Municipality, Limpopo Province”. Project no: SHS/19/PH/11/2903. This project will be conducted under the supervision of Dr. A Maphula (Supervisor) and Mrs A Mudau (Co-supervisor). This is to seek your consent in order to approach relevant individuals from the village with valuable information to help me achieve my research goal. A copy of proposal is provided to show all the techniques and process to be followed to successfully conduct the study. Upon completion of the study, a bounded copy of the full dissertation will be provided to the leadership of Dzingahe village. For further information/inquiry contact me from the details provided below. Thank you!!!

Yours sincerely: Maladze N.T (0766127981); Dr A Maphula (Supervisor) Contact No: 015 962 8341

APPENDIX B: INFORMATION SHEET:

Research title: Knowledge and Attitudes towards Prostate Cancer among Men at a selected Village in Thulamela Municipality, Limpopo Province.

Principal Investigator/s/ researcher: Mr. Maladze N.T (BA, YID & BA, Honours in Psychology).

Supervisor: Dr. A. Maphula (PhD in Psychology)

Brief Introduction and Purpose of the Study: I am Ndivhuwo Trevor Maladze, a Masters of Public Health (MPH) student in School of Health Science at University of Venda. As part of my curriculum, I have to conduct a research project, and I am researching on the knowledge and attitudes towards prostate cancer screening among men at a selected village in Thulamela Municipality, Limpopo Province. The aim of this research is to investigate the men's knowledge and attitudes towards prostate cancer screening.

Outline of the Procedures: The present study will take place at Dzingahe village with the total sample of 235 males. The study will only include Dzingahe village male residents who are 40 years and above regardless of their educational level, marital status and duration of their residence membership. As part of this project I would like to invite you to take part in completing a questionnaire. This activity will involve answering a questionnaire in writing and will take around 20-30 minutes. The researcher will be present to give clarity where required.

The questionnaire will be provided in two languages versions (English and Tshivenda version) and each respondent will choose the one they are comfortable with. The questionnaire is divided into four sections including socio-demographic characteristics, knowledge regarding prostate cancer and its screening methods, attitudes and screening practices. The questionnaire is easy to complete consisting of close-ended. Respondents are expected to truthfully complete all questions on the questionnaire.

Risks or Discomforts to the Participant: There are no risks for participating in this study.

Benefits: The findings of the study will inform the public and raise awareness about the knowledge, attitudes and screening practices regarding prostate cancer. The public will also gain awareness regarding the importance of early detection and treatment to effectively manage and control prostate cancer. Furthermore, the researcher will be able to publish the study findings and add to the body of knowledge.

Reason/s why the Participant May Be Withdrawn from the Study: Participation in this study is voluntarily. You may withdraw from the study anytime if you feel you don't

want to continue. There will be no adverse consequences for choosing to withdraw from the study.

Remuneration: There will be no remuneration for participation in this study.

Costs of the Study: The respondents are not expected to pay any cost in this study. **Confidentiality:** The information from this study will be used for the study purposes only and will not be made available to a third party that is not involved in the study. Findings from this study will not be linked to any respondents.

Research-related Injury: There will be no harm/injury that may occur to respondents during the study.

Persons to Contact in the Event of Any Problems or Queries:

Supervisor: Dr A Maphula at Angelina.Maphula@univen.ac.za. Co-supervisor: Azwinndini.mudau@univen.ac.za. Please contact the researcher (cell no. 076 612 7981), or the University Research Ethics Committee Secretariat on 015 962 9058. Complaints can be reported to the Director: Research and Innovation, Prof GE Ekosse on 015 962 8313 or Georges Ivo.Ekosse@univen.ac.za

APPENDIX C: CONSENT FORM

Statement of Agreement to Participate in the Research Study:

- I hereby confirm that I have been informed by the researcher, Mr. Maladze N.T, about the nature, conduct, benefits and risks of this study - Research Ethics Clearance Number:

- I have also received, read and understood the above written information (Participant Letter of Information) regarding the study.

