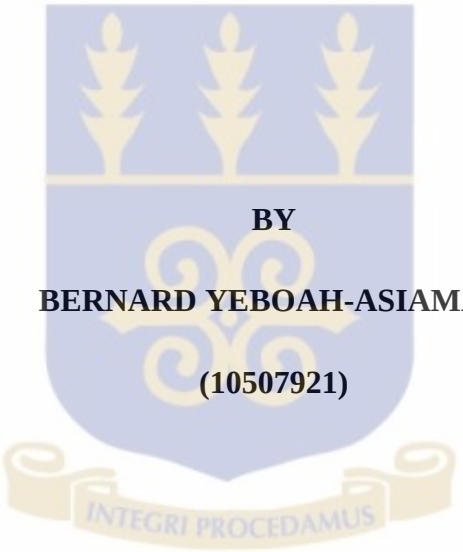
SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA

PERCEPTIONS AND ATTITUDES ABOUT PROSTATE CANCER AMONG MALE TEACHERS IN THE SUNYANI MUNICIPALITY



BY

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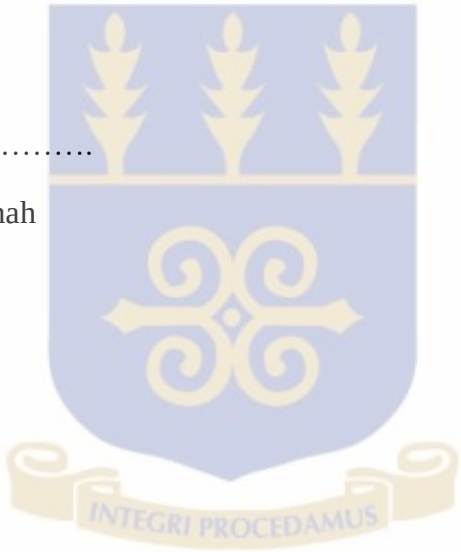
THIS DISSERTATION IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE MASTER OF PUBLIC HEALTH (MPH) DEGREE

JULY, 2015

DECLARATION

I, Bernard Yeboah-Asiamah, do hereby declare that, with the exception of other people's works which have been duly acknowledged, this dissertation is my own work under the supervision of Dr. Mercy M. Ackumey, and that this work, either whole or in part, has not been presented elsewhere for another degree.



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Bernard Yeboah-Asiamah Date

(Student)

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Mercy M. Ackumey, PhD Date

(Supervisor)

DEDICATION

I dedicate this work to my parents Mr. and Mrs. Asare Bediako, and my siblings who have been my source encouragement.

ACKNOWLEDGEMENT

I am highly grateful to the almighty God for His grace and mercy shown upon me throughout this study.

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ABSTRACT

Prostate cancer is rated the second leading cause of cancer-related deaths among men in the world and in Ghana, the most frequently diagnosed cancer among men. Studies have identified low awareness and lack of knowledge, perceptions, and negative attitudes toward PC as barriers to screening for PC and thus early detection of the disease. This has resulted in the disease been diagnosed at advanced stages which have no better treatment outcomes. This cross sectional descriptive study examined the perceptions and attitudes of male teachers in the Sunyani Municipality about PC by examining perceptions of PC, assessing knowledge about the causes, symptoms and treatment of PC and examining PC attitudes about early detection of PC. The study employed a structured questionnaire to collect data on knowledge, perceptions and attitudes toward PC, and was conducted among 160 male teachers in the Sunyani Municipality who were aged 45 to 60 years. Data entry and analysis was done using STATA 12. The study found high awareness and knowledge on PC, good perception about PC and positive attitude towards PC screening among male teachers in the Sunyani Municipality. The study found television and radio as the major sources of information on PC. Socio-demographics were found not to be associated with knowledge and perceptions about PC, and attitudes toward PC screening. Knowledge of PC was found to influence perceptions about PC (OR 9.12; 95% CI, 1.88-44.42) and attitudes toward PC screening (OR 4.23; 95% CI, 1.74-10.28), however, perceptions (OR 1.69; 95% CI, 0.52-5.55) did not influence attitudes toward PC screening. The study concludes that educational campaigns should be aimed at increasing the knowledge level of PC for all the adult male population above 35 years irrespective of their educational backgrounds. This may help encourage more males to screen for PC.

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LIST OF ABBREVIATIONS

ACS	-	American Cancer Society
AIDS	-	Acquired Immune Deficiency Syndrome
ASR	-	Age-Standardized Rate
DRE	-	Distal Rectal Examination
GES	-	Ghana Education Service
GHS	-	Ghana Health Service
GLOBOCAN	-	Global Cancer Project
HIV	-	Human Immunodeficiency Virus
MOH	-	Ministry of Health
PC	-	Prostate cancer
PSA	-	Prostate specific Antigen
SCT	-	Social Cognitive Theory
TB	-	Tuberculosis
WHO	-	World Health Organization

DEFINITION OF TERMS

PC is the cancer of the prostate gland in males, commonly known as adenocarcinoma.

Perception about PC is defined as the respondent's beliefs about the causes, perceived seriousness and, perceived susceptibility of risk of PC.

Attitudes are the behaviours adopted by respondents related to the prevention of Prostate cancer. These behaviours include but are not limited to screening for PC.

Knowledge of PC is defined respondent's information about the signs, symptoms, causes and health-seeking options for PC.

CHAPTER ONE

INTRODUCTION

1.0 Background

Deaths caused by cancers are the leading deaths in well advanced nations and the second leading cause of death in emerging nations (Calys-Tagoe, Yarney, Kenu, Adwoa, Amanhyia, Enchill & Obeng, 2014). These deaths are more than the combined deaths from HIV/AIDs, Tuberculosis (TB) and malaria (MOH/GHS, 2014). In 2012, 14.1 million new cancer cases were recorded with 8.2 million deaths and 32.6 million still living with the disease (Calys-Tagoe et al., 2014). It is however estimated that by 2020, out of the cancer cases reported globally 70% will come from developing countries (MOH/GHS, 2014). The two commonly diagnosed cancers and the leading cause of cancer-related deaths in the world are breast cancer, predominantly in females and lung cancer mostly diagnosed in males (Calys-Tagoe et al., 2014). However, the second most frequently diagnosed cancer among men as at 2011, was Prostate cancer (PC) (Etawo, Ekeke, & Mbiaba, 2012).

Cancer of the prostate is an important public health problem (Udeh, Amu, Nnagbugwu, & Ozoemena, 2015). As the second common cancer, PC is the sixth leading cause of death among men in the world (Jemal, Lortet-tieulent, Ward, Ferlay, Brawley, & Bray, 2012). PC is a frequently diagnosed cancer in men and an estimated 2,000 men are diagnosed each day worldwide, with one man expected to die from the disease every 2 minutes (Fitzpatrick, Kirby, Brough, &Saggerson, 2009). The PC burden is projected to grow to 1.7 million new cases and 499 000 new deaths by 2030 simply due to the growth and

aging of the world's population (Jemal et al., 2012). In 2008, an estimated 899,000 PC cases and 258,000 PC deaths were expected. Of these, 72% of the cases and 52% of the deaths occurred in developed countries, mainly in Europe and the United State (Belbase, Agrawal, Pokharel, Agrawal, Lamsal & Shakya, 2013; Jemal et al., 2012).

