

KNOWLEDGE AND ATTITUDES TOWARDS PROSTATE CANCER
SCREENING AMONGST MEN IN OSHANA REGION, NAMIBIA

A THESIS SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN APPLIED FIELD EPIDEMIOLOGY/LABORATORY
MANAGEMENT

OF

THE UNIVERSITY OF NAMIBIA

BY

OLIVIA NAKWAFILA

200826239

April 2017

Main Supervisor : Prof I Quaye

Co-supervisor : Dr Penhafo Angula

ABSTRACT

Early diagnosis in cancer greatly affects treatment success of which the most important components are education (knowledge) and encouragement of the target population to participate in early diagnostic procedures (World Health Organisation). Statistics from Cancer Namibia (CAN) show that prostate cancer has been on the rise with 126 and 311 cases reported in 2006 and 2012. In 2014 and 2015, 52 and 68 prostate cancer cases were recorded in Intermediate Hospital Oshakati (IHO). Out of the 52 cases in 2014, 10 (19%) died and out of the 68 cases in 2015 14 (21%) died. The study examined knowledge and attitudes on prostate cancer screening amongst men in Oshana region.

This was a cross-sectional study among men aged between 18-72 years attending IHO Outpatients Department. We enrolled 384 participants using systematic random sampling. Frequencies and proportions were generated. Bivariate analysis was performed to determine factors affecting the level of knowledge and attitudes; factors found to be significant were further analysed using logistic regression.

The mean age for the respondents was 30.4, ± 12.5 SD and range 18-72. Majority 219 (57%) of participants lived in urban areas while 271 (70.6%) were single. The most common source of information was through the radio. Overall, the respondents had inadequate knowledge 269 (70.1%), positive attitudes 331 (86.2%) and low screening uptake 16/ 76 (21%) among eligible men (>45years). Married or cohabitating (OR=1.73; 95% CI = 1.07-2.79); and attained tertiary education (OR=2.91, 95% CI= 1.43-5.94), being a civil servant (OR=4.07, 95% C.I = 1.22-13.53) and earned > US\$ 200 per month (OR=1.99, 95%CI = 1.24-3.19) were found to be associated with adequate knowledge at the bi-variate level. Tertiary education (OR=2.24, 95% CI=1.06-4.73) was the independent risk factors for adequate knowledge after adjusting for confounders.

There was generally poor knowledge and low screening among the respondents. Advance level of education (tertiary education) was the major predictor of adequate knowledge. There is a need for exploration of new platforms for creating awareness on PCa in the community and inclusion of PCa screening in routine medical check-ups for early diagnosis in eligible men.

Table of Contents.....	Pages
ABSTRACT.....	ii
ACKNOWLEDGEMENTS.....	viii
DEDICATION.....	x
DECLARATIONS.....	xi
ABBREVIATIONS AND ACRONYMS.....	xii
LIST OF TABLES.....	xiv
LIST OF FIGURES.....	xv
CHAPTER 1: INTRODUCTION.....	1
1.1 ORIENTATION AND BACKGROUND OF THE STUDY.....	1
1.2 STATEMENT OF THE PROBLEM.....	7
1.3 DEFINITION OF CONCEPTS.....	9
1.4 CONCEPTUAL FRAMEWORK.....	9
1.5 PURPOSE OF THE STUDY.....	12
1.6 OBJECTIVES OF THE STUDY.....	12
1.6.1 General objective.....	12
1.6.2 Specific objectives.....	12
1.7 SIGNIFICANCE OF THE STUDY.....	13
1.8 CHAPTER LAYOUT.....	15
1.9 SUMMARY.....	15
CHAPTER 2: LITERATURE REVIEW.....	16
2.1 INTRODUCTION.....	16
2.2. CLINICAL FEATURES.....	19
2.3 EPIDEMIOLOGY.....	20
2.4 RISK FACTORS, PREVENTION AND TREATMENT MODALITIES.....	22

2.6 PROSTATE CANCER KAP IN CARIBBEAN, NORTH AND SOUTH AMERICAN MEN.....	25
2.7 KNOWLEDGE, ATTITUDES AND PRACTICES OF PROSTATE CANCER IN NAMIBIA	28
2.8 SUMMARY	28
CHAPTER 3: RESEACH DESIGN AND METHODOLOGY	29
3.1 INTRODUCTION	29
3.2 RESEARCH METHOD AND DESIGN	29
3.3 STUDY SETTING AND POPULATION	30
3.3.1 Inclusion Criteria.....	30
3.3.2 Exclusion Criteria	30
3.4 SAMPLE AND SAMPLING METHOD.....	31
3.5 RESEARCH INSTRUMENTS.....	32
3.5.1 Validity	33
3.5.2 Reliability.....	33
3.6 PRETESTING TESTING OF THE DATA COLLECTION INSTRUMENT	34
3.7 DATA COLLECTION PROCEDURE.....	35
3.8 DATA MANAGEMENT AND ANALYSIS	36
3.9. RESEARCH ETHICS.....	38
3.9.1 Permission.....	38
3.9.2 Voluntary participation and Informed consent	38
3.9.3 Confidentiality and anonymity.....	39
3.10 SUMMARY	39
CHAPTER 4: RESULTS.....	40
4.1 INTRODUCTION	40
4.2. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE STUDY PARTICIPANTS	41
4.3 SOURCE OF INFORMATION.....	50
4.4 KNOWLEDGE OF PROSTATE CANCER.....	52
4.4.1 Knowledge specific to the questions.....	52
4.5 ATTITUDES TOWARDS PROSTATE CANCER.....	56
4.5.1 Attitudes per specific question.....	56

4.6 PROSTATE CANCER SCREENING PRACTICES	58
4.7 ASSOCIATIONS BETWEEN LEVELS OF KNOWLEDGE ABOUT PCA AND SOCIO-DEMOGRAPHIC FACTORS, AND FAMILY HISTORY OF PCA	62
4.8 ASSOCIATIONS BETWEEN ATTITUDE LEVELS ABOUT PCA AND SOCIO-DEMOGRAPHIC FACTORS, AND FAMILY HISTORY OF PCA	65
4.10 SUMMARY	70
CHAPTER 5: DISCUSSION.....	71
5.1 INTRODUCTION	71
5.2 SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS	71
5.2.1 Age.....	72
5.2.2 Marital status.....	73
5.2.3 Religion.....	74
5.2.4 Education	74
5.4 AWARENESS AND SOURCES OF INFORMATION ABOUT PCA	77
5.5 PROSTATE CANCER KNOWLEDGE.....	79
5.6 ATTITUDES REGARDING PROSTATE CANCER.....	84
5.7 PROSTATE CANCER PRACTICE.....	86
5.8 SUMMARY	88
CHAPTER 6: CONCLUSION AND RECOMMENDATIONS	89
6.1 INTRODUCTION	89
6.2 CONCLUSION.....	89
6.3 LIMITATIONS.....	90
6.4 RECOMMENDATIONS.....	91
6.4.1 Men attending Intermediate hospital Oshakati	91
6.4.2 Policy	91
6.4.4 Future research.....	92
6.5 SUMMARY	92
REFERENCES	93

ANNEXURE A: RESEARCH PERMISSION LETTER FROM UNAM.....	106
ANNEXURE B: RESEARCH PERMISSION LETTER FROM MOHSS	107
ANNEXURE C: INFORMED CONSENT.....	109
ANNEXURE D: REASEARCH TOOL	110

ACKNOWLEDGEMENTS

First and foremost I thank the Lord for the strength and mercy He has shown upon me throughout the whole of this study.

I greatly appreciate the generosity of CDC and the Ministry of Health for funding this research. My deep appreciation to my main supervisor Prof I. Quaye for his patience, open-mindedness, intellectual support and the dedication he has shown towards assisting me. My gratitude goes to my co-supervisor Dr P. Angula for her drive and determination, hard work, understanding, valuable time, skills in resolving challenges even at times when it seemed difficult. Both my supervisors have gone above and beyond their call of duty and have sacrificed their valuable time and busy schedules for this study. Thank you.

I humbly thank Dr Kofi the resident advisor for NamFELTP and Dr Kenu from Ghana FELTP for their unwavering support. My appreciation goes to Mrs Emmy Ndevaetela, Ms Muroa and the whole of the Epidemiology team. I thank the University of Namibia and the Ministry of Health for allowing me to conduct this study, as well as the Oshakati health team for their support.

I also thank the editor of this research Mrs Saara Mupapa, my friends, colleagues and all the people who have been in my life and throughout this journey. My family, I thank you all for your encouragement and support. Last but not least, I thank the research assistants and participants for taking part in this study.

May the Lord bless you all.

DEDICATION

This thesis is dedicated to my lovely mother Mrs Sofia Nakwafila who has taught me in her own way never to give up and always fight for what I believe in. Let this be a reminder of your hard work and a good product of a daughter you have helped me to become.

DECLARATIONS

I Olivia Nakwafila, hereby declare that this study is a true reflection of my own research, and that this work, or part thereof has not been submitted for a degree in any other institution of higher education.

No part of this thesis may be reproduced, stored in any retrieval system, or transmitted in any form, or by means (e.g. electronic, mechanical, photocopying, recording or otherwise) without prior permission of the author or The University of Namibia.

I Olivia Nakwafila, grant The University of Namibia the right to reproduce this thesis in whole or in part, in any manner or format, which The University of Namibia may deem fit, for any person or institution requiring it for study and research; providing that The University of Namibia shall waive this right, if the whole thesis is being published in a manner satisfactory to the University.

Signature

Date

ABBREVIATIONS AND ACRONYMS

ACS	American Cancer Society
AK	Adequate Knowledge
CAN	Cancer Association of Namibia
DHS	Demographic Health Survey
DRE	Digital Rectal Examination
GHANAFELTP	Ghana Field Epidemiology and Laboratory Training Programme
GLOBOCAN	Global Cancer Project
HT	Health Transition
IEC	Information, Education and Communication
IHO	Intermediate Hospital Oshakati
IK	Inadequate Knowledge
KAP	Knowledge, Attitude and Practice
MoHSS	Ministry of Health and Social Services
NAMFELTP	Namibia Field Epidemiology and Laboratory Training Programme
NCDs	Non-Communicable Diseases
OPDs	Outpatients Department
PCa	Prostate cancer

PCPs

Primary Care Physicians

PSA

Prostate Specific Antigen

WHO

World Health Organisation

LIST OF TABLES

Table 4.1 Sociodemographic characteristics of the respondents, Oshana region, 2016.....	42
Table 4.2 Sources of information about where the respondents have heard about PCa.....	50
Table 4.3 Distribution of respondents' responses on knowledge about PCa, Oshana region, 2016.....	53
Table 4.4 Knowledge levels about PCa, Oshana region, 2016.....	55
Table 4.5 Respondents responses on attitude towards PCa, Oshana region, 2016.....	56
Table 4.6 Attitude levels towards PCa Oshana region, 2016.....	57
Table 4.7 levels of knowledge and sociodemographic characteristics and family history of PCa.....	63
Table 4.8 Attitude levels and sociodemographic characteristics.....	66
Table 4:9 Logistic regression adjusted for confounders on selected factors on the level of knowledge Oshana region, 2016.....	68

LIST OF FIGURES

Figure 1.1 Interaction of Knowledge, Attitudes and uptake of prostate cancer screening practices	11
Figure 2.1 Health transition of Communicable Diseases to Non-communicable Diseases, Oshana region, 2016.....	21
Figure 4.1 Respondents who smoke and those who do not smoke cigarettes, Oshana region, 2016.....	44
Figure 4.1.1 The percentage of respondents who smoked a number of cigarette per day, Oshana region, 2016.....	45
Figure 4.2 Respondents who drink alcohol and those who do not drink alcohol, Oshana region, 2016.....	46
Figure 4.2.1 Distribution of respondents who drink alcohol by the number of glasses per day Oshana region, 2016.....	47
Figure 4.3 Monthly income of study respondents, Oshana region, 2016.....	48
Figure 4.4 Frequencies of respondents with and without a family history of PCa, Oshana region, 2016.....	49
Figure 4.5 Prostate cancer screening practices, Oshana region, 2016.....	59
Figure 4.6 Reasons of respondents who have never had a PCa exam done, Oshana region 2016.....	60
Figure 4.7 Reasons of respondents who have never had a PCa exam done, Oshana region 2016.....	61

CHAPTER 1: INTRODUCTION

1.1 ORIENTATION AND BACKGROUND OF THE STUDY

The World Health Organization (WHO) has documented that early diagnosis of cancer greatly affects treatment success. The process to early diagnosis is proposed to include education (knowledge) on the disease, encouragement for participation (practice) in early detection procedures and practices that prevent the risk of developing cancer (Who, 2014). Çapik (2014) reported that in Turkey and many countries, the early diagnostic tests for cancer are not considered among routine screening programs, but are performed on an individual basis with recommendations from physicians.

In Namibia, previous work on assessing knowledge of the population on cancer was done through the normal Demographic Health Survey (DHS) of 2013 - 2014 without details on specific cancer types including prostate cancer. In particular, screening for prostate cancer has not achieved desired targets.

According to the Cancer Association of Namibia (CAN), most Namibian men shy away from prostate cancer screening due to the way the examination is being done. Therefore there is a need to equip the public with knowledge on prostate cancer and to create more awareness on prostate cancer screening as was recently reported in the Villager newspaper (Moses, 2015)

Cancer is the second leading cause of death at 8% after HIV (23%) in Namibia

(A. P. Cancer & Guide, n.d.). Screening tests are not emphasized in Namibia, with only prostatectomy being the main recommended procedure for treatment. The burden of cancer is increasing, and thus the African Organization for Research and Training in Cancer (AORTIC) has committed to fostering research, education and advocacy on a variety of levels to increase the awareness of cancer in Africa (“Cancer in Africa,” 2011).

Research has shown that prostate cancer is increasingly recognized as a critical public health problem in Africa. Assessing knowledge, attitudes and practices (KAP) on prostate cancer was part of the demographic health survey conducted in Namibia in 2013 - 2014. The report states that 64 percent of men aged 40 - 64 indicated that they have heard of prostate cancer. The DHS report (2014) further revealed that only 33 (7%) men from Oshana region had been tested for prostate cancer within the period.

Although the level of knowledge on prostate cancer is generally high in Namibia, Oshana region is among the regions which have low percentages of men who have heard of prostate cancer (DHS, 2014). It is well documented that having adequate knowledge about prostate cancer is also a significant determinant of screening behaviour (Pendleton et al., 2008). According to Vandamme (2009) a study on KAP is conducted to investigate human behaviour on a certain topic for diagnostic purposes, to gain insight into a current situation and to help design appropriate interventions.

Literature documents that the level of KAP of prostate cancer correlates with prevalence levels with regards to management approaches. So generally the view is that men of African descent in USA, Caribbean, and Sub-Saharan Africa (SSA) have low levels of knowledge compared to American Hispanic men, hence the high incidence and mortality rates within those populations (Rebbeck et al., 2013). Another study which was conducted among Arabic communities indicate knowledge levels of 52.1 percent and 30 percent of men who have undergone a regular prostate examination respectively (Arafa, Rabah, & Wahdan, 2012).

In other studies conducted in Nigeria and Ghana, it was found that awareness of prostate cancer is quite low as only 39.2 percent and 54.1 percent of participants were aware of prostate cancer respectively (Atulomah, Motunrayo F. Olanrewaju, Ademola M. Amosu, & Omotoyosi Adedeji, 2010) ; (Binka, Nyarko, & Doku, 2015). Results of a study conducted in Nigeria showed that 48 percent of men were not aware of prostate cancer as a disease and the majority did not even know the function of the prostate (Atulomah et al., 2010).

In a study referred to previously that was in Ghana, the findings revealed lack of knowledge on the key risk factors and symptoms of prostate cancer. The participants also had poor screening behaviours (Binka et al., 2015). According to Nakandi et al., (2013a), poor knowledge of prostate cancer due to insufficient information on prostate cancer risk, screening and treatment contributes to a poor diagnosis and prognosis of the disease.

Moreover, a large population-based conducted in South Africa study has shown increased survival benefits in the early detection and treatment of prostate cancer, compared to no active therapy in men if diagnosed early, due to adequate awareness and practice towards prostate cancer (Babb, Urban, Kielkowski, & Kellett, 2014).

According to CAN's Chief Executive Officer there is a low uptake of prostate cancer screening in Namibia as only 1070 cases of prostate cancer from 2005 to date, while only 728 cases were detected between 1991 and 2005 in Namibia. On average, 100 men are diagnosed with prostate cancer every year in Namibia, and it is suspected that many more may be living with it and not know about it (Moses, 2015)

The results from Intermediate Hospital Oshakati (IHO) records show that prostate cancer is among the leading causes of death in men. In 2014 and 2015, 52 and 68 prostate cancer cases were recorded respectively. Out of the 52 cases which were recorded in 2014, there were 10 (19%) case fatalities, and 14 (21%) case fatalities out of the 68 cases recorded in 2015. In terms of age, the number of cases diagnosed and those who died as per age category in Oshakati were as follows, 40 – 49 years, 3 (1%), 50 – 59 years, 10 (1%), 60 – 69 years, 25 (5%), 70 – 79 years, 40 (7%) and 80 years and above were 42 (10%) respectively.

It is known anecdotally that men only get a chance to be screened for prostate cancer in Oshakati when the doctor suspects a malignant case. If the cancer has already metastasised very little can be done and hence the high number of cancer deaths in Oshakati (Bangma, Roemeling, & Schröder, 2007).

If the prostate cancer rate is taken vis-à-vis the population of Namibia, it is quite clear that it is a serious public health problem that requires renewed attention. Therefore, the present study examined whether there has been any changes in the level of knowledge, attitudes and screening practices amongst men in Oshana region regarding prostate cancer after the DHS of 2013 - 2014, in Namibia.

1.2 STATEMENT OF THE PROBLEM

Prostate cancer accounts for 44.8 per 100,000 of all cancers among men in Namibia. It also accounts for 21.2 per 100,000 of overall cancer incidence and 21.5 per 100,000 of all cancer mortalities among adult men. Namibia has a 5-year prevalence rate of 28 per 100,000 (Ferlay et al., 2015). The Cancer Association of Namibia has projected that one in eight men (1/8) in Namibia will develop prostate cancer during their lifetime, with most men being diagnosed after the age of 50. Statistics from CAN also show that prostate cancer has been on the increase with 126 and 311 cases reported in 2006 and 2012 respectively (Haidula, 2014).