- I am aware that the results of the study, including personal details regarding my sex, age, date of birth, initials and diagnosis will be anonymously processed into a study report.

- In view of the requirements of research, I agree that the data collected during this study can be processed in a computerized system by the researcher.

- I may, at any stage, without prejudice, withdraw my consent and participation in the study.

- I have had sufficient opportunity to ask questions and (of my own free will) declare myself prepared to participate in the study.

- I understand that significant new findings developed during the course of this research which may relate to my participation will be made available to me.

Full Name of Participant Date Time Signature

I, …… …… …… ……..

Mr. Maladze N.T herewith confirm that the above participant has been fully informed about the nature, conduct and risks of the above study.

Full Name of Researcher:……. Date…… Signature……

Full Name of Witness (If applicable):……..Date:…….. Signature……

Full Name of Legal Guardian (If applicable) …… Date…….. Signature…….

APPENDIX D: English version Questionnaire

A. Socio-Demographic Characteristics

(Put a tick inside the box where is appropriate to indicate your response).

A1. Indicate the age group you fall under

☐ 40-49 years ☐ 50-59 years ☐ 60-69 ☐ 70-79 years

☐ 80 years and above

A2. Indicate your religion?

☐ Catholic ☐ Protestant ☐ Muslim ☐ Traditional ☐ None

A3. Marital status?

☐ Married ☐ Single ☐ Widowed ☐ Separated ☐ Divorced.

A4. What is your current occupation status?

☐ Unemployed ☐ Employed ☐ Self-employed ☐ Pensioner

A5. What is your current monthly income?

☐ Less than R2000 ☐ R2001-R4000 ☐ R4001-R6000 ☐ R6001-R8000

☐ R8001 and more

A6. Indicate your highest level of education?

☐ None ☐ Primary ☐ Secondary ☐ Diploma ☐ University

A7. How would you rate your general state of your health now?

☐ Excellent ☐ Good ☐ Fair ☐ Poor

If it is poor, why? _____

B. Knowledge regarding prostate cancer and screening methods:

B1. Have you ever heard about prostate cancer?

☐ No ☐ Yes

B2 If the above answer is yes, from whom?

☐ Physician ☐ Mass media ☐ Internet ☐ Friend/family

☐ Other: (specify) _____

B3. What is prostate cancer?

☐ Cancer of the male reproductive organ

☐ Cancer of the prostate cancer

☐ Inability to urinate

☐

I don't know

B4. What may be the risk factors for the development of prostate cancer? (More than one answer is possible).

☐ Family history ☐ Alcohol ☐ High-fat diet ☐ older age ☐ Smoking

☐ Obesity ☐ Other: (specify) _____

B5. Which gender is affected by prostate cancer?

☐ Men only ☐ Women only ☐ Both men and women ☐ I don't know

B6. Do you know which age is at risk for developing prostate cancer? ☐ Yes ☐ No

B7. What are the signs of prostate cancer? (More than one answer is possible)

☐ Fever ☐ loss of appetite ☐ Blood in urine ☐ Pain during urination

☐ Loss of weight ☐ Headache ☐ Frequent urination

B8. Have you ever heard of the PSA (Prostate-specific antigen) and DRE (Digital rectal examination)?

☐ No ☐ Yes

B9. If the above answer is yes, from whom? (More than one answer is possible)

☐ Internet ☐ Physician ☐ Friends/family ☐ Mass media

☐ Other: (specify) _____

B10. PSA and DRE are used to detect prostate cancer? ☐ No ☐ Yes ☐ I don't know

B11. Can prostate cancer be treated?

☐ Yes ☐ No ☐ I don't know

C. Attitudes:

(For each statement indicate whether you strongly agree, agree, disagree or strongly disagree.)

