UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
SCHOOL OF NURSING SCIENCES

FACTORS ASSOCIATED WITH UPTAKE OF PROSTATE CANCER SCREENING AMONG PATIENTS SEEKING HEALTH CARE SERVICES AT KENYATTA NATIONAL HOSPITAL.

BY
ROBERT N MAKORI.
H56/70304/2013

A DESERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING (ONCOLOGY NURSING) OF THE UNIVERSITY OF NAIROBI.

NOVEMBER, 2015

DECLARATION

I ROBERT NYAMBANE MAKORI, declare that this dissertation is my own original work and has not been presented for a degree award at any other University or institution of higher learning.

Signature ……Date……

SUPERVISORS' APPROVAL

This dissertation has been submitted with our approval as university supervisors:

1. **Mrs. AngelineC.Kirui: BSc (N), MSc.**

   Lecturer

   School of Nursing Sciences,

   College of Health Science,

   University of Nairobi

   Signature……Date……

2. **Prof. Ann Karani: PhD, MA, DAN, RN/M, CHN.**

   Professor of Nursing

   School of Nursing Sciences,

   College of Health Sciences,

   University of Nairobi

   Signature……Date……

DEDICATION

This work is dedicated to my wife Gladys Kwamboka, and my children, Victor, Vanessa and Jerome, for their love, prayers and encouragement throughout this study.

To Accident and emergency Nurses and Doctors whose knowledge, skills and abilities enable them to work in extremely dynamic environment of critical illness.

ACKNOWLEDGEMENT

First and foremost, all thanks to God for everything that I am and will be. Without God, I am nothing. The Blessings evident despite the challenges that were encountered reminds me that without hope, faith is instrumental to progress, and if faith dims, hope can always light one's path. To God is the Glory.

Special thanks go to my supervisors, Professor Ann Karani and Mrs. Angeline Kirui, for their guidance, support and supervision throughout the study. Without those help, this project would not have been a success. Please keep up the helping spirit.

I appreciate the School of Nursing Sciences of the University of Nairobi for the good learning atmosphere and my employer Kenyatta National Hospital for sponsoring me to pursue a course in my treasured field (saving lives) and hence to undertake this research.

I also wish to thank all my Colleagues Christine and Okibit for their constant appraisal, critique and encouragement. You always kept me on my toes. I appreciate the efforts of Dr Phillip Ayieko of KEMRI for his willingness to discuss with me some biostatistical literature that needed concerted mental efforts.

My appreciation also goes to all the research participants; for accepting to participate in this study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS/ AND ACRONYMS

A & E	Accident and Emergency department
ACS	American Cancer Society
CDC	Center for Disease Control
DRE	Digital Rectal Examination
IARC	International agency for research on cancer
FGD	Focused group discussion
GFD	General filtering department
HBM	Health belief model
KNH	Kenyatta National Hospital
KHIS	Kenyatta Health Information Statistics
MDG	Millennium Development Goals
NGOS	Non-governmental organization
PC	Prostate Cancer
PSA	Prostate specific antigen
WHO	World Health Organization
SPSS	Statistical package for social sciences

Operational definitions

Attitude-respondents perception on the value of prostate screening in relation to early detection of Prostate Cancer

Awareness –Is the state or condition of being aware of prostate cancer signs and symptoms as well as screening

Barriers –Refers to personal, religious and cultural factors that discourage/prevent prostate screening.

Cancer- Begins when cells in a part of the body start to grow out of control. Instead of dying, cancer cells continue to grow and form new abnormal cells.

Knowledge –Refers to correct information regarding prostate screening.

Perception of self-vulnerability is defined as the degree of optimism (i.e., subjects' belief) in their insusceptibility and level of control of fear towards prostate cancer.

Prostate specific antigen- is a substance made by cells in the prostate gland in both normal cells and cancer cells. Found in semen but a small amount is found in blood.

Screening –refers to the testing to find a disease such as cancer in people who do not have symptoms of that disease

Uptake of prostate cancer screening is defined as having ever been tested for prostate cancer by any of the common screening methods (i.e., direct rectal examination, prostate specific antigen and biopsy).

ABSTRACT

Background:

Prostate cancer screening is not a common practice in Kenya in spite of prostate cancer being the most commonly diagnosed cancer in Kenyan men .Majority of our patients therefore usually present in the hospital with the disease in the advanced stage.

Objective: To investigate factors associated with uptake of prostate cancer screening among patients seeking health care services at Kenyatta National Hospital.

Design: Descriptive cross-sectional study

Methodology: The researcher used systematic random sampling to select One hundred and ninth (n=190) participants from the patient population. The participants were 40 years and above. Data was collected using structured questionnaires, summarized using descriptive statistics and presented in tables and graphs. Key informant interviews with Doctors and nurses were done to collect qualitative data. It was carried out between January and June 2015.Statistical analyses for associations between knowledge levels, perception of self-vulnerability to prostate cancer, uptake of prostate cancer screening and socio-demographic characteristics were performed using the chi-square tests followed by Spearman's correlation tests and binary logistic regression modeling.

Results: Results of this study showed that approximately three-quarters, 136 (72.7%) participants had never attended medical checkup and most 113 (60.4%) patients strongly agreed that it is important to get tested to prevent disease. At least 80% of patients 154 (82.4%) said that they visited a doctor only when they are sick. Binary logistic regression analyses revealed that good knowledge of prostate cancer was associated with university [OR, 18.741; 95% CI, 6.878-51.064; $P<0.0001$]; diploma [OR, 9.332; 95% CI, 3.752-23.213; $P<0.0001$]; and secondary education [OR, 4.078; 95% CI, 1.650-10.075; $P=0.002$].

Conclusions: The findings of this study demonstrate that health care intervention targeting information dissemination; behavioral change on risk perceptions; and uptake of early screening can halt the burden of prostate cancer in this population.

Recommendations: There is need for cancer stakeholders to promote good knowledge on prostate cancer to increase men's perception of self-vulnerability towards the disease and hence increase PC screening. More research needs to be done to other Kenyan regions especially at county level to identify the unique factors influencing uptake of prostate cancer screening.

1.0 CHAPTER ONE: INTRODUCTION

Prostate cancer (PC), an adenocarcinoma of the male prostate gland, is progressively becoming a significant health burden among men in the world (Ferlay *et al.*, 2011; Lozano *et al.*, 2012).Early detection of the disease is a fundamental component of a successful prostate cancer therapy. Men are susceptible to PC, just as women are most susceptible to breast cancer.

There are a number of ways by which PC can be treated. This includes screening at the stage of the development of the disease when there are no symptoms. The rationale of screening is to reduce the possibility of developing the disease at the asymptomatic stage .This method is evident in the breast examination (BSE) mammography and Pap smear tests conducted in breast and cervical cancer interventions respectively. These have played an important role in reducing the burden of the disease and mortality for females. However in prostate cancer, screening involves physical examination to palpate the prostate by digital rectal examination (DRE), by measuring the levels of prostate specific antigen (PSA) in the blood or by biopsy where a sample of prostate gland tissue is taken for histological examination. A PSA level of 4ng/ml and above is indicative of a prostate problem; either an enlargement or tumour is involved.

Most of the patients in Kenya present with advanced disease due to low awareness and a lack of early screening services (Magoha & Ngumi, 2000; MPHS & MMS, 2011; Wasike & Magoha, 2007). A number of studies in Kenyatta National Hospital also show that most prostate cancer patients report at hospital with advanced disease (Magoha & Ngumi, 2000; MPHS & MMS, 2011; Wasike & Magoha, 2007) but their awareness and knowledge levels on prostate are basically undefined. With this in mind, the study was to identify factors associated with uptake of PC screening in the affected population. It was to enable health care providers to review the current policies and strategies for screening PC.

1.1 Background information

Prostate cancer has been on the rise for the past five decades despite different options and it has been shown that PC treatment is possible when there is an early diagnosis when the disease is still localised in the prostrate (Sigrid, 2010).

In the United States, PC represented 14%of all new cancer cases (Howlader et al., 2014). Additionally, in 2014, there was an estimated 233,000 PC cases and 29,480 PC deaths reported (ACS, 2013; Howlader et al., 2014).

In Africa, it's likely that 0.9 million cases and 0.26 million deaths of prostate cancer (PC) occur annually in both developed and underdeveloped countries (Ferlay, et al, 2011).PC is the leading cancer in both incidence and mortality in Africa, contributing to 40,000 (13%) of the entire male cancer incidence and 28,000 (11.3%) of all male cancer associated mortalities. It has been found that PC is the leading cancer in terms of incidence and mortality in men from Africa and the Caribbean (IARC, 2014). The study also noted that PC is a growing problem in Africa with approximately 28,006 deaths from PC in 2010, and approximately 57,048 deaths projected in 2030 if aggressive interventions are not put in place This evidence points out that there could be lack of early presenting symptoms resulting in patients being diagnosed with advanced disease, where the emphasis is on palliative treatment and supportive care.The PC in Nigeria may be as great as that noted in black men in the United States, which may suggest a common enhancing genetic predisposition (Oladimeji et al,2010).

Treatment modalities for prostate cancer are proofing difficult , and the prognosis of untreated or inadequately managed cases is often usually poor especially in developing countries (Marks,2009).This could be attributed to the high cost of medication and surgical interventions required to treat patients with a diagnosed condition (Marks, 2009) .About thirty (30) percent of cancers are curable if detected early s while thirty (30) percent of cancers are treatable with prolonged survival if detected early and thirty (30) percent of cancer patients can be provided with symptom management and palliative care(WHO,2008).

Prostate cancer (PC) screening could assist to find a cancer at an early stage when it can easily be cured (Oliver and Joann, 2008).The study recommends health promotion on the at risk population, potential harms and benefits.cervical cancer screening in developed countries has shown that primary screening generally detects more than 90% of all cancer cases before they metastasize to other regions of the body system (ACS, 2013).

In Kenya, health sector through the (National Reproductive Health Policy, 2007 and the National Reproductive Health Strategy, 2009-2015) provide the policy framework, with cancers of the reproductive organs being priority components. Despite of the favorable policy in place and efforts towards enhancing PC screening, the data still shows that Prostate cancer is

diagnosed when its already advanced among Kenyan men. This is further aggravated by the fact that PC screening is not a common practice and patients go for it when PC is quite advanced.

A study done in KNH has shown that patients diagnosed with PC presents late with clinically advanced disease (Wasike and Magoha, 2007).The incidence and the magnitude of PC risk in our locality must have been grossly underestimated in the past. PC rate in Kenyans may be as great as noted in black men in the United States, Jamaica, Nigeria and Cameroon which may suggest some common enhancing genetic predispositions (Wasike and Magoha, 2007) Screening increases early detection and survival but there is no evidence to show that screening reduces mortality. If in future early detection and intervention is proved to provide real benefit apart from the over diagnosis of latent non aggressive tumours, then the mortality from prostate cancer could begin to decline in the next decade (WHO, 2010).

Currently in Kenya, there is no sufficient data on the significance of early screening of prostate cancer, reasons for lack of screening, association between socio-demographic characteristics and screening among the respondents. With this in mind, this study sought to identify factors associated with uptake of PC screening in the affected population. The findings would enable health care providers to review the current policies and strategies for screening PC.

1.2 Statement of problem

It is estimated that about 1 in 6 men in the US will be diagnosed with prostate cancer during their lifetime and 1 in 36 will die from this disease (ACS, 2010). Despite of the important burden of prostate cancer cases and deaths and extensive research on its causes, prevention, early detection and treatment, many uncertainties remain about this cancer. A low turnover of early screening could be contributing to the increasing burden of prostate cancer.

In Sub-Saharan Africa, uptake of prostate cancer screening has not been well addressed and as such very few studies have been conducted on men above 40 years seeking health care services at clinical settings. The incidence and mortality rates are also about three times the rates found in some other racially defined groups (ACS, 2013, 2014;these could be associated with either inefficient policies or in effective strategies for controlling the disease. One of the most effective intervention tools for prostate cancer is screening and early diagnosis (Magoha & Ngumi, 2000).

There are about 200 cases of prostate cancer for every 100,000 men in Africa and it's the third cause of deaths in men after age 40 years worldwide(Nairobi cancer registry report, 2007) has shown that prostate cancer represented 15 percent of all cancers of the reproductive system in males between 2000 and 2007

There is limited data in Kenya on the uptake of prostate cancer screening, reasons for lack of screening, association between socio-demographic characteristics and screening among the respondents .With this in mind the need to do this study was useful to identify factors associated with screening in the affected population.

At present, there are no clear strategies to prevent prostate cancer through life-style modification or preventive intervention and therefore, understanding factors that determine uptake of PC will be highly beneficial as a precautionary measure against the onset of the disease.

Also, limited studies at KNH and Kenya in general, have led to over-reliance on research findings from elsewhere in the world, despite the fact that risks and factors influencing the outcomes of the disease are largely different. Thus, there was an urgent need to identify factors associated with prostate cancer screening at KNH.

1.3 Justification of the study

The prevalence of PC is rising, as is the morbidity and mortality associated with it. Thus the purpose of screening is not to diagnose the disease but to identify those at risk to whom the diagnostic test may be offered (ACS, 2011).One of the most effective intervention tools for prostate cancer is screening and early diagnosis (Magoha & Ngumi, 2000). However, the lack of knowledge on the disease and the low uptake of routine screening among men most at risk of developing prostate cancer compound the problem. In addition, little is known in KNH about the factors predisposing men to increased risk of prostate cancer as well as hindering awareness and uptake of screening and early diagnosis. Considering the dreaded context to which the patients seek health care when PC is quite advanced, it is important to establish the factors that hinder uptake of early PC screening in order to understand their experiences and devise efficient early screening interventions. This study was to identify factors responsible for the lack of knowledge and early screening in men aged over 40 years and above. It was also to generate information that will be used to come up with strategies to improve the quality of care thereby encouraging patients to come for early screening of PC.Therefore, the results of this study are intended to

show factors that have been neglected and empower society to come for early screening. This in turn may be utilized in further studies and the drafting of appropriate policies and designing of control strategies on the PC disease appropriate for Kenya. The strategy will reduce the cost of patient care hence improve the quality of lives for prostate cancer patients.

1.4 Study benefits

This study was to show the awareness and knowledge levels, perception of self-vulnerability to prostate cancer and uptake of screening for prostate cancer among patients aged 40 years and above seeking health care services at KNH. The findings of this study was to enhance urgent health measures aimed at promoting specific knowledge levels on prostate cancer and further collaborative screening strategies for prostate cancer across the country. Early screening for PC has been shown to contribute significantly to improving clinical outcomes of patients, policy and management of the disease (MPHS & MMS, 2011).

The study findings will also be used for planning and designing appropriate interventions by the Ministry of Health, NGOs and other stakeholders in a view to create awareness and enhance prostate cancer screening services utilization in the region and beyond in order to avert the trend and prevalence of prostate cancer. Finally, the recommendations of this study will go a long way in significantly improving service delivery of prostate cancer at all stages.