In Africa, PC is the leading cancer in both occurrence and the number of deaths (Rebbeck et al., 2011). The incidence of PC is estimated at 39,600 cases, at an Age Standardized Rate (ASR) of 17.5 per 100,000 population and the death cases (28,000) at an Age Standardized Rate of 12.5 per 100,000 as in 2008. PC in Africa is expected to cause an estimated 57,048 deaths in 2030 (Rebbeck et al., 2011). Specifically Western African in the same year recorded an estimated new cases of 13,300 (ASR of 22.2 per 100,000 population) and death cases of 10,700 (ASR of 18.3 per 100,000 population) (Jemal et al., 2012).

In Ghana, according to Global Cancer Project (GLOBOCAN) 2008, the Age-Standardized PC incidence rate is estimated to be in the range 11.8-20.4 per 100,000 population and ASR mortality of from 15.3-22.0 per 100,000 population (Jemal et al., 2012). Recently, 7% screen detected PC prevalence has been recorded in Accra (Hsing et al., 2014). In 2012, PC was one of the common cancers seen among males at the Korle-Bu teaching hospital representing 26.5% of cancer cases (Calys-Tagoe et al., 2014). In Kumasi, the Kumasi Cancer Registry has reported PC incidence of 13.2% and as one of the common cancers among males (Laryea et al., 2014). According to Wiredu & Armah (2006), PC death was the second leading cause of cancer-related deaths among males between the years 1991 and 2000 at the Korle-Bu Teaching hospital. The cases of PC

have risen by the year with incidence of greater than 200 per 100, 000 population per year (MOH/GHS, 2014).

Although PC incidence rates are highest generally in the developed countries, highest estimated death rates of PC are recorded in low-to-medium income areas of South America, the Caribbean, and sub-Saharan Africa (Jemal et al., 2012). These variations are due to early screening and detection among the developed countries (Jemal et al., 2012).

Early detection of PC is suggested to have better treatment outcomes and thus regarded as the best way of reducing deaths related to PC (Chiu, Anderson, & Corbin, 2005). However certain barriers to PC screening are lack of knowledge, negative attitudes toward PC screening and high costs of screening, embarrassment of being aware of the disease, poor knowledge of available healthcare services for PC facilities or practitioners, intention to undergo screening and self-reported screening and not having a regular doctor (Chiu et al., 2005). The lack of knowledge in the general population on many issues about PC which could have informed early screening suggests several PC cases may be reported late.

PC together with other forms of cancer as a chronic disease affect people in so many ways and depending on their perceptions (or definition) of the disease, result in plural health-seeking and cases are eventually reported in advanced stages at the hospitals. Generally, screening and management of cancers often is influenced by local perceptions, and beliefs and cultural norms (Kolahdooz et al., 2014) particularly in the developing countries. For example, the likelihood of screening is often influenced by socio-economic and psychological factors such as cost of screening, fear and perceived effectiveness of

cancer screening (Kolahdooz et al., 2014). Knowledge about PC and beliefs (perceptions; perceived risk and benefits of test) (Blocker et al., 2006; Vedel, Puts, Monette, Monette, & Bergman, 2011), and attitudes are said to influence screening behaviours (Kolahdooz et al., 2014).

With growing incidence of PC and the new interventions for the disease, this study seeks to find out the perceptions, and attitudes toward early detection of PC among male teachers in the Sunyani Municipality.

1.1 Statement of Problem

Deaths caused by PC are the highest among men of Africa origin (Yamoah et al., 2013). In Ghana, the GLOBOCAN 2008 has estimated the Age-Standardized (ASR) mortality of 15.3-22.0 per 100,000 population (Jemal et al., 2012).

PC cases are reported in the late stages (Udeh, et al., 2015; Ali, 2011). In Ghana, about 75% of PC cases are reported at the hospital in the advanced stages (Yamoah et al., 2013; Chu, Ritchey, Devesa, Quraishi, Zhang & Hsing, 2011; MOH/GHS, 2014). The late presentation of Ghanaian men at health facilities may be attributed to lack of awareness and knowledge about the disease, perceptions (or definitions given to the disease) (MOH/GHS, 2014) and attitudes toward early screening and treatment of the disease. In Ghana, the reported prevalence for the Prostate Specific Antigen screening is 2.5% (Chu et al., 2011). Early detection is said to have a 94% 5-year survival rate as compared to 30% when diagnosed in the advanced stages (Chiu et al., 2005). With 75% of cases reported late, suggests that only 25% of Ghanaians will live 5 years after been diagnosed of PC.

Despite PC-related studies in other parts of the world, particularly in developed countries, no study on perceptions and attitudes toward PC among male teachers has been conducted within the Sunyani municipality. This study therefore seeks to examine the perceptions about PC and the attitudes toward PC screening among male teachers in the Sunyani Municipality.

1.2 Conceptual framework

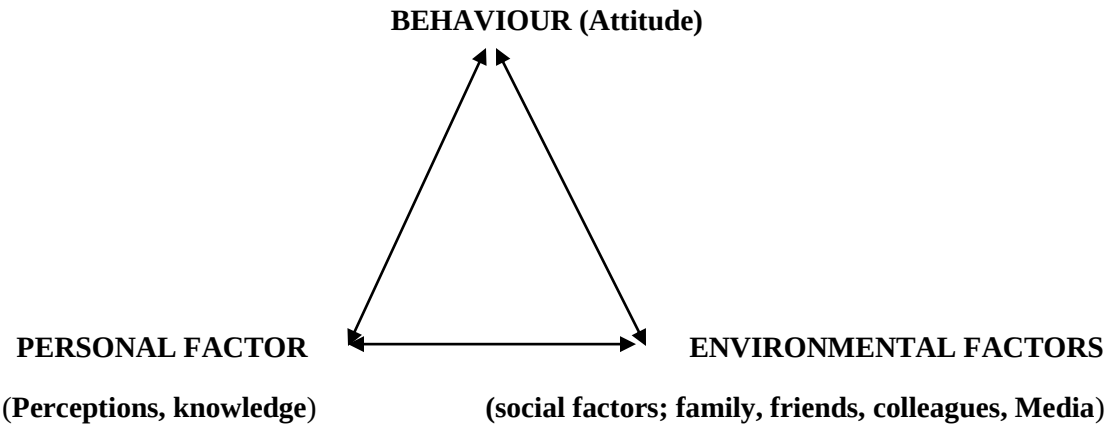

Figure 1: The Social Cognitive Theory, Source: Bandura (1986)

This study adopts the Social Cognitive Theory (SCT). The SCT deals with understanding behavioral change by looking at the cognitive, emotional aspects and aspects of behaviour of an individual. The SCT expatiates on how an individual attains and sustains certain behavioral patterns while allowing for changes through interventions. According to the SCT, environmental factors, the individual (personal factors) and behaviour could explain a person's behavioral change (Bandura, 1986). The environment-related factors refer to the external factors that can influence (either facilitate or impede) an individual's behaviour. These factors comprise the social and physical environment in which the person finds him/herself. The social environmental factors look at influences from family

and friends, and colleagues while the physical environmental factors take into consideration the physical things an individual is surrounded with, such as ambient temperature, availability of food and others. The personal factors refer to the cognitive or mental representation of the environment that may affect a person's behaviour. The personal factors include a perception. The SCT suggests that the environment and the personal factors provide a framework for understanding behaviour, and the environmental, personal factors and behaviour are constantly influencing each other to shape a person's attitude (behaviour).