Although the 2013 DHS of Namibia reported 64 percent of men who have heard of prostate cancer, there is no documented data whether their knowledge influences their uptake for testing. The number of men who were tested was less than half of those who were reported to have knowledge. Furthermore, there was no information on when and how men obtained knowledge on prostate cancer heard about it. For instance, was it by the onset of illness or symptoms, or through some other source?

Moreover, the sources of information on prostate cancer among men who receive services at the IHO had not been previously assessed. Availability of such information may help public health workers to design Information, Education and Communication (IEC) materials for men through appropriate media to address the identified gap of knowledge.

The researcher found limited literature on Knowledge, attitudes and screening practices towards prostate cancer in Oshana region and Namibia as a whole. Awareness programs on prostate cancer are being conducted in the northern parts of the country, but whether the participants have access to the information being disseminated is questionable. Because

The knowledge, attitudes and screening practices regarding cancer of the prostate are known in Oshana region, from the Namibian DHS (2013-2014) baseline data. As a follow up, this study assessed the levels of knowledge, attitudes and screening practices in comparison to the findings of the DHS report of 2013 – 2014 in Oshana region.

1.3 DEFINITION OF CONCEPTS

The main concepts related to this study are defined:

- Knowledge of prostate cancer is defined as having information on prostate cancer. Information include what the signs and symptoms are, prevention and treatment modalities for prostate cancer
- Attitude towards prostate cancer is defined as a settled way of thinking or feeling about prostate cancer
- Practice regarding prostate cancer screening is defined as having ever been tested for prostate cancer by any common screening methods: Prostate Specific Antigen (PSA) testing or Digital Rectal Examination (DRE)

Concepts above developed from (Vandamme, 2009)

1.4 CONCEPTUAL FRAMEWORK

The framework of this study is divided into three components: a) the knowledge that men have regarding prostate cancer; b) the attitudes and how the men feel towards prostate cancer and c) their screening practices regarding prostate cancer.

The first objective was to measure the level of knowledge, whether adequate or inadequate based on the Likert scale. The way the men feel about prostate cancer was assessed by their attitude response, as per the second objective. Based on the knowledge and attitudes, the screening practices, PSA and DRE that they are engaged in were evaluated.

Figure 1.1 shows the demographic variables that play a role in the knowledge and attitudes of patients with prostate cancer for participation in screening activities.

The primary variables that affect attitudes are education, age, religion, occupation and marital status. Together these factors affect the practice of participation in screening activities.

In the present study four variables, marital status, education, occupation and monthly income were seen as the most dominant factors in Namibia that affected participation by men with prostate cancer in screening activities.

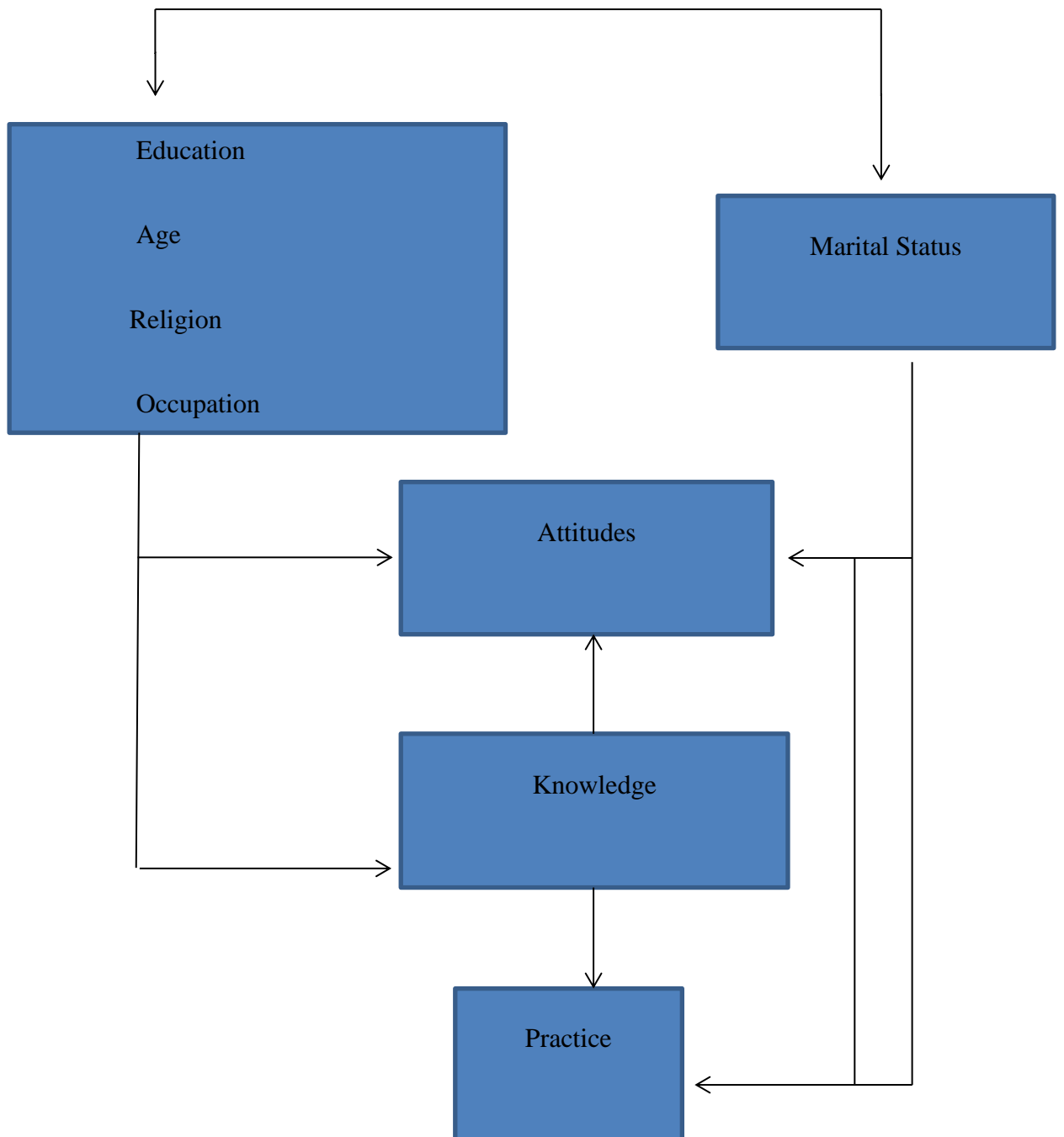


Figure 1.1 Interaction of Knowledge, Attitudes and uptake of screening practice towards prostate cancer

Redesigned from (Paul, 2014)

1.5 PURPOSE OF THE STUDY

The purpose of the study was to determine the knowledge, attitudes and screening practices towards prostate cancer amongst men in Oshana region, Namibia.

1.6 OBJECTIVES OF THE STUDY

1.6.1 General objective

To determine the knowledge, attitudes and screening practices amongst men in Oshana region and their associations with sociodemographic characteristics regarding prostate cancer.

1.6.2 Specific objectives

- To determine the knowledge of prostate cancer amongst men in Oshana Region
- To determine the attitudes of prostate cancer amongst men in Oshana Region
- To determine the practices towards prostate cancer screening amongst men in Oshana Region

1.7 SIGNIFICANCE OF THE STUDY

The results from this study will create baseline data which help to develop appropriate preventative measures and awareness programs. Furthermore, this study will also help identify possible reasons for the late reporting of men for PCa screening and aid to inform the public on the need for early-seeking behaviour through screening.

Previous research conducted on other cancer types such as breast cancer have confirmed that various awareness-creations campaigns have led to an increase in early detection and treatment leading to a decrease in the burden of disease due to morbidity mortality (Yip et al., 2008). Therefore, an increase in awareness among men at risk of PCa may result in early detection, reduction in mortality and morbidity and subsequent and disease burden.

Moreover, the study findings will provide data on the knowledge levels, attitudes and screening practices towards early detection of PCa which can be used as a basis for subsequent academic research. The need for a cancer registry or a reliable source of information with all cancer records including the history of the patient, date diagnosed, treatment, follow-up, outcome and so forth is needed greatly in Namibia. However, motivation for the establishment of a cancer registry requires data from studies such as this one.

Additionally, the medication and treatment for prostate cancer can be quite costly. The Cancer Association of Namibia spends about N\$1.9 million annually on cancer treatment (Prostate, 2012). With the availability of additional information and data, government agencies and stakeholders can implement interventions that will not only lead to saving of lives but reduce the economic burden of the disease as well.

1.8 CHAPTER LAYOUT

Chapter 1: An introduction and background information about PCa in general. The chapter provides a profile of Knowledge, Attitudes and screening Practices towards PCa globally, Africa and the region being studied. The purpose and objectives of the study were also covered in this chapter.

Chapter 2: covers the literature review

Chapter 3: present the study research design and the methodology

Chapter 4: presents the results of the study and interpretation of the results

Chapter 6: presents a discussion of the results, similarities, differences and gaps found in studies conducted in Africa and other countries globally

Chapter 5: gives the conclusion and recommendations of the study. It also describes the limitations of the study.

1.9 SUMMARY

This chapter provided an introductory information on why the study was conducted, what prostate cancer is and the incidence and prevalence rates of the disease in Africa and worldwide. Background information on the proportion of KAP information in different regions was also included. The conceptual framework, purpose, significance and objectives of the study were also covered in this chapter.

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

The purpose of a literature review is to establish what other researchers have done in an area of interest, and to identify methods that can be applied to the study under consideration. The literature review for this study focused on the epidemiology of PCa, risk factors, prevention and treatment modalities as well as on the KAP studies done in Africa and beyond.

Prostate cancer is a disease of the prostate gland that presents as either asymptomatic disorder (Persec et al. 2010) or a systemic malignancy (Bambury & Gallagher, 2012). It is marked by a disruption of the prostate architecture causing abnormal structure of the prostate and an increase in Prostate Specific Antigen (PSA) (Lawrentschuk & Perera, 2016)

The risk factors for prostate cancer include age, sex, lifestyle, diet, race and family history of PCa with age being highlighted as significantly common. Almost two out of every three prostate cancer cases are found in men over 65 years of age. Symptoms of prostate cancer include difficulty in urinating, frequent urination and blood in urine which are not usually present especially in the early stages of the disease, hence the importance of screening (Prostate Cancer UK, 2014).

Prostate specific antigen screening test is used as a biomarker to test for the prostate cancer marker. If the PSA results are elevated with persistent increase in the results, it is an indication of cancerous prostate cells (Duffy, 2011). However, the first step in screening for PCa is Digital Rectal Examination (DRE) (Loeb & Catalona, 2009). Treatment choices play a very important role depending on the stage of the prostate cancerous cells (Prostate Cancer UK, 2014).

Current researches seem to validate Prostate Cancer (PCa) as the leading cancer among men of African descent in the USA, Caribbean, and Sub-Saharan Africa (SSA). In 2008, it was estimated that PCa deaths were five times greater in SSA than that observed among African-Americans or their Caucasian counterparts. It was also estimated that by 2030 the incidence rate would have doubled in Africa (Rebbeck TR et al., 2013).

Recently, a higher mortality rate of prostate cancer among African-Americans than Caucasians (>3times higher than US born man) was reported (Mutetwa et al., 2010). These trends suggest that men of African descent appear to be at greater risk of getting PCa.

A study conducted to assess the KAP of men regarding prostate cancer and uptake of screening tests in various populations in the United States, reported that KAP of prostate cancer appears to be low among Black American men, contrasting those in low and middle income countries, particularly Sub-Saharan Africa (Nakandi et al., 2013).

In addition, knowledge levels among multi-ethnic black men in America were reported to range from 71.1 - 81.9 % taking demographic variables into consideration. While a KAP study done in Uganda determined that majority of the respondents 324 (59.4%) had heard about prostate cancer, while 9 % of the respondents knew about serum PSA testing. Consequently, only 3.5 % of the respondents in Uganda had ever undergone a serum PSA test (Ellison et al., 2014).

2.2. CLINICAL FEATURES

Prostate is a walnut sized gland which is part of the male reproductive system. It is located beneath the urinary bladder and in front of the rectum. The function of the prostate is to make fluid which nourishes and protects sperm cells in the semen. The activity and growth of the prostate is regulated by a hormone called androgen (testosterone) produced by the testicles (Prostate, 2012)

Many men who are diagnosed with prostate cancer are asymptomatic. However symptoms include urinary problems, blood in urine, pain in the hips, groin, pelvis, spine, and difficulty urinating and when ejaculating(“Prostate Cancer Prevention and Early Detection Prostate cancer risk factors,” n.d.). However, in a study conducted by reviewing other PCa studies on clinical features of suspected prostate cancer in primary care, it was reported that although urinary tract symptoms are one of the predictors for PCa they were not highly predictive. Instead, a biochemical test such as PSA testing or DRE provide better indication of the disease (Young et al., 2015).

In a study conducted on prostate volume and prostate adverse features, prostate cancer size and location were said to be of importance in diagnosis. Prostate cancers located in small glands are more aggressive than those located within larger glands (Briganti et al., 2007). Detection and treatment are very important when it comes to prostate volume.

2.3 EPIDEMIOLOGY

Like all the other cancer types, the origin of PCa is unknown. Regardless, there may be certain factors that dispose men to being at risk of PCa. These factors include age, race, and family history of prostate cancer, certain prostate changes (Prostatic Intraepithelial Neoplasia) and some type of genome. However, having a risk factor does not mean that one will necessarily get prostate cancer (Zhou & Magi-Galluzzi, 2008).

Cancer incidences and mortality rates vary worldwide. In the United states PCa is the most common malignancy affecting men and is the second leading cause of cancer deaths (Bashir, 2015). However, prostate cancer differs between geographical and different ethnic groups. Chu et al. (2011) reported that the rates of PCa vary about 8 times within SSA, with the lowest rate reported in West Africa and highest rates reported in the East. With the economy in Africa improving and increasing adoption of western style of living, it is likely that an increase in the incidence rate of PCa in Africa will occur with time as projected (Rebbeck et al.,2013)

In Figure 2.1, the epidemiological transition in Africa from prevalence of communicable to non-communicable diseases is presented.

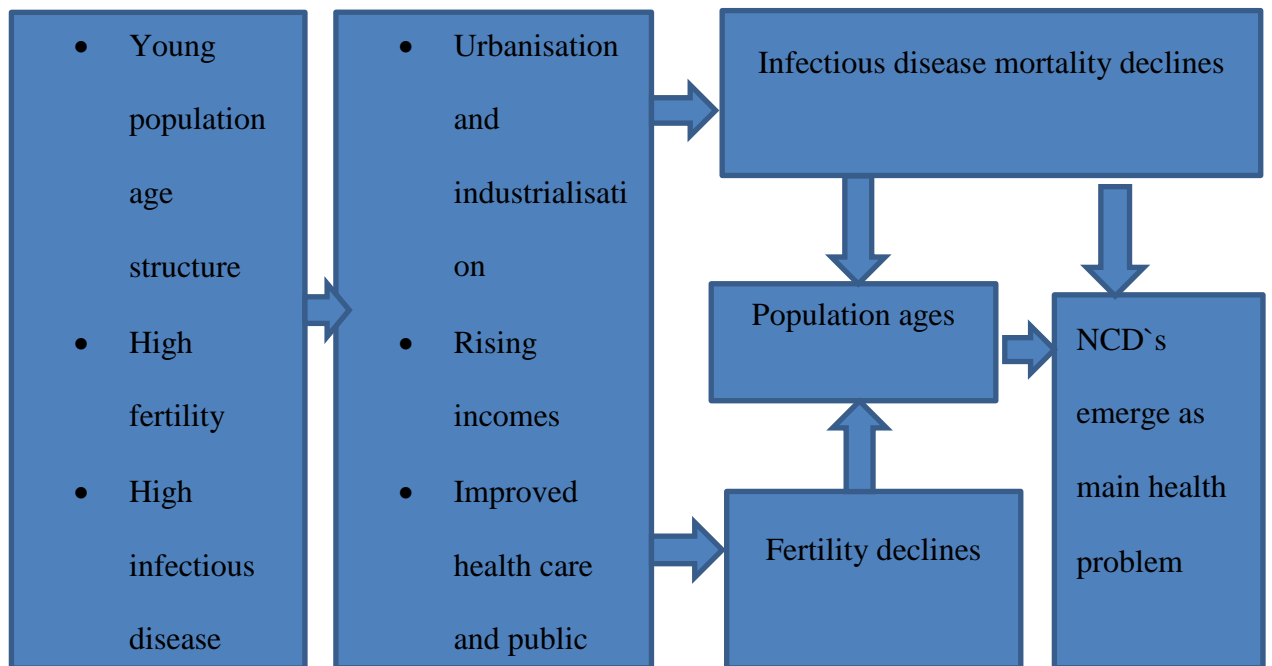


Figure 2.1 Health transition of Communicable Diseases to Non-communicable Diseases, Oshana region, 2016 (Maher, Smeeth, & Sekajugo, 2010).

The health or epidemiological transition is driven by increased urbanization, improved health care, western lifestyle and increasing age are some of the core factors that drive the trend towards non-communicable diseases, including cancer in Africa. Based on Namibia DHS 2013-2014, the factors that have been observed to contribute to an increased incidence of PCa are economic status, alcohol intake, smoking, diet, inactivity, age, gender and ethnicity.

2.4 RISK FACTORS, PREVENTION AND TREATMENT MODALITIES

The elements of the approach to controlling prostate cancer are similar to that of other non-communicable diseases (NCDs) which include prevention, detection, diagnosis, treatments and rehabilitation (“NCDs _Epid_Namibia-2015,” n.d.). Living a healthy lifestyle such as avoiding smoking, exercising regularly and weight control offer opportunities for reducing the risk of developing prostate cancer (Cuzick et al., 2014).

Early detection comprises early diagnosis in symptomatic population and screening in asymptomatic population, for at risk individuals (Of, Health, Of, & Services, 2016). Increasing awareness of the signs and symptoms of cancer contributes to detection of the disease in less advanced stages (knowledge acquisition) and insight into the usefulness of participation in screening activities for early diagnosis. This will add to timely detection of the disease and efficient management that can save lives. Early detection can then lead to careful assessment of clinical signs and symptoms, testing for PSA and assessment for DREs so that the choice of treatment: drug therapy, surgery, radiation, vasectomy or surveillance can be initiated.