2.0 CHAPTER TWO: LITERATURE REVIEW

This chapter discusses relevant literature with the subheadings: Prevalence of prostate cancer screening, Awareness, knowledge levels and perceptions about prostate cancer screening, Perception on self-vulnerability towards prostate cancer, Uptake of screening; Diagnosis, detection and screening of prostate cancer and importance of early PC screening.

2.1 Prevalence of prostate cancer screening

Prevalence and determinants of prostate cancer screening is influenced by different socio demographic factors .Prostate cancer testing in South Australian men has shown that beliefs about vulnerability to prostate cancer and efficacy of screening, presence of uncomplicated lower urinary tract symptoms (LUTS) and sociodemographic variables play a role in health seeking behavior on PC screening (Juan and John ,2004).However, beliefs in personal vulnerability to prostate cancer remain a significant component of reported future testing, suggesting a focus for community education.

It's estimated that the global cancer burden will increase by 6, 000,000 between 2000 and 2020, and that most of this increase will be in the developing countries, especially Sub-Saharan Africa (WHO, 2010). Akinremi, 2014 established that Nigerian men are a willing group for screening by both the PSA and DRE with the positive response to calls for health screening and interest in prostate health. The finding of PSA >4 ng/ml in 11.15% of this population reveals the need for greater awareness and measures to increase early detection. Screening is very important to better define the PC prevalence and characteristics in our population; otherwise political and economic circumstances will ensure that men still present late with aggressive PC.

In Uganda, it has been revealed that thirty percent of cancers in developing countries are related to infection, and most cancer patients are young and in their prime, as opposed to the elderly population of cancer patients in the developed world (Orem, 2009).The high morbidity due to cancer in Uganda is attributed to late presentation of disease. This is also linked to high mortality, reflecting the lack of access to early diagnosis and treatment as a result of the poor status of the cancer care system in the country.

Odunayo and Ogundele, 2015 has shown that Prostate cancer screening is not a common practice in Nigeria in spite of prostate cancer being the most commonly diagnosed cancer in Nigerian men. Awareness about prostate cancer is also poor .This correlates to the Kenyan setup where majority of our patients usually present in the hospital with the disease in the advanced stage.

2.2Awareness, knowledge levels and perceptions about prostate cancer screening

The lack of awareness about prostate cancer and other prostate-related issues has been identified as a cause of low survival and higher mortality rates among black men (Kabore, et al, 2013). Although men with advanced stage disease may benefit from palliative treatment, their tumors are generally not curable. Thus, a screening program that could accurately identify asymptomatic men with aggressive localized tumors might be expected to substantially reduce prostate cancer morbidity, including urinary obstruction and painful metastases, and mortality (Rebbeck, 2013).

A person's history of PC screening is related to the knowledge regarding prostate cancer. Knowledge and screening history are positively related to intent to undergo screening in future. Education; income and urban residence have been absolutely associated with prior screening and willingness to undergo screening in future (Oliver et al, 2008)

The findings are however different in developed countries. (ACS, 2013) has shown that knowledge of prostate cancer impact male participation in prostate cancer screening. The researchers further concluded that failure to participate in early detection and screening may be due to confusing messages in the media regarding the benefits of such screening.

This could support the need for concerted effort aimed at raising knowledge levels on the disease in the target population focusing on the aetiology, signs and symptoms and treatment modalities. Consequently, raising such information will lead to increased knowledge levels with increase in early detection and treatment that will reduce morbidity and mortality.

2.3 Perception on self-vulnerability towards prostate cancer

It is important that men understand the medical and psycho-social issues influencing prostate cancer in order to make informed decisions regarding prostate cancer screening and prevention (Oladimeji et al, 2010). Thus, the study shows that PC awareness and misperceptions are correlated to the level of education. Educational interventions should target on the entire

populations to improve self-informed decision about early diagnosis using PSA blood test screening. Sensitization activities should be strongly conducted with health care practitioners using the media and should be backed with an effective national health policy on PC screening and early detection.

2.4 Uptake of screening

It's estimated that 22.5% of the Nigerian men are aware of prostate cancer screening. Of great significance are findings showing that uptake of Prostate cancer screening could be associated with good knowledge and perception on self-vulnerability to prostate cancer (Oladimeji et al., (2010) .It will be significant however, to identify the factors responsible for the low uptake of screening. Thus, good knowledge of prostate cancer is a strong factor for enhancing uptake of screening for the disease, which could be achieved through formal and informal education and reinforced through focused health education activities.

2.5 Diagnosis, detection and screening of prostate cancer

Although several methods are accessible for diagnosis of prostate cancer, biopsy removal and microscopic examination is the only confirmatory method (Javali *et al.*, 2013). However, prior to a biopsy, several other investigative measures are used to determine the status of the prostate and the urinary tract. For instance, digital rectal examination is used for detecting prostate abnormalities. Cystoscopy is used for examining the bladder using a thin, flexible camera tube inserted down the urethra and trans-rectal ultra-sonography creates a picture of the prostate using sound waves from a probe in the rectum (Marks, 2009).

(i)Clinical diagnosis

History taking and clinical examination of patients can aid in suspecting for prostate cancer. This clinical process is usually based on the presence of signs and symptoms suggestive of a diseased prostate such as prostatitis, an infection, usually caused by bacteria; benign prostatic hyperplasia, an enlarged prostate, which may cause dribbling after urination or frequent urination, especially at night. The main method of prostate examination include DRE for genitourinary symptoms (Marks, 2009), and painful hematuria associated with abdominal pain, flank pain, suprapubic pain or dysuria (Marks, 2009).

(ii)Histological investigations

The most commonly used system of classifying the histologic characteristics of prostate cancer is the Gleason score, which is determined using the glandular architecture within the tumour. If cancer is suspected in the prostate gland, a biopsy is offered expediently. Previous studies in Kenya showed that most patients reporting with advanced prostate cancer presented with prostate hyperplasia (Ngugi & Byakika, 2007).

(iii) **Prostate-specific antigen**

PSA is a protein produced by the cells of the prostate gland. PSA is present in small quantities in the serum of men with healthy prostates, but is often elevated in the presence of prostate cancer and in other prostate disorders. Rising levels of PSA over time are associated with both localized and metastatic prostate cancer (Andriole *et al.*, 2009; Roobol *et al.*, 2009).

2.6 Importance of early screening

In developed countries, screening for PSA has led to early detection and management of the disease. However, in developing countries particularly in Africa, routine screening has remained low, leading to reduced detection rates, poor management and increased mortality from the disease (Ajape *et al.*, 2009). Recent studies in Ghana among 196 men visiting the outpatient Department of Komfo Anokye Teaching Hospital showed that 83.6% had elevated PSA levels and 95.5% had prostate cancer (Rebbeck *et al.*, 2013). Additional studies on 156 Nigerian men showed a lack of awareness on prostate cancer, prostate cancer screening and serum PSA test for screening (Ajape *et al.*, 2009). Studies in Kenya on 108 patients established associations between high levels of PSA and increased rates of prostate cancer in biopsy samples (Ngugi & Byakika, 2007). In addition, (Magoha & Ngumi, 2000)) suggested that early diagnosis is a requirement for effective therapy of prostate cancer. Moreover, the present screening techniques including DRE, PSA, transrectal ultrasound (TRUS) and random ultrasonically guided multiple prostatic biopsies can detect some potentially curable asymptomatic localized cancers (Zeigler-Johnson *et al.*, 2008). A review by (Ngugi & Magoha, 2007) also indicated that increased detection of early prostate cancer is due to widespread use of PSA screening in the humanity.

2.7 Theoretical framework: Health belief model

Health belief model was used to provide a theoretical framework for this study. It was developed by a group of social psychologistGodfrey Hochbaum, Irwin Rosen stock, and Stephen Kegels working in the U.S. Public Health Services. The model was developed in response to the failure of a free tuberculosis (TB) health screening program (Rawlet, 2011).

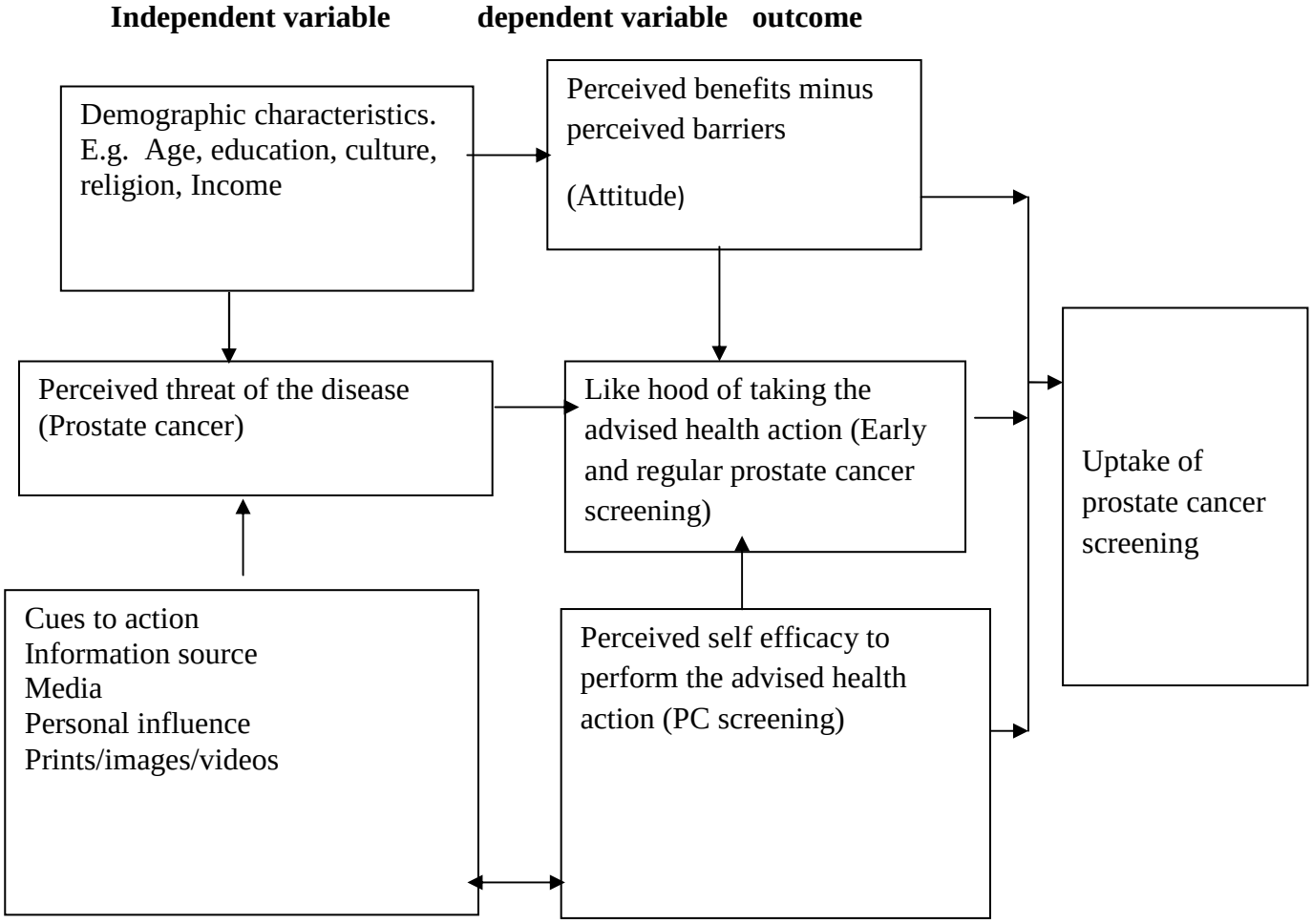
The Health Belief Model provides a theoretical framework for evaluating PC cancer screening behavior, as well as designing potential interventions. The Model suggests that health-related action depends on perceptions of disease severity and susceptibility, screening benefits and barriers, and cues to action. Using the Model as a guide (Nancy ,2004)suggest that interventions to improve prostate cancer screening for men with limited health literacy skills should focus on improving understanding of basic investigations as a screening test, overcoming common negative attitudes towards this test through efficacy messages, and providing easy to understand instructions . DRE and PSAs are of particular importance in prostate cancer screening initiatives in the clinical healthcare setting, as availability to flexible biopsy is often limited because of long waiting periods and/or a limited number of trained physicians who can perform these procedures.

The model demonstrates that health related behaviour (like prostate screening) is influenced by a person's perception of the threat posed by a health problem, belief/value associated with the action and one's ability to take /perform the advised health action (Tavian 2009, Day at el 2010, Rawlet 2011).

The HBM consists of six levels which are proposed for contributing to people's enhancement to adapt to health behaviour. These concepts are; perceived susceptibility (chances of getting a condition), perceived severity (seriousness of a disease and its consequences), perceived benefits (belief in how effective the advised action will be in mitigating the problems of the disease,perceved barriers (tangible and psychological obstacles that may prevent or limit performance of the advised action),self-efficacy (confidence in one's ability to take or perform the action) and cues to action which refers to events or strategies that increase ones motivation (Day at el,2010).

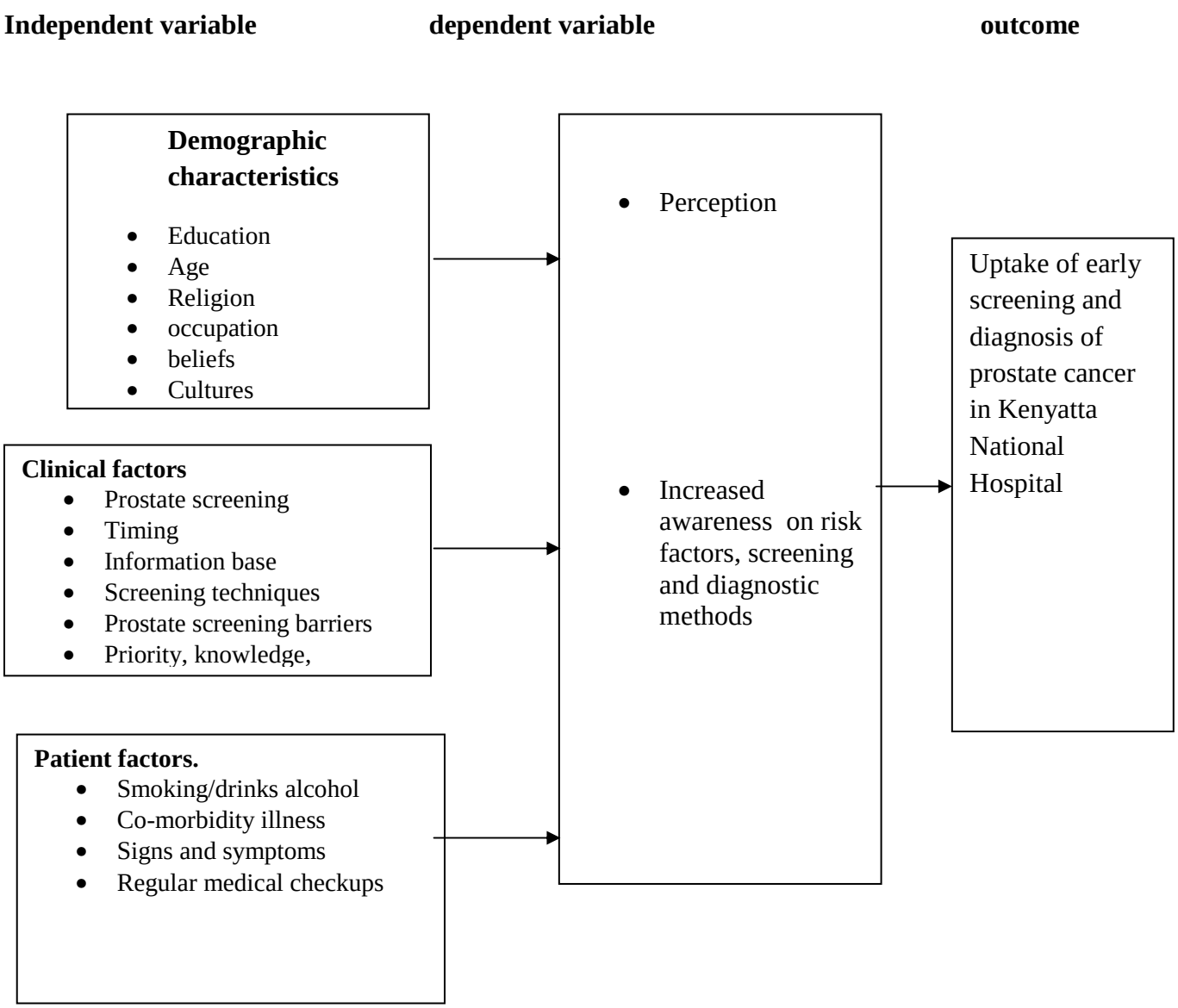
HBM explains that a man who perceives threat of the disease (perceived susceptibility/perceived severity) would be more likely to perform the advised health action .The same case applies to a man who has confidence in taking the health action and has minimal or no barriers. In addition, a man who has positive attitude towards the health action (perceived benefits minus barriers) would be more likely to take the advised health action. The relationship of these HBM and PC screening is shown in the table below.