Personal factors

For the purpose of this study which is aimed at examining the perception and attitude about PC among male teachers in the Sunyani Municipality, the personal factors look at the perceptions and knowledge of the individual about PC. The perceptions held by the person about the causes, perceived seriousness, perceived susceptibility of risk of PC, perceived pain, embarrassment and outcomes of PC screening may influence a person's behaviour (attitude) towards screening for PC. Again, the personal factor looks at the knowledge on the signs, symptoms, causes and the availability of screening test and the benefits of early screening, and treatment or health-seeking options for PC. Knowledge of the health risk and benefits of health practices is one of the core determinants of behavior change (Bandura, 2004; Short, James & Plotnikoff, 2013). Therefore, it suggested that high knowledge on PC will translate into good perceptions and in turn positive attitude and behaviour change.

Environmental factors

These include social support and barriers to behaviour change. For the purposes of this study, these environmental factors will focus on the influence of family and friends, and campaign massages about PC carried out on the various media outlets and by health professionals. One basic principle of the social cognitive theory is observational learning (Bandura, 1986); that is where a person learns by watching others. These factors may serve as facilitators or barriers. People may receive support and encouragement from experiences shared by family and friends, campaign massages about PC carried out on the various media outlets and advice by health professionals or on the other hand may receive negative feedbacks or discouragement from these factors especially from family and friends.

Behavioural factors

The behavioural aspect of the model takes into consideration the person's attitude toward PC and its screening. The behavioural factor is reflected in a person's plans to undertake behaviour at a point in time. It is suggested that positive attitude toward PC and its screening will translate into the willingness and screening practices of the study group.

These factors constantly interact to influence a person's attitude toward early screening for PC, and the recognition of these factors in health interventions or strategies can effectively promote behaviour change.

1.3 Justification of Study

The occurrence of PC is heading towards an epidemic status and it is expected to increase as the population in most regions of the world is aging. This poses a huge socioeconomic threat and has medical implications (Fitzpatrick et al., 2009; MOH/GHS, 2014).

PC is curable if only it is detected early and treatment initiated soon after (Schulman, Kirby, & Fitzpatrick, 2003). Programs to ensure early diagnosis for a better treatment outcome can be effective when there is an increased awareness within the general population about the disease, its signs and symptoms, and its treatment. The average man in Ghana is unaware of PC (MOH/GHS, 2014). Increased awareness of PC may demystify poor perceptions and negative attitudes toward the early screening for the disease. Success stories have been reported for breast cancer in women at risk, where awareness creation has led to an increase in early detection and treatment, decreased death and burden (Schulman et al., 2003). Therefore an increase in awareness among men at risk of PC may result in early case detection and reduction in death and disease burden. Findings from this study may guide public health educational programs on PC and assist in the development of public health interventions on PC. Additionally the study findings will also provide data on the awareness level, perceptions and attitudes towards early detection of PC which can be used as a basis for subsequent academic research.

1.4 Objective of the Study

1.4.1 General Objective

The main study objective was to examine the perceptions and attitudes of male teachers in the Sunyani Municipality about prostate cancer

1.4.2 Specific Objectives

1. To determine the perceptions of prostate cancer among male teachers
2. To assess the knowledge of male teachers about the causes, symptoms and treatment of prostate cancer
3. To find out attitudes of male teachers towards the early detection of the disease

1.5 Research Questions

1. What perceptions do male teachers have of prostate cancer?
2. What knowledge do male teachers have about the causes, symptoms and treatment of prostate cancer?
3. What is the attitude of male teachers toward the early detection of the disease?
4. What are the sources of information for prostate cancer?

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter looks at the clinical features of prostate, the epidemiology and risk factors of Prostate cancer (PC). This section also talks about findings from previous studies on the perceptions (perceived risk, perceived causes and severity), knowledge about PC, sources of information about PC and the attitudes of men toward PC screening.

2.1 Clinical features and Epidemiology of PC

Prostate is a gland peculiar to only men and it's found anterior to the rectum and beneath the urinary bladder. The size of the prostate is age dependent, with a small size in younger men and can become large in older men. Its growth depends on the presence of male hormones. The prostate functions by producing fluid which keep and feed sperm cells in the semen. PC is an adenocarcinoma of the prostate gland. There are other uncommon forms of cancer of the prostate gland which include sarcomas, small cell carcinomas, and transitional cell carcinoma (ACS, 2014). PC in most cases develops slowly but some PCs can develop rapidly and aggressively.

PC in the early stages is asymptomatic. However, some symptoms recognized at the highly developed phase of the disease include; a slow or weak urinary stream, frequent urination especially at night, blood in the urine, erection dysfunction, pain in the hips, back, ribs, and other areas as it extends to the bones, weakness or lack of sensation in the legs, feet, and occasional loss of bladder or bowel control due to the pushing on the spinal cord by the cancer (ACS, 2014).

2.1.1 Epidemiology of PC

PC is the most frequently occurring cancer in men in the world (Babb, Urban, Kielkowski, & Kellett, 2014; Hevey et al., 2009). PC incidence differs significantly between geographical areas and with ethnicity (Babb et al., 2014; Grönberg, 2003). PC incidence is common in the developed countries and less common in developing countries (Haas, Delongchamps, Brawley, Wang, & Gustavo, 2009). In many developed countries; mainly Europe and the United State, PC is one of the most common cancer and among the leading cause of death (Haas et al., 2009) and it's a significant public health problem in the Western countries (Hevey et al., 2009).