Statements	Strongly agree	Agree	Disagree	Strongly disagree

C1. All male adults should undergo prostate cancer screening.				
C2. Early diagnosis of prostate cancer improves clinical outcome.				
C3. Early consultation with doctors for urinary symptoms is helpful.				
C4. Drug treatment of prostatic diseases is effective.				
C5. Medical and surgical treatment can cure prostatic problems.				
C6. Consultation with doctor is only necessary when home remedy fails.				
C7. Screening for prostate cancer is not necessary if one is healthy and fit.				
C8. I will only consider going for prostate cancer screening when I get sick.				

D. Screening practices:

D1. Have you ever consulted a physician and /or urologist regarding prostate cancer?

☐ No ☐ Yes,

If the above answer is yes, how many times? _____

D2. Did the physician and /or urologist tell you about PSA test?

☐ No (go to question D4) ☐ Yes

D3. Have a physician and/or Urologist inform you about the disadvantages and advantages of taking PSA test? ☐ o ☐ es

D4. Have you ever undergone PSA test? ☐ No (go to question D5) ☐ Yes

If the above answer is yes, how many times? _____;_____

When was the last time? ——————— (Jump to question D6)

D5. Reasons for not undergoing PSA test? (More than one answers possible)

☐ Never advised by physician ☐ lack of interest in screening

☐ I was unaware of screening ☐ Financial constrains

☐ Thought there is no need for screening since have no symptoms

☐ I don't feel at risk of developing prostate cancer ☐ lack of time

D6. Reasons for undergoing PSA test:

☐ I feel at risk ☐ to detect prostate cancer before symptoms occur

☐ I felt sick ☐ I have participated in prevention programme

☐ I was advised to, by who? _____

D7. Would you undergo the PSA test? ☐ No ☐ Yes

If No, Why? _____

If Yes, Why? _____

APPENDIX E: Tshivenda version questionnaire

A. Vhuvha ha muthu:

(khavha vhee raithi kha tshibogisi tsho teaho zwi tshielana na phindulo dzavho)

A1. kha vha sumbedze hune vha wela hone nga minwaha kha zwigwada zwi tevhelaho:

☐ 40-49 Ya minwaha ☐ 50-59 Ya minwaha ☐ 60-69 Ya minwaha

☐ 70-79 Ya minwaha ☐ 80 Ya minwaha na uya ntha

A2. Avhasumbedze vhurereli havho kha vhurereli vhutevheleho:

☐ Khatholiki ☐ Prositent ☐ Mumasilimu ☐ Ha-tshirema ☐ Ahuna

A3. Tshiimo tshavho tsha mbingano

☐ Ndo vhinga ☐ Thingo vhinga naluthihi ☐ U lovhelwa nga mufumakadzi

☐ Rofhambana ☐ Rotalana

A4. Kha vha sumbedze hune vha wela hone siani la mushumo

☐ A vha shumi ☐ Vha a shuma ☐ Vha to dishuma ☐ Vha kha phentsheni

A5. Magavhelo ane vha a wana nga nwedzi

☐ Fhasi ha R2000 ☐ Vhukati ha R2001 na R4000 ☐ Vhukati ha R4001 na R6000

☐ Vhukati ha R6001 na R8000 ☐ Ubva kha R8001 uya ntha.

A6. Avha sumbedze ndalukanyo dza vho dza pfunzo:

☐ Ahuna ☐ Phuraimari ☐ Sekondari ☐ Dipuloma

☐ Yunivesithi

A7. Mutakalo wavho u nga tshiimo-de?

☐ Wa nthesa ☐ Wa vhudi ☐ Wa vhukati ☐ Asi wa vhudi

Arali u si wa vhudi, ndi ngani?_____

B. Ndivho ine vhavha nayo ngaha khentsa ya prositeiti na ndila dzine ya toliwa ngadzo (screening methods):

B1. Vhono vhuya vhapfa nga khentsa ya prosteiti naa?

☐ Hai ☐ Ee

B2. Arali phindulo ya afho ntha i ee vhopfa nga nnyi?