Concepts and their relationships with prostate cancer screening



2.8 Conceptual framework.

It is drawn to show the characteristics that were studied under each major variable. The concepts were applied to obtain data from the consenting respondents.



2.9 Broad objective

To determine factors associated with uptake of prostate cancer screening among patients aged more than 40 years seeking health care services at A&E department of KNH- Kenya within the 6 months of study.

2.10 Specific objectives

1. To determine prevalence of prostate cancer screening among patients aged 40 years and above seeking health care services at A&E department of KNH.
2. To establish factors that influence uptake of prostate cancer screening among patients aged 40 years and above seeking health care services at A&E department of KNH.
3. To assess perception of self-vulnerability towards prostate cancer among patients aged 40 years and above seeking health care services at A&E department of KNH.

2.11 Research questions

1. What is the uptake level of prostate cancer screening among men aged over 40 years seeking health care services at A&E department of KNH?
2. What are the factors associated with prostate screening among men aged over 40 years seeking health care services at A&E department of KNH?
3. What is the perception of self-vulnerability towards prostate cancer among patients aged 40 years and above seeking health care services at A&E department of KNH.

2.12 Hypothesis

1. Awareness, knowledge and perception on self-vulnerability to PC influences the uptake of PC screening among patients aged more than 40 years and above seeking health care services at A&E department of KNH**.**

2.13 Research variables

2.13.1 Independent variables

- Social demographic factors(Age, religion, income, cultural beliefs)
- Perception
- Awareness
- Knowledge

2.13.2 Dependent variables

- Uptake of Prostate cancer Screening

3.0 CHAPTER THREE: RESEARCH METHODS

3.1 Study design

It was a cross-sectional study with both qualitative and quantitative components aimed at collecting information from the male patients 40 years and above seeking health care services at A&E department of KNH. Quantitative approaches through structured questionnaires were used to collect data on demographic, socioeconomic, awareness and knowledge on PC, perception on self-vulnerability to prostate cancer and uptake of prostate cancer screening.

3.2 Study area description

The study was carried out in Accident and Emergency department of KNH. The department attends to approximately 8000 patients in a month of which about 2/3 come in as referrals. The unit is managed by 150 and 15 Doctors. KNH was chosen because it is the largest referral hospital in Kenya and it receives the highest number of oncology patients in the country. It also provides specialized services for cancer patients. A&E department is the entry point for all patients referred to KNH for specialized care. It has 4 subunits that triage patients with medical, surgical, gynecological, and emergency interventions respectively. PC screening is done in the surgical subunit where patients are reviewed and sent to surgical outpatient clinic for further management. For patients who are diagnosed with PC, they are admitted to relevant wards for cancer treatment depending on cancer staging. They get admitted to surgical wards i.e (5A, 5B, 5D). They are later transferred to oncology ward (GFD) for different forms of cancer treatment. A&E department has also a satellite outpatient Unit that serves patients who are stable and not referred to KNH .It's about 400 meters from the main A&E department. Being the entry point of all patients, the researcher was able to access all participants seeking health care for the first time and those on due appointment during the period of study.

3.3 Study population

The study population consisted of male patients who are 40 years and above who were seeking health care services at A&E department of Kenyatta National hospital. Age of forty years and above has been reported as the age at risk for PC(KEMRI, 2006),the age at risk for PC at KNH is unknown; hence forty years was the minimum age of entry into this study since at this

age most men have at least basic knowledge and therefore aware of PC. These men were selected at the A&E department as they seek other health care services. Doctors and Nurses who have worked in A&E department for more than two years were selected as key informants for the study.

3.4 Inclusion criteria

- Male patients 40 years and above
- Patients who were mentally alert and stable
- Those males who consented to participate in the study.

3.5 Exclusion criteria

- Patients below 40 years
- Those who were mentally ill and in pain
- Those who refused to consent.

3.6 Sample size determination and formula

The A&E department of Kenyatta National Hospital handles to an average of three hundred and Seventy Five male patients (375) aged 40 years and above per month (A&E outpatient Statistics, KNH 2014).Sample size was estimated using the formula recommended by Fisher *et al.,* (1998) (Mugenda and Mugenda, 2003).

$n= z^2 pq/ d^2$

Where

n = Desired sample size (when population is greater than 10,000)

z = Standard Normal Deviation which is equal to 1.96 corresponding to 95% confidence interval

p = Prevalence of the issue under study, 50%

q = 1-p

d = confidence limit of the prevalence (p) at 95% confidence interval 1-0.95 = 0.05

Degree of accuracy desired for the study is hence set at 0.05.

Substituting the figures above in the formula.

Thus n = 1.96^2 x 0.5 x 0.5 = $(0.05)^2$n = 384

Since the target population is less than 10,000 the sample was adjusted using the following formula.

nf = n/[1+ (n/N)]

Where;

nf – Desired sample size (when the population is less than 10,000).

n – Sample size (when population is more than 10,000) calculated 384.

N – Number of monthly estimate of male patients aged over 40 years attended at A&E department of KNH.In this case three hundred and seventy five male patients (375) are attended.

Thus **nf = n/[1+ (n/N)]**

= 384 =384/2.024 =189.723

1+ (384/375

Thus the minimum sample size was**190** respondents.

3.7 Sampling frame and sampling procedure.

Systematic sampling method was used to obtain a sample of 190 respondents. This targeted male patients aged 40 years and above seeking health care services during the time of data collection. This method was favorable since the respondents were not coming to the hospital at the same time. The sample for this study was recruited during a three month period between May and July 2015 from the KNH A&E department. The first subject was selected randomly. A

random number was obtained between 1 and 5 of the first visitors to determine the first subject to be recruited. In this case, averagely three hundred patients are seen per month and the researcher had planned three months to collect data.

Therefore, 300 *3 =900/190 =4.736

Every 5th patient was recruited to the study until the sample size was achieved. Patients who consented to participate in the study were recruited.

3.8 Data collection tools

3.8.1Questionnaires

A semi structured questionnaire was used to collect information from the study subjects with the help of research assistants. The questionnaire contained both open and close ended questions which were used to gather information on demographic, economic, cultural, institutional, knowledge, attitude factors related to PC health seeking behavior of male patients above 40 years. Filling a questionnaire took between 30-40 minutes.The questionnaires contained statements that patients could choose from the options that are applicable or to add what is not captured in the questionnaire. The questionnaire was translated into Kiswahili for ease of understanding. Questionnaires were self-administered under guidance from the researcher. The researcher administered questionnaires to those who cannot read or write the items. Each questionnaire was evaluated for completeness after the respondents had finished filling in the responses.

3.8.2 Key informant interview

For Qualitative analysis, interviews were conducted from key informants who provided care to the patients. Interviews with 3 Doctors and 5 Nurses was done to find out barriers that deter PC screening and their opinions in regards to uptake levels of PC screening. This was used to complement the quantitative findings from the questionnaires.

3.8.3Training of research assistants

The research assistants were 2 Nursing diploma holders working at A&E department and they were trained two days on research tools, ethical considerations,transcription of data for both quantitative and qualitative studyand other relevant issues, with a further orientation during pre-testing of research instruments. Training was conducted in A&E seminar room.The research

assistants were trained by the researcher on the purpose and the meaning of each question, and on how to ask each question. Any shortcoming observed during pretest was acted upon to ensure the assistant understands their roles.

3.8.4 Pretest of the tool

The questionnaire was pre-tested at KNH outpatient unit which is about 400 metres from A&E department to establish its reliability and validity. The Unit was chosen because of its close proximity and has similar social and demographic distribution as A&E. The unit serves patients over 12 years who are non-emergent. Most of these patients are residents of Nairobi County. The facility provides services during the day. The questionnaire was addressed to male patients aged over 40 years. During the pre-test, written consent was obtained from 10 patients willing to participate.

3.8.5 Limitations of the study

- Recall bias because the researcher was not able to observe directly some significant aspects of patients with prostate cancer what they are going all the way through.
- The research was confined within the hospital set up hence uptake of PC screening outside clinical setting was not discussed.

3.9 Ethical considerations

The study was conducted following approval by the Joint University of Nairobi and Kenyatta National Hospital Ethics and Research Committee (ERC). A clearance to conduct the study was obtained from National Commission for Science, Technology and Innovation. Permission was to be sought from KNH administration as well as A&E department. The patients participating gave informed consent.

The patients willing to participate were required to do so voluntarily through giving informed consent. Subjects were assured of confidentiality by anonymity, privacy during interview and safe guarding the study material both in soft and hard copies under lock and key. Anonymity was maintained throughout data collection process by ensuring that participants do not write their names on the questionnaire.

Presentation of the study results was made to fellow colleagues and staff at KNH A&E unit as well as a panel of members of the faculty at the University of Nairobi. Presentations were

made to the KNH institution's management and during medical education sessions and conferences. A copy of the report of recommendations from the study was submitted to the head of the institution of Kenyatta National hospital and Nairobi University.

3.10 Data management (cleaning and entry)

At the conclusion of each session, the researcher was able to assess each questionnaire to ensure completeness and precision. An Epi Data 3.1 database was used for capturing screening information including text, string and numerical data. Continuous numerical responses were entered as absolute values while categorical responses were coded. Care was taken to split multiple responses into multiple variables ready for analysis.

To ensure data validation during entry, the database utilized value ranges (to prevent out of range entries) and skip patterns .Authentication of data was conducted by carrying out double entry and comparisons. The confirmed data was transferred to International Business Machine (IBM) Statistical Package for Social Sciences (SPSS) Statistics version 20.

Qualitative data from Key informant interview was collected during the discussion using audio recording of the discussion. Unclear information was written on paper and highlighted for clarification before the end of the discussion. Audio recording of interviews was transcribed into Microsoft Office Word document to be transferred into NVIVO software version 10.

3.11 Data analysis and presentation

Data was collected using a standardized questionnaire and entered into a password protected database. During entry, all hard copy forms were stored in a lockable cabinet to avoid unauthorized access. Once entry was completed, the entered data was compared to the hard copy forms to ensure correctness and completeness.

Exploratory data analysis was carried out to describe the study population and identify any emerging observations, trends and outliers. Categorical variables were summarized using counts and proportions while continuous variables were summarized using measures of central tendency and dispersion.

Bivariate analysis to determine factors associated with uptake of prostate cancer among patients seeking health care were carried out using t-test for continuous variables and chi-squared

tests for categorical variables. P-values was used to determine the statistical significance of results obtained with the cut off set at $p<0.05$. Multivariate logistic regression was carried out to determine independent correlates of prostate cancer screening.

Data was analyzed using Statistical Package for Social Sciences (SPSS) version 20.0 computer software and was presented using frequency distribution tables, graphs (bar and line) and pie charts.

Perception of self-vulnerability to prostate cancer was assessed using ten statements on a 5-point Likert scale: +5 (strongly agree) to +1 (strongly disagree) for positive statements, and +5 (strongly disagree) to +1 (strongly agree) for negative statements. The positive statements were: 1) *respondent believes that they are at a higher risk of getting prostate cancer than other* men; 2) respondent believes that they are likely to get prostate cancer in future; 3) respondent believes that some people fear dying from prostate cancer if they get to know their status; 4) respondent believes that prostate cancer may be present without showing pain or symptoms; and 5) respondent believes that diet determines risk of prostate cancer; and the negative statements were: 1) respondent believes that there is no prevention of prostate cancer; 2) respondent believes that if they get prostate cancer, they will die within 5 years; 3) respondent believes that there is no treatment for prostate cancer; 4) respondent believes that prostate cancer kills even if diagnosed early or treated; and 5) respondent believes that regular checking for prostate cancer indicates that one has prostate cancer. The perception towards self-vulnerability was defined based on the mean (34.1) of the cumulative Likert scores as follows: good perception was defined by values ≥mean and poor perception was based on values below the mean. Age was summarized as medians (range) and compared between groups (i.e., good vs. poor knowledge; good vs. poor perception, etc) using the Mann Whitney tests. Categorical variables such as socio-demographics factors were summarized as proportions and compared between groups using the Pearson's chi-square tests. Associations between levels of knowledge (i.e., cumulative scores for each individual from the 8 questions) and perception of self-vulnerability (cumulative Likert scores for each individual from the 10 statements) on prostate cancer was examined using the Pearson's correlation test. In order to identify factors independently associated (predictors) with the dependent variables (i.e., good and poor knowledge of prostate cancer, and perception of self-vulnerability to prostate cancer and uptake of prostate cancer screening), all variables significant in the univariate analyses (i.e., Mann Whitney tests, chi-square and Pearson's

correlation analysis) at P<0.100 were entered into binary logistic regression modeling and controlled for the confounding effect of age. Age was controlled because age at risk of PC has been reported as forty years followed by increased morbidity and mortality as men advance towards seventy years (KEMRI, 2006), and given the fact that awareness, knowledge and perception to PC increases with age (Breen et al., 2001). All tests were two-tailed and an alpha-value of 5% used for statistical inferences.

Qualitative data from Key informant interviews was collected during the discussion using audio recording of the discussion. Interviews were transcribed into Microsoft office word document to be transferred into NVIVO software. Qualitative data analysis was done through identification of key words, themes and patterns in the data. Data coding and labeling was done during and after data collection. Coding was to identify themes, ideas and patterns in the data.