In Africa, PCs are reported mostly as cases from the hospitals due to the lack of population-based cancer registries (Chu et al., 2011). However in the last 10 years, a number of new cancer registries have been opened, but data on PC are obtained more often than not from the west Africa countries (Delongchamps, Singh, & Haas, 2007) . The prevalence of PC in Africa is reportedly 300 per 100,000 and purged at 4% by the WHO (Bowa, 2010). PC incidence in sub-Sahara Africa is said to be on the increase in several countries (Chu et al., 2011; Delongchamps et al., 2007), but the total incidence of PC is lower than that reported in Africa-Americans (Chu et al., 2011). The rates of PC vary significantly about 8-times within sub-Sahara Africa with the lowest rate reported in West Africa and highest rates seen in the East (Chu et al., 2011). PC was in 2008 the most commonly diagnosed cancer in Africa-America, the Caribbean and sub-Sahara Africa men recording the age-standardized PC incidence rate of 159.5 per 100,000 in Africa-Americas, 71.1 per 100,000 in the Caribbean and 17.5 per 100,000 in Africa (Rebbeck et al., 2013). The incidence of PC in the world is on the increase across all age

groups and particularly among young men (Delongchamps et al., 2007). According to Bowa (2010), PC is occurring among young men in Africa than in developed countries and this makes PC an important public health problem (Delongchamps et al., 2007).

2.1.2 Risk factors of PC

The exact cause of PC like other cancers is not known. But certain risk factors are recognized to be linked to the development of PC (ACS, 2014). The most commonly risk factors of PC are ageing, hereditary factors (family history) and race or ethnicity (Hevey et al., 2009; ACS, 2014; Alsharef, Kahie, Conradie, Goad & Fourie, 2012). Other predisposing factors include, lifestyle factors such as smoking, diet, alcohol and stress, nationality and workplace exposure (environmental influence) (ACS, 2014; Alsharef et al., 2012), and hormonal factors (Crawford, 2003; Alsharef et al., 2012; Ukoli et al., 2008).

PC is commonly diagnosed in men over the age of 65 with an estimated 6 in 10 cases of PC (ACS, 2014). Men aged 40 years and below are less frequently diagnosed with PC, but the probability of developing PC is higher after age 50 (ACS, 2014). PC risk increases from 0.005% in men below 39 years to 2.2%, that is 1 case in 45 men, among men aged 40 to 59 years and 13.7% (1 case in 7 men) among individuals aged 60 to 79 years and the chance of PC occurring in a man's lifetime is 16.7%, that is 1 case in 6 men (Crawford, 2003). However, histological evidence shows a higher likelihood of developing PC along with aging (Crawford, 2003).

Men with family histories of PC are said to be at risk of the disease (Crawford, 2003; ACS, 2014). PC risk is twice among men whose fathers or brothers are diagnosed of the

disease. The risk of developing PC increases among men with several of their first-degree relations affected by the disease (Crawford, 2003; ACS, 2014). There is an indication that men with family history of the PC develop PC on the average of 6 to 7 years earlier than those without family history and at early ages (Crawford, 2003). An estimated 5% to 10% of all PC cases and about 40% of PC been diagnosed at 55 years are suggested to have a genetic origin (Crawford, 2003).

African-American men and Caribbean men of Africa ancestry are commonly diagnosed of PC than in men of other races. PC incidence in African-Americans is one of the highest in the world (Crawford, 2003; Delongchamps et al., 2007), with nearly 60% higher than reported cases in the white race (Crawford, 2003). African-Americans are diagnosed with PC at younger ages and at advanced stages as compared to their white counterparts (Delongchamps et al., 2007; Bowa et al., 2010). The higher incidence of PC in African-Americans is yet to be explained but it is suggested that both ecological and hereditary factors working together may account for such occurrences (Delongchamps et al., 2007). However, PC incidence is less common in men of Asian, Hispanic or Latino lineage (ACS, 2014).

PC risk is suggested to be influenced by diet (Crawford, 2003; Ukoli et al., 2008) even though the role of diet in PC is not understood (ACS, 2014). A higher PC risk is identified to be associated particularly with the higher intake of fat, red meat, and dairy products (Crawford, 2003; ACS, 2014; Kheirandish & Chinegwumdoh, 2011). PC risk with high level of calcium consumption is also identified (ACS, 2014). However, vitamin D, soy and omega-6 fatty acids are said to be protective of PC (Kheirandish & Chinegwumdoh, 2011).

Sex hormones are said to be associated with the risk of developing PC. Androgen have been indicated in the development of PC (Etawo et al., 2012; Alsharef et al., 2012). The study by Etawo et al. (2012) concluded that elevated levels of testosterone and decreased levels of oestradiol in the blood are risk factors for developing PC. This is contrasted by Alsharef et al. (2012) whose study shown an association between low serum testosterone level and increased level of PSA.

2.2 Perceptions about PC

Perception of PC for the study is defined as the beliefs held about the causes, perceived seriousness and, perceived susceptibility of risk of PC.

Based on the Self-Regulatory Model, there are a group of perceptions which have an effect on attitudes toward diagnosis and treatment of a disease. These perceptions include; the perceived name given to disease and its manifestations (*identity*); perception about how long disease last (*timeline*); beliefs about what causes of the disease (*causes*); the perceived effects the disease has on the individual life (*consequences*); and viewpoint of the length of time that an individual can treat the disease (*treatment control*) (Traeger et al., 2009; Hevey et al., 2009). Perceptions about the causes and/or risk factors of PC have been noted (Allen, Kennedy, Wilson-Glover, & Gilligan, 2007; Nakandi et al., 2013; Fitzpatrick et al., 2009) and it's especially among men who have not been diagnosed of PC (Allen et al., 2007). PC is perceived to be caused by having several sexual partners (Allen et al., 2007), and in Uganda, it is seen as gonorrhea (Nakandi et al., 2013). According to Fitzpatrick et al. (2009), carrying mobile phones in the pocket was reported to increase the risk of developing PC. Hevey et al. (2009) however, report of a

good perception among men at risk of PC with men having a true conceptual picture of PC.

Diverse perception of the severity of PC have been expressed and this may have influenced how men approach the diagnoses and treatment in developed and developing countries, besides the disparities in the availability of test for PC. It has been reported in the United State of America that PC (and cancer in general) is perceived as a death sentence and/or a taboo, and the test (particularly Distal Rectal Examination) and treatment for PC poses as a threat to masculinity (Allen et al., 2007; Pedersen, Armes, & Ream, 2012) but in Uganda some men perceive PC as not as serious as HIV and Aids (Nakandi et al., 2013).

Perceived risk (self-susceptibility risk) for PC has been reported in men with family history of PC. Men whose relatives or family members have been diagnosed or died of PC perceive themselves to be at a risk of getting the disease higher than ordinary men (Bratt, Damber, Emanuelsson, Kristo, & Lundgren, 2000; Cormier, Kwan, Reid, & Litwin, 2002). For instance, in Sweden men with such backgrounds estimated their perceived risk for PC above the general men's perceived risk for PC of 30% (Bratt et al., 2000). Even though men with family history of PC are aware of their increased risk (Cormier et al., 2002) and generally overrate their lifetime risk of PC (Bratt et al., 2000; Matthew et al., 2011), many at the same time underrate their risk (Cormier et al., 2002). An international survey has reported that many men (and their spouses) seen themselves to be at minimal danger of developing PC (Fitzpatrick et al., 2009). According to a study by Rajbabu et al. (2007), Black men do not know they are at increased risk of developing the disease. This is contrary to available evidence which suggests men of black ethnicity

have high risk of developing PC (ACS, 2014). It has been found that risk perception is considerably influenced by environmental (source of information about PC) and personal experience, and it's a process that changes over time (Matthew et al., 2011)

Risk perceptions possess psychological distress (Matthew et al., 2011). Men who perceive themselves at a higher risk of PC experience depression and anxiety which affect their daily lives (Bratt et al., 2000; Matthew et al., 2011). Among men at risk of PC, PC is seen as a long standing illness with severe effects that bring about negative emotional reactions (Hevey et al., 2009). This is seen in men who overestimate their perceived risk of PC (Matthew et al., 2011). On the other hand, Cormier et al. (2002) has reported that among men with a family history of PC, one who have had PC live a normal life after treatment without any psychological distress.