☐ Vhadivhi vha mutakalo ☐ Tshumelo dza vhudavhidzani ha nnyi na nnyi

☐ Inthanete ☐ Kha khonani/mashaka ☐ Hunwevho: (Kha vha hu bule)

B3. Prosteiti khentsa ndi mini?

☐ Ndi khentsa ya vhudzimu ha munna

☐ Ndi khentsa ya prosteiti

☐ Ubalelwa/ukundelwa utambuluwa

☐ Athidivhi

B4. Ndi zwifhio zwithu zwine zwa vhea muthu kha khombo yau ngavha na khentsa ya prosteiti? (Vha nga nanga phindulo dzino fhira nthihi)

☐ Divha zwa kale ya muta ☐ Halwa ☐ Ula zwithu zwodalaho mapfura

☐ Vha aluwa ☐ U daha ☐ U kwathesa/U vha na muvhili wokalulaho

☐ Na zwinwe: (Kha vha zwi bule) _____

B5. Vha ya zwidivha uri ndi ifhio mbeu ino kwamea nga khentsa ya prositeiti?

☐ Ee ☐ Hai

B6. Vha ya zwidivha uri ndi vhathu vha re na minwaha mingana vha re kha khombo ya u kavhiwa nga vhulwadze uvhu? ☐ Ee ☐ Hai

B7. Tsumbadwadze dza vhulwadze uvhu ndi dzifhio? (Vha nga nanga phindulo dzino fhira nthihi)

☐ Mufhiso ☐ U savha na dzangalelo la zwiliwa ☐ Malofha kha mutabuluwo

☐ Vhutungu musi utshi tambuluwa ☐ U fhungudzea ha muvhili/u onda

☐ U rema ha thoho ☐ U dzulela u tambuluwa

B8. Vhono pfa nga PSA(Prosate-specific-antigen) na DRE (Digital Rectal Examination)

☐ Hai ☐ Ee

B9. Arali phindulo yavho afho ntha I ee vhopfa nga nnyi? (Vha nga nanga phindulo dzono fhira nthihi)

☐ Inthanete ☐ Vhadivhi vha mutakalo ☐ Kha mashaka/khonani

☐ Tshumelo dza vhudavhidzani dza nnyi na nnyi ☐ Na zwinwe: _____

B10. PSA na DRE zwi Shuma kha u tola khentsa ya prositeiti?

☐ Ee ☐ Hai ☐ Athidivhi

B11. Khentsa ya prosteiti iya ilafhea naa? ☐ Ee ☐ Hai ☐ Athidivhi

C.Vhudipfi havho:

(Kha zwitatemennde zwi tevheleho khavha vhusumbedze uri vhaya tendelana nazwo tshothe, vhakhou tendelana nazwo, vha khou zwi hanedza, kana vha khou zwi hanedza tshothe).

	Ndi khou tenda tshothe	Ndi khou tenda.	Ndi khou Hanedza.	Ndi khou hanedza tshothe.
C1. Vha-aluwa vhothe vha tea utolwa khentsa ya prositeiti.				
C2. U tavhanya u ilafha zwiita uri mishonga I kone U shuma nga vhuhali.				
C3. Uya u vhona dokotela hutshe na tshifhinga malugana na mutambuluwo zwia thusa.				
C4. Mishonga ya u ilafha vhulwadze ha khentsa ya prosteiti a ina vhuhali ha u ilafha.				
C5. U lafhiwa nga mishonga na miaro zwia thusa u ilafha khentsa ya prosteiti.				
C6. U vhonana na dokotela ndi zwa ndeme musi mishonga ya hayani yo kundelwa.				
C7. U toliwa khentsa ya prosteiti a zwi na mushumo arali muthu a na mutakalo o khwatha.				
C8. Ndi nga ya u tshekisa Prosteiti khentsa arali ndi tshi khou lwala.				