3.12 Dissemination Plan

The results of this study are presented as a dissertation to the University of Nairobi and thereafter to the KNH management .Copies of the report will also be kept in the University of Nairobi library for references. The study will also be published in scientific peer reviewed journals for public access.

4.0 CHAPTER FOUR: RESULTS

Data from 190 participants who were interviewed as well as that of key informants from health workers was analysed and results presented as follows;

4.1 Demographic characteristics

This section describes the participant's socio demographic characteristics. The mean age of the adult male was 52.8 years (SD ± 9.9) and a range between 40 years and 93 years. Table 4.1 shows the age distribution of the participants and indicates that the modal age group was 45-49 years with 48 (25.3%) patients. Most 100 (52.9%) participants were Protestants followed by Catholics who accounted for 32.3% of the participants. One hundred and sixty three (87.6%) participants were married and the remaining participants reported that they were separated, widowed or single and had never married.

Table 4.1: Demographic characteristics of participants

	Frequency (n)	Percent (%)
Age		
40-44 years	39	20.5
45-49 years	48	25.3
50-54 years	33	17.4
55-59 years	20	10.5
60-64 years	22	11.6
65 years and above	28	14.7
Religion		
Catholic	61	32.3
Protestant	100	52.9
Muslim	23	12.2
None/ atheist	5	2.6
Marital status		
Married	163	87.6
Single	7	3.8
Widowed	9	4.8
Separated	7	3.8

4.1.1 Socio-economic characteristics of participants

The two leading occupations reported by the participants were business 72 (40.2%) and office work 58 (32.4%) as shown in Table 4.2. Thirty-two (17.9%) participants were engaged in farming and the remaining 17 (9.5%) were casual labourers. There were 66 (35.3%) participants who reported that the highest level of education attained was secondary level education. Forty-five (24.1%) patients had primary level education and 37 (19.8%) had attained college diploma qualifications.

Key informants indicated that participants with poor education were less likely to get screened or treated for PC.At the same time however; participants said that professional men are also unlikely to maintain an appropriate health care routine and seek cancer screening. They attributed this to the lack of routine preventive care and the tendency among men to seek medical care only upon appearance of symptoms. '*I am surprised at the number of professional men that have prostate issues, but don't seek treatment' (Key informant).*

Table 4.2: Socio-economic characteristics of participants

	Frequency (n)	Percent (%)
Occupation		
Office work	58	32.4
Business	72	40.2
Casual work	17	9.5
Farmer	32	17.9
Level of education		
None	14	7.5
Primary	45	24.1
Secondary	66	35.3
Diploma	37	19.8
University	25	13.4

4.2 General health status of participants

Adult male patients at KNH A & E department were asked to rate their general health status. As shown in Figure 4.1, 107 (57.2%) patients rated their general health as fair and 49 (26.2%) rated themselves being in good general health.

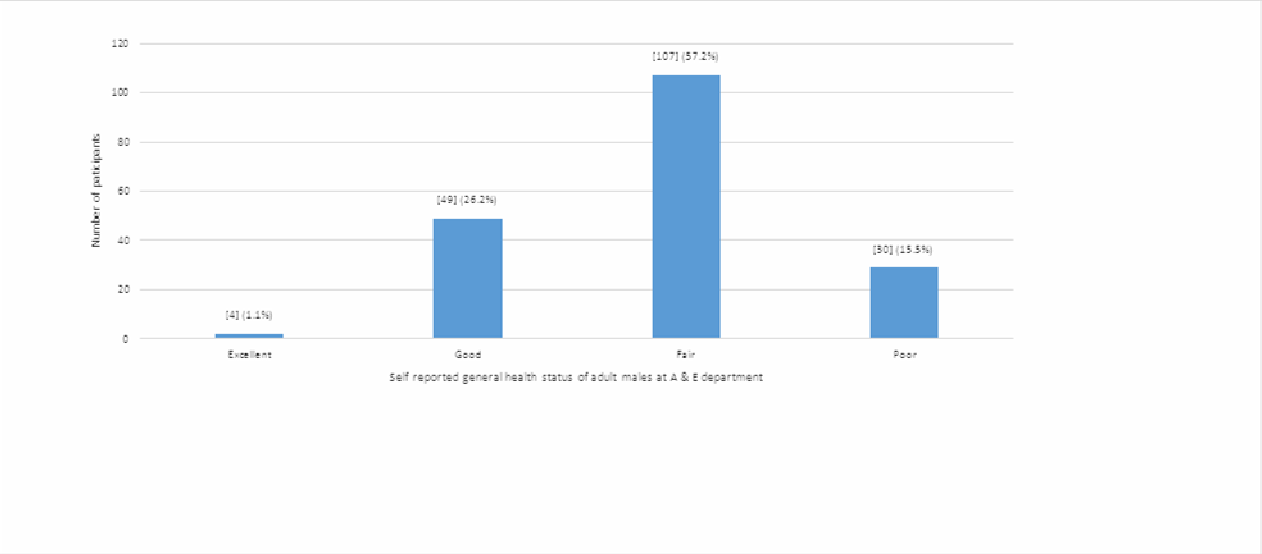


Figure 4.1: Self-reported general health status of participants

Table 4.3 presents the health related and care seeking behavior of adult males attending KNH A&E during the survey. Smoking and alcohol consumption was reported by 84 (44.9%) and 110 (59.1%) participants respectively. Among these smokers and participants who reported taking alcohol, 68 (35.8%) participants indicated that they smoked and also took alcohol, 42 (22.1%) took alcohol but did not smoke and 16 (8.4%) smokers did not consume alcohol.

Approximately three-quarters, 136 (72.7%) participants had never attended medical checkup, and 26 (13.9%) reported that it had been 1 year since they attended the last medical checkup. Most 113 (60.4%) patients strongly agreed that it is important to get tested to prevent disease. At least 80% of participants 154 (82.4%) said that they visited a doctor only when they are sick.

Among all the participants, 79 (42.5%) presented to the department with urinary tract pains or complains of lower abdominal discomforts.

Table 4.3: Health related behavior among participants

	Frequency (n)	Percent (%)
Smoking		
Yes	84	44.9
No	103	55.1
Alcohol consumption		
Yes	110	59.1
No	76	40.9
Last medical checkup		
Never	136	72.7
3 months ago	9	4.8
6 months ago	9	4.8
1 year ago	26	13.9
2 years ago	7	3.7
It is important to get tested to prevent disease		
Strongly agree	113	60.4
Agree	59	31.6
Disagree	15	8
Frequency of visits to doctor		
Only when I am sick	154	82.4
once every 6 months whether sick or not	26	13.9
Once a year whether sick or not	7	3.7
Currently suffering from any urinary tract pains/discomforts		
Yes	79	42.5
No	107	57.5

4.3 Prostate screening uptake among partipants

Participants were asked whether they had ever been screened for prostate cancer. Figure 4.2 shows that 45 (23.7%) of participants presenting to KNH A&E department reporting ever having had prostate cancer screening. Of these 45 patients who had been screened, 32 reported that they had had a prostate specific antigen (PSA) test done while 6 had a direct rectal examination (DRE) and 7 had a biopsy performed.

Key informants noted that digital exams were intrusive and culturally unacceptable when conducted by female health workers." *some of the exams like digital rectal exams expose those seeking these services, there is inadequate privacy, confidentiality due to lack of space at the A&E department, lack of adequate counseling to help reduce fears of a potential postive cancer" among other concerns.*

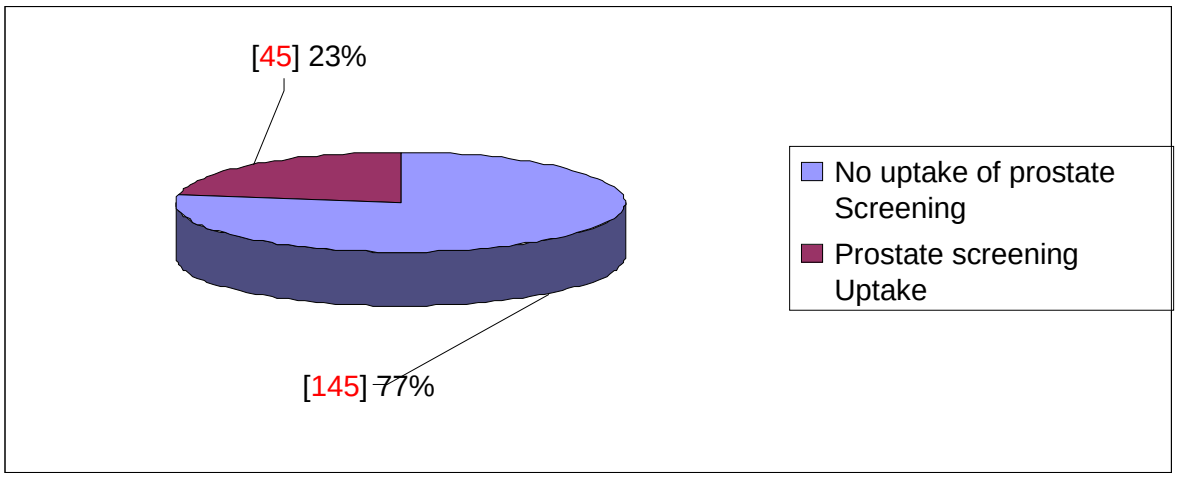


Figure 4.2: Prostate cancer screening among participants

4.4 Factors Influencing Uptake of Prostate Cancer screening among participants

4.4.1 Demographic factors influence on screening uptake

The chance of prostate cancer screening increased with advancing age from 10.3% in 40-44 year age group to 57.1% in the participants aged 65 years and above. The participants in the age groups 60-64 years and 65 years or older were six times OR = 6.06(95 % CI 1.59-23.11) and 11 times OR = 11.67(95% CI 3.25-41.83) more likely to screen for prostate cancer compared to 40-44 year olds.

Table 4.4: Association between age and prostate cancer screening

	Prostate screening			
	Yes	No	OR(95 % CI)	P value
40-44 years	4(10.3)	35(89.7)	1.00	
45-49 years	5(10.4)	43(89.6)	1.02(0.25-4.08)	0.981
50-54 years	6(18.2)	27(81.8)	1.94(0.50-7.58)	0.338
55-59 years	5(25.0)	15(75.0)	2.92(0.69-12.40)	0.147
60-64 years	9(40.9)	13(59.1)	6.06(1.59-23.11)	0.008
65 years and above	16(57.1)	12(42.9)	11.67(3.25-41.83)	<0.001

Among the participants involved in farming occupation 37.5% had screened for prostate cancer compared to 15.5% of those engaged in office work, OR = 3.27(95% CI 1.19-8.96) p = 0.021, Table 4.5. A quarter of businessmen (25%) and 23.5% of casual labourers had also screened and the proportion were not significantly different from the office workers who screened for prostate cancer.

Patients with secondary education (12.1%) were less likely to screen for prostate cancer compared to no education (50%), OR = 0.14(0.04-0.50) p = 0.002. The rates of screening in primary (24.4%), diploma (29.7%) and university (32%) graduates were not significantly different from that in participants with no education (50%).

Table 4.5: Screening uptake and participants demographic characteristics

	Screening uptake			
	Yes	**No**	**OR (95% CI)**	**P value**
Formal education				
None	7(50.0)	7(50.0)	1.00	
Primary	11(24.4)	34(75.6)	0.32(0.09-1.13)	0.077
Secondary	8(12.1)	58(87.9)	0.14(0.04-0.50)	0.002
Diploma	11(29.7)	26(70.3)	0.42(0.12-1.50)	0.182
University	8(32.0)	17(68.0)	0.47(0.12-1.80)	0.271
Marital status				
Married	39(23.9)	124(76.1)	1.00	
Single	0(0.0)	7(100.0)	NA	NA
Widowed	3(33.3)	6(66.7)	1.59(0.38-6.66)	0.526
Separated	3(42.9)	4(57.1)	2.38(0.51-11.12)	0.269
Occupation				
Office work	9(15.5)	49(84.5)	1.00	
Business	18(25.0)	54(75.0)	1.81(0.75-4.41)	0.189
Casual work	4(23.5)	13(76.5)	1.68(0.44-6.32)	0.446
Farmer	12(37.5)	20(62.5)	3.27(1.19-8.96)	0.021

4.4.2 General health status and family history of cancer among participants

There was a significant association between patient complains of urinary tract pains or discomfort and uptake of prostate cancer screening (Table 4.6). Thirty four percent of participants who complained of pains and discomfort underwent screening compared to 15.9% of those without such complains (OR = 0.36, 95%CI 0.18-0.73). Frequent medical examinations were also associated with higher chances of prostate cancer screening OR = 4.61(1.16-18.28).

Alcohol consumption (p =0.831) and smoking habits (p = 0.447) were not associated with screening uptake, neither was self-reported assessment of health status (p > 0.05), nor frequency of visits to a doctor (p > 0.05).

Key informants reported both external and internal cues that prompted participants to seek prostate cancer screening. The external cues that were associated with uptake of screening services were family history of prostate cancer, and health education and sensitization about prostate cancer. The reasons for seeking screening services that were considered to result from

internal processes commonly involved the appearance of signs and symptoms of prostate cancer including urinary tract infections and its complications, sexual dysfunction, urine retention and painful micturation.*"Most men will come to seek medical attention when they have infection e.g. urinary tract infection and on the process of treatment, they are diagnosed with the cancer when history taking is done.socio-economic factors, proximity to the facility and level of knowledge contributes significantly to uptake of PC screening"…..*

Table 4.6: Health status perception and uptake of cancer screening

	Screening uptake			
	Yes	**No**	**OR (95% CI)**	**P value**
General health status				
Excellent	1(50.0)	1(50.0)	1.00	
Good	8(16.3)	41(83.7)	0.20(0.01-3.45)	0.265
Fair	26(24.3)	81(75.7)	0.32(0.02-5.31)	0.427
Poor	10(34.5)	19(65.5)	0.53(0.03-9.34)	0.662
Frequency of medical examination				
Never	29(21.3)	107(78.7)	1.00	
3 months ago	5(55.6)	4(44.4)	4.61(1.16-18.28)	0.03
6 months ago	1(11.1)	8(88.9)	0.46(0.06-3.84)	0.474
1 year ago	8(30.8)	18(69.2)	1.64(0.65-4.15)	0.296
2 years ago	2(28.6)	5(71.4)	1.48(0.27-8.00)	0.652
It is important to get tested to prevent disease				
Strongly agree	29(25.7)	84(74.3)	1.00	
Agree	15(25.4)	44(74.6)	0.99(0.48-2.03)	0.973
Disagree	1(6.7)	14(93.3)	0.21(0.03-1.64)	0.136
Urinary tract pains/ discomfort				
Yes	27(34.2)	52(65.8)	1.00	
No	17(15.9)	90(84.1)	0.36(0.18-0.73)	0.004
Frequency of visits to doctor				
Only when I am sick	36(23.4)	118(76.6)	1.00	
Once every 6 months whether sick or not	6(23.1)	20(76.9)	0.98(0.37-2.63)	0.973
Once a year whether sick or not	3(42.9)	4(57.1)	2.46(0.53-11.50)	0.253
Alcohol consumption				
Yes	26(23.6)	84(76.4)	1.00	
No	19(25.0)	57(75.0)	1.08(0.55-2.13)	0.831
Smoking				
Yes	18(21.4)	66(78.6)	1.00	
No	27(26.2)	76(73.8)	1.30(0.66-2.58)	0.447

A total of 104 (55.6%) out of the 190 participants reported that they had a family member who had been diagnosed with cancer. The types of cancers reported among family members of

participants are presented in figure 4.3. The most common types of cancers were cancer of the prostate reported in 45 (41.7%) cases, breast 15 (13.9%), and skin 12 (11.1%). Other types of cancers were reported by 25.9% of participants.