2.3 Knowledge about PC

Knowledge about PC is defined as having adequate information about the signs, symptoms, causes and health-seeking options for PC. Knowledge about PC is said to be an independent predictor of men's uptake of PC screening (Pruthi et al., 2005; Watson et al., 2006), despite Watson et al. (2006) reporting that either very low or high (extreme) levels of PC knowledge could also prevent men's intensions of testing for PC.

High level of knowledge about PC has been reported by previous studies (Cormier et al., 2002; Hevey et al., 2009; Oranusi, Mbieri, Oranusi, & Nwofor, 2012). Oranusi et al. (2012) report that majority of public servants in Amanba state of Nigaria identified one or more symptoms of PC correctly with most common symptom identified been the difficulty in urinating, and identified correctly the risk factors associated with PC. This

high level of knowledge is mostly found among men at high risk, especially those with family history, of PC (Cormier et al., 2002; Hevey et al., 2009) and men previously been diagnosed of PC (Allen et al., 2007), and among white men (Rajbabu et al., 2007). It is reported that knowledge about PC increased among 40% of men after their brothers were diagnosed of PC (Pruthi et al., 2005). As reported by Comier et al. (2002), older men are more knowledgeable about PC than younger men. In contrast, a study has found that older men of low income and from the rural areas whose brothers have been diagnosed with PC had poor knowledge about PC (Pruthi et al., 2005). High knowledge levels have however been associated with high level of education and income as reported by Wilkinson, List, Sinner, Dai, & Chodak (2003).

Other previous studies have however reported low level of knowledge about PC in Australia (Sanderson, Wijesinha, & Jones, 2013), United State of America (Chan et al., 2011; Allen et al., 2007; Wilkinson et al., 2003; Pedersen et al., 2012), Uganda (Nakandi et al., 2013), Nigeria (Jo, Eo, Co, & Eo, 2013) and the United Kingdom (Watson et al., 2006). Jo et al. (2013), have reported total lack of knowledge about the risk factors, symptoms, screening and treatment of PC in Nigeria. Low levels are noted among men at low risk of PC, the Hispanic Americans (Chan et al., 2011), and men of younger age and those not been diagnosed with PC (Allen et al., 2007). However among the African-Americans and black men in general who are known to be at high risk of PC, Wilkinson et al. (2003), Rajbabu et al. (2007) and Pedersen et al. (2012), report of low level of knowledge about the disease. Knowledge about PC in the general populate is poor (Nakandi et al., 2013; Wilkinson et al., 2003; Pedersen et al., 2012). Particularly, some studies have reported the lack of knowledge or awareness about the availability of

screening or test for PC (Chan et al., 2011; Allen et al., 2007; Watson et al., 2006), which is one of the reasons why majority of PC cases are presented in advanced stages in the sub-region. Knowledge levels about PC can however be increased through educational programs and/or interventions (Wilkinson et al., 2003; Rajbabu et al., 2007; Watson et al., 2006; Chan et al., 2011).

2.4 Attitudes toward Early screening

Cancer screening can reduce the consequences of developing cancer as screening can facilitate early detection of developing cancer tissues leading to improved treatment results (Kolahdooz et al., 2014). This is evident in the reduction of deaths caused by breast, lung, colon and cervical cancers through screening in the asymptomatic stages and early treatments (Kolahdooz et al., 2014).

Negative attitudes and poor participation in cancer-screening could lead to the diagnosis of cancer in more advanced stages, and results in undesirable treatment outcomes (Kolahdooz et al., 2014). Early detection or screening is suggested to reduce mortalities from the PC disease (Schulman et al., 2003) as the early detection of PC prevents the spread of cancer cell to other parts of the body (Capık & Gözüm, 2012). Early detection and treatment of PC is said to have a 94% survival rate (5-year survival rate) better as compared to 30% when diagnosed in the advanced stages (Chiu et al., 2005) and increased the survival benefit (Nakandi et al., 2013). PC strategies in Europe and America now include early screening to achieve a better treatment outcome which can be restorative (Rajbabu et al., 2007). But there are raging arguments and/or controversies about the use of Prostate Specific Antigen (PSA) and Digital Rectal Examination (DRE) to test for PC (Nakandi et al., 2013; Chan et al., 2011).

The American Cancer Society recommends that men over the age of 50 years undergo either Prostate Specific Antigen (PSA) or Digital Rectal Examination (DRE), PC screening every year. It further states that the advantages and disadvantages should be explained to patients before screening (Tasian et al., 2012). The American Urological Association also advocate for screening after informed counseling to obtain a baseline DRE and PSA, and follow up screening based on the base-line value but at a lesser age of 40 years (Tasian et al., 2012). This is consistent with the Ghana Health Service guideline for screening services in Regional hospitals (MOH/GHS/SSG, 2011). But there are factors that serve as barriers and limit one's informed decision making for testing for PC. In the hospital, these factors may include patients, physician, and system barriers such as patient co-morbidity, lack of education, physician inability to remember, and patient's inability to visit the clinic (Chan et al., 2011) and attitudes (positive or negative) toward early screening for PC. Different attitudes towards early detection of PC have been identified across Europe (Schroder et al., 2010) and across Africa, differences exist in patterns of screening, detection and treatment (Rebbeck et al., 2011)

Studies have shown negative attitudes toward early screening for PC (Ilic, Risbridger, & Green, 2005; Nakandi et al., 2013; Rajbabu et al., 2007). Sanderson et al. (2013) report that men in Australia have negative attitude towards screening of PC due to reasons such as the uncomfortable nature of DRE and the blood drawn for PSA. Others factors include embarrassment, anxiety and fear of knowing PC status have been reported to account for people negative attitudes toward screening and treatment of PC (Arafa et al., 2015). Pedersen et al. (2012) report that the perceptions of fears and taboos, affect the willingness of men to talk to their doctors about PC. The perception of threat posed by

DRE to the masculinity of men and its associated pain also prevent men from screening for PC (Allen et al., 2007; Pedersen et al., 2012).