2.5 PROSTATE CANCER KAP STUDIES IN SOME AFRICAN COUNTRIES

The low levels of KAP among African populations have been documented in Nigeria, Uganda, and Ghana. In Nigeria, low levels of KAP were observed among men in a rural community in the Inkene local government district (Eo et al., 2014). A similar finding was reported in a qualitative cross-sectional study conducted in Ibadan, South West Nigeria. The study recommended for the creation of community awareness programs on prostatic diseases in the community (Atulomah et al., 2010).

A hospital based study in Nigeria however, reported a contrasting result. In this study 74.1% of the men were reported to be aware of the existence of prostate cancer except that their participation in screening activities was low. A similar hospital based study conducted in Kenya, Nairobi indicated a low perception of men regarding cancer of the prostate (Paul, 2014).

In Uganda, the level of awareness about prostate cancer among men was also low, as was their participation in screening activities (Atulomah et al., 2010); (Nakandi et al., 2013). The study revealed that 59.4% of the men had heard about prostate cancer and as few as 9% knew about serum prostate specific antigen (PSA) testing. Consequently, only 3.5% had ever undergone a serum PSA test (Ellison et al., 2014). A study conducted in Ghana reported PCa awareness level of 54.1% among participants (Binka et al., 2015). These results cumulatively indicate that in Africa, KAP with regards to PCa is low and requires strategies for improvement.

There is a clear need for health promotion interventions designed to increase awareness and improve PCa practice. To prepare men to make a decision to be tested, IEC materials should be provided earlier to facilitate the diagnosis of PCa (Brooks, Wolf, Smith, Dash, & Guessous, 2010). Particularly, men in the risk age groups must be targeted to receive information so they can be evaluated early for detection and management. On the other hand, younger men under the age of 50 and men at average risk should receive this information early so that detection rates improve, to save lives.

2.6 PROSTATE CANCER KAP IN CARIBBEAN, NORTH AND SOUTH AMERICAN MEN

A study conducted in Western Jamaica to assess KAP among men aged 40 - 93 years from two different Parishes namely Trelawney, St James as well as among manual labourers showed variable prostate cancer screening results. The men from Trelawney parish were 10.5 times more likely not to be screened compared to men from St James. Manual labourers were 5.5 times less likely to have been screened than non-manual labourers. Men who had not been advised to have prostate cancer screening were 92% less likely to be screened than those advised and men who were not sure of how frequently screening should be conducted were 6.1 times more likely not to be screened compared to those who knew that screening should be conducted annually (Anderson, Wallace, Aung, & Jolly, 2015).

Men who visited healthcare providers only when they felt sick were 6.4 times more likely not to be screened compared to men who visited annually (Anderson et al., 2015). Based on the results from this study, the researchers suggested that prostate cancer screening interventions be instituted and promoted in communities to make it available to men with less economic resources and those who do not routinely visit a physician or health facility (Anderson et al., 2015).

Similar results were observed among rural male health workers in another study in Jamaica where 72.2% of men had heard about the screening procedure for prostate cancer, with only 27.1% having gone through prostate examination.

Furthermore, a review of the cancer registry in countries in the Caribbean showed that the high mortality rates observed among Caribbean-born patients may be partly attributed to later diagnosis. Interventions focused on KAPs of prostate cancer could potentially reduce mortality in this population (Mutetwa et al., 2010).

The low uptake of screening behaviours was evident in a study conducted in the US among Primary Care Physicians (PCPs) to examine the behaviour of men and physicians regarding prostate cancer screening. The results indicated that PSA screening was more likely among non-Hispanic blacks. PCPs in multi-specialty group practices were more likely to remain neutral or discouraged PSA testing compared to PCPs in solo practices (Hall et al., 2011).

In addition, a qualitative study confirmed that screening could save men's lives if women could get involved. The study findings also emphasized health education efforts as a means of helping community members understand health issues, screening options and how to make informed screening decisions (Hunter, Vines, & Carlisle, 2015); (Obana & O'Lawrence, 2015).

Information based on another study regarding KAPs of prostate cancer among American physicians suggests similar results as the Hall et al. (2011) study. The results show a low uptake of KAPs on prostate cancer among the participants. Participants correctly identified prostate cancer risk factors but were less knowledgeable about prostate cancer screening tests and overall prostate cancer risk. Men over the age of 50 were not screened (Tasian et al., 2012). In a study involving African Americans, only 13% of the participants reported receiving a comprehensive explanation about prostate cancer. The study also reported a low level of knowledge regarding prostate cancer among the respondents (Davis et al., 2010).

In the non-Hispanic white ethnic groups, it was reported that men were less likely to be tested for prostate cancer than African-Americans, although the latter group presented with more malignancy which raised concerns about missed prevention opportunities. African-Americans with high PSA results had the shortest time until follow-up, reflecting awareness of the threat of prostate cancer for African-Americans (Liang, Du, Thompson, & Turner, 2012).

Another study conducted in Brazil showed that 63% of men had knowledge about prostate cancer. A reasonable number of the participants (40.6%) had positive attitudes towards screening while 28.1% had proper practices (Paiva, Catarina, & Harter, 2010). Regarding the attitude of the men on their choice of not doing a digital rectal examination, 20.6% indicated comfort level; 9.4% stated the gender of the health practitioner and 5.3% attributed it to fear (Bourne, 2010).

2.7 KNOWLEDGE, ATTITUDES AND PRACTICES OF PROSTATE CANCER IN NAMIBIA

Literature search failed to locate a documented research on prostate cancer KAPs in Namibia apart from the data in the DHS. Although prostate cancer is affecting the health of men and requires major attention regarding interventional strategies, there is a gap on the baseline information defining what knowledge men have and practice that they normally go through towards early detection of PCa to inform on interventional strategies. The present study has sought to provide baseline information for further studies and intervention in the future.

2.8 SUMMARY

This chapter gave an overview of the clinical features, epidemiology, risk factors, and prevention and treatment modalities of PCa. It also discussed gaps, similarities and contradictions on studies conducted on KAPs of PCa in other regions.

CHAPTER 3: RESEACH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

This chapter discusses the research design and the method which was used to answer the objectives of the study. It covers the research design, sampling, data collection instrument, the reliability, validity and data management as well as analysis. The ethical consideration and the rights of the participants have also been explained in this chapter.

3.2 RESEARCH METHOD AND DESIGN

A quantitative approach using a descriptive cross sectional design was used for this study using systematic random sampling. This was appropriate to ensure all respondents had an equal chance of being selected for the study and allow the inference of the findings to the entire population under study (Elsayir, 2014);(Dicker, Coronado & Koo, n.d)

Eligible men between the ages of 18 – 72 years attending IHO Outpatients Department were recruited for the study. The systematic sampling which is the purest form of probability sampling was used. By using systematic sampling, each member of the population had an equal and known chance of being selected and therefore representative of the population being studied.

3.3 STUDY SETTING AND POPULATION

The northern part of Namibia is made up of the four main “O” regions which are Oshana, Omusati, Ohangwena and Oshikoto. Approximately half of the population in Namibia live in the north. Oshana is considered the centre of the four “O” regions with the Intermediate Hospital Oshakati being the only referral hospital for the regions. Therefore the population for the study was men attending the Outpatient Department (OPD) in the Intermediate Hospital Oshakati, aged between 18 - 72 years. They consisted of a uniform mix of patients from both rural and urban areas since patients from both locations do come to the targeted health facility.

3.3.1 Inclusion Criteria

Men aged 18 - 72 years attending Intermediate Hospital Oshakati at the Outpatients Department who were eligible and willing to participate.

3.3.2 Exclusion Criteria

- Men aged 18 - 72 with prior diagnosis of prostate cancer were not part of the study
- Men with debilitating medical or health issues, mentally unstable and speech disabled were excluded
- Men who were critically ill were also excluded

3.4 SAMPLE AND SAMPLING METHOD

The sample size was calculated using Epi info 7 version statistical package using the following parameters: Population size: 847, 259 (catchment population for the Northern regions), Expected frequency: 50%, Confidence limits: 95%, Design effect: 1 and Clusters: 1. hence, the maximum possible sample size of 384 was used. Methodology for sample calculation refer to (Wayne & Chad, 2013)

A systematic sampling method was used. Men attending the Oshakati hospital OPD were recruited for the study. The estimated number of males who attended the OPD was 30 in a day. The first participant was randomly selected and then every third patient was interviewed until a target sample size of 384 was achieved.

3.5 RESEARCH INSTRUMENTS

A structured questionnaire was designed based on WHO guidelines on conducting Knowledge, Attitudes and Practice surveys as well as UNESCO questionnaire guidelines (“A guide to developing knowledge , attitude and practice surveys,” n.d.) &(Siniscalco, n.d.). The questionnaire was also developed based on what obtains elsewhere and in the Namibia DHS (2013). The questionnaire was in English and consisted of closed-ended questions. A translation into the local vernacular language (Oshiwambo) was provided for those who could not speak or understand the English language. Four sections namely Section A, B, C and D made up the questionnaire (see Appendix D).

Section A consisted of questions on socio-demographic characteristics such as age, current residence, religion, education, major occupations, marital status, smoking and alcohol status, earnings per month as well as family history of cancer. Section B captured knowledge questions on prostate cancer risk, signs and symptoms, complications and treatment options. Section B also captured a question on sources of information where the participants had heard about PCa. Section C captured attitude questions towards prostate cancer as a disease and screening behaviours. Section D captured information on PCa Practices such as PSA screening and DRE, duration when the tests were done and reasons for not having a PSA or DRE exam done.

3.5.1 Validity

The validity of a test is the extent to which the test measures the variables under the study (Designs, n.d.). It ensures accuracy and correct interpretation of the results of the study. In this study validity was achieved by cross-checking, inspecting and scrutinizing the information entered in the questionnaires to ensure that the data collected was accurate, relevant, complete, consistent and homogeneous.

Validity was well ensured by verification of the men's passports (health cards with basic information on their medical history) to ensure that they have never been diagnosed with prostate cancer. Validity was also enhanced as adjustments were made to the questionnaire as a result of pretesting the data collection tool.

3.5.2 Reliability

Reliability is the consistency of a measure that ensures consistency of a test. In this study, reliability of the questionnaires was ensured by designing closed-ended questions that measure KAPs of prostate cancer.

Furthermore the conditions in which the questionnaires were administered ensured that the results obtained from the study is accurate. The participants were briefed on what the study was all about, with additional supervision of the research assistants to minimize errors and ensure data accuracy.

3.6 PRETESTING TESTING OF THE DATA COLLECTION INSTRUMENT

A pretesting of the questionnaires was done among 15 participants who met the inclusion criteria. This helped to identify any ambiguities, relevance, sensitivity and acceptability of the questions and likely duration of administering.

At the end of the pretesting testing, the questionnaire was modified to align with the findings. Changes to a few questions were made such as another column of “unemployed” was added to question 4, Co-habitation was added to one of the optional answers in question 5 and another option “Other reasons” was added to question 40 in Section D

3.7 DATA COLLECTION PROCEDURE

Men attending the OPD between the ages of 18 - 72 were included in this study. The research started in August 22, 2016 and was completed in October 7th, 2016.

During the data collection period, all men within the age category had separate queues. Every day men who attended the OPD were briefed on what the study was all about and given information on ethical principles that were instituted in the study to protect the participants when they were still in the queues.

After debriefing, the first participant was selected randomly. Subsequently, every third participant was systematically selected. The selected participants were taken to a room where the interviews took place

The interviews were done by two male health assistants until the required targeted sample size of 384 participants was attained. The male health assistants were selected on assumption that men will be more comfortable and open talking to a fellow male than a female. The health assistants personally filled in the responses in the questionnaire to avoid incompleteness and to rectify questions that would appear unclear to participants. The principal researcher checked the completed questionnaires for any errors and completeness on a daily basis.

3.8 DATA MANAGEMENT AND ANALYSIS

The data was entered in Epi info 7 and exported to Microsoft excel for cleaning and coding. Analysis was done using Epi info 7. Sociodemographic characteristics were summarised in frequencies and percentages. Knowledge levels were determined using a series of 10 questions on risk factors, signs and symptoms, prevention, treatment and complications of prostate cancer (*see appendix D*).

Each participant who could answer any of the questions from 1 - 10 was assigned a score of 1 and 0 for a “no” or “don`t know” answer. The overall score was calculated for all ten knowledge questions for each person. The maximum score was 10; any individual who had a score of 5 and more was categorised as having adequate knowledge and any individual who had a score of 4 and less was categorised as having inadequate knowledge.

Attitudes regarding PCa were assessed using ten statements on a 3 point Likert scale: agree - 1, don't agree - 0 and don't know - 0. The scale was scored as agree - 1, don't know - 0 and don't agree - 0 for the positive questions, and don't agree - 1, don't know - 0 and agree - 0 for the negative statements. Out of a maximum score of 10, each participant who scored 5 and above was classified as having positive attitude and each participant who scored from 4 and below was classified as having negative attitude.

Practice was assessed by calculating frequencies and percentages of those who had a PSA or DRE done, and the number of times it was done. Reasons for those who have not had the tests done was quantified and described descriptively.

Descriptive analysis of sociodemographic characteristics was calculated (frequencies and percentages). Bivariate analysis to determine association between sociodemographic characteristics and levels of knowledge and attitudes was done using Odds ratio and P values. To identify the factors independently associated with dependent variables, all variables significant in bivariate analysis were adjusted for confounding on the level of knowledge using logistic regression analysis. Bivariate analysis and multiple logistic regression results were all presented in Odds ratio at a p value < 0.05. The significant level of 95% confidence interval was set for all statistical procedures.

3.9. RESEARCH ETHICS

3.9.1 Permission

Ethical clearance was sought from the University of Namibia and a second approval was sought from the Ministry of Health and Social Services. The ethical clearance letter from MOHSS was presented to Oshakati Regional Director prior to data collection. Participants' wellbeing in this study was a priority. The principal researcher ensured that participants were treated with respect, and given enough information for them to make an informed voluntary consent. No harmful activity regarding their participation in the study occurred.

3.9.2 Voluntary participation and Informed consent

The participants were systematically recruited without any bias. Participants were well informed about the study including information on voluntary participation in the study. Both oral and written agreements of consent were obtained during the time of data collection.

3.9.3 Confidentiality and anonymity

Privacy in medical investigation and epidemiologic research has become a crucial matter (World Health Organization, 2013). Throughout the study, the privacy, anonymity and confidentiality of the participants were maintained. Participants were interviewed in separate rooms that allowed them to express themselves freely.

The data from this research will only be used for research purposes and not be made available to a third party that is not involved in the study. In addition, findings from this study will not be linked to any individuals.

3.10 SUMMARY

This chapter addressed design and methodologies used to enrol study participants and to collect data. It contains the root of the research which includes: the data collection instrument, data management and analysis and steps taken to ensure that the results are valid and reliable. The ethical principles taken were also included.

CHAPTER 4: RESULTS

4.1 INTRODUCTION

This chapter focuses on the presentation and interpretation of the results obtained from the study. Three hundred and eighty four (384) participants were interviewed and the response rate was 100%. The results are presented in chronological order in the way they were analysed starting with sociodemographic characteristics of the participants, sources of information on PCa, knowledge levels (adequate and inadequate knowledge) of PCa, attitude levels (positive and negative attitudes) relating to sociodemographic characteristics and associations. The last part of the results presents the logistic regression adjusted for confounding on factors that were statistically significant in bivariate analysis with the levels of knowledge.

4.2. SOCIODEMOGRAPHIC CHARACTERISTICS OF THE STUDY PARTICIPANTS

The results about the demographic characteristics of the respondents are presented in table 4. 1 on page 43. The mean age of the participants was 34.1, ± 12.5 SD and range: 18 - 72

Table 4.1 Demographic characteristics of the respondents, Oshana region, 2016

Characteristics	Frequency (N=384)	Percent (100%)
Age group (years)		
18-28	160	41.7
29-39	119	31.0
40-50	59	15.4
51-61	30	7.8
Above 61	16	4.2
Current Residence		
Town	219	57.0
Village	165	43.0
Marital Status		
Single	271	70.6
Married	69	18.0
Separated	6	1.6
Divorced	2	0.5
Cohabiting	36	9.4
Religion		
Christianity	374	97.4
Islam	3	0.8
Others*	7	1.8
Education		
Primary	110	28.6
Secondary	202	52.6
Tertiary	47	12.2
None	25	6.5

Data are presented in frequency (N) and proportions (%), others*any other religion in Namibia

A total of 160 (41.7%) were aged group 18-28 years while 16 (4, 2%) were aged above 61years old. Most respondents 219 (57%) lived in town. Moreover, the majority of the respondents indicated being single 271 (70.6%) and the least were divorced and separated 8 (2.1%). Furthermore, most of the respondents 374 (97.4%) were Christians.

The distribution of the respondents by their education levels showed that 202 (52.6%) had acquired at least a secondary education while 25 (6.5%) respondents had no education.