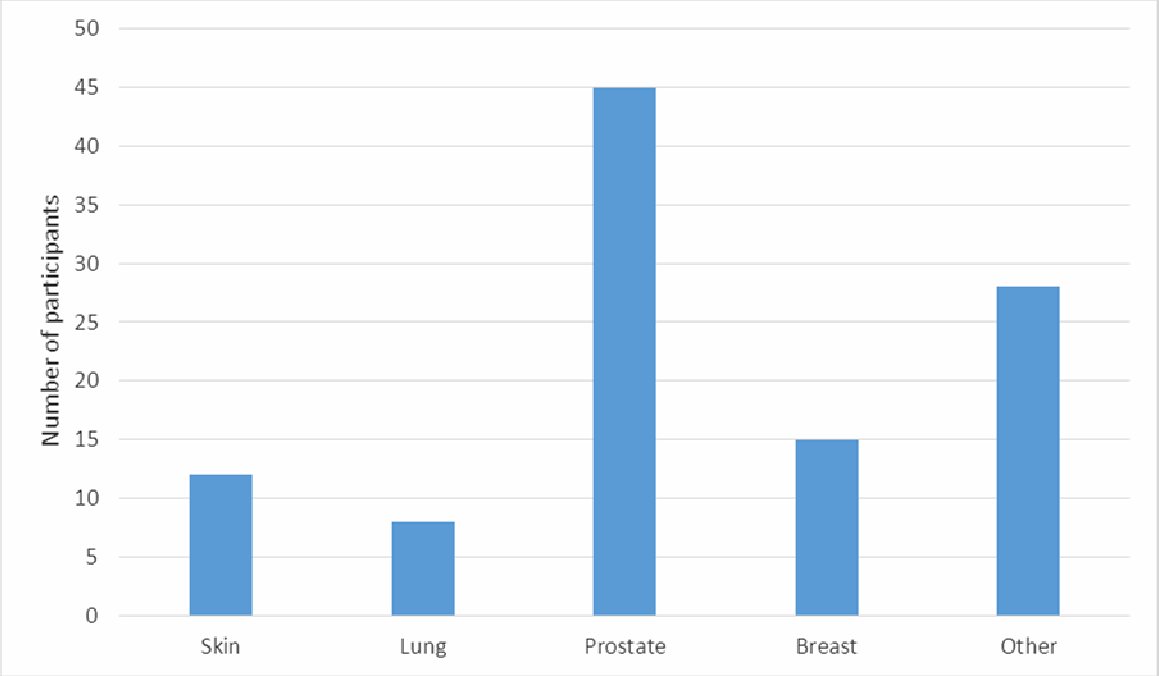


Figure 4.3: Types of cancers among family members of participants reporting positive family history of cancer

The participants most commonly reported that the family member with cancer diagnosis was a parent 50 (46.7%). As shown in Table 4.7, only 3 (2.8%) of the cancer cases involved the child of a participant. Out of the cancer diagnoses that were reported in family 77 (65.3%) had resulted in death of the family member and 43.2% of these were deaths involving parents of participants.

Table 4.7: Family history of cancer among participants

	Frequency (n)	Percent (%)
Relationship between participant and family member with cancer		
Child	3	2.8
Parent	50	46.7
Spouse	19	17.8
Other	35	32.7
Cancer death reported in participant's family		
Yes	77	65.3
No	41	34.7
Relationship between participant and family member who died from cancer		
Child	2	2.5
Parent	35	43.2
Spouse	8	9.9
Other	36	44.4

One hundred and seventeen (71.8%) of the male participants reported that they knew a friend who had died of cancer. Figure 4.7 shows that the leading causes of cancer deaths among the friends of the participants were cancers of the breast 40 (33.1%) and prostate 37 (30.6%).

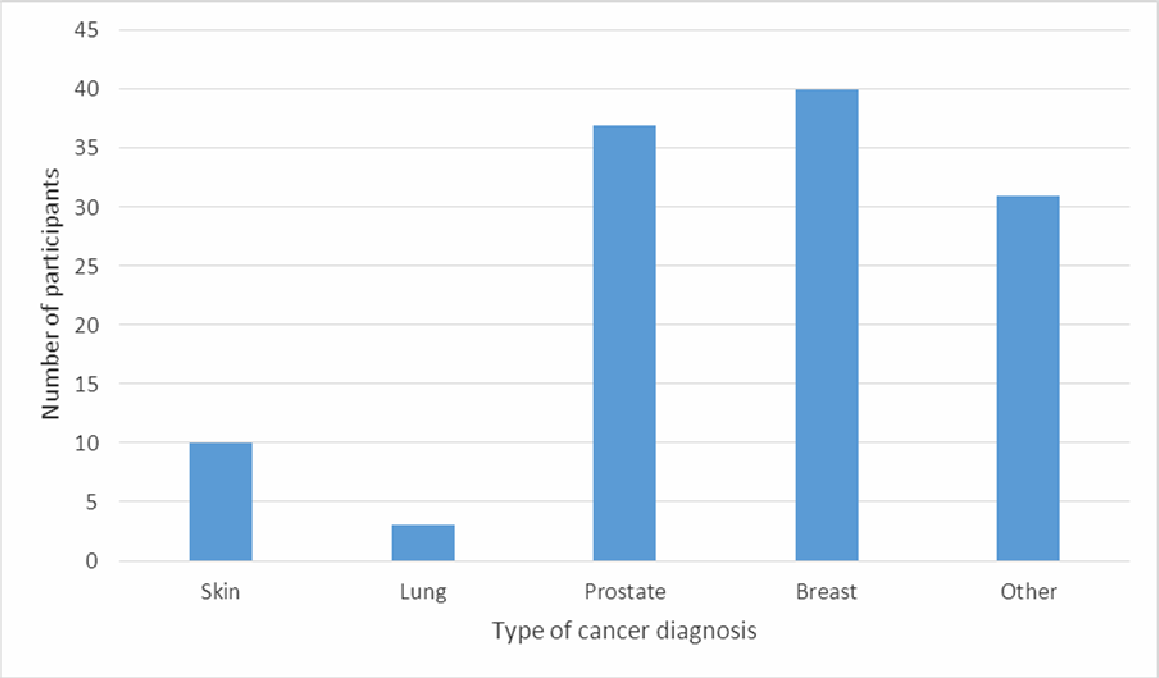


Figure 4.4: Types of cancer among friends of participants reporting knowing friends with cancer diagnosis

Cancer screening uptake was associated with cancer death among friends known to the participants. As shown in Table 4.8, screening uptake was significantly higher among participants who knew a friend who had died of cancer (30.8%) compared to those who did not (15.2%). The uptake of prostate cancer screening was also higher with positive family history of cancer (26.9%) compared to negative history (20.5%) but this difference was not statistically significant (p = 0.307) neither was the difference in screening uptake in cases of a cancer death in the family (29.9 versus 19.5%).

This was augmented by key informant who cited that men actively sought out screening because of fear of cancer due to a family history of prostate cancer or at the recommendation of their wives or other family members. "*For example, since a participant has a family history he has to get PSA checked regularly….. (Key informant*)"

Table 4.8: Cancer diagnosis in family and friends and impact on cancer screening

	Screening uptake			
	Yes	**No**	**OR (95% CI)**	**P value**
Family history of cancer				
Yes	28(26.9)	76(73.1)	1.00	
No	17(20.5)	66(79.5)	0.70(0.35-1.39)	0.307
Cancer death in participant's family				
Yes	23(29.9)	54(70.1)	1.00	
No	8(19.5)	33(80.5)	0.57(0.23-1.42)	0.227
Knows friend who died from cancer				
Yes	36(30.8)	81(69.2)	1.00	
No	7(15.2)	39(84.8)	0.40(0.16-0.99)	0.047

4.4.3 Knowledge on prostate cancer screening among the participants

The most common sources of information on prostate cancer screening was radio 159 (83.7%), hospital 81 (42.6%), relatives 71 (37.4%) and friends 64 (33.7%). As shown in Figure 4.5, doctors and newspapers were also important sources of information on prostate cancer screening.

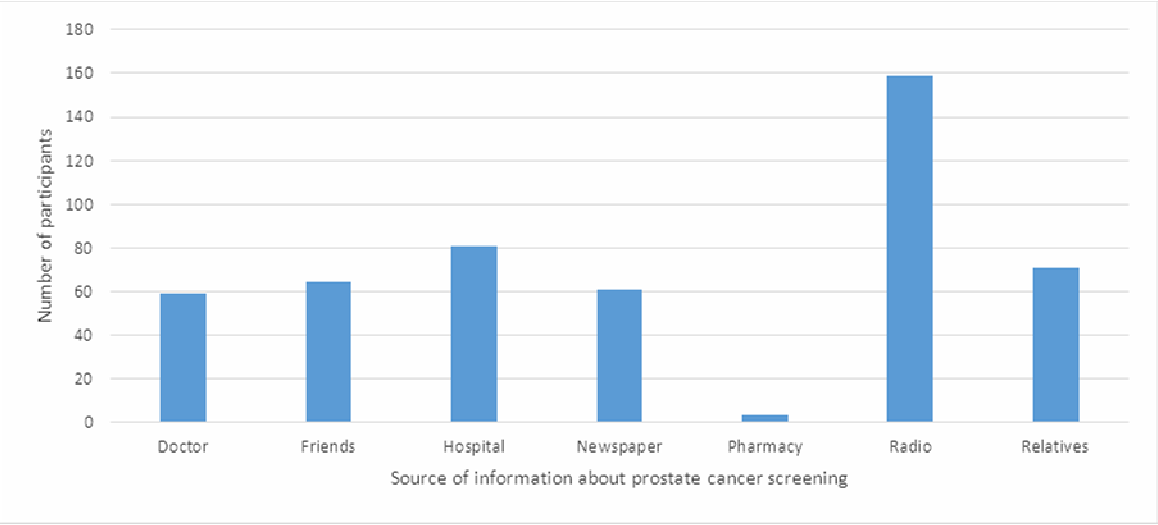


Figure 4.5: Sources of cancer screening information among participants

Twenty four percent of participants who had ever heard about prostate cancer reported that they had been screened while none of the patients who were unaware about prostate cancer screening reported being screened (Table 4.9). Participants who reported that they knew anyone who had ever undergone prostate screening were also more likely to undergo screening (42.9%) compared to those who did not know a person who had been screened (13.6%), $p < 0.001$ (Table 4.9).

Lower perceived risk of prostate cancer was associated with lower screening uptake rates. Participants who disagreed or strongly disagreed that they were at a higher risk of getting prostate cancer than other men reported that they underwent screening 17.6% ($p = 0.024$) and 13.2% ($p = 0.012$) of the times compared to 41.4% for participants who strongly agreed with this statement.

The embarrassment associated with prostate screening did not significantly impact on screening uptake, neither did the feeling that participants could do nothing to prevent prostate cancer (**refer Table 4.9).**

Table 4.9: Participants knowledge on cancer and its influence on prostate cancer screening

	Screening uptake			
	Yes	**No**	**OR (95% CI)**	**P value**
I believe that there is nothing I can do to prevent me from getting prostate cancer				
Strongly agree	10(33.3)	20(66.7)	1.00	
Agree	15(22.4)	52(77.6)	0.58(0.22-1.49)	0.257
Disagree	12(19.7)	49(80.3)	0.49(0.18-1.31)	0.156
Strongly disagree	8(28.6)	20(71.4)	0.80(0.26-2.45)	0.695
Doing prostate cancer screening/test is embarrassing for me				
Strongly agree	3(27.3)	8(72.7)	1.00	
Agree	8(20.5)	31(79.5)	0.69(0.15-3.20)	0.634
Disagree	25(26.3)	70(73.7)	0.95(0.23-3.87)	0.946
Strongly disagree	9(22.0)	32(78.0)	0.75(0.16-3.43)	0.711
Ever heard of prostate cancer screening				
Yes	43(24.9)	130(75.1)	NA	
No	0(0.0)	10(100.0)	NA	NA
I believe that I am at a higher risk of getting prostate cancer than other men				
I strongly agree	12(41.4)	17(58.6)	1.00	
I agree	19(27.1)	51(72.9)	0.53(0.21-1.31)	0.168
I disagree	9(17.6)	42(82.4)	0.30(0.11-0.85)	0.024
I strongly disagree	5(13.2)	33(86.8)	0.21(0.06-0.71)	0.012
Know anyone who has taken a Prostate Cancer Screening test				
Yes	36(42.9)	48(57.1)	1.00	
No	8(13.6)	51(86.4)	0.21(0.09-0.50)	<0.001

Key informant interview reported low levels of knowledge among most men about prostate cancer, risk factors, and screening and treatment options. In addition, what knowledge there is about prostate cancer treatment invokes fear and discomfort. *'It affects your manhood to say something is wrong with your prostate, this also says that something is wrong with your sexual function. Men fear that they will always be labeled as being sick after the surgery' (Key informant). The threat of sexual dysfunction posed by prostate cancer leads to a heightened desire to distance oneself from even the possibility of illness. 'As long as I don't know I have it, I don't have it'*

4.5 Reported Self-vulnerability to prostate cancer among participants

Most 108 (57.8%) participants did not know whether a person could have prostate cancer without manifesting the signs and symptoms of the disease. Thirty six percent of participants disagreed that if someone has prostate cancer, it is already too late to get treated for it while 57 (33.1%) agreed with the statement. Eighty-nine (48.4%) participants disagreed with the statement that prostate cancer will kill you no matter when it is found and how it is treated.

Key informants suggested specific efforts to target individual behavior including raising awareness about prostate cancer and screening, given low levels of knowledge. In particular, they were enthusiastic about promoting the PSA, given the common aversion to the DRE.
Participants also advocated addressing DRE stigma by promoting the importance of having a consistent primary care provider. *'If men are in the system they will get care, but if they are healthy, they won't seek care and get tested' (Key informant).*

Table 4.10: Perception of self-vulnerability towards prostate cancer among participants.