Positive attitudes towards PC screening have also been established (Bratt et al., 2000; Oranuni et al., 2012; Berglund, Nilsson, & Nordin, 2005; Hevey et al., 2009). Men who engage in regular screening for PC are those whose family members have been diagnosed with PC (familial risk) (Bratt et al., 2000; Wilkinson et al., 2003), and those who have previously tested (Berglund et al., 2005). Positive attitudes toward PC screening have been found to be associated with high level of education, age, income, awareness of the availability of the test, and the occupation of men (Wilkinson et al., 2003). Men are more likely to take up screening for PC if they are asked by their doctors (Berglund et al., 2005). Positive attitude is reported to influence men's PSA testing intentions (Watson et al., 2006; Berglund et al., 2005). However, positive attitudes toward PC screening is not necessarily always a predictor of men's intentions to screen for PC. Studies by Watson el at. (2006) and Berglund et al. (2005), have reported that even though men shown a positive attitudes toward PSA test for PC, they expressed less/no intentions of undertaking PSA screening after been provided with information (decision aids) on PC and PSA test.

2.5 Sources of Information about PC

The information obtained about PC helps to increase the awareness and knowledge levels, demystifies certain perceptions about the disease, and help develop a positive attitude towards PC and early screening for PC. According to the Social cognitive theory, factors that can influence a person's behaviour and thus their attitudes include social environmental factors. These factors include influences from friends, family and

colleagues, and the sources of information (media). These sources of information, just as they disseminate information to improve upon people's knowledge about the disease, also increase risk perceptions (Matthew et al., 2011). These sources of information may be important and used in health education, promotion and awareness creation campaigns. Several studies have identified the media (Matthew et al., 2011; Rajbabu et al., 2007; Nakandi et al., 2013; Oranusi et al., 2012) as a source of information about PC. Other related sources include brochures, magazines, and newspapers (Oranusi et al., 2012).

Other studies have identified the internet (Ilic et al., 2005; Allen et al., 2007; Matthew et al., 2011; Capık & Gözüm, 2012). According to Capık and Gözüm (2012), web education and other sources of information (desk calendar, cell phone text messages and remainder flyers) resulted in positive changes in the barrier and susceptibility perceptions of individuals about PC, and also increased in the screening for PC. The books and medical journals (Allen et al., 2007; Matthew et al., 2011), family and friends (experiences shared by affected persons) (Allen et al., 2007; Nakandi et al., 2013; Oranusi et al., 2012) and health professionals (Doctors and other health workers) (Matthew et al., 2011; Nakandi et al., 2013; Oranusi et al., 2012) have all been identified as sources of information about PC.

2.6 Application of Social Cognitive Theory

Previous studies have applied the Social Cognitive theory (SCT) to examine informed decision of PC screening (Allen, Mohllajee, Shelton, Drake, & Mars, 2009; Owens, Friedman, Brandt, Bernhardt, & Hébert, 2015); information desired and received on PC (Maliski, Connor, & Fink, 2006) and self-management behaviour among PC survivors (Paterson, Robertson, & Nabi, 2014). Allen et al. (2009), found that the provision of

information (social support) through a computer tailored intervention improved the baseline knowledge on PC and decision self-efficacy scores (personal factor). Among African-American men, PC screening has been found to be influenced by the recommendations from their doctors and the knowledge of PC risks (Owens et al. 2015). The provision of social support is therefore important in enforcing the personal factors such as knowledge and self-efficacy which informs the needed behaviour change.

CHAPTER THREE

METHODS

3.0 Introduction

This chapter focuses on methods that were used to answer the research questions. This section includes the study type, the variables, the study area, study population, sampling, Data collection technique/method and tools, Data processing and analysis, and Data quality.

3.1 Study Design

This is a cross-sectional descriptive study among male teachers in the Sunyani Municipality. Quantitative data collection approaches using a structured questionnaire was used to collect data on socio-demographic factors, perceptions of PC, knowledge about PC, attitudes toward early detection of PC screening and sources of information about PC.

3.2 Study Area

This study was undertaken in the Sunyani Municipality of the Brong Ahafo region.

3.2.1 Profile of the study area

3.2.1.1 Location

Sunyani Municipality is one of the twenty-two administrative districts in the Brong Ahafo Region of Ghana. Sunyani, the capital of the Municipality, also serves as the Regional Capital for Brong Ahafo. The Municipality lies between Latitudes 70 20'N and 70 05'N and Longitudes 20 30'W and 2010'W, and shares boundaries with Sunyani West

District to the North, Dormaa District to the West, Asutifi District to the South and Tano North District to the East. The municipality has a total land area of 829.3 Square Kilometers (320.1square miles).

Figure 2: Map of Sunyani Municipality, Source google (2015)

3.2.1.2 Population Size

The Sunyani municipality is estimated to have a population of 147,301 as at 2010 with a growth rate of 3.8 percent, as compared to the national growth rate of 2.7 percent indicating a high growth rate. The proportion of male is 49.6% as to 50.4% been females. The Municipality has 9 towns and villages with most of the municipal's population concentrated in three of these towns namely Sunyani, Abesim and Nkwabeng. The municipal has an average household size of 4 as compared to the national average household size of 5.1 (Sunyani Municipal Assembly, 2014).

3.2.1.3 Ethnicity and Religious composition

Nine different ethnic groups can be found in the municipality and noticeable among them are the Akan forming the majority (71.1%), the Northern tribes (19.3%), the Ewe (3.2%) and the Ga Dangme (2.1%). The majority of the populace are Christians (81%). Others religious groups found in the Municipality are Islam (11.3%), traditional believers (0.9%) whereas 6.2% belong to no religious group (Sunyani Municipal Assembly, 2014).

3.2.1.4 Vegetation, Climate, Rainfall and Drainage

Sunyani Municipality is covered with a Moist – Semi Deciduous Forest Vegetation with primary vegetation found at the north-west, east and southern parts of the municipality, and has two forest reserves namely the Yaya and the Amoma forest reserves. The vegetation contains some valuable timber species and can support the growing of tree crops such as cocoa and citrus.

The municipal records an average monthly temperatures ranging between 23°C and 33°C with the minimum temperatures recorded in August and the maximum around March and April. The municipality has a high relative humidity which is averaged between 75 and 80 percent during the rainy seasons, and between 70 and 80 percent during the dry seasons.

The Sunyani municipality records an average rainfall of 88.987cm and has a double rainfall pattern-the main and minor rainy season. The main rainy season starts from March to September and the minor occurs between October and December.

The Municipality has several streams and rivers, notably Tano, Amoma, Kankam, Benu, Yaya and Bisi. Most part of the municipality is supplied with water by the Ghana Water

Company water treatment plant served by the Tano River (Sunyani Municipal Assembly, 2014).

3.2.2 Health facilities and health status

The Sunyani Municipality has one (1) regional hospital, one (1) municipal hospital, two (2) private hospitals, one (1) mission hospital, six (6) private clinics, five (5) school clinics, three (3) Quasi clinics and eight (8) health centers. The regional hospital serves as a referral hospital for the Municipality and the region as a whole.