D. Utolwa ha prositeiti khentsa:

D1. Vhono kwamana na vhadivhi vha mutakalo malugana na khentsa ya prositeiti?

☐ Ee ☐ Hai

Arali phindulo ya afho ntha I ee, ndi lungana? _____

D2. Dokotela wa muvhili ono vha vhudza nga ndingo dza PSA?

☐ Hai ☐ Ee

D3. Dokotela wa muvhili ono vha vhudza nga vhudi na vhuvhi ha u dzhia ndingo dza PSA?

☐ ☐

Ee Hai

D4. Vhono diwana vha khou ita ndingo dza PSA?

☐ Hai (Arali phindulo is Hai, khavhaye kha mbudziso D5)

☐ Ee (vho guma lini uya?_____ ; vhoya lungana? _____ (khavhaye kha D6)

D5. Zwiitisi zwa uri vhasa ite ndingo dza PSA? (vha nga nanga phindulo dzino fhira nthihi)

☐ U sa wana ndivho kha dokotela. ☐ U sa vha na dzangalelo kha ndingo.

☐ U savha na masheleni. ☐ U sa divha nga ha ndingo.

☐ U sa vhona thodea ya uita ndingo vhunga husina tsumba dzwadze.

☐ U sa divhona ukha khombo ya u kavhiwa nga vhulwadze hovhu.

☐ U savha na tshifhinga. ☐ A vho ngo dowelea kha shango la hashu

☐ A vhungo anda kha vhathu. ☐ Vhu fara lushaka lu re mashango davha

D6. Tshivhangi tsha u ita ndingo dza PSA?

☐ U pfa ndi khou lwala. .

☐ U itela utodulusa uri ndina yo na musi tsumbadwadze dzi sa thuvha hone.

☐ Ndo pfa ndi khou lwala. ☐ Ndo dzhenelela kha fulo lau thivhela khentsa hei.

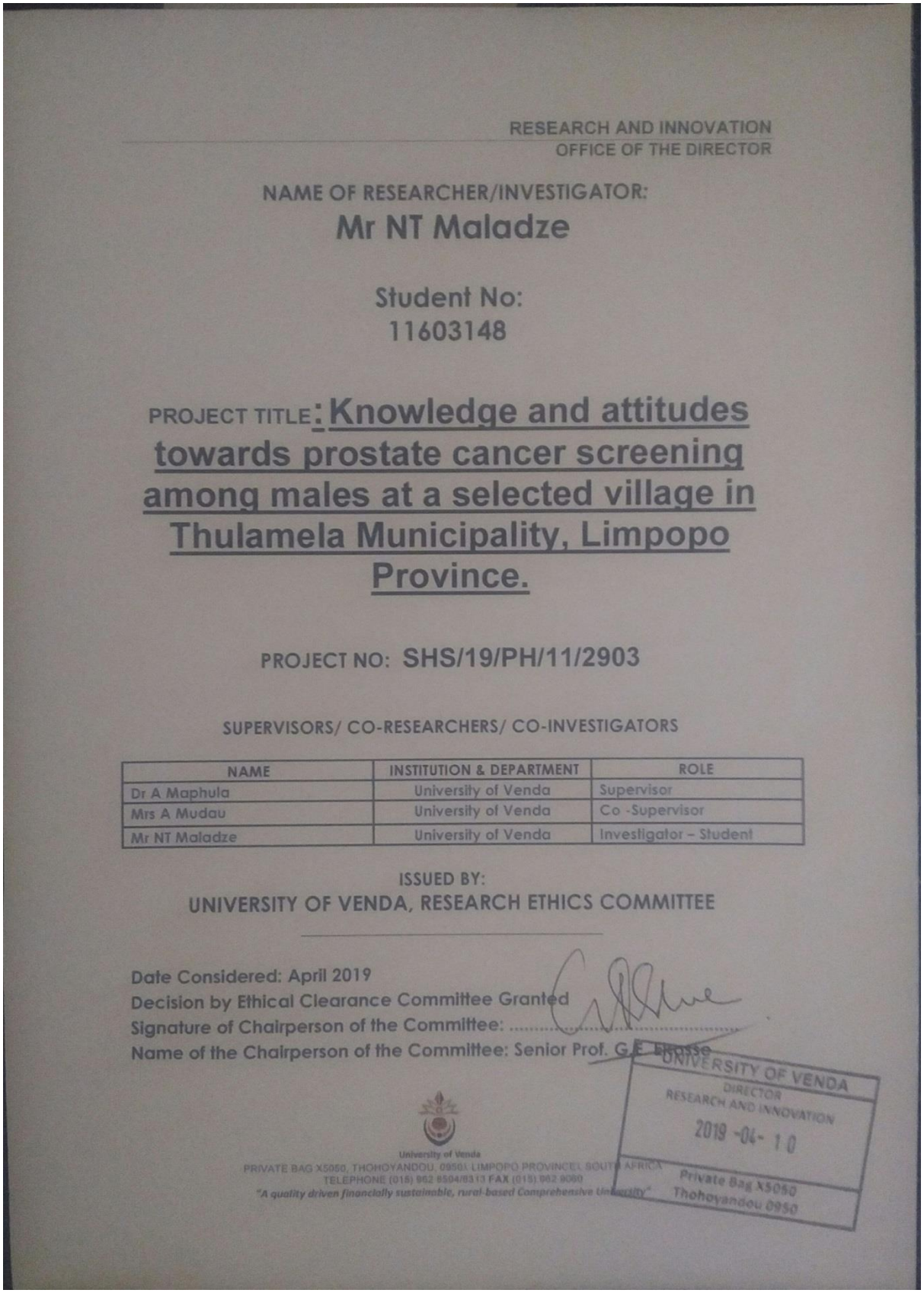
☐ Ndo newa tsivhudzo uri ndiite ndingo dza PSA, (nga nnyi?)