	Frequency (n)	Percent (%)
A man can have prostate cancer without having any pain or symptoms		
True	33	17.6
False	46	24.6
I do not know	108	57.8
If someone has prostate cancer, I think it is already too late to get treated for it		
Strongly agree	15	8.7
Agree	57	33.1
Disagree	62	36
Strongly disagree	38	22.1
Prostate cancer will kill you no matter when it is found and how it is treated		
Strongly agree	10	5.4
Agree	54	29.3
Disagree	89	48.4
Strongly disagree	31	16.8
I think getting checked for prostate cancer makes people scared that they may really have prostate cancer		
Strongly agree	17	9.1
Agree	51	27.3
Disagree	94	50.3
Strongly disagree	25	13.4
I think some people do not want to know if they have prostate cancer		
Strongly agree	15	8.5
Agree	34	19.3
Disagree	88	50
Strongly disagree	39	22.2
I follow a planned exercise program		
Sometimes	46	24.7
Often	50	26.9
Routinely	90	48.4

5.0 CHAPTER FIVE: DISCUSSION

5.1 Introduction

The study findings revolved around knowledge levels and uptake of prostate cancer screening among men. Other areas of socio economic and institutional factors affecting prostate cancer screening behavior emerged: reluctance to talk about cancer, lack of routine preventive care, and stigma associated with digital rectal examination. The discussion provides a firm basis upon which conclusions and recommendations were advanced in order to address factors associated with uptake of prostate cancer screening among men seeking health care services in Kenyatta National Hospital. It also includes areas of further research.

Demographic variables were examined for their contribution to uptake of prostate cancer screening. The association between being married and PC screening have been found in studies of African American men and prostate cancer (Finney et al., 2005; Swan et al., 2003). In this study, approximately more than half of the participants (87.6%) were married. However, there were no statistically significant differences between marital status and uptake of prostate cancer screening. Nevertheless, it is not known if being married is important to screening patterns over time.

Most of the participants had secondary education 35.3, % while 24.4% had attained only primary education. Levels of education and occupation have also been associated with increased level of prostate cancer screening (Ross et al., 2005). However, this study did not demonstrate any statistically significant differences between occupation and level of education, and the intent to screen for prostate cancer. It could be argued that the impact of education and occupation on uptake of prostate cancer screening may be related to the presence or absence of certain structural barriers like transportation, financial support, and geographical distance to the hospital. However, in the absence of these barriers, education and occupation may not present any significant associations in the uptake of prostate cancer screening among the participants.

The uptake of prostate cancer screening reported by respondents enrolled in this study was only 23.7%. This figure corresponds to the research done by Oladimeji *et al.*, (2010) among Nigerian men that showed that 22.5% of the Nigerian men were aware of prostate cancer screening. Significantly, are results presented here showing that uptake of prostate cancer

screening was associated with advancing age from 10.3% in 40-44 year age group to 57.1% in the participants aged 65 years and above. The participants in the age groups 60-64 and 65 years were six times OR=6.06 (95%) more likely to screen for prostate cancer compared to 40-44 years old. In a similar study, done in a rural community of Ogun State in Southwestern Nigeria the level of awareness of prostate cancer among the participants was 39.2 %**.**(Ogundele, 2015). This is slightly high than the awareness rate in our study despite the fact that this study took place in an urban setting.

Knowing the level of awareness about a disease condition is important for both the government and health care workers for the purpose of planning and organization of health care delivery to the group of people affected or to people at risk of developing the disease condition.

Participants from the study reported multiple sources of prostate cancer information with the mass media being the leading source of the information with 159(83.7%). The results are similar to previous studies among Nigerian men more than 50 years and less than 100 years showing awareness levels on PC of 80% and the mass media as the main source of prostate cancer information (Oladimeji *et al.,* 2010). These results are important in view of the fact that prostate cancer is an increasing health burden among men in Kenya. It is therefore important in the dissemination of the information about the disease to take advantage of this channel of information for the purpose of health education activities. The fact that all the 190 participants in this study had contact with health care workers during this survey, only 60 (31.5%) of them got information about the disease from health care workers. This shows that more efforts are still needed from the health care workers to educate people about the disease. There is a need for the health care workers to take advantage of their contact with adult males who are at risk of this disease to give them some information about the disease during their contact. Provision of information leaflets containing short information on the common diseases in our community in different languages and made available to all patients when they have contact with healthcare workers may help with improving level of awareness about such diseases among patients.

In addition, low knowledge levels were reported among the respondents on prostate cancer screening methods and frequency of screening. These findings differ from observations by (Ajape *et al.*, 2009) showing that only 5.8% of the Nigerian urban men were aware of the PSA test. The dissimilarities in the findings may be accounted for by the differences in the educational and religious backgrounds given that most of the respondents in the Nigerian study

were Muslims with less than secondary level education. In addition, the Nigerian study only examined the PSA method of screening while respondents in the current study reported knowing the three test procedures (PSA, DRE and biopsy). However, the findings differ from a recent study in Ghana showing 69.9% PC prevalence out of which 33.8% had metastatic disease (Yamoah *et al.*, 2013). Thus, highlighting a need for earlier detection for effective treatment.

Also, the study showed that 91.4% of the participants were willing to take-up prostate cancer screening and 97.2% of the participants were willing to learn more about prostate cancer screening. The higher willingness levels to screen for the disease among the participants seeking health care services at KNH may be attributed to the increasing awareness of the disease especially amongst the educated population. Therefore, good knowledge of prostate cancer is a strong factor for enhancing uptake of PCscreening, which could be achieved through formal and informal education and reinforced through focused health education activities.

Results from the study indicated that men with a family history of prostate cancer and those who knew a friend who had died of cancer, considered themselves to be more vulnerable to developing the disease than men without such a family history. In addition, findings showed that men with a family history of prostate cancer were more likely to have been screened for prostate cancer in the past and to be screened in the future. Also, findings suggested that the stronger intentions to undergo prostate cancer screening among men with a family history could be explained by their greater perceived vulnerability to developing the disease. Current findings are consistent with two prior studies that examined the relation of family history of prostate cancer to perceived risk. In one study (Bratt et al., 2000), risk perceptions were assessed in men described as having three or more linked relatives with prostate cancer.

Experiences related to having a family history of prostate cancer give rise to beliefs about personal vulnerability to the disease, which, in turn, motivate early detection behavior. To evaluate this possibility further, future research should seek to examine knowledge and beliefs about prostate cancer risk and about the efficacy of prostate cancer screening among men with a family history of the disease. As demonstrated in this study, having a family history is associated with greater perceived vulnerability to developing prostate cancer as well as greater likelihood of undergoing PSA testing. At the same time, results indicate that having a family history is associated with more requests for information about prostate cancer

This study has a limitation. The sample may not be representative of all the population of men where over 80 % of people live in rural areas.. The reliance on self-reported data is not always accurate and responses may not reflect actual family history of prostate cancer or prostate cancer screening history.

Nevertheless, this study has the merit of being the first to assess awareness, knowledge and uptake of PC in KNH and demonstrate the need for interventions targeted on under educated populations to improve self-informed decision for early diagnosis of PC.

5.2 Conclusions

1. This study has showed that the level of uptake of prostate cancer screening among adult male patients seeking health care services at KNH is low; however, most of the men are willing to undertake prostate cancer screening and know more about the disease.

2. The most common source of information about the disease among participants is the media; our health care workers need to do more in disseminating information about the early uptake of PC screening.

3. More efforts are needed to encourage adults male who are at risk to go for voluntary screening as early detection have been shown to improve the disease outcome.

4. The uptake of prostate cancer screening is very low among men seeking health care services in KNH;

5.3 Recommendations

1. Voluntary annual PSA screening should be recommended for males aged 40 years and above, including those in the high risk bracket.
2. There is need for increased awareness of the factors that predispose participants to the disease. The significance and relevance of these findings to PSA screening in the country and its accuracy in diagnosing prostate cancer cannot be overemphasized.

5.4 Areas of further research

1. There is need for sustained local research regarding risk factors (e.g., family history, genetics, etc) for prostate cancer that may improve further understanding of prostate cancer and the uptake of prostate cancer screening in Kenya. Investigations focusing on behavioral and lifestyles may provide insights into the impact of behavior and lifestyle on development of prostate cancer leading to targeted interventions.

2. Expand prostate cancer research to other Kenyan regions especially at county level to identify the unique factors influencing awareness, knowledge, perceptions and uptake of screening

REFERENCES

Ajape, A. A., Ibrahim, K. O., Fakeye, J. A., & Abiola, O. O. (2010). An overview of cancer of the prostate diagnosis and management in Nigeria: the experience in a Nigerian tertiary hospital. Ann Afr Med, 9(3), 113-117.

Andriole, G. L., Crawford, E. D., Grubb, R. L., Buys, S. S., Chia, D., Church, T. R., et al. (2009). Mortality results from a randomized prostate-cancer screening trial. N Engl J Med, 360(13), 1310-1319.

Akinremi, T.O., Adeniyi, A., Olutunde, A., Oduniy, A., and Ogo, CN., (2014). Need for and relevance of prostate cancer screening in Nigeria. Cancer 8: 457

American Cancer Society. (2013). *Cancer Facts & Figures for African Americans 2013-2014.* Atlanta, GA: American Cancer Society.

American cancer society, (2011). Testing for prostate cancer: medical review. Atlanta: American Cancer society,int.

Arnold-Reed, D. E., Hince, D. A., Bulsara, M. K., Ngo, H., Eaton, M., Wright, A. R., *et al.* (2008). Knowledge and attitudes of men about prostate cancer. *Med J Aust, 189*(6), 312-314.

Deibert, C. M., Maliski, S., Kwan, L., Fink, A., Connor, S. E., & Litwin, M. S. (2007). Prostate cancer knowledge among low income minority men. *J Urol, 177*(5), 1851-1855

Diane W., Juan, C., John, R., (2004).Disclosure cancer control. 11(6) 388-396. Ann Afr Med.

Ferlay, J., Shin, H. R., Bray, F., Forman, D., Mathers, C., & Parkin, D. M. (2011). Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. Int J Cancer, 127(12), 2893-2917

Finney, R. L. J., Meissner, H. I., Breen, N., Vernon, S. W., & Rimer, B. K. (2005). Factors associated with men's use of prostate-specific antigen screening: Evidence from health information national trends survey. *Preventive Medicine, 40*(4), 461-468.

Ford, M. E., Vernon, S. W., Havstad, S. L., Thomas, S. A., & Davis, S. D. (2006). Factors influencing behavioral intention regarding prostate cancer screening among older African-American men. *J Natl Med Assoc, 98*(4), 505-514.

Holt, C. L., Wynn, T. A., & Darrington, J. (2009). Religious involvement and prostate cancer screening behaviors among southeastern African American men. *Am J Mens Health, 3*(3), 214-223.

Howlader, .N, Noone, A. M., Krapcho, M., Garshell, J., Neyman, N., Altekruse, S. F. et al. (2013, 2014).SEER Cancer Statistics Review, 1975-2010, National Cancer Institute. Bethesda, MD, http://seer.cancer.gov/csr/1975_2010/, based on November 2012 SEER Data submission, posted to the SEER web site, accessed April 2013 and January 2015.

International Agency for Research on Cancer (IARC, 2014).World Health Organisation. Geneva.

Javali, D., Dwivedi, K., Kumar, R., Jagannathan, R., Thulkar, S., & Dinda, A. K., (2013). Magnetic resonance spectroscopy imaging-directed transrectal ultrasound biopsy increases prostate cancer detection in men with prostate-specific antigen between 4-10 ng/mL and normal digital rectal examination. Int J Urol.vol 13 (5) 433-441.

Kabore, F.A., Kambou, T.B., Barnabé Zango,B.O.,(2013). Knowledge and Awareness of Prostate Cancer among the General Public in Burkina Faso. Springer Science Business Media New York. Journal of cancer education, 29, 69-73,

Lozano, R., Naghavi, M., Foreman, K., Lim, S., Shibuya, K., Aboyans, V.,(2012). Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet, 380(9859), 2095-2128

Magnus, M. (2004). Prostate cancer knowledge among multiethnic black men. *J Natl Med Assoc, 96*(5), 650-656.

Maulana, A. O., Krumeich, A., & Van Den Borne, B. (2009). Emerging discourse: Islamic teaching in HIV prevention in Kenya. *Cult Health Sex, 11*(5), 559-569.

Marks, S., (2009). Prostate and Cancer: a family guide to diagnosis, treatment and survival (4th ed.). Cambridge: Da Capo Press.

MPHS & MMS. (2011). National Cancer Control Strategy 2011-2016. Retrieved 7th June, 2013, from http://www.ipcrc.net/pdfs/Kenya- National-Cancer-Control-strategy.pdf.

Magoha, G. A., & Ngumi, Z. W., (2000). Cancer of the penis at Kenyatta National Hospital. East Afr Med J, 77(10), 526-530.

Magoha G.A (1998).Early screening for prostate cancer. East Africa Medical Journal (1998) march 75(3) 191.

Mugenda O.M and Mugenda A.G (2003) Research methods: Quantitative and qualitative approaches. Nairobi Acts press.

Nancy C.D, (2004) Colorectal Cancer Screening Knowledge, Attitudes, and Beliefs among Veterans: Does Literacy Make a Difference? Journal of clinical oncology.vol. 22 (13) 2617-2622.

Ngugi, P. M., & Byakika, B. (2007). Histology of specimens taken by prostatectomy and needle biopsy. East Afr Med J, 84(8), 363-366.

Ogundele, S.,O., Ikuerowo S.,O.,(2015) A survey of the awareness of prostate cancer and its screening among men attending the outpatient clinics of a tertiary health center in Lagos, Nigeria. Niger J Surg 2015;21:115-8.

Oladimeji, O., Bidemi, Y. O., Olufisayo, J. A., & Sola, A. O., (2010). Prostate cancer awareness, knowledge, and screening practices among older men in Oyo State, Nigeria. Int Q Community Health Education, 30(3), 271- 286.

Oliver, Joann Simon, (2008). "Prostate Cancer Screening Patterns among African American Men in the Rural South." Dissertation, Georgia State University.

Orem J.W (2009) .The Roles of National Cancer Research Institutions in Evolving a Comprehensive Cancer Control Program in a Developing Country: Experience from Uganda. Uganda Cancer institute.

Polit, D. F., & Hungler, B. P. (1999). Nursing research principles and methods (6th ed.). New York: Lippincott.

Rawlet K.E (2011) Analytical evaluation of the health belief model and the vulnerable population's conceptual, model applied to a medically underserved, rural population. International journal of applied science and technology, 1(2) 15-21.

Rebbeck, T. R., Devesa, S. S., Chang, B. L., Bunker, C. H., Cheng, I., Cooney, K., *et al.* (2013). Global patterns of prostate cancer incidence, aggressiveness, and mortality in men of African descent. Prostate Cancer, 2013, 560857

Roobol, M. J., Kerkhof, M., Schroder, F. H., Cuzick, J., Sasieni, P., Hakama, M.,(2009). For nonattendance and contamination in the European Randomized Study of Screening for Prostate Cancer (ERSPC). Eur Urol, 56(4), 584-591.

Ross, L. E., Uhler, R. J., & Williams, K. N. (2005). Awareness and use of the prostate-specific antigen test among African-American men. *Journal of the National Medical Association, 97*(7), 963-971.

Sigrid .D. (2010). Prostate Cancer Screening with PSA Department of Urology Institute of Clinical Sciences .The Sahlgrenska Academy at Göteborg University Göteborg, Sweden

Swan, J., Breen, N., Coates, R. J., Rimer, B. K., & Lee, N. (2003). Progress in cancer screening practices in the United States: Results from the 2000 national health interview survey. *Cancer, 97*(6), 1528-1540.