Cigarette smoking status of the respondents are presented in figure 4.1 below

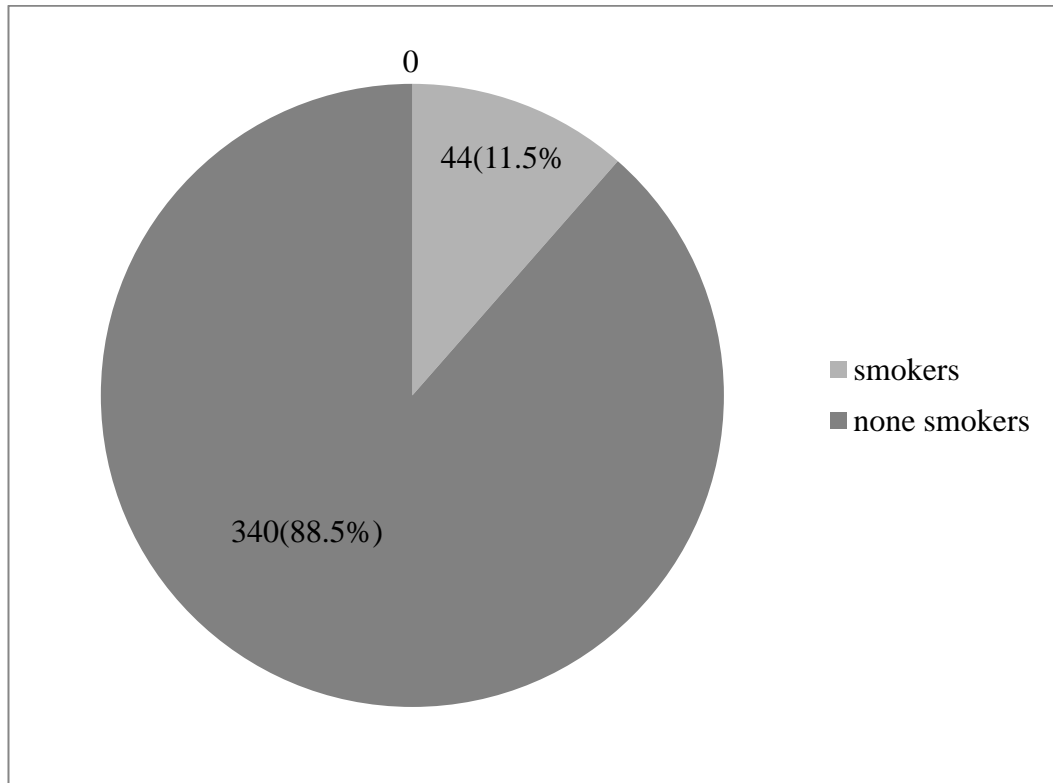


Figure 4.1 Participants who smoke and those who do not smoke cigarettes, Oshana region, 2016

The majority of the respondents 340 (88.5%) were non-smokers.

The findings for the quantity of cigarettes consumed daily among smokers (N=44), are presented on the bar graph below.

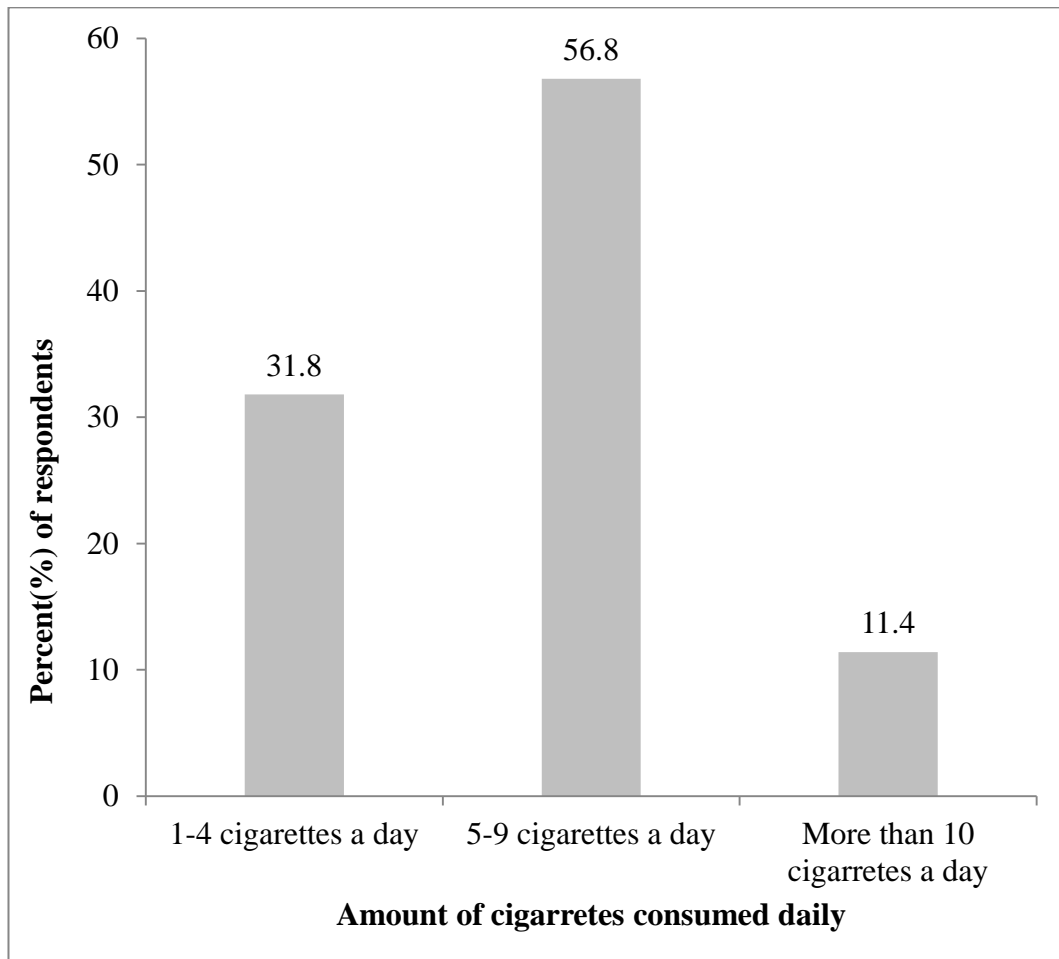


Figure 4.1.1 The percentage of respondents who smoked a number of cigarette per day, Oshana region, 2016

About 57% of the respondents reported that they smoked between 5 and 9 cigarettes while about 11% smoked more than 10 cigarettes per day.

Alcohol consumption status of respondents is shown on the pie chart below.

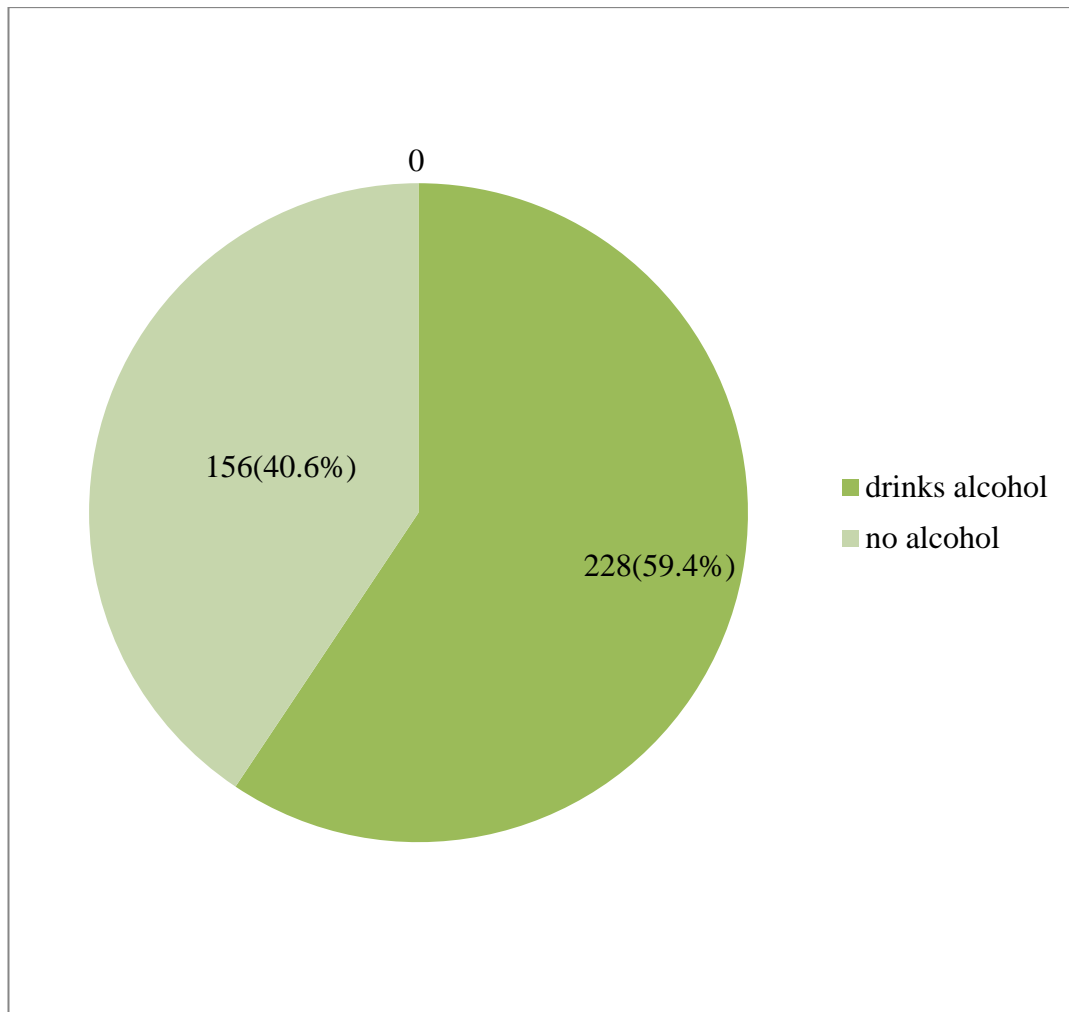


Figure 4.2 Respondents who drink alcohol and those who do not drink alcohol, Oshana region, 2016

The majority of the respondents 228 (59.4%) reported that they drink alcohol.

Figure 4.2.1 below shows the percentage of respondents who drink a number glasses of alcohol per day.

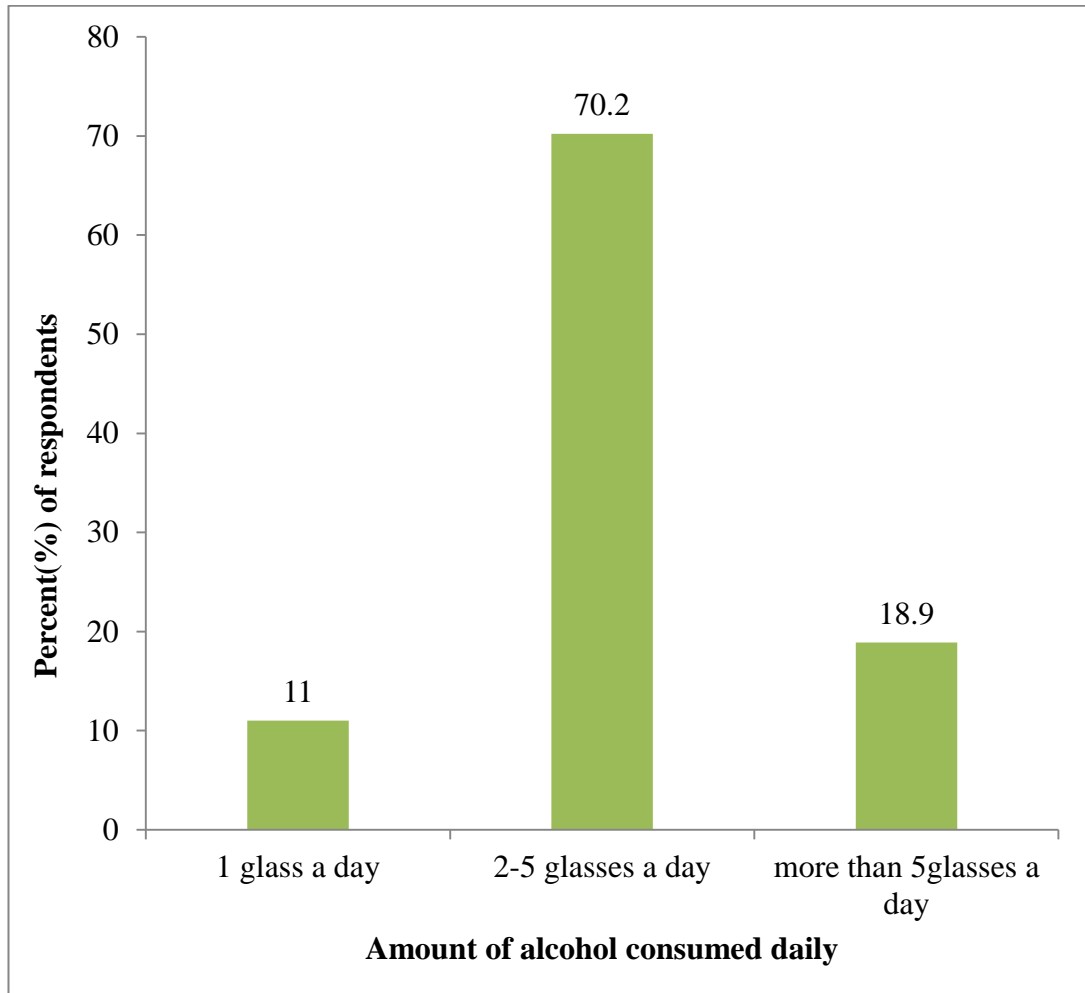


Figure 4.2.1 Distribution of respondents who drink alcohol by the number of glasses per day Oshana region, 2016

About 70% of the respondents who drink alcohol reported that they drink 2-5 glasses of alcohol per day and 18.9% drink more than 5 glasses per day

Monthly earning of the study respondents are presented in figure 4.3 below.

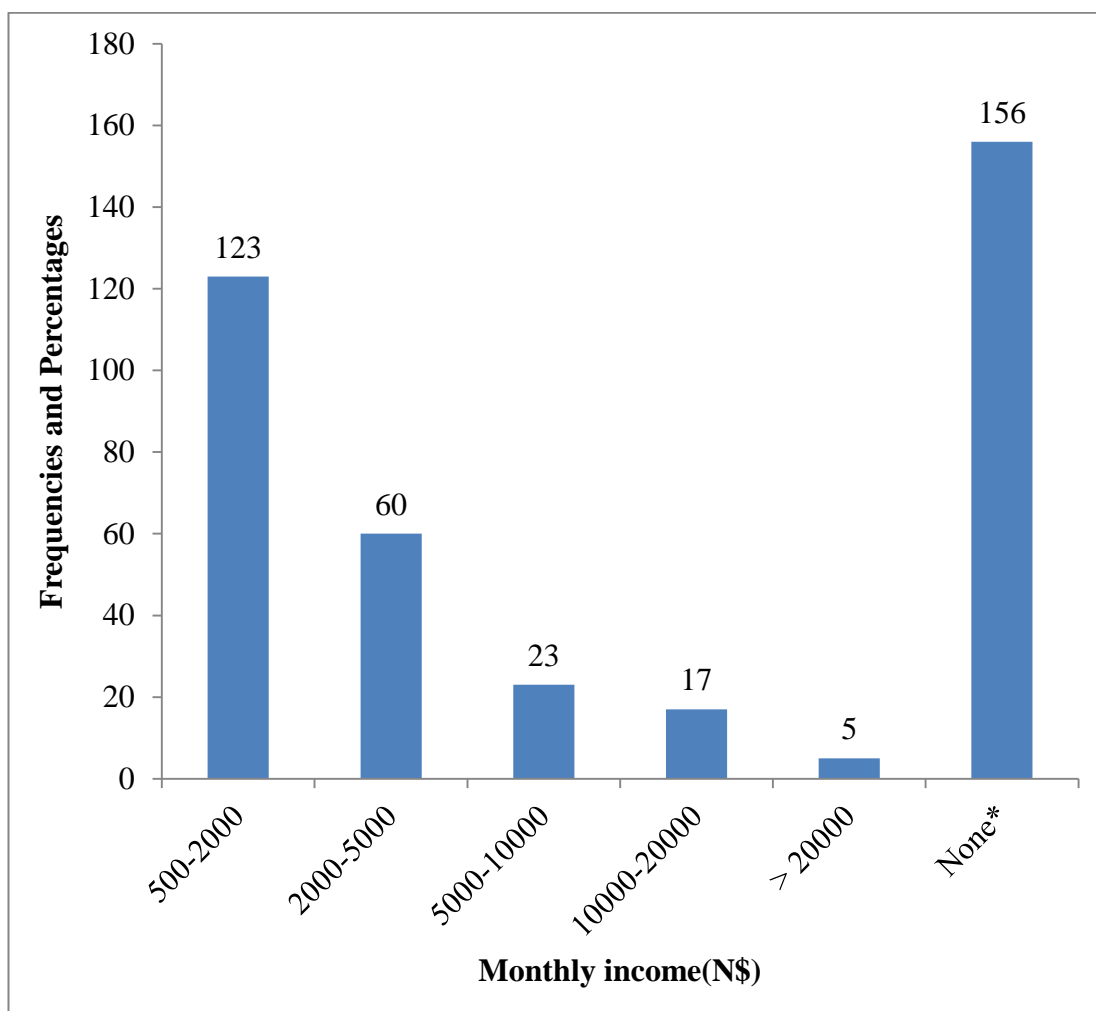


Figure 4.3 Monthly income of study respondents, Oshana region, 2016

About 123 (32.0%) of the respondent earned a monthly income of N\$ 500-N\$2000 while 156 had no income.

The findings about the respondents' history on PCa are presented in the pie chart below.

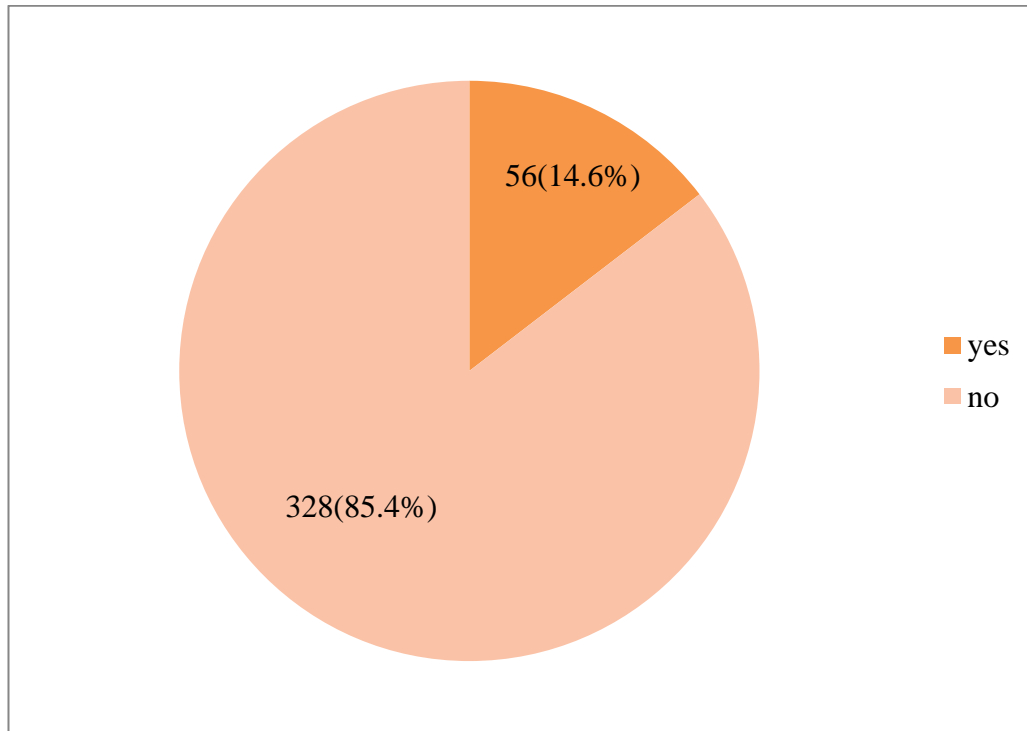


Figure 4.4 Frequencies of respondents with and without a family history of PCa, Oshana region, 2016

A total of 56 (14.6%) respondents reported having a family history of PCa.