The top ten diseases commonly recorded in the municipality in order of high number of cases to lower number of cases are malaria, acute ear infection, acute eye infection, diarrhea, upper respiratory tract infection, dental caries, rheumatism and other joint conditions, acute urinary tract infection, skin diseases and gynecological conditions for the year 2013 to mid-year 2014 (Sunyani Municipal health Directorate, 2014). In 2003, cancer was the ninth commonest cause of death in the Brong Ahafo region accounting for 3.6% of deaths and a case fatality risk of 29.6% (MOH/GHS, 2014). PC cases recorded for the year 2013 to mid-2014 stood at 17 cases for men of the age 50 years and over in the Sunyani Municipality (Sunyani Municipal health Directorate, 2014). The regional hospital offers a screening and treatment services for PC.

3.2.3 School facilities

The Sunyani municipality has 59 primary and 54 Junior high schools, 4 public second cycles Schools and 1 tertiary institution. There are also several number of private schools. The Municipality has a total number of 1276 teachers in the public schools, of which 625

are male teachers (as at September, 2014) (Sunyani Municipal Education Service, 2014). Of the 625 male teachers, the number of male teacher age 45 and above is 256

3.3 Variables

Dependent variable;

Perceptions of PC: Respondent's beliefs about the causes, perceived seriousness, and perceived susceptibility of risk of PC.

Attitude towards PC: Respondent's behaviour towards the prevention of PC; which include but not limited to screening for PC.

Independent variables;

Socio-demographic; Age, marital status, educational level, Rank, ethnicity, Religion

Knowledge and Sources of information; media, internet, family/friends, health professionals, books and journals.

3.4 Study population

This study involved male teachers of public schools who are 45 years old and above in the Sunyani Municipality. This study population is selected because men in this year group are potentially at risk of developing PC. Also the Ghana Health Service recommends that early screening for PC should start for men at 40 years. This suggests that men of 45 years and above are expected to have been screened for at least twice for PC. The public schools were chosen as the focus because teachers in these schools are documented.

3.4.1 Inclusion and exclusion criteria

The inclusion criteria was that the respondent must be a male teacher, aged 45 years and above, and teaches in the Sunyani municipality.

The study excluded male teachers below the age of 45 and female teachers of any age in the Sunyani municipality.

3.5 Sampling

3.5.1 Sample Size

According to the Sunyani Municipal Education Office, the total number of teachers in the Municipality is 1276 of which 625 are male teachers (as at September, 2014). Of the 625 male teachers, the number of male teacher age 45 and above is 256. The sample size used was calculated by using the Krejcie and Morgan table 1970. The Krejcie and Morgan table 1970 determines the sample size for a given population for easy reference based on the formula;

$$s = X^2NP(1-P) + d^2(N-1) + X^2P(1-P)$$

Where *s*= required sample size

X^2= the table value of chi-square for 1 degree of freedom at a desired confidence interval (3.841)

N=the population size

P= the population proportion (which is assumed to be 0.05 since this will provide the maximum sample size

d= the degree of accuracy expressed as a proportion (0.50)

From the table, a target population of 256 will give a sample size of 156 male teachers which was a representative of the male teachers age 45 years and above in the Sunyani Municipality. However, 160 male teachers aged 45 years and above were recruited to take part in the study.

3.5.2 Sampling method

The schools within the Sunyani Municipality were stratified into 3 different strata; namely primary, Junior High School, and Senior High School. The proportion of male teachers aged 45 and above sampled (based on the determined sample size of 156) from each stratum was determined as illustrated in the table below.

Table 3.1: The proportion of teachers that was sampled from each stratum

School type	**Number of male teachers aged 45 and above**	**Number of teachers to be sampled**
Primary	59	$\frac{59}{256} * 156 =$**36**
Junior High school	107	$\frac{107}{256}$*156=**65**
Senior High School	90	$\frac{90}{256} * 156 =$**55**
Total	256	**156**

A list of schools was obtained from the Sunyani Municipal Education office and simple random technique was used in selecting the required number of schools (primary, Junior High School and Senior High School). The number of schools from each stratum sampled is showed in Table 3.2.

Table 3.2: The number of schools that was sampled from each stratum

Stratum (Schools)	**Number of schools to be sampled**
Primary schools	$\frac{36}{59}$*59=**36**
Junior High Schools	$\frac{65}{107}$*54=**33**
Senior High Schools	$\frac{55}{90}$*4=**2**

In sampling the primary schools, numbers were assigned to each of the 59 schools and 36 of them were randomly selected in a non-replaceable manner. In sampling for the Junior High Schools, numbers were also assigned to the 54 Junior high schools and 33 were randomly selected from the lists without replacing. The list of the 4 Senior High Schools were assigned numbers and 2 schools were simple randomly selected.

Simple random technique was then used in selecting the required number of male teachers from the sampled schools. For the primary schools, there is an average of 1 male teacher aged 45 and above therefore the male teachers in that age group in the 36 sampled schools were recruited. For the Junior High schools, there are on average 2 male teachers aged 45 and above. For this reason, all the male teachers aged 45 and above in the 33 sampled schools were recruited and 1 was subsequently randomly selected out.

A proportion of 55 male teachers aged 45 and above that was sampled from the 2 senior high schools were shared among the 2 schools at a proportion of 27 and 28. These proportions were randomly assigned to the two schools by placing the names of the schools in 1 box and the numbers in another box. The names of the schools were randomly selected and a corresponding number was selected randomly for them. In

sampling for teachers in the 2 Senior High schools sampled, a list of names of the teachers age 45 and above was obtained for each of the schools and assigned with numbers. The required number of respondents was then randomly selected from the list. In cases where the teacher whose number is picked is unavailable, the teacher with the next number was recruited.

3.6 Data collection technique/method and tools

The data collection tool that was used for this study was a structured questionnaire. The questionnaire was developed based on the objectives of the study and also based on the reviewed literature. The questionnaire was centered on the respondents' demographics, knowledge, perception and attitude toward early screening and sources of information. The questionnaire was composed of closed ended questions intended to answer the research questions.

3.7 Quality Control

3.7.1 Pre-test or pilot study

The questionnaire was pre-tested on a sample of 10 male teachers in the same year group in different schools in the Sunyani West district. The Sunyani West district was used because the district share some similarities in the socio-demographic features with the Sunyani Municipality This was to allow for modifications to make the questionnaire clearer and reliable.

3.7.2 Validity and Reliability

Data collection was done solely by the researcher. All questionnaires returned were checked for mistakes and completeness. Questionnaires with unclear responses or which had missing information that could not be clarified were excluded. The data was entered in an excel spreadsheet and exported into STATA 12 (StataCorp LP, College Station, TX, USA). Double data entry and cleaning was done to reduce data entry errors and validated authenticity.

3.8 Statistical method

The statistical analysis was done using STATA 12 (StataCorp LP, College Station, TX, USA). Preliminary analysis was carried out to summarize the data on socio-demographic characteristics of respondents, knowledge on PC, perceptions, attitudes toward early detection and sources of information on PC into percentages and frequencies for descriptive purposes.