Tafian S.S., (2009) prediction of breast self examination in a sample of Iranian women: An application of the health belief model.BMC women's Health 37:9.Available from http://www.biomedcentral.com/1472-6874/9/37.

Wasike, R. W., & Magoha, G. A. (2007). Descriptive case series of patients presenting with cancer of the prostate and their management at Kenyatta National Hospital, Nairobi. *East Afr Med J, 84*(9 Suppl), S31-35.

WHO, (2009). Fighting non communicable diseases: Africa's new silent killers. African Health Monitor, 8(1), 7-34.

Yamoah, K., Beecham, K., Hegarty, S. E., Hyslop, T., Showalter, T., & Yarney, J. (2013). Early results of prostate cancer radiation therapy: an analysis with emphasis on research strategies to improve treatment delivery and outcomes. *BMC Cancer, 13*, 23.

Yen, I. H., & Syme, S. L. (1999). The social environment and health: A discussion of the epidemiologic literature. *Annual Review of Public Health, 20*, 287-308.

Zeigler-Johnson, C. M., Rennert, H., Mittal, R. D., Jalloh, M., Sachdeva, R., Malkowicz, S. B., *et al.* (2008). Evaluation of prostate cancer characteristics in four populations worldwide. *Can J Urol, 15*(3), 4056-4064.

APPENDICES

Appendix 1: Work plan in Gantt chart+

Activity	Jul-Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015	Jul 2015	Aug 2015	Sep 2015	Oct 2015	Nov 2015
Topic identification and concept development															
Proposal writing															
Ethics research committee Review															
Correction and re-submission to ethics research committee															
Training of research assistants and pre-testing															
Data collection															
Data analysis															
Report writing															
Report examination															
Defense of thesis at SONS															
Final report refinement and submission															

Appendix 2: The Budget

COMPONENT	ACTIVITY DESCRIPTION / COST	ITEM	UNIT OF MEASUREMENT	UNIT COST (KSH)	TOTAL (KSH)
	Stationeries	Foolscaps	4 reams	@500	2,500
		Photocopy papers	5 reams	@500	2,500
		Proposal printing	1 drafts	@500	500
		Photocopy charges	250 pages	@2	500
	Computer services	Laptop	1	30,000	30,000
	Surfing	Airtime	20	500	10,000
	Browse of literature	Modem	1	3000	3,000
Subtotal					**49,000**
Research	Pretesting	Transport and sustenance for 3 persons	2 days	@1,000	6,000
	Questionnaires	Typing and Printing questionnaires	10 copies	@10	100
		Photocopy of questionnaires	2000 pages	@2	4000
	Data collection	Research assistants (2)- Transport and subsistence reimbursement	30 days	@1,000	60,000
		Data processing and analysis	-	-	15,000
Approvals	Ethical Review Fees	Review of Proposal Ministry of Science and technology		2000 1000	2000 1000
Sub –total					**88,100**
Reports	Draft reports (3)	Printing	450 pages	@10	4,500
		Photocopying	8 copies	@600	4,800
	Final reports	Correction and Printing	150 pages	@ 10	1,500
		Photocopying	8 copies	@ 300	2,400
		Binding	8 copies	@ 500	4,000
Sub-total					**11,800**
Grand total					**148,800**

Appendix 3: English consent information document

Title of the study:" **Factors associated with uptake of prostate cancer screening among patients seeking health care services in Kenyatta National Hospital."**.

Researcher	**Institution**	**Contact**
Robert N Makori	University of Nairobi	P. O. Box 120-00202 Nairobi, Tel Number 0722-675301
SUPERVISORS Mrs. Angeline C.Kirui	University of Nairobi	P.O Box 19676-00202, Nairobi Tel Number 0720-440665
Professor Ann Karani	University of Nairobi	P.O Box 19676-00202, Nairobi Tel Number 0721850910

I. **Introduction to the study**

You are invited to fill in the questionnaire or to participate in a focus group discussion session as a part of a research study, carried out by Robert N Makori who is student pursuing Master of Science in Nursing (Oncology) at the University of Nairobi. The research will be carried in the Accident and Emergency Unit, KNH between May and July 2015. The intention of this research study is to find out factors associated with uptake of prostate cancer screening among patients seeking health care services at Kenyatta National Hospital. The study will shed light on the reasons patients seek health care services when prostate cancer is quite advanced and help generate strategies to improve any harmful effect of the Prostate cancer treatment.

You are being invited to take part because you are in the age bracket where prostate cancer is common. Approximately 190 patients will be recruited to participate in either filling in a questionnaire or participating in a focus group discussion. The questionnaire filling will take between 30-40 minutes through guidance of the researcher or the assistant while the audio-recorded focus groups will be onetime events lasting between 30minutes and 1 hour, and will be held in one of the seminar rooms in Accident and Emergency Department KNH. Should you decide to participate, you will be highly appreciated.

This consent form gives you information about the study, the risks and benefits, and the process that will be explained to you. Once you understand the study, and if you agree to take part, you will be asked to sign your name or make your mark on this form. You will be given a copy to take home

II. **Study Objective**

The main objective of the study will be to identify factors associated with uptake of prostate cancer screening among patients over 40 years seeking health care services in the Accident and Emergency department (A&E) of Kenyatta National Hospital (KNH).The specific objectives will be to: determine prevalence of prostate cancer screening; assess perception of self-vulnerability towards prostate cancer and establish factors that influence uptake of prostate cancer screening.

III. Benefits of the study

Regarding benefits, there may not be any direct benefits for you as an individual participant, but the information collected will help shed light on the reeasons that determine uptake of Prostate cancer Screening among patients seeking health care services in KNH. The

study will also generate information that will be used to come up with strategies to improve the quality of treatment and care of Prostate cancer. The findings of the study may be used for planning and designing appropriate interventions by the Ministry of Health, Non-Governmental Organizations and other stakeholders.

IV. Risks:

There are minimal risks to you for participating in this study. There is a possibility that some of the questions asked may make you uncomfortable. If so, know that you don't have to answer these questions if you don't want to. The researcher and the research assistant will keep all the information obtained through questionnaire and during focus group discussion sessions confidential**.**

V. Procedures

i) **Questionnaire procedure**

You shall be asked to read and understand all the questions before answering them. You will not be required to give personal details in the questionnaire. The questionnaire will contain both open and close ended questions. You may also be guided by the researcher or the assistant to respond to the questions appropriately. Filling a questionnaire will take between 30-40 minutes. The questionnaire will be divided into different sections to gather information on socio-economic history, social concerns, demographic data ,awareness and knowledge levels, perception of prostate Cancer self-vulnerability and uptake of prostate cancer screening.

ii) Key informant interview

During the interview, you will be asked to participate in a general discussion of your professional experiences during the treatment of these patients. There will be guiding questions which will help key informants narrate their lived experiences during PC screening and treatment. At least individual sessions will be conducted, and you will be given a chance to be interviewed. During interview, questions will be asked to the respondents to gather their views on certain experiences.

VI. Compensation

There shall be no monetary rewards for the participants in this study. However, refreshments worth 150 shillings will be served to each participant during the FGD session.

VII. Voluntary Participation and Withdrawal Remember, your participation is entirely voluntary. Should you change your mind, you have the right to drop out at any time without facing any consequences. You may skip questions or stop participating at any time.

VIII. Sharing the results

The results of this study may be presented during scientific and academic forums and may be published in scientific journals and academic papers

IX. Confidentiality

You will not be required to write your name or to give any personal identification in the questionnaire. Concerning the Interview sessions, after written transcripts are made, the audio tapes will be destroyed and the transcripts will be kept under lock and key. There will be no way

to identify individual participants. There shall not be use of any information that would make it possible for anyone to identify you in any presentations or written reports about this.

X. Contact Persons

You will be given a card to take with you containing contact information for the researcher, her supervisors as well as contact for the Director of Ethics (KNH/UON ERC). If you should have questions or concerns about the content of this study or about your rights as a participant, please feel free to contact them directly. The contacts are as shown below.

Researcher: Robert N. Makori P. O. Box 120-00202 Nairobi, Tel Number 0722-322092

Supervisors: Mrs Angeline C. Kirui P.O Box 19676-00202, Nairobi Tel Number 0720-440665

Professor Ann Karani P.O Box 19676-00202, Nairobi Tel Number 0721850910

Director of KNH/ UON – ERC, Professor A.N. Quantai. P.O Box 20723- 00202, Nairobi

Tel: 726300-9 Fax: 725272.

Appendix 4: English Consent confirmation form (Questionnaire)

I have read the consent explanation and understood its content. I have been given the opportunity to discuss all my concerns with the researcher. I do therefore agree voluntarily to participate in the study titled **"**Factors associated with prostate cancer screening among men seeking health care services in Kenyatta National Hospital."

Signature of participant---------- Date----------

Signature of researcher ---------- Date ----------

Appendix 4.1 English Consent confirmation form Key informant

I have read the consent explanation and understood its content. I have been given the opportunity to discuss all my concerns with the researcher. I am thus willing to participate in an audio-recorded Key informant discussion session. I do therefore agree voluntarily to participate in the study titled "Factors associated with prostate cancer screening among patients seeking health care services in Kenyatta National Hospital."

Signature of participant---------- Date----------

Signature of researcher ---------- Date ----------

Appendix 5: Kiambatisho: Fomu ya maelezo kuhusu idhini

Kichwa cha Utafiti:

"**Sababu sinazo adhili kuchunguzwa mapema kwa ugongwa ya saratani ya Korodani kwa wanaume katika Hospitali ya Taifa ya Kenyatta (KNH),"**

I. Utangulizi wa utafiti

Unakaribishwa kujaza dodoso au kushiriki katika kikao cha majadiliano ya kikundi kama sehemu ya utafiti, uliofanywa na Robert N Makori ambaye ni mwanafunzi anayesomea uzamili wa uuguzi (Onkolojia) katika Chuo Kikuu cha Nairobi. Utafiti utafanyika katika kitengo cha kupokea Wagonjwa, KNH kati ya Mei na Julai 2015. Madhumuni ya utafiti huu ni kutathimini sababu zinasofanya wagonjwa kutopimwa saratani ya wanaume mapema kati ya wanaume miaka arabaini na zaidi katika Hospitali ya Taifa ya Kenyatta. Utafiti huo utaangazia uzoefu wa kuchunguzwa mapema na kusaidia kujenga mikakati ya kupunguza madhara ya saratani.

Umealikwa kushiriki kwa sababu miaka yako huchangia kupata saratani. Takriban wazazi 190 wataajiriwa kushiriki katika aidha kujaza dodoso au kushiriki katika majadiliano ya kundi lenga. Kujaza dodoso itachukua kati ya dakika 30-40 kupitia uongozi wa mtafiti au msaidizi ilihali kunakili majadiliano ya kundi lenga itakuwa tukio moja la kudumu kati ya madakika30 na saa moja na utafanyika katika moja ya ukumbi ndogo katika KNH . Ukiamua kushiriki , utapewa shukrani sana.

II. **Lengo la Utafiti**

Matokeo ya utafiti huu yatasaidia kujua hali ilivyo katika upatikanaji wa huduma ya tiba kwa wagonjwa wa Saratani zilizofeli katika hospital kuu ya Kenyatta, Maeneo maalum ya utafiti ni pamoja na: Kuchunguza wasiwasi ya kijamii na kiuchumi na uzoefu wa madaktari na wauguzi wanapochungusa aina hii ya saratani

III. Faida ya Utafiti

Kuhusu faida, kunaweza kuwa hakuna faida yoyote ya moja kwa moja kwako kama mshiriki binafsi, lakini taarifa zinazokusanywa itasaidia kuaangazia uzoefu wa kisaikolojia ya wazazi ambao watoto wao wanaendelea na matibabu ya saratani ya damu. Utafiti huo pia utatoa taarifa ambazo zitatumika kuweka mikakati ya kuboresha uchunguzi mapema saratani ya wanaume.. Matokeo ya utafiti yanaweza kutumika kwa ajili ya kupanga na kubuni mikakati sahihi na Wizara ya Afya , mashirika ya Kiserikali na washikadau wengine.

Hatari : IkiwaKuna hatari ndogo kwako kushiriki katika utafiti huu.Kuna uwezekano kwamba baadhi ya maswali utakaoulizwa yanaweza kukukera. Kama ni hivyo , jua ya kwamba una haki ya kutojibu maswali haya kama wewe hautaki. Mtafiti na msaidizi wa utafiti wataweka habari zote zilizopatikana kwa njia ya dodoso na wakati wa vikao vya majadiliano ya kundi lenga kwa siri.

V. Utaratibu:

Utaratibuwa dodoso

Utaulizwa kusoma na kuelewa maswali yote kabla ya kuyajibu. Hautahitajika kutoa maelezo ya kibinafsi katika dodoso. Dodoso itabeba maswali wazi na yale karibu kumalizika. Unaweza pia kuongozwa na mtafiti au msaidizi kujibu maswali ipasavyo. Kujaza dodoso itachukua kati ya

dakika 30-40. Dodoso itakuwa imegawanyika katika sehemu mbalimbali kukusanya taarifa juu ya historia ya kijamii na kiuchumi , masuala ya kijamii , hisitoria ya kifamilia yakoya ugonjwa ya saratani,Ufahamu,Ujuaji na habari za uchunguzi wa ugonjwa ya Korodani

Utaratibu wa Kundi Lenga:

Wakati wa majadiliano ya kundi lenga, madaktari na wauguzi watatoa maoni na uzoefu wakati wanapohudumia wagonjwa wa saratani ya Korodani. Kutakuwa na maswali elekezi ambayo itasaidia washiriki kueleza uzoefu wao Angalau vikao tatu vya kundi lenga vitafanyika , na wewe utakuwa katika moja ya vikundi. Vikundi vitajumuisha washiriki sita kwa kila kikundi. Wakati wa majadiliano ya kundi lenga, waliohojiwa wataulizwa maswali kukusanya maoni yao juu ya uzoefu fulani wakati wa matibabu ya saratani ya korodani.

VI. Malipo

Hatutakuwa na malipo hasa lakini wale watashiriki kwa mjadala watapewa kinywaji kidogo cha shilingi mia moja na hamsini kila mmoja wakati wa majadiliano.

VII. Kushiriki kwa Hiari na Kujiondoa

Kumbuka, kushiriki kwako ni kwa hiari kabisa. Ukibadili maoni yako, una haki ya kujiondoa wakati wowote. Unaweza ruka maswali au kuacha kushiriki wakati wowote.

VIII. Usiri

Hautahitajika kuandika jina lako au kutoa kitambulisho chochote cha kibinafsi katika dodoso. Kuhusu vikao vya kundi lenga, baada ya kunakili mahojiano, kanda za sauti zitaharibiwa na nakala yatawekwa chini ya kufuli na ufunguo. Hakutakuwa na njia ya kutambua washiriki

binafsi. Huwezi kutambuliwa, hakutakuwa na matumizi ya taarifa yoyote ambayo ingewezesha mtu yeyote kukutambua katika maonyesho yoyote au ripoti kuhusu hili

IX. Kuelezewa Matokeo ya utafiti huu)

Matokeo ya utafiti huu yatajadiliwa kwa ukumbi tofauti wa usayansi na itachapiswa kwa vitabu vya usayansi na utafiti.