4.3 SOURCE OF INFORMATION

The results about where the respondents have heard the information about PCa are presented in Table 4.2, below. Only 163 out of the 384 respondents reported having heard about PCa.

Table 4.2 Sources of information about where the respondents have heard about PCa.

Source of Information	FrequencyN=163	Percent (%)
Male dinners	3	1.8
TV	22	13.5
Radio	50	30.7
Health pamphlets	13	8.0
Church	1	0.6
Internet	6	3.7
Newspaper	18	11.0
Health professional	10	6.1
Family and Friends	22	13.5
Others	3	1.8
Textbooks	15	9.2

Respondents who have heard about prostate cancer indicated that the medium was through the following sources; radio 50 (30.7%), TV 22 (13, 5%) family and friends 22 (13.5%) newspaper 18 (11.05), text books 15 (9.2%) health pamphlets 13 (8.0%), health professionals 10 (6.1%), internet 6 (3.7%), male dinners 3 (1.8%) and others 3 (1.8%).

4.4 KNOWLEDGE_OF PROSTATE CANCER

4.4.1 Knowledge specific to the questions

Table 4.3 summarizes the distribution of respondents' responses on their knowledge of PCa.

Table 4.3 Distribution of respondents' responses on knowledge about PCa, Oshana region, 201

Variable(Total N=384)	No	Percent (%)
Heard about prostate cancer		
Yes	163	42.4
No	221	57.6
Could identify what PCa is		
Yes	117	30.5
no	267	69.5
Could identify risk factors		
Yes	105	27.3
No	279	72.7
Could indicate whether risk factors for PCa could be reduced		
Yes	94	24.5
No	290	75.5
Could identify way(s) in which the risk factors could be reduced		
Yes	94	24.5
No	290	75.5
Could identify early warning signs of PCa		
Yes	91	23.7
No	293	76.3
Could indicate if early detection can increase survival		
Yes	100	26
No	284	74
Could indicate if PCa can be treated		
Yes	87	22.7
No	297	77.3
Could indicate ways in which PCa can be treated		
Yes	75	19.5
No	309	80.5
Could identify complications for PCa		
Yes	104	27.1
No	280	72.9

Table 4.3 on page 53 shows respondents who had heard (Yes) and had not heard (No) about PCa. Data presented in frequencies (N=163) and percentages (%)

- Respondents who knew what prostate cancer is, were 117 (30.5%) with 105 (27.3%) being able to identify the risk factors. Out of the 27.3 % who could identify the risk factors most respondents indicated cigarette smoking 29 (27.6%), sexual activity 27 (25.7%) and age 25 (23.8%) as the most common risk factors for PCa
- About 94 respondents (24.5%) were positive that risk factors for causing prostate cancer could be reduced and 94 (24.5%) could identify how the risk factors could be reduced. Some of the respondents identified improved sex education 37 (49.3%) and better health care 31 (41.3%) as the best approach to reducing PCa risk.
- Less than a half of the respondents knew the warning signs of PCa 91 (23.7%) with the majority stating difficulty urinating 69 (75.8%) and pain in the groin 30 (33.0%) as warning signs.
- One hundred respondents 100 (26.0%) were positive that early detection could increase chances of survival. Respondents who were positive that PCa can be treated were 87 (22.7%). Seventy five (19.5%) respondents could identify ways to treat PCa with 35 (46.7%) stating drug therapy, 15 (20%) mentioning radiation and 8 (10.7%) stating vasectomy as means of treatment.

- Out of 27.1% of the respondents who could identify complications for PCa most respondents indicated urinary inconsistency 20 (19.2%), loss of life 18 (17.3%) and impotence 15 (14.4%) as the most common complications caused by PCa

The level of knowledge which was based on the Likert scale grading are shown in table 4.4 . Refer for the scores in chapter 3:Methodology

Table 4.4 Knowledge levels about PCa, Oshana region, 2016

Knowledge levels about PCa	Frequencies (N)	Percentages (%)
Adequate knowledge	115	29.9
Inadequate Knowledge	269	70.1
Total	384	100.0

A total of 269 respondents had inadequate knowledge about PCa.

4.5 ATTITUDES TOWARDS PROSTATE CANCER

4.5.1 Attitudes per specific question

The results on attitudes towards PCa are summarised in Table 4.5.

Table 4.5 Respondents' responses on attitude towards PCa, Oshana region, 2016

Attitude Statements	Agree N(%)	Don't know N(%)	Don't agree N(%)
Prostate cancer is only a problem for males of advancing age	114 (29.7)	121 (31.5)	149 (38.8)
It is important to screen for prostate cancer	358 (93.2)	20 (5.2)	6 (1.6)
Prostate cancer screening would be painful	65 (16.9)	235 (61.2)	84 (21.9)
Going through prostate cancer screening is embarrassing	61 (15.9)	20 (5.2)	303 (78.9)
Prostate cancer screening will aggravate the disease	30 (7.8)	153 (39.8)	200 (52.1)
Going through prostate cancer screening will help me to be healthy	289 (75.3)	88 (22.9)	7 (1.8)
Prostate cancer screening is beneficial and will settle any ambiguities	256 (66.7)	118 (30.7)	10 (2.6)
Regular examination for PCa is expensive	63 (16.4)	243 (63.3)	78 (20.3)
If recommended I would go to screen for PCa	369 (96.1)	12 (3.1)	3 (0.8)
If found out that I have PCa, I would accept any treatment given	377 (98.2)	6 (1.6)	1 (0.3)

Data presented in Frequencies (N=384) and Percentages

Three hundred and eighty four participants were assessed on their attitudes towards PCa in general, screening, as well as treatment. The scores were coded and summed up to provide results for participants who had positive and negative attitudes towards PCa, Table 4.6. Please refer to chapter 3 for Likert scale grading

Table 4.6 Attitude levels towards PCa Oshana region, 2016

Attitude levels towards PCa	Frequency(N)	Percentages (%)
Positive Attitude	331	86.2
Negative Attitude	53	13.8
Total	384	100

A large number (331) of respondents displayed a positive attitude towards prostate cancer screening.

4.6 PROSTATE CANCER SCREENING PRACTICES

Out of 163 respondents who have heard about prostate cancer of which of those eligible were 76 (>45 years) therefore 16/76 (21%) have had an exam done. The data is presented in Figure 4.5. PSA test had been done on sixteen (21%) with 15(19.7%) having done a rectal examination.

- Some of the participants indicated to have undergone the examination in the past that 3 - 4 months, 9 (56.3%) while two participants reported to have had it done in the past 12 months ago (12.5%),

The figure below shows respondents who had a PCa exam done at monthly within the last 12 months.

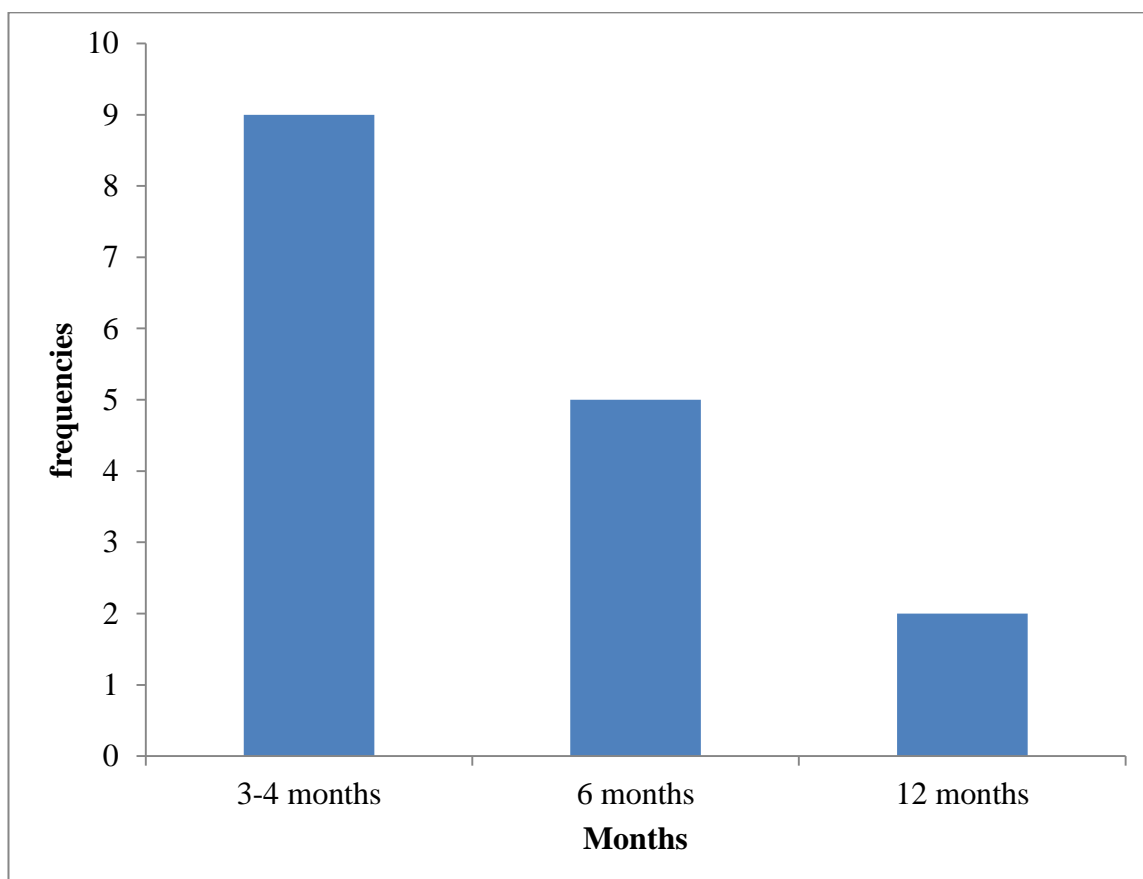


Figure 4.5 Prostate cancer screening practices, Oshana region, 2016

Out of the 16 respondents who went for PCa screening, 9 were about 3 to 4 months ago, while 2 were screened about 12 months ago.

Representation of different reasons for having a PCa screening exam among 16 respondents is presented in the pie chart below.

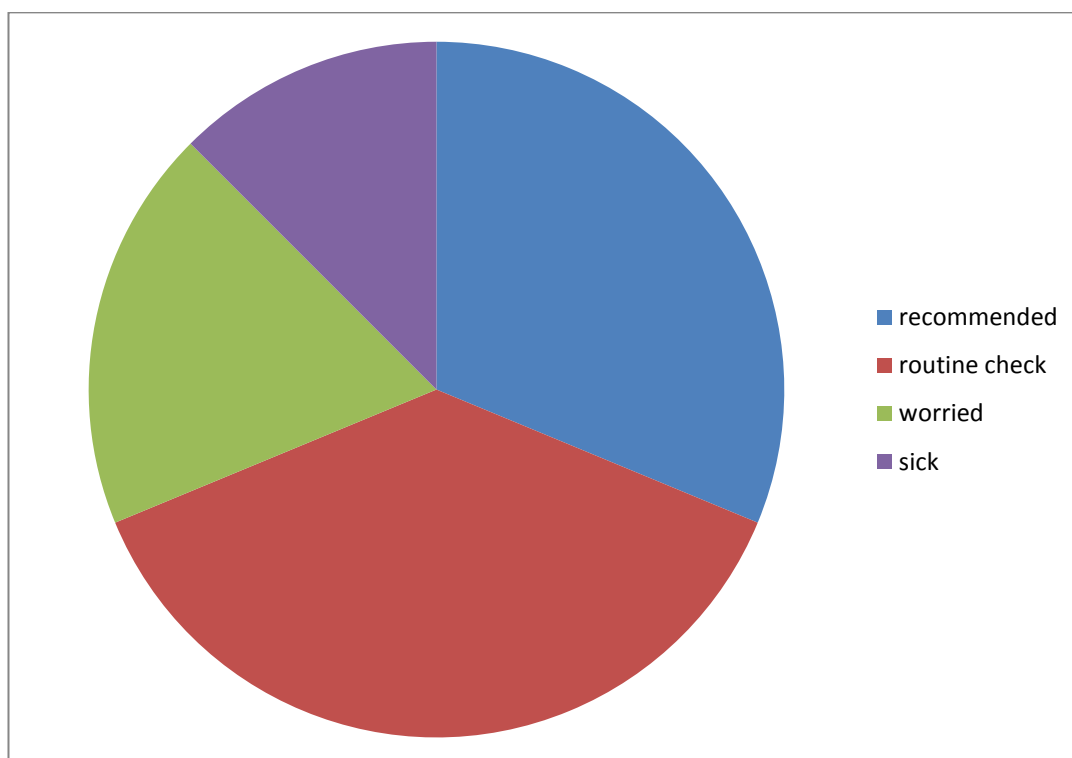


Figure 4.6 Representation of reasons among respondents who have been screened for PSA, Oshana region, 2016

The respondents gave the following reasons for having an examination done: recommended by a doctor 5 (31.3%), routine check 6 (37.5%), worried 3 (18.8%) and sick 2 (12.5%),

Representation of different reasons for respondents who have never had a PCa screening exam. Data is presented in percentages (%), N=368

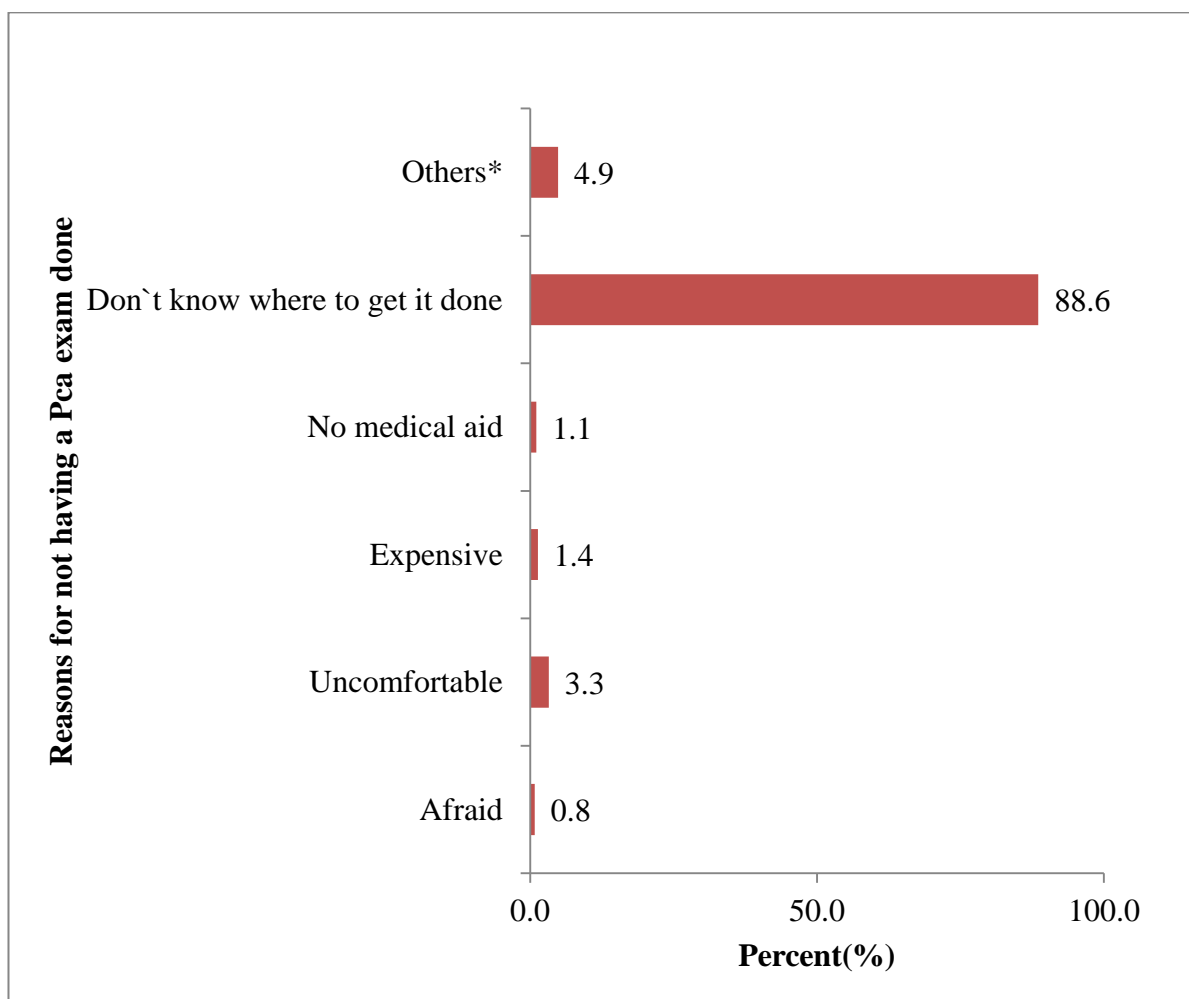


Figure 4.7 Reasons of respondents who have never had a PCa exam done, Oshana region 2016

The respondents who did not have an examination done stated the following reasons for failing to do so: : afraid 3 (0.8%), uncomfortable 12 (3.3%), expensive 5 (1.4%), no medical aid 4 (1.1%), don't know where to get it done, 342 (88.6%), other reasons 18 (4.9%), Figure 4.9

4.7 ASSOCIATIONS BETWEEN LEVELS OF KNOWLEDGE ABOUT PCA AND SOCIO-DEMOGRAPHIC FACTORS, AND FAMILY HISTORY OF PCA

The associations between levels of knowledge are summarised in Table 4.7 below. Data are presented as Adequate Knowledge (AK) and Inadequate Knowledge (IK), in frequencies (N) and percentages (%), an asterisk (*) indicates a reference category. Odd ratios (OR), are indicated at 95% confidence interval (C.I.95%), and probability values (p value). Variables with cells less than five counts were excluded.