D7. Vhone vhanga ita ndingo dza PSA?

☐ Ee, (Ngani vha tshi ralo?) _____

☐ Hai, (Ngani vha tshi ralo?)_____

APPENDIX F: Ethical clearance letter



RESEARCH AND INNOVATION
OFFICE OF THE DIRECTOR

NAME OF RESEARCHER/INVESTIGATOR:

Mr NT Maladze

Student No:
11603148

PROJECT TITLE: **Knowledge and attitudes towards prostate cancer screening among males at a selected village in Thulamela Municipality, Limpopo Province.**

PROJECT NO: **SHS/19/PH/11/2903**

SUPERVISORS/ CO-RESEARCHERS/ CO-INVESTIGATORS

NAME	INSTITUTION & DEPARTMENT	ROLE
Dr A Maphula	University of Venda	Supervisor
Mrs A Mudau	University of Venda	Co -Supervisor
Mr NT Maladze	University of Venda	Investigator – Student

ISSUED BY:
UNIVERSITY OF VENDA, RESEARCH ETHICS COMMITTEE

Date Considered: April 2019
Decision by Ethical Clearance Committee Granted
Signature of Chairperson of the Committee: .....
Name of the Chairperson of the Committee: Senior Prof. G.E. Ebonse

UNIVERSITY OF VENDA
DIRECTOR
RESEARCH AND INNOVATION
2019 -04- 10
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06 March 2020

Dear Sir/Madam

This serves to confirm that I proof-read and edited dissertation entitled “Knowledge and Attitudes Towards Prostate Cancer Screening Among Males at a Selected Village in Thulamela Municipality, Limpopo Province” by Maladze Ndivhuwo Trevor, student number: 11603148.

I have also suggested few amendments, provided the changes I recommended are effected to the text, the language is of an acceptable standard.

Please don’t hesitate to contact me for any enquiry.

Regards

Dr. Hlaviso Motlhaka

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