X. Mawasiliano

Utapewa kadi yenye anwani za mawasiliano za mtafiti, wasimamizi wake na vile vile anwani za mawasiliano ya Mkurugenzi wa Maadili (KNH / UON ERC). Kama una maswali au wasiwasi kuhusu maudhui ya utafiti huu au kuhusu haki zako kama mshiriki , tafadhali jisikie huru kuwasiliana nao moja kwa moja. Anwani ni kama inavyoonnyeshwa hapa chini :

Mtafiti: Robert N Makori S.L.P 120-00202 Nairobi, Nambari ya simu 0722-675301

Supervisors: Mrs Angeline C.Kirui S.L.P 19676-00202, Nairobi Nambari ya simu 0720-440665

Professor Ann Karani S.L.P 19676-00202, Nairobi Nambari ya simu 0721850910

Director of KNH/ UON – ERC, Professor A.N. Quantai. S.L.P 20723- 00202, Nairobi

Nambari ya simu: 726300-9 Fax: 725272.

Appendix 6: Fomu ya kuthibitisha idhini (Dodoso)

Nimesoma maelezo ya idhini na kuelewa maudhui yake. Nimepewa fursa ya kujadili maswala yangu yote na mtafiti . Hivyo basi nimekubali kwa hiari kushiriki katika utafiti uliopewa kichwa " Sababu sinaso adhili kuchunguzwa mapema kwa ugongwa ya saratani ya Korodani kwa wanaume katika Hospitali ya Taifa ya Kenyatta (KNH),"

Sahihi ya Mshiriki ---------- Date----------

Sahihi ya Mtafiti ---------- Date ----------

Appendix 7: Questionnaire

SERIAL NO.

Title: Factors associated with prostate cancer screening among men seeking health care services in Kenyatta National Hospital.

Date: _____

PI/designee initials ……

INSTRUCTIONS

Please do not write your name anywhere in the questionnaire.

Put a tick (√) in box next to the right response

Where no responses/choices are provided please write the response in the spaces provided.

SOCIO DEMOGRAPHIC CHARACTERISTICS

Put a tick inside the box appropriately to indicate your response e.g.

√

How old are you ? _____ yrs

1) county:_____

What is your religion? Catholic

☐ Protestant ☐ Muslim ☐ Traditional ☐ None/Atheist

3) Marital Status ☐ Married ☐ Single ☐ Widowed ☐ Separated ☐ Divorced

4) Current Occupation ☐ Office work ☐ business ☐ casual work ☐ farmer

5) Level of Education ☐ None ☐ Primary ☐ Secondary ☐ Diploma ☐ University

General Health Status

6) How would you rate your general state of your health today?

☐ Excellent ☐ Good ☐ Fair ☐ Poor

7) Do you smoke? ☐ Yes ☐ No

8) Do you Drink alcohol? ☐ Yes ☐ No

9) When did you last have a thorough medical examination of your body?

☐ Never ☐ last Month 3 months ago ☐ 6 months ago ☐ 1 year ago ☐ 2years ago

10) It is important to get tested to prevent disease?

☐ I strongly agree ☐ I agree ☐ I disagree ☐ I strongly disagree

11) When do you see a doctor?

☐ Only when I am sick ☐ once every 6 months whether sick or not

☐ Once a year whether sick or not

12) Do you currently suffer from any urinary tract pains/discomforts ☐ Yes ☐ No

What are some specific health screenings that you've participated in----------

---

Family History of Cancer

13) Does anyone in your Family have cancer? ☐ Yes ☐ No if '**yes**' proceed to quiz 17, if '**NO' proceed from quiz 20.**

14) What type of cancer…….

15) What is their relation to you……..

16) Has anyone in your Family died of Cancer…….

17) What is the relation to you…….

18) Has any friend of yours died from Cancer?

☐ Yes

☐ No

If 'Yes 'What type of Cancer was it?

……..

Respondent's knowledge on prostate screening testing

19) Have you heard of prostate cancer screening?

☐ Yes ☐ No

20) If yes, where did you hear it from? (Tick all that's applicable.)

☐ Hospital ☐ Doctor ☐ Pharmacy ☐ Friend ☐ Relative ☐ Radio ☐ TV ☐ Newspapers/books/magazines ☐ other specify…….

21) Do you believe that you are at a higher risk of getting prostate cancer than other men?

☐ Strongly agree ☐ Agree Disagree ☐ Strongly disagree

22) If you have been screened for prostate cancer, which method was used?

☐ Prostate specific antigen (PSA) ☐ Direct rectal examination (DRE) ☐ Biopsy ☐ I do not know

23) Do you know anyone who has taken a Prostate Cancer Screening test?

☐ Yes ☐ No

If yes, who are they to you? ☐ Family member ☐ Relative ☐ Friend

24) I believe that there is nothing I can do to prevent me from getting prostate cancer:

☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

25) What I eat will determine if I get prostate cancer or not

☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

26) Would you like to know more about Prostate Cancer-screening? ☐ Yes ☐ No

If No, is it because?

☐ I am afraid ☐ I do not need to know more about it ☐ God protects his own

☐ It does not matter, whether I take it or not ☐ I do not want to know ☐ I do not know where to get the information

27) Doing prostate cancer screening/test is embarrassing for me

☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

28) From what you know, how often should one go for prostate cancer screening?

☐ Yearly ☐ every two years ☐ every three years ☐ do not know

29) What do you think gets in the way of people getting screened/ tested for prostate cancer

☐ Lack of knowledge ☐ Fear of the unknown ☐ deliberately not wanting to know ☐ God protects, why bother

30) Do you know of specific prostate cancer screening tests by name? ☐ Yes ☐ No

31) If yes have you heard of the following screening methods?

Prostate screening antigen (PSA) assay testing ☐ Yes ☐ No

Digital rectal examination (DRE) ☐ Yes ☐ No

Biopsy test ☐ Yes ☐ No

Other Specify …….

32) Where did you hear any or all of the tests from? ☐ Hospital ☐ Doctor

☐ Pharmacy friend ☐ relative ☐ radio ☐ TV

☐ Newspapers/books/magazines

33) A man can have prostate cancer without having any pain or symptoms ☐ True

☐ False ☐ I do not know

34) If someone has prostate cancer, I think it is already too late to get treated for it:

☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

35) Prostate cancer will kill you no matter when it is found and how it is treated

☐ Strongly agree Agree ☐ Disagree ☐ Strongly disagree

36) I think getting checked for prostate cancer makes people scared that they may really have prostate cancer ☐ Strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

37) I think some people do not want to know if they have prostate cancer because they do not want to know they may be dying from it ☐ strongly agree ☐ Agree ☐ Disagree ☐ Strongly disagree

38) I follow a planned exercise program ☐ never ☐ sometimes

☐ Routinely

Questionnaire instrument and Consent Form (Kwa Kiswahili)

Orodha Ya Mwaswali yalioulizwa kwenye Uchunguzi huu .Tarehe……..

Daraja, hali ya maisha, na kipimo ya kifedha ya Anayejibu maswali

1) Umri wako……..
2) Mahali unaishi----------

3) Dini yako? ☐ Mkatholiki Mu☐estanti Muisilamu ☐

☐ Dini ya kitamaduni ☐ Asie amini chochote

4) Hali Yako ya Ndoa☐ Ni☐ Mke ☐oa Nim☐wa Hatuishi pamoja

☐ NipoTalakani

5) Kiwango chako cha elimu kina lenga wapi☐ hamna ☐ msingi ☐ sekondari

☐Diploma ☐chuo kikuu

b) Hali Yako ya Kimwili

6) Je, waweza kusema hali yako ya mwili kiafya iko namna gani Kwa sasa?

☐Bora ☐ Nzuri ☐ sawa tu ☐ hohe hahe

Wa vuta sigara ?

☐Ndio ☐la

7) Wa tumia mvinyo? ☐ ndio ☐ la

8) Kipimo chako cha utumiaji wa matunda na mboga wa lenga wapi:

☐ juu sana ☐ kati kati ☐ kiasi ya chini ☐ hohe hahe

☐ sikuli hata

9) Ni lini mwisho mwili wako ulikaguliwa na daktari, kiafya? ☐ Sijawahi ☐ mwezi Jana

☐ Miezi tatu zilizopita ☐ miezi sita ilio pita ☐ mwaka mmoja uliopita
☐ Miaka miwili ilio pita

10) Unakubali vipi kuhusu kupimwa ili kuzuia magonjwa? ☐ Nakubali zaidi

☐ Nakubali tu ☐ sikubali ☐ sikubali kabisa

11) Ni vipimo gani za magonjwa ushawahi kufanyiwa ……..,

12) Unakubali vipi kuhusu kupimwa ili kuzuia magonjwa? ☐ Nakubali zaidi ☐
☐ nakubali tuSikubali ☐ sikubali kabisa

13) Je, Ni lini unamuona Daktari?

☐ Wakati niko mgojwa ☐ kila ya miezi sita, kama nipo mgonjwa au la

☐ Kila mwaka kama nipo mgonjwa au la

c) Historia ya Kifamilia Yako ya zaratani

14) Kuna yeyote Kwa familia yako ambaye anaugua ugonjwa wasaratani? .....

15) Ni aina gani ya saratani?……

16) Je uhusiano yake na wewe ni mgani? ……..

17) Familia yako ishawahi kumpoteza mtu yeyote Kwa ugonjwa wa saratani? …….

18) Ilikua ni saratani aina gani...

19) Je uhusiano ya mtu huyu na wewe ni mgani?…….

20) ushawahi kumpoteza rafiki yeyote kwa njia ya saratani ☐ ndio ☐ la

21) Je unafahamu ilikuwa niaina gani ya saratani?.....

Ufahamu, Ujuaji na habari za ugonjwa wa saratani ya Korodani na Anayejibu maswali

22) Je ushawahi kusikia ugonjwa wa saratani ya korodani ? ☐ ndio ☐ la

23) Je unaamini kwamba saratani ya korodani ni ungonjwa hatari? ☐ Ndio ☐ la

24) Je kuna mtu umjuae ambaye ana ugonjwa wa saratani ya korodani? ☐ Ndio ☐ la

25) Je unajua mtu yeyote ambaye alifariki kutokana na saratani ya korodani ☐ ndio ☐ la

26) Je ushawahi kusikia uchunguzajiwa ugonjwa wa saratani ya korodani ☐ ndio ☐ la

27) Je ushawahi kuchungunzwa kuhusu saratani ya korodani? ☐ ndio ☐ la

28) Je ulipata habari za saratani ya korodani kutoka wapi? Marafiki magazetini

Runinga radio daktari mlezi shemeji

29) Je wazijua dalili za saratani ya korodani? Yes No

30) Kama ndivyo, dalili hizi ni kama zipi? Ugumu wa kukojoa damu kwenye mkojo maumivu mifupani Uchungu ngononi

31) Je kulingana na ufahamu wako, ninani ambaye hushikwa na ugonjwa wa saratani ya korodani?

32) Je wafikiri ugonjwa wa saratani ya korodani waweza kuzuiwa? Ndio la

33) Kama ndivyo, ugonjwa huu waweza kuzuiwa Kwa njia gani?

Usafi wa sehemu za siri ukaguzi wa mara kwa mara utumiaji wa mipira ya kondomu ulaji wa chakula inavyo pendekezwa kujikinga na watu wengi ngononi

zinginezo……..

33) Je saratani ya korodani yaweza kutibiwa? Ndio la

34) Kama ndio,je,ni kifungu gani saratani ya korodani waweza kutibika

Kifungu cha mapema wakati wowote matibabu yanapo anzishwa kifungu cha mwisho sijui

35) Je, unahabari ya taratibu zozote za kutibu saratani ya korodani ☐ ndio ☐ la

36) Kama ndivyo,ni taratibu gani za kutibu saratani ya korodani ambazo unazijua?

☐ Radiotherapy ☐ upasuaji ☐ kemotherapi/madawa

☐ Radiotherapi na upasuaji ☐ upasuaji, madawa na Radiotherapi

d) Ufahamu, Ujuaji na habari za uchunguzi wa ungonjwa wa saratani ya Korodani na Anayejibu maswali

37) Je ushawahi kusikia uchunguzi wa saratani ya korodani? ☐ ndio ☐ la

kamandivyo, ulisikia kutoka wapi? ☐ Hospitalini ☐ Daktari ☐ famacia ☐ rafiki

☐ mjomba ☐ radio ☐ runinga ☐ magazetini ☐ zinginezo…….

38) Je,kama umewahi kuchunguzwa ungonjwa wa saratani ya korodani, ni utaratibu gani ulitumiwa?

☐ Prostate specific antigen (PSA) ☐ Direct rectal examination (DRE) ☐ Biopsy

☐ sijui

39) Je wamjua mtu yeyote ambaye ameshajunguzwa ugonjwa huu wa saratani ya korodani ?

☐ Ndio ☐ la

Appendix 8: Key Informant's Interview Guide

I am going to ask you a few questions on what you think about factors associated with uptake of prostate cancer screening among men over 40 years of age seeking health care services at A&E department. I expect this session to be as interactive as possible. Be as truthful as you can. In the process of discussions tape recording of the proceedings may take place. In all issues respect, confidentiality, dignity and responsible behavior will be observed. All issues discussed will be only for the purposes of this research and will not be mentioned in any other forum. In case you don't understand any of the questions kindly seek clarification. Let us now discuss each of the following questions.

1) Do you think there is an association between socio demographic variables and uptake of prostate cancer screening? Please elaborate.
2) Please tell me the barriers that deter prostate cancer screening among men in your setup and how? What are the barriers?
3) In your opinion what are the factors associated with uptake of prostate cancer screening among men aged over 40 years in A&E department? Please elaborate.
4) Do you think the current investigative measures of prostate cancer screening are accessible?
5) In your opinion what is the uptake level of prostate cancer screening among men aged over 40 years? Please elaborate

Appendix 9: Authority Letter to carry out research work

UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

KNH/UON-ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

18 MAY 2015

Ref: KNH-ERC/A/232

18th May, 2015

Robert Nyambane Makori
H56/70304/2013
School of Nursing Sciences
University of Nairobi

Dear Robert

Research Proposal : Factors associated with uptake of prostate cancer screening among patients seeking health care services in Kenyatta National Hospital (P83/02/2015)

This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above proposal. The approval periods are 18th May 2015 to 17th May 2016.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
g) Submission of an *executive summary* report within 90 days upon completion of the study This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website **www.erc.uonbi.ac.ke**

Protect to discover

Yours sincerely,

PROF. M. L. CHINDIA
SECRETARY, KNH/UON-ERC

c.c. The Principal, College of Health Sciences, UoN
The Deputy Director CS, KNH
The Chair, KNH/UoN-ERC
The Director, School of Nursing Sciences, UoN
Supervisors: Mrs.Angeline C. Kirui, Prof. Ann Karani