Table 4.7 levels of knowledge and sociodemographic characteristics and family history of PCa

Characteristics	AK N (%)	IK N (%)	OR	95% CI	P value
Age group (years)					
18 - 28	39 (33.9)	121 (45.0)	*		
29 - 39	38 (33.0)	81 (30.1)	1.46	0.85-2.47	0.18
40 - 50	22 (19.1)	37 (13.8)	1.84	0.96-3.49	0.06
>50	16 (13.9)	30 (11.1)	1.65	0.80-3.34	0.19
Current Residence					
Town	69 (60.0)	150 (55.8)	*		
Village	46 (40.0)	119.0 (44.2)	0.84	0.54-1.31	0.49
Marital Status					
Single	71 (61.7)	200 (74.3)	*		
Married/Cohabiting	40 (34.8)	65 (24.2)	1.73	1.07-2.79	0.03
Education					
Primary	29 (25.2)	81 (30.1)	*		
secondary	57 (49.6)	145(53.9)	1.09	0.65-1.87	0.79
Tertiary	24 (20.9)	23(8.6)	2.91	1.41-5.96	0.0034
None	5 (4.3)	20 (7.4)	0.69	0.22-1.97	0.62
Major Occupations					
Artisan	14 (12.2)	38 (14.1)	*		
business	21 (18.3)	35 (13.0)	1.63	0.71-3.74	0.30
farming	16 (13.9)	39 (14.5)	1.11	0.47-2.63	0.83
Civil servant	9 (7.8)	6 (2.2)	4.07	1.19-14.10	0.03
Others	27 (23.5)	59 (21.9)	1.24	0.58-2.72	0.70
Unemployed/Students	13 (11.3)	54 (20.1)	0.65	0.27-1.57	0.38
Students	15 (13.0)	38 (14.1)	1.07	0.45-2.56	1
Smoking status					
smokers	12 (10.43)	32 (11.9)	*		
none smokers	103 (89.6)	237 (88.1)	1.16	0.58-2.42	0.73
Alcohol status					
drinks alcohol	65 (56.5)	163 (60.6)	*		
No alcohol	50 (43.5)	106 (39.4)	1.18	0.76-1.84	0.50
Monthly earnings(N\$)					
500-2000/None	72 (62.7)	207 (77)	*		
>2000	43 (37.4)	62(23.0)	1.99	1.24-3.19	0.006
Family History with PCa					
Yes	17 (14.8)	39 (14.0)	*		
No	98 (85.2)	230 (85.5)	0.98	0.53-1.85	1.00

- The odds of a respondent being knowledgeable on prostate cancer are: by age, 29-39 (OR=1.46) 40-50 (OR=1.84) more than 50 (OR=1.65); married/cohabitating (OR=1.73). Other variables examined were education levels: secondary (OR=1.09), tertiary (OR=2.91), occupation: business (OR=1.63), farming (OR=1.11), civil servants (OR= 4.07), others (OR=1.24), students (OR=1.07); smoking: non -smokers (OR=1.16), non-consumption of alcoholic beverages (OR=1.18).
- There was an association between respondents who came from the village (OR 0.84), have had no schooling (OR=0.69), unemployed (OR=0.65), had a family history with PCa no (OR =0.98) and the level of knowledge.
- The associations between those married/cohabitating (p=0.03), tertiary (p=0.0034), civil servants (p=0.02), monthly income of >2000 (p=0.006), were statistically significant (all the P values are less than (P<0.05).

4.8 ASSOCIATIONS BETWEEN ATTITUDE LEVELS ABOUT PCA AND SOCIO-DEMOGRAPHIC FACTORS, AND FAMILY HISTORY OF PCA

Data on attitude levels are presented in Table 4.8. The data is presented as Adequate Attitude (A Attitude) and Inadequate Attitude (I Attitude) in frequencies (N), percentages (%) Odd Ratios (OR), 95% C.I. (95% confidence interval) and Probability values (p value). Variables with cells less than five counts were excluded.

Table 4.8 Attitude levels and sociodemographic characteristics

Characteristics	A Attitude N (%)	I Attitude N (%)	OR	95% CI	P value
Age group (years)					
18 - 28	139 (42.0)	21 (39.6)	*		
29 - 39	105 (31.7)	14 (26.4)	1.13	0.55-2.38	0.86
40 - 50	49 (14.8)	10 (18.9)	0.74	0.33-1.75	0.51
>50	38 (11.5)	8 (60.4)	0.72	0.28-2.03	0.47
Current Residence					
Town	188 (56.8)	31 (58.5)	*		
Village	143 (43.2)	22 (41.5)	1.07	0.57-2.03	0.88
Marital Status					
Single	237 (71.6)	34 (64.2)	*		
Married/Cohabiting	88 (26.6)	17 (32.0)	0.74	0.39-1.42	0.40
Education					
Primary	89 (26.9)	21 (39.6)	*		
secondary	181 (54.7)	21 (39.6)	1.33	0.36-5.01	0.76
Tertiary	39 (11.8)	8 (15.1)	1.15	0.47-2.97	0.83
Major Occupations					
Artisan	46 (13.9)	6 (11.3)	*		
business	51 (15.4)	5 (9.4)	1.33	0.19-0.66	0.76
farming	46 (13.9)	9 (17.0)	0.67	0.21-2.06	0.58
Civil servant	11 (3.3)	4 (7.5)	0.36	0.08-1.69	0.21
Others	73 (22.1)	13 (24.5)	0.73	0.24-2.05	0.62
Unemployed	56 (16.9)	11 (20.8)	0.66	0.21-1.94	0.60
Students	48 (14.5)	5 (9.4)	1.25	0.34-4.73	0.76
Smoking status					
smokers	38 (11.5)	6 (11.3)	*		
none smokers	293 (88.5)	47 (88.7)	0.98	0.36-2.36	1.00
Alcohol status					
drinks alcohol	197 (59.5)	31 (58.5)	*		
no alcohol	134 (40.5)	22 (41.5)	0.96	0.53-1.75	0.88
Monthly earnings					
500-2000/None	241 (72.8)	38 (71.7)	*		
>2000	90 (27.1)	15(28.2)	0.95	0.50-1.85	0.87
Family History with PCa					
Yes	48 (14.5)	8 (15.1)	*		
No	283 (85.5)	45 (84.9)	1.05	0.44-2.29	0.84

- There was an association between age category of 29 – 39 (OR=1.13), >50 (OR=0.72), those who are married/cohabitating (OR=0.74) and received atleast a tertiary education (OR=1.15). An association was also observed between respondents who did not receive any form of education (OR=5.00), participants with different occupations such as farming (OR=0.67), civil servants (OR=0.36), others (OR=0.73), unemployed (OR=0.66) non-smokers (OR=0.98) drink alcohol (OR=0.96) and those with a monthly income of >2000 (OR=0.95).
- Associations between the age category of secondary education >50 (OR=0.72), those who are married/cohabitating (OR=0.74) show that these characteristics were more respondents with different occupations such as farming (OR=0.67), civil servants (OR=0.36), others (OR=0.73), unemployed (OR=0.66) non-smokers (OR=0.98) drink alcohol (OR=0.96) and those with a monthly income of >2000 (OR=0.95) were likely to have positive attitudes towards PCa.

4.9 LOGISTIC REGRESSION OF SOCIODEMOGRAPHIC CHARACTERISTICS AND THE LEVELS OF KNOWLEDGE

The results for the factors that were significant in bivariate analysis are summarised in Table 4.9.

Table 4:9 Logistic regression adjusted for confounders on selected factors on the level of knowledge Oshana region, 2016

Characteristics	AK N (%)	IK N (%)	OR	95% CI	P Value
Marital Status					
Married/Cohabiting	40 (34.8)	65 (24.2)	1.62	1.00-2.66	0.05
Education					
Tertiary	24 (20.9)	23(8.6)	2.24	1.06-4.73	0.03
major occupations					
Civil servant	9 (7.8)	6 (2.2)	1.15	0.31-4.18	0.84
Monthly income					
>N\$2000	43 (37.4)	62 (23.0)	1.57	0.94-2.62	0.09

Logistic regression analysis adjusted for possible confounders using variables with p-value <0.05 in bivariate analysis as candidate variables. Data presented in Odd ratios (OR) confidence interval (95% C.I) and P value.

- The odds of being married/cohabitating are 1.62 times likely in respondents with adequate knowledge than in those with inadequate knowledge
- The odds of being educated until tertiary level are 2.24 times likely in respondents with adequate knowledge than in those with inadequate knowledge.

After adjusting for confounders the true value of the odds ratio lies between 1.06-4.73 showing that the results are statistically significant ($P=0.03$) as they do not include a value of one (1) and the P value is <0.05 , therefore adequate knowledge is influenced by the level of education.

- The odds of working as a civil servant are 1.15 times likely in respondents with adequate knowledge than in those with inadequate knowledge.
- The odds of earning a monthly income of > 2000 are 1.57 times likely in respondents with adequate knowledge than in those with inadequate knowledge.

4.10 SUMMARY

The results were presented as tables, figures, including bar graphs and pie charts. All the results are discussed in more details in the next chapter which discusses and explains the reasons for the findings and relates this study's findings to previous studies.

CHAPTER 5: DISCUSSION

5.1 INTRODUCTION

In this chapter, the researcher interprets and discusses the findings from a perspective of previous reports in Africa and worldwide. The researchers own reflective thoughts are also presented. The results are discussed in the order they are presented in the previous chapter

5.2 SOCIODEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS

A large number of the respondents in this study were adults above the age of 28. Many of the respondents were from urban areas and were Christians who had mostly attained at least a secondary education, single and habitually drank alcohol other than cigarettes. A lot of respondents reported taking 1 - 5 glasses of alcohol per day. Of those who were earning an income, they reported earning between N\$500 - 2000 monthly. A small number indicated to come from a family with a history of PCa.

5.2.1 Age

In Namibia, there are only three generations within the population. The first, second and third generations. A large number of people living in Namibia is the third generation (Namibia Statistics Agency, 2013). This could be the explanation for having a mean age of 30.4 participants in this study and a high number of 18 - 28 years of age category of participants. Similar results were obtained in a KAP study conducted among Ugandan men with a representation of 324 (59.4%) who were aged between 18 – 28 years (Nakandi et al., 2013).

Dissimilar to the results of this study are results from a study conducted among university students in Nigeria which obtained a mean age 25.7 for respondents in a similar KAP study (H. Cancer, Cells, & Pathways, 2015). The difference in the mean age can be explained by the fact that a larger number of University students are younger than the mean age in this population based study.

5.2.2 Marital status

Based on the Namibia 2011 Housing and Census survey, 59% of the people eligible to be married are not married and divorce rates remain quite high. A similar finding to our study was reported by Nakandi et al. (2013a) that 57.1% of the respondents were unmarried and 37.6% were married.

In South Africa a study conducted among men attending a urology clinic shows a high percentage of men who were married (n=220, 64.0%). Men attending urology clinics are likely to be older (above 40 years) hence the results differs from the present study (Mofolo et al., 2015). Contrary to the results from our study where most men were single (70.6%), in a study conducted among men attending a PSF of the municipal district of Juiz de Fora, MG in Brazil married men reported in the majority (69.7%). (Paiva et al., 2010)

5.2.3 Religion

This study findings show that most of the participants interviewed were Christians. There were few Muslims and other religions that are almost unknown, but more than half (90%) of the population in Namibia is Christian (Namibia card box). Similar findings were recorded among male teachers in Sunyani municipality in Ghana where majority of the participants were Christians, 145 (90.6%) and the rest were Muslims. In contrast to our study findings is a study conducted by Oranusi et al., (2012) in Nigeria where most of the participants were Muslims 292 (52%) compared to 261 (46.5) who were Christians. It is a well-known fact that Nigeria has one of the most Muslim populations in West Africa (Manfreda, 2015)

5.2.4 Education

The education system in Namibia has changed drastically, from paid primary and secondary school fees to free primary and secondary education. Even though free secondary education was only introduced two years back primary education has been free for close to five years. Once someone is educated from lower primary it is less challenging to get them enrolled for secondary education. It could also be because of the 30.4 average age that we obtained in our study.

This study's findings are similar to those of a study conducted in Nairobi, Kenya where 235 (40.5%) of the participants who had received secondary education were comparable to those who had received a diploma and tertiary education 217 (37.3%), 86 (14.8%) respectively (Paul, 2014).

Similar results are shown in a study conducted by Deibert et al. (2007) and Arnold-Reed et al., (2008a). Unlike the results obtained from our study, a study conducted in Brazil shows a majority (66.9%) of people who had an incomplete elementary school education (Paiva et al., 2010).

5.2.5 Other demographic characteristics (major occupations, smoking, alcohol and monthly earnings)

The results of our study on occupation differ from those of a study conducted in Kenya. The results of the study conducted in Kenya shows that participants who were formally employed were 351 (60.4%) with unemployed being 36 (6.2%), contrasting with our study. In Florida, the results also differed as more participants had full time employment (T.Odedina, 2011).

Alcohol abuse is a very significant problem in Namibia. Namibia is ranked 5th in alcohol consumption in Africa. Literature has indicated that it is easy for the youth in Namibia to get access to alcohol at shops in the community, and that very young children are given homebrewed alcohol to ease hunger pangs and stop them from crying . This seems to have facilitated the habitual consumption of alcohol (Reform, Barth, & Hubbard, 2009). A report by the WHO (World Health Organization, 2010) in 2010 indicated that 97% of the population consumed beer compared to other alcoholic beverage types, affirming the findings of the study.

In terms of money distribution, it is a known fact that unemployment in Namibia is high (Namibia statistics agency, 2010). A majority of the people who reported earning within N\$500 – N\$2000 monthly were the pensioners while the rest did not have any means of income (40.6%). However, the results conducted in Brazil by Paiva et al.,(2010) shows that participants had a mean salary US\$ 168.30 which is equivalent to N\$2000 a month, making it similar to the results we got from our study. (T.Odedina, 2011).

In USA Florida it was reported that most of the people earned less than N\$ 21,000, which could be attributed to the fact that the study included participants from different working backgrounds such as barber shops, local black churches, mosques, community pharmacies, fraternities and social organizations.

5.3 Family history

Just as it occurs in many other diseases and public health events such as HIV, TB and domestic violence, cancer in Namibia especially in the Northern region was not really an open topic. The situation is changing currently but in the past 5-10 years, if a family member were to die because of any type of cancer one would not really know the cause of death as it is kept a secret (Care, 2013; Violence, n.d.).

A study in Australia showed that the at risk age category of men had little knowledge of the family history of PCa, which is similar to what we observed in the present study (Arnold-Reed et al. (2008b)

5.4 AWARENESS AND SOURCES OF INFORMATION ABOUT PCA

Mass media specifically radio and TV was the most common ways participants heard about prostate cancer. Other platforms such as health professionals, churches, male dinners and the internet were not common sources of information. This may reflect the average educational levels of most of the participants who preferred to access information from formal sources rather than informal sources. Oshana region was among the 13 regions with a low number of people who have heard about PCa from the DHS survey (*Demographic and Health Survey, 2013*).

This study findings are consistent with a study in Uganda where most of the participants received PCa education through the radio (50.1%), however, 37% obtained information from health workers which differ from our study findings, with only 6.1% of the participants receiving information from a health worker. Consistent with the results of our study is a study which was conducted in Ghana where 110 (68.8%) participants have heard about PCa through TV and 92 (57.5%) through the radio (Yeboah-asiamah, 2015). This study findings contrast the findings of a study among men in Nairobi Kenya by Paul (2014) where by only 16.7% of the participants were aware of PCa through mass media.

5.5 PROSTATE CANCER KNOWLEDGE

The knowledge specific questions on PCa in general, awareness, symptoms and treatment was low among the participants as only 42.4% of the participants have heard about prostate cancer. Most of the participants identified improved sex education 37 (49.3%) and better health care 31 (41.3%) as the best approach to reducing PCa risk. Less than a half of the participants knew the warning signs with a large number of the participants in our study stating difficulty urinating, pain in the groin, as some of the warning signs. Participants were also able to identify treatment modalities such as drug therapy, radiation and vasectomy. Complications that were indicated included urinary inconsistency, loss of life and impotence as most complications for PCa.

The overall knowledge was low as most of the participants had inadequate knowledge. Statistically significant associations were observed between those married and cohabitating, tertiary education levels, working as a civil servant and a monthly income of more than N\$2000, 00. Tertiary education was found to be a major predictor for adequate knowledge.

Consistent with this results is the findings in the DHS. Even though the DHS indicate that 64% of the people in Namibia have heard about PCa, the four “O” regions in the north were among the regions with the lowest percentages: Ohangwena (6.4%) Omaheke (18.0%), Omusati (8.2%) and Oshana (10%) (*Demographic and Health Survey, 2013*).

The results presented by the KAPs study conducted in Uganda are like those of this as they identified pain during urination as one of the most common presenting symptoms (12.5%) of PCa. In a study conducted in Nigeria 21.2% participants were aware of difficulty in urination being a symptom of PCa. Even though a few participants preferred going to traditional doctors for PCa screening, a majority stated going to the hospital as the appropriate treatment (Eo et al., 2014). In another study conducted among Saudis, participants mentioned herbal treatments as a treatment modality for PCa. However, some of the treatment modalities (surgery, chemotherapy and radiation) mentioned were in consonance with that our study.

Inadequate awareness was found in a study among public servants in Nigeria where 94.2% of the study participants were completely uninformed of PCa (Ajape, Babata, & Abiola, 2010) . However a study conducted among male university students in Ghana Yeboah-asiamah,(2015) and among older men in Oyo State of Nigeria Oladimeji, Bidemi, Olufisayo, and Sola (2010) indicated a higher awareness of PCa. The low levels of knowledge were also observed by results of a study conducted in Hawaii (Conde et al., 2011). This could have been attributed to the fact that most of the participants from the studies had not received a secondary education.

Contrary to the results from our study are results from a study done in Ghana in Sunyati Municipality, and in Kenya where 84.6% of the participants were aware of PCa (Yeboah-asiamah, 2015) ; (Paul, 2014).

This study results show a slight difference between young and older people with regards to knowledge levels. The older people seemed to be more knowledgeable than young people even though the differences were not found to be statistically significant. This results are different from results of studies conducted by Deibert et al. (2007) and Paul (2014) where a statistically significant number of respondents who were older had poor knowledge than those who had good knowledge.

This results are consistent with results of a Ugandan study where they found a statistically significant association between knowledge and education ($p=0.03$), the p value we got from our study is also the same. Consistent with this results is a study done among Jamaican men which indicated a protective association between the levels of knowledge and educational level ($p=0.373$) and current rank ($p=0.386$) (Anderson et al., 2015)

Another study conducted in South Africa showed similar results as this study. The levels of school education were associated and statistically significant. However, the results were different in terms of age and marital status as they were not associated (Mofolo et al., 2015).

The study findings of this study found that tertiary education is a predictor for adequate knowledge. It has been proven by (Paul, 2014) that education is a very important determinant for PCa knowledge. Results from a study conducted in Asia, at University of Jordan among older men(40-75) reported that adequate knowledge on education has not only been proven as a predictor for PCa knowledge but also for both knowledge and Practice(Abuadas, Petro-nustas, & Albikawi, 2015).

A study conducted on barriers and facilitators of Prostate Cancer Screening among Filipino Men in Hawai'i has also indicated that lack of awareness(knowledge) is a barrier against prostate cancer screening.(Conde et al., 2011)

The Study results of the NAMDHS are contradicted by the results of this study as have indicated that health insurance coverage (OR = 2.95, $p= 0.01$) is an important predictor of screening for prostate cancer in Namibia. (Kangmennaang, Mkandawire, & Luginaah, 2016).

In another study conducted among physicians in Jamaica concluded that physicians' knowledge of prostate cancer does not predict their personal prostate cancer screening. It is known that many health professionals do not take health information upon themselves serious as they already have an idea therefore end up taking care of other people and neglecting themselves or being neglected.

Reports from studies in Nigeria, Ghana and Hawaii indicate that age and educational status are important in PCa awareness (Ajape et al., 2010), (Oladimeji et al., 2010) ((Yeboah-asiamah, 2015) (Conde et al., 2011). Studies done in Uganda, Jamaica and South Africa support these findings as well (Anderson et al., 2015) (Mofolo et al., 2015). Knowledge on PCa is very important in helping to prevent high incidence and mortalities of prostate cancer that are facing sub-Saharan Africa. Governments should put measures in place to increase awareness and mitigate the menacing threat.

5.6 ATTITUDES REGARDING PROSTATE CANCER

Overall the results of the study show that many of the respondents have a positive attitude towards PCa as a disease in general, screening, as well as treatment. Positive attitude decreases when someone is single, being more educated, being a civil servant, and earning more money. Positive attitude associations with PCa were observed among the age category of 29 -39, living in the village, having attained secondary education, having a business and being a student. The youth appear to be more optimistic about death issues than aged. Lifestyles clearly differ between the aging and the youth.

Many NCDs affect the educated and wealthy people compared to the poor and uneducated so that attitudes could be the main reason for this. Having a good attitude encompasses measured alcohol consumption and habits of smoking.

In a study in Jamaica, it was proposed that knowledge on PCa could be a predictor of attitude towards PCa screening (McNaughton, Aiken, & McGrowder, 2011). Our study findings are similar to findings from a study conducted in Brazil and Ghana where both studies indicated good attitudes of participants towards prostate cancer (Paiva et al., 2010); (Atulomah et al., 2010).

Almost all the respondents in our study indicated their willingness to go for prostate cancer screening (96.1%) and the rest of the respondents' attitudes about the importance of prostate cancer and treatment were positive. These results are similar to studies conducted in Nigeria (Atulomah et al., 2010); (Ajape et al., 2010).

In Ghana Binka, Nyarko, Doku, Antwi (2014) a contrasting result was obtained which may be attributed to sociocultural influences.

5.7 PROSTATE CANCER PRACTICE

In this study only a few number of participants had undergone PSA and DRE screening. Most of the participants had the test 3 - 4 months prior to enrolment as part of their routine check-ups recommended by their spouses and family practioners. Other reasons were because they were worried and felt sick. Out of those who were not screened, most of them indicated not being comfortable and mentioned a few other reasons such as not knowing where to get screened for PCa. These results indicate that participants were not aware of the screening methods. In Namibia there are no schedules as to when men should go for PCa screening like other cancers in Namibia such as breast and cervical cancer, hence a very low screening uptake.

A study conducted by Paiva et al. (2010) shows that practice levels were adequate (51.9%), or at least above average. The results are different from the findings observed in our study where the practice was very low 16 (4.7%). These differences relate to the programs put in place to inform communities on what is available. In Uganda it was reported that only 3.5% of the participants had ever undergone a serum PSA test. (Paiva et al. (2010)).

A large number of the participants in our study had indicated that it is important to screen for prostate cancer, like the findings of Paiva et al. (2010), where 94.3% reported that it is indeed important for one to go for prostate cancer screening even though only a small number 16 (21%) had been screened. This may indicate that positive attitudes may not determine that one may go for PCa screening.

In a study conducted by Hjertholm et al. (2014) the results show that men in highest quartile of practices compared to men in the lowest quartile had a high incidence ratio and of course the probability of getting a prostate cancer diagnosis. Furthermore, even though the testing of PSA practices may be high it may not reduce prostate cancer mortality but be helpful on treatment outcomes as opposed to when it's diagnosed late.

In the Namibia Demographic Health Survey (2013 – 2014) on factors which influence men in Namibia to go for screening, health insurance was identified as a predictor of screening for prostate cancer in Namibia. Results in this study further shows that a higher education and discussing reproductive issues with a health worker were more likely to promote screening for prostate cancer (Kangmennaang et al., 2016).

In our study not having medical aid affected participation negatively while good education and knowledge positively impacted the desire to enrol in screening programs. This may mean that Namibia with the right tools made available to the communities many men could be motivated to participate in screening programs towards early detection, treatment and management.

5.8 SUMMARY

The data obtained in the present study clearly adds value to studies done through the DHS with significant baseline information that provides adequate tools for intervention regarding use of the media to impart knowledge and awareness to change attitudes and practices towards PCa screening for early diagnosis.

CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

6.1 INTRODUCTION

In this chapter the researcher presents the conclusions drawn from the findings of the study. The limitations of the study are also outlined in this chapter. Recommendations which are based on evidence from the study are also presented.

6.2 CONCLUSION

Generally the study above revealed that data obtained from the present study adds value to studies done through the DHS with significant baseline information that provides adequate tools for intervention regarding use of the media to impart knowledge and awareness to change attitudes and practices towards PCa screening for early diagnosis.

6.3 LIMITATIONS

- The study only included men aged 18 - 72 attending the Intermediate Hospital Oshakati in Oshana region, therefore the views of the respondents were not representative of the whole country.
- This was a hospital-based study therefore it only provides baseline data for the age category of men studied in a hospital setting.
- A small number of respondents reported having been screened for PCa, therefore statistical tests could not be performed as the numbers were very minimal (0.1%).

6.4 RECOMMENDATIONS

6.4.1 Men attending Intermediate hospital Oshakati

- MoHSS need to create awareness on PCa through other sources other than the radio. Awareness should be on prostate cancer in general, signs and symptoms, treatment and preventative measures of prostate cancer.
- As screening was very low, a programme could be developed as part of a routine to screen men who are at a risk age of developing PCa. Women could also be involved in speaking to their spouses on the importance of early screening as has been recommended in several reports.

6.4.2 Policy

- The Ministry of Health could work together with the Oshakati health team to include PCa awareness and screening as part of priority diseases and start at community level with health extension workers sharing information on PCa knowledge, screening modalities, the importance of early detection and treatment options available using especially identified sources (radio and TV) and other sources.
- The Ministry of Health could also include the screening of NCDs including PCa in the health passports to enhance early detection.

6.4.4 Future research

- This was a quantitative study and was therefore limited to exploring reasons and challenges men have for not going for screening. A more complex methodology that entails both quantitative and qualitative method may be needed to address, for example, the perceptions and experiences of those who have PCa cancer.

6.5 SUMMARY

This chapter presented conclusions from the findings of the study as well as the recommendations in relation to the findings and objectives of the study. The limitations for the study were also presented.

REFERENCES

- A guide to developing knowledge , attitude and practice surveys. (n.d).
communication.
- Abuadas, M. H., Petro-nustas, W., & Albikawi, Z. F. (2015). Predictors of Participation in Prostate Cancer Screening among Older Men in Jordan, *16*, 5377–5383.
- Ajape, A. A., Babata, A., & Abiola, O. O. (2010). Knowledge of prostate cancer screening among native African urban population in Nigeria. *Nigerian Quarterly Journal of Hospital Medicine*, *20*(2), 94–6. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/21243859>
- Anderson, T., Wallace, T., Aung, M., & Jolly, P. E. (2015). Prostate Cancer Knowledge, Attitudes and Screening Practices among Men in Western Jamaica. *The West Indian Medical Journal*. <http://doi.org/10.7727/wimj.2013.168>
- Arafa, M. A., Rabah, D. M., & Wahdan, I. H. (2012). Awareness of general public towards cancer prostate and screening practice in arabic communities: A comparative multi-center study. *Asian Pacific Journal of Cancer Prevention*, *13*(9), 4321–4326.
- Arnold-Reed, D. E., Hince, D. A., Bulsara, M. K., Ngo, H., Eaton, M., Wright, A. R., Brett, T. D. (2008b). Knowledge and attitudes of men about prostate cancer. *Medical Journal of Australia*, *189*(6), 312–314. http://doi.org/arn11420_fm [pii]

- Atulomah, Motunrayo F. Olanrewaju, Ademola M. Amosu, & Omotoyosi Adedeji. (2010). Level of Awareness, Perception and Screening Behavior Regarding Prostate Cancer Among Men in a Rural Community of Ikenne Local Government Area, Nigeria. *Primary Prevention Insights*, 11. <http://doi.org/10.4137/PPRI.S5955>
- Babb, C., Urban, M., Kielkowski, D., & Kellett, P. (2014). Prostate Cancer in South Africa : Pathology Based National Cancer Registry Data (1986 – 2006) and Mortality Rates (1997 – 2009), 2014. <http://doi.org/10.1155/2014/419801>
- Bambury, R. M., & Gallagher, D. J. (2012). Prostate cancer: Germline prediction for a commonly variable malignancy. *BJU International*. <http://doi.org/10.1111/j.1464-410X.2012.11450.x>
- Bangma, C. H., Roemeling, S., & Schröder, F. H. (2007). Overdiagnosis and overtreatment of early detected prostate cancer. *World Journal of Urology*, 25(1), 3–9. <http://doi.org/10.1007/s00345-007-0145-z>
- Bashir, M. N. (2015). Epidemiology of prostate cancer. *Asian Pacific Journal of Cancer Prevention*. <http://doi.org/10.7314/APJCP.2015.16.13.5137>
- Binka, C., Nyarko, S. H., & Doku, D. T. (2015). Cervical Cancer Knowledge, Perceptions and Screening Behaviour Among Female University Students in Ghana. *Journal of Cancer Education*, 4531, 362–371. <http://doi.org/10.1007/s13187-015-0852-x>

- Bourne, P. A. (2010). Rural male health workers in Western Jamaica: Knowledge, attitudes and practices toward prostate cancer screening. *North American Journal of Medical Sciences*, 2(1), 11–7. <http://doi.org/10.4297/najms.2010.111>
- Briganti, A., Chun, F. K. H., Suardi, N., Gallina, A., Walz, J., Graefen, M., ... Karakiewicz, P. I. (2007). Prostate volume and adverse prostate cancer features: Fact not artifact. *European Journal of Cancer*, 43(18), 2669–2677. <http://doi.org/10.1016/j.ejca.2007.09.022>
- Brooks, D. D., Wolf, A., Smith, R. A., Dash, C., & Guessous, I. (2010). Prostate cancer screening 2010: updated recommendations from the American Cancer Society. *Journal of the National Medical Association*, 102(5), 423–429. [http://doi.org/10.1016/S0027-9684\(15\)30578-2](http://doi.org/10.1016/S0027-9684(15)30578-2)
- Cancer, A. P., & Guide, Q. (n.d.). No Title, 1–4.
- Cancer, H., Cells, S., & Pathways, S. (2015). Cancer and Clinical Research ClinMed, 1–5.
- Çapik, C. (2014). The impact of educational sessions provided on prostate cancer, and its screening tests on the knowledge level, and participation behavior of the individuals in questionnaire surveys. *Turk Uroloji Dergisi*, 40(1), 17–23. <http://doi.org/10.5152/tud.2014.80688>
- Care, C. H. (2013). Celebrating Health Care Workers in Northern Namibia., 3(2).

- Chu, L. W., Ritchey, J., Devesa, S. S., Quraishi, S. M., Zhang, H., & Hsing, A. W. (2011). Prostate Cancer Incidence Rates in Africa, 2011. <http://doi.org/10.1155/2011/947870>
- Conde, F. A., Landier, W., Ishida, D., Bell, R., Cuaresma, C. F., & Misola, J. (2011). Barriers and facilitators of prostate cancer screening among Filipino men in Hawaii. *Oncol Nurs Forum*, 38(2), 227–233. <http://doi.org/http://dx.doi.org/10.1188/11.ONF.227-233>
- Cuzick, J., Thorat, M. A., Andriole, G., Brawley, O. W., Brown, P. H., Culig, Z., ... Wolk, A. (2014). Prevention and early detection of prostate cancer. *The Lancet Oncology*. [http://doi.org/10.1016/S1470-2045\(14\)70211-6](http://doi.org/10.1016/S1470-2045(14)70211-6)
- Daniel W.W., & Cross C.L.,(2013) Biostatistics: A foundation for analysis in the health sciences (10th ed.).United States of America
- Davis, S. N., Diefenbach, M. A., Valdimarsdottir, H., Chen, T., Hall, S. J., & Thompson, H. S. (2010). Pros and cons of prostate cancer screening: Associations with screening knowledge and attitudes among urban African American men. *Journal of the National Medical Association*, 102(3), 174–182. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&AuthType=ip,shib&db=psyh&AN=2010-06426-002&site=ehost-live&custid=s4121186\nstacy.davis@temple.edu>

- Deibert, C. M., Maliski, S., Kwan, L., Fink, A., Connor, S. E., & Litwin, M. S. (2007). Prostate Cancer Knowledge Among Low Income Minority Men. *Journal of Urology*, *177*(5), 1851–1855.
- Demographic and Health Survey*. (2013). Windhoek, Namibia. Retrieved from pro@mhss.gov.na;Internet:www.mhss.gov.na.
- Designs, Q. (n.d.). Unit 3 Question :, 191–220.
- Dicker,R., coronado F., Koo D., & Parrish,R.G.(n.d) Principles of epidemiology in public health practice: An introduction to applied epidemiology and biostatistics. (3rd ed.).United States of america
- Duffy, M. J. (2011). Prostate-specific antigen: does the current evidence support its use in prostate cancer screening? *Annals of Clinical Biochemistry*, *48*(Pt 4), 310–6. <http://doi.org/10.1258/acb.2011.010273>
- Ellison, G. L., Weinrich, S. P., Lou, M., Xu, H., Powell, I. J., & Baquet, C. R. (2014). NIH Public Access, *100*(10), 1139–1145.
- Elsayir, H. A. (2014). Comparison of precision of systematic sampling with some other probability samplings, *3*(4), 111–116. <http://doi.org/10.11648/j.ajtas.20140304.16>
- Eo, O., Et, O., Kola, L., Mm, L., Adebusoye, L., & Tg, A. (2014). Knowledge and Perception of Nigerian Men 40 Years and Above Regarding Prostate Cancer La Connaissance Et La Perception Des Nigerian De L ' Age 40 Et Plus Concernant Le Cancer De Prostat, *4*(1).

- Ferlay, J., Soerjomataram, I., Dikshit, R., Eser, S., Mathers, C., Rebelo, M., ... Bray, F. (2015). Cancer incidence and mortality worldwide: Sources, methods and major patterns in GLOBOCAN 2012. *International Journal of Cancer*, *136*(5), E359–E386. <http://doi.org/10.1002/ijc.29210>
- Haidula, T. (2014). Rise of diseases concerns African First Ladies. *The Namibian*, pp.2–4. Retrieved from <http://www.namibian.com.na/print.php?id=125994&type=2>
- Hall, I. J., Taylor, Y. J., Ross, L. E., Richardson, L. C., Richards, T. B., & Rim, S. H. (2011). Discussions about prostate cancer screening between U.S. primary care physicians and their patients. *Journal of General Internal Medicine*, *26*(10), 1098–1104. <http://doi.org/10.1007/s11606-011-1682-0>
- Hjertholm, P., Fenger-Grøn, M., Vestergaard, M., Christensen, M. B., Borre, M., Møller, H., & Vedsted, P. (2014). Variation in general practice prostate-specific antigen testing and prostate cancer outcomes: An ecological study. *International Journal of Cancer. Journal International Du Cancer*, *442*, 435–442. <http://doi.org/10.1002/ijc.29008>
- Hunter, J. C., Vines, A. I., & Carlisle, V. (2015). African Americans' Perceptions of Prostate-Specific Antigen Prostate Cancer Screening. *Health Education & Behavior: The Official Publication of the Society for Public Health Education*, *42*(4), 539–544. <http://doi.org/10.1177/1090198114566453>

- Kangmennaang, J., Mkandawire, P., & Luginaah, I. (2016). What prevents men aged 40-64 years from prostate cancer screening in Namibia? *Journal of Cancer Epidemiology*, 2016, 14–17. <http://doi.org/10.1155/2016/7962502>
- Liang, Y., Du, F., Thompson, I. M., & Turner, B. J. (2012). Limited PSA testing in indigent men in South Texas: An appropriate care or missing a prevention opportunity? *Cancer Epidemiology Biomarkers and Prevention*, 21(9), 1489–1496. <http://doi.org/10.1158/1055-9965.EPI-12-0497>
- Loeb, S., & Catalona, W. J. (2009). What is the role of digital rectal examination in men undergoing serial screening of serum PSA levels? *Nature Clinical Practice. Urology*, 6(2), 68–69. <http://doi.org/10.1038/ncpuro1294>
- Maher, D., Smeeth, L., & Sekajugo, J. (2010). Health transition in Africa: Practical policy proposals for primary care. *Bulletin of the World Health Organization*, 88(12), 943–948. <http://doi.org/10.2471/BLT.10.077891>
- Manfreda, P. (2015). Religion and Conflict in Syria. *About.com*, 2, 1–12. Retrieved from <http://middleeast.about.com/od/syria/a/Religion-And-Conflict-In-Syria.htm>
- McNaughton, D., Aiken, W., & McGrowder, D. (2011). Factors affecting prostate cancer screening behaviour in a discrete population of doctors at the university hospital of the West Indies, Jamaica. *Asian Pacific Journal of Cancer Prevention*, 12(5), 1201–1205.

- Mofolo, N., Betshu, O., Kenna, O., Koroma, S., Lebeko, T., Claassen, F. M., & Joubert, G. (2015). Knowledge of prostate cancer among males attending a urology clinic , a South African study. <http://doi.org/10.1186/s40064-015-0824-y>
- Moses, T. (2015, November). Men afraid of Prostate cancer screening. *theVillager*. Windhoek, Namibia. Retrieved from www.theVillager.com.na
- Mutetwa, B., Taioli, E., Attong-Rogers, A., Layne, P., Roach, V., & Ragin, C. (2010). Prostate cancer characteristics and survival in males of african ancestry according to place of birth: Data from Brooklyn - New York, Guyana, Tobago and Trinidad. *Prostate*, 70(10), 1102–1109. <http://doi.org/10.1002/pros.21144>
- Nakandi, H., Kirabo, M., Semugabo, C., Kittengo, A., Kitayimbwa, P., Kalungi, S., & Maena, J. (2013). Knowledge, attitudes and practices of Ugandan men regarding prostate cancer. *African Journal of Urology*, 19(4), 165–170. <http://doi.org/10.1016/j.afju.2013.08.001>
- Namibia statistics agency. (2010). Namibia Household Income & Expenditure Survey (NHIES) 2009 / 2010 Namibia Household Income & Expenditure Survey (NHIES) 2009 / 2010, 229.
- Namibia Statistics Agency. (2013). Namibia 2011 Population & Housing Census - Main Report, 214. Retrieved from [http://www.nsa.org.na/files/downloads/Namibia 2011 Population and Housing Census Main Report.pdf](http://www.nsa.org.na/files/downloads/Namibia%202011%20Population%20and%20Housing%20Census%20Main%20Report.pdf)
- NCDs _Epid_Namibia-2015. (n.d.).

- Obana, M., & O'Lawrence, H. (2015). Prostate cancer screening: psa test awareness among adult males. *Journal of Health and Human Services Administration*, 38(1), 17–43.
- Of, M., Health, P., Of, M., & Services, M. (2016). National Cancer Control.
- Oladimeji, O., Bidemi, Y. O., Olufisayo, J.-A. Y., & Sola, A. O. (2010). Prostate cancer awareness, knowledge, and screening practices among older men in Oyo State, Nigeria. *International Quarterly of Community Health Education*, 30(March 2016), 271–286. <http://doi.org/10.2190/IQ.30.3.g>
- Oranusi, C. K., Mbieri, U. T., Oranusi, I. O., & Nwofor, A. M. E. (2012). Prostate cancer awareness and screening among male public servants in Anambra state, Nigeria. *African Journal of Urology*, 18(2), 72–74. <http://doi.org/10.1016/j.afju.2012.04.016>
- Paiva, E. P. De, Catarina, M., & Harter, R. (2010). Knowledge , attitudes and practices regarding the detection of prostate cancer *, 23(1), 88–93.
- Paul, W. (2014). Prostate Cancer Awareness, Knowledge, Perception on Self-Vulnerability and Uptake of Screening Among Men in Nairobi County, Kenya. *Kenyatta University Institutional Respository*, 92. Retrieved from <http://ir-library.ku.ac.ke/handle/123456789/9005>

Pendleton, J., Hopkins, C., Anai, S., Nakamura, K., Chang, M., Grissett, A., & Rosser, C. J. (2008). Prostate cancer knowledge and screening attitudes of inner-city men. *Journal of Cancer Education : The Official Journal of the American Association for Cancer Education*, 23(3), 172–9. <http://doi.org/10.1080/08858190802235429>

Persec, Z., Persec, J., Sović, T., Romic, Z., Bosnar Herak, M., & Hrgovic, Z. (2010). Metastatic prostate cancer in an asymptomatic patient with an initial prostate-specific antigen (PSA) serum concentration of 21,380 ng/ml. *Onkologie*, 33(3), 110–112. <http://doi.org/10.1159/000277743>

Prostate,T.(2012).*ProstateCancer*.

<Http://Www.Cancer.Gov/Cancertopics/Wyntk/Prostate/Prostate.Pdf> (5.2.2013).

<http://doi.org/10.1007/978-3-540-40901-4>

Prostate Cancer Prevention and Early Detection Prostate cancer risk factors. (n.d).

Prostate Cancer UK. (2014). Treatment Choices. *Prostate Cancer*.

Rebbeck, T. R., Devesa, S. S., Chang, B., Bunker, C. H., Cheng, I., Cooney, K., Zeigler-johnson, C. M. (2013). Global Patterns of Prostate Cancer Incidence , Aggressiveness , and Mortality in Men of African Descent, 2013.

Rebbeck TR, Chang B, Bunker CH, Cheng I, Cooney K, Eeles R, Fernandez P, Giri VN, Gueye SM, Haiman CA, Henderson BE, Heyns CF, Hu JJ, Ingles SA, Isaacs W, Jalloh M, John EM, Kibel AS, Kidd LR, Layne P, Leach RJ, Neslund-Dudas C, Okobia MN, Ostrander EA, P, D. S. S. (2013). Global Patterns of Prostate Cancer Incidence, Aggressiveness, and Mortality in Men of African Descent. *Prostate Cancer*, 2013, 12. <http://doi.org/10.1155/2013/560857>

Reform, L., Barth, K., & Hubbard, D. (2009). *Monograph No . 4 MONOGRAPH series • 2009 Alcohol and Youths : Suggestions for by.*

Siniscalco, M. T. (n.d.). Questionnaire design.

T.Odedina, F. (2011). Prostate cancer health and cultural beliefs of black men: The Florida Prostate Cancer Disparity Project. *Infectious Agents and Cancer*, 6 Suppl 2(Suppl 2), S10. <http://doi.org/10.1186/1750-9378-6-S2-S10>

Tasian, G. E., Cooperberg, M. R., Cowan, J. E., Keyashian, K., Greene, K. L., Daniels, N. A., ... Chan, J. M. (2012). Prostate specific antigen screening for prostate cancer: Knowledge of, attitudes towards, and utilization among primary care physicians. *Urologic Oncology: Seminars and Original Investigations*, 30(2), 155–160. <http://doi.org/10.1016/j.urolonc.2009.12.019>


Vandamme, E. (2009). Concepts and challenges in the use of Knowledge-Attitude-Practice surveys: Literature review. *Strategic Network on Neglected Diseases and Zoonoses*, (August). Retrieved from <http://www.snndz.net/resources/literature-reviews/full-reviews/>

- Violence, D. (n.d.). A Profile of Domestic Violence in Namibia 63, 63–238.
- Who. (2014). Cancer Control : Knowledge into Action Early Detection.
- World Health Organization. (2010). Namibia, 2010. <http://doi.org/10.1787/aeo-2010-48-en>
- World Health Organization. (2013). Ethical issues in Patient Safety Research. *World Health Organization*, 41. http://doi.org/ISBN_978_92_4_150547_5 (NLM classification: WX 185)
- Yeboah-asiamah, B. (2015). No Title, (10507921).
- Yip, C. H., Smith, R. A., Anderson, B. O., Miller, A. B., Thomas, D. B., Ang, E. S., McTiernan, A. (2008). Guideline implementation for breast healthcare in low- and middle-income countries: Early detection resource allocation. In *Cancer* (Vol. 113, pp. 2244–2256). <http://doi.org/10.1002/cncr.23842>
- Young, S.-M., Bansal, P., Vella, E. T., Finelli, A., Levitt, C., & Loblaw, A. (2015). Systematic review of clinical features of suspected prostate cancer in primary care. *Canadian Family Physician Médecin de Famille Canadien*, 61(1), e26-35.
Retrieved from
<http://www.ncbi.nlm.nih.gov/pubmed/25756146> \n <http://www.ncbi.nlm.nih.gov/pubmed/25756146>
- Zhou, M., & Magi-Galluzzi, C. (2008). Prostatic Adenocarcinoma, Prostatic Intraepithelial Neoplasia, and Intraductal Carcinoma. *Surgical Pathology Clinics*. <http://doi.org/10.1016/j.path.2008.08.001>

World Health Organization (2013). Early detection of cancer. Retrieved from <http://www.who.int/cancer/detection/en/>

ANNEXURE A: RESEARCH PERMISSION LETTER FROM UNAM

University of Namibia, Private Bag 13301, Windhoek, Namibia
900 Strandfontein, Namibian Drive, Oshana Square
WE +264 61 296 3111, 1800 +26466666666, info@unam.na



RESEARCH PERMISSION LETTER

Date: 20/06/2016

TO WHOM IT MAY CONCERN

RE: RESEARCH PERMISSION LETTER

1. This letter serves to inform you that student: **OLIVIA NAKWAFILA** (Student number: 200826239) is a registered student in the Department/ school of **PUBLIC HEALTH** for the **MASTER IN FIELD EPIDEMIOLOGY** degree at the University of Namibia. His/her research proposal was reviewed and successfully met the University of Namibia requirements.
2. The purpose of this letter is to kindly notify you that the student has been granted permission to carry out postgraduate studies research. The School of Postgraduate Studies has approved the research to be carried out by the student for purposes of fulfilling the requirements of the degree being pursued.
3. The proposal adheres to ethical principles.

Kind regards

Signed: *Prof. T. Quaye*, *Head, PGS, Fac. of Health*
Name of Main Supervisor: *Prof T Quaye*

Signed: *Dr. M. Hedimbi*
Dr. M. Hedimbi
Director: School of Postgraduate Studies
Tel: 2063523
E-mail: mhedimbi@unam.na

Centre for Postgraduate Studies
Office of the Director
2016 -07- 04
University of Namibia
UNAM

ANNEXURE B: RESEARCH PERMISSION LETTER FROM MOHSS**REPUBLIC OF NAMIBIA***Ministry of Health and Social Services*

Private Bag 13198
Windhoek
Namibia

Ministerial Building
Harvey Street
Windhoek

Tel: 061 - 203 2510
Fax: 061 - 222558
E-mail: Ester.Shaama@mhss.gov.na

OFFICE OF THE PERMANENT SECRETARY

Ref: 17/3/3

Enquiries: Ms. E.N. Nepolo

Date: 26th July 2016

Ms. Olivia Nakwafila
P.O. Box 21755
Windhoek
Namibia

Dear Ms. Nakwafila

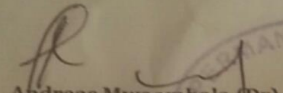
Re: Investigation on Knowledge, Attitude and Practices of men regarding prostate cancer, Intermediate Hospital Oshakati, Oshana region, Namibia.

1. Reference is made to your application to conduct the above-mentioned study.
2. The proposal has been evaluated and found to have merit.
3. **Kindly be informed that permission to conduct the study has been granted under the following conditions:**
 - 3.1 The data to be collected must only be used for completion of your Master of Science in Field Epidemiology and Laboratory Management;
 - 3.2 No other data should be collected other than the data stated in the proposal;
 - 3.3 Stipulated ethical considerations in the protocol related to the protection of Human Subjects' information should be observed and adhered to, any violation thereof will lead to termination of the study at any stage;
 - 3.4 A quarterly report to be submitted to the Ministry's Research Unit;
 - 3.5 Preliminary findings to be submitted upon completion of the study;

3.6 Final report to be submitted upon completion of the study;

3.7 Separate permission should be sought from the Ministry of Health and Social Services for the publication of the findings.

Yours sincerely,


Andreas Mwoombola (Dr)
Permanent Secretary



ANNEXURE C: INFORMED CONSENT

Investigation on Knowledge, Attitudes and Practices of men regarding prostate cancer Intermediate Hospital Oshakati, Oshana region

Identification Number _____

Date of interview _____

Informed Consent

Greetings! My name is Olivia Nakwafila, and I am doing a Master's of Science in Applied Epidemiology and Laboratory Management at the University of Namibia. This study and its procedures have been approved by the appropriate people and research committee of the University of Namibia. I am also authorised by the Ministry of Health and Social Services to conduct this study at Intermediate Hospital Oshakati, Oshana Region.

The purpose is to collect information that will help determine the knowledge, attitudes and practices of prostate cancer at Intermediate hospital Oshakati. I would, therefore, like to ask you some questions about your demographic information, knowledge, attitudes and practices regarding prostate cancer as this information will be important for the study. Although this study will not benefit you directly, the information obtained will help decision-makers in the region to plan improvements on prostate cancer awareness and early diagnosis. There should be no risks to you in sharing your information.

Your identity will not be revealed when the study is reported. Your participation in this study is totally voluntary. You have the right to withdraw at any time if you care to, without repercussions or penalty. Any information you give me will be confidential.

Should you have any questions concerning the study, please do not hesitate to contact me (Olivia Nakwafila, Cellphone number: 0814293540)

I have discussed the above points with the participant.

Signature of the investigator

Date

I hereby freely consent to take part in this study

Signature of participant

Date

ANNEXURE D: REASEARCH TOOL**Investigation on Knowledge, Attitudes and Practices of men regarding prostate cancer Intermediate Hospital Oshakati, Oshana Region**

Date _____

Number of Participant _____

*Instructions: Please Tick (√) where appropriate***Section A: Socio-Demographic Characteristics**1. Age

2. Current Residence

Town Village

3. Religion

Christianity Islam Others

4. Education

Primary Secondary Tertiary None

5. Major Occupations

Business Unemployed Teacher/Lecturer Farming

9]h]

Artisan Student others (banking, music, estate manager)

6. Marital Status

Single Married Separated Divorced cohabitating

7. If married, Number of wives

One Two More than two

8. Do you smoke?

Yes No

9. If yes,

1-4 cigarettes daily >5 cigarettes daily >10 cigarettes daily 10.

Do you take alcohol?

Yes No

11. If yes,

Which class? (*Please give a **Tick**(√) to all that apply*)

Beers Wines Spirits

12. Amount?

1 glass daily 1-5 glasses da More than 10 glasses daily

13. How much do you earn per month?

Between N\$500-N\$2000 More than N\$2000-N\$5000

More than N\$5,000-N\$10000 More than N\$10000-N\$20000 More than

N\$ 20000 None pensioner

14. Do you come from a family with a history of cancer?

Yes No Don't know

Section B: Knowledge about Prostate Cancer (PCa)

Knowledge is defined as having information on prostate cancer. Information include what the signs and symptoms are, prevention and treatment modalities for prostate cancer

*Instructions: Please give a **Tick**(√) to the appropriate answer*

15. Have you heard about prostate cancer?

Yes No

16. If yes, which source of information have you heard about prostate cancer?

*Instructions: Please **Tick** (√) to all that apply*

Male dinners Tv Radio Newspaper Health Pamphlets

Church Internet Text books Health
Professional Family and Friends Others, Specify

17. What is prostate cancer?

Scrotum cancer Cancer of the male reproductive organ

Inflammation of the prostate gland Cancer of the prostate gland

Inability to urinate Don't know

18. What are the risk factors associated with prostate cancer (*Please Tick(✓) all that apply*)

Family history Race Age Dietary fat intake Sexual
activity occupation cigarette smoking Don't know

19. Can risk factors for developing prostate cancer be reduced?

Yes No Don't know

20. If yes, by which way?

Improved sex education Better health care Periodic medical
check-up

Condom usage Abstaining from sex Dietary Control
Don't know

21. What are the early warning signs of prostate cancer?

Pain in groin Fever Difficulty in urinating Uneasy feelings

Don't know

22. Can early detection increase survival?

Yes No Don't know

23. Can prostate cancer be treated?

Yes No Don't know

24. If yes, how can prostate cancer be treated? (please **Tick**(√) all that apply)

Surgical means Drug therapy Radiation Surveillance

Vasectomy All of the above Don't know

25. What are the complications of prostate cancer?(Please **Tick**(√) all that apply)

Impotence Loss of life Urinary incontinence

Cystitis/urethritis dementia Don't know

Section C : Attitudes regarding Prostate Cancer

Attitude is defined as a settled way of thinking or feeling about Prostate cancer

*Instructions: Please answer with honesty as possible by giving a **Tick(✓)***

26. Prostate cancer is a problem for only males of advancing age.

Agree Don't know Don't agree

27. It is important to screen for prostate cancer

Agree Don't know Don't agree

28. Prostate cancer screening would be painful

Agree Don't know Don't agree

29. Going through prostate cancer screening is embarrassing

Agree Don't know Don't agree

30. Prostate cancer screening will aggravate the disease

Agree Don't know Don't agree

31. I believe that going through prostate cancer screening will help me to be healthy

Agree Don't know Don't agree

32. PC screening is beneficial and will settle any ambiguities about whether I have the disease or not

Agree Don't know Don't agree

33. Regular examination for prostate cancer is expensive

Agree Don't know Don't agree

34. If recommended, I would go to screen for prostate cancer

Yes No Don't agree

35. If I found out that I have prostate cancer, I would accept any treatment given

Yes No Don't agree

Section D: Prostate Cancer Practices

Defined as having ever been tested for prostate cancer by any common screening methods: PSA testing, Direct Rectal examination

36. Have you ever had a PSA Test done?

Yes No

37. Have you ever had a Rectal Exam done?

Yes No

38. If any of the above tests is yes, when did you have it?

3-4 months ago 6 months ago 12 months ago

39. If yes, what was the reason for having a PSA / Rectal exam done?

Recommended by a doctor Routine check Worried

Sick

40. If no, why not?

Afraid Uncomfortable Don't know where to go get it done

Expensive No medical Aid Other reasons

Thank you!