Knowledge on PC was measured using 10 questions on the causes, signs and symptoms, and treatment. The questions were scored on a 3 point Likert-like scale of agree, don't know and don't agree. The scale was scored as agree 1, don't know 0 and don't agree 0 for the positive questions, and don't agree 1, don't know 0 and agree 0 for the negative statements. The scores were added up to give the marks scored by respondents on perception about PC. With a maximum score of 10, respondents who had a score of 5 and above were classified as having high knowledge and those with scores less than 5 were classified as having a low knowledge.

Perception about PC was assessed using 14 questions on causes, risk susceptibility factors, severity and treatment. The questions were scored on a 3 point Likert-like scale of agree, don't know and don't agree. The scale was scored as agree 1, don't know "0" and don't agree 0 for the positive questions, and don't agree 1, don't know 0 and agree 0 for the negative statements. The scores were added up to give the marks scored by respondents on perception about PC. With a maximum score of 14, respondents who had a score of 7 and above were classified as having good perception and those with scores less than 7 were classified as having a poor perception.

Attitudes toward screening for PC were assessed using 9 questions on willingness to screen, benefits of screening and treatment options. The questions were scored on a 3 point Likert-like scale of agree, don't know and don't agree. The scale was scored as agree 1, don't know 0 and don't agree 0 for the positive questions, and don't agree 1, don't know 0 and agree 0 for the negative statements. The scores were added up to give the marks scored by respondents on perception about PC. With a maximum score of 9, respondents who had a score of 5 and above were classified as having positive attitude and those with scores less than 5 were classified as having a poor attitude.

The Pearson's Chi square ($\chi 2$) and Fisher's exact test analysis was used to examine the association between the variables; the associations between socio-demographic and perception, socio-demographic and level of knowledge, and socio-demographic and attitude towards PC. The multivariate regression analysis was used to explore further variables that were found to significantly have associations, reporting Odd Ratios. The significant level of 5% was set for all statistical procedures.

3.9 Ethical consideration and issues

The researcher sought for ethical clearance from the Ghana Health Service. Consent was sought from the Sunyani Municipal Education Service Office and the heads of the schools sampled. The objective and rationale for the study was explained to respondents and consent obtained.

3.9.1 Privacy and confidentiality

The privacy and confidentiality of the respondents was assured. All information provided by the respondents was kept confidential and data were locked in cabinet and on computers protected by passwords. The name and identity of the respondent was not needed for the study. The information provided was only identified by a code number and was treated strictly confidential. Respondents' name did not appear or was not mentioned in any part of the report of this study.

The respondents' involvement in this study was only through an interview and was not exposed to any form of risks. The subjects' participation in the study was voluntary and was not given any monetary or any kind of reward. All the information provided by the respondents was used for the study.

3.10 Limitations of the study

The study included only male teachers in the public schools and could not include male teachers from the private schools, although their participation could have further substantiated the results obtained. Male teachers from the private schools were not included because of the lack of data on them.

The study relied on self-report from the respondents and the information given by the respondents could not be verified, there may therefore be information bias.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter presents the results of the study on the perceptions and attitudes toward PC among male teachers in the Sunyani Municipality. It presents the socio-demographic characteristics of the respondents, the awareness and knowledge levels of PC, the sources of information on PC, perceptions and attitudes of respondents about PC. The section also covers the associations between the socio-demographic variables, knowledge, perceptions and attitudes towards PC.

4.1 Socio-demographic characteristics of the respondents

One hundred and sixty (160) male teachers in the Sunyani Municipality were interviewed. The ages of the respondents ranged from 45-60. The mean age of the study respondents was 49.52 (SD=± 3.95), with the majority of them, 68.1%, in the age category 45-50 years (Table 4.1). Most of the respondents, 87.5%, indicated that they were married and 12.5% were single.

All the respondents in this study had attained a tertiary education; the majority, 90.6%, of the respondents indicated they had completed University education while 9.4% had a 3-year post-secondary education. With respect to the current rank of respondents in the Ghana Education Service, 41.3% were principal superintendents, 39.4% were assistant directors grade 2, 10.6% were assistant directors grade 1 (Table 4.1).

Most of the respondents 90.6% were Christians, while 9.4% of the respondents were Muslim (Table 4.1). Furthermore, 65.6% of the respondents were Akans, 17.5% were

from the 3 Northern regions of Ghana and 1.3% were Ewes (Table 4.1). This may reflect the religious and ethnic composition of the Municipality where the Christians and the Akan ethnicity make up the majority.

Table 4.1: Socio-demographic characteristics of the respondents

Characteristics	Frequency N=160	Percent (100%)
Age		
45-50	109	68.1
51-55	34	21.3
56-60	17	10.6
Marital status		
Single	20	12.5
Married	140	87.5
Level of education		
College of education	15	9.4
University graduate	145	90.6
Current rank		
Snr. Superintendent	14	8.6
Principal Superintendent	66	41.3
Assistant Director II	63	39.4
Assistant Director I	17	10.6
Religious Affiliation		
Christian	145	90.6
Muslim	15	9.4
Ethnicity		
Akan	105	65.8
Ga	3	1.9
Ewe	18	11.3
Northern	28	17.5
Others*	6	3.8

Data are presented in frequency (N) and proportions (%); *any other ethnic group in Ghana

4.2 Awareness and sources of information on PC, and family and friends' history of PC

The results showed that all the 160 (100%) study respondents were aware of prostate cancer. The majority, 68.8% reported to have heard about PC on television, while 57.5% of the respondents indicated the radio as their source of information on PC; 21.3% indicated the newspapers and 20.0% indicated to have received information on PC from health professionals (Table 4.2). This may reflect the higher educational level of most of the respondents who may prefer to access information from formal sources rather than informal sources.

Out of the 160 study respondents, 19.4% of the respondents indicated that members of their family and friends have been diagnosed of PC with 80.6% of the respondents indicating that no member of their family and friends has being diagnosed of PC.

Table 1.2: Awareness and sources of information about prostate cancer

Sources of information*	**Frequency N= 160**	**Percent (%)**
Television	110	68.8
Radio	92	57.5
Newspaper	34	21.3
Health pamphlet	8	5.0
Church/Mosque	15	9.4
Internet	13	8.1
Books/Journals	9	5.6
Health professional	32	20.0
Family and friend	18	11.3

Data are presented in frequency (N) and proportions (%)
*Respondents indicated more than one source of information about PC

4.3 Knowledge levels about PC

Knowledge levels about PC was measured based on questions about the causes, signs and symptoms, risk factors, screening tests and treatment for PC. Most of the respondents, 63.1%, indicated that PC has no known cause while 45.0% of the respondents indicated PC may present with no signs and symptoms at the early stages of the disease (Table 4.3). On the early signs and symptoms of PC, majority, 80.0%, of the respondents indicated difficulty in urinating, 35.0% indicated weakness and numbness in the legs and feet; 45.0% of the respondents indicated bloody urine, and 42.5% indicated pain in the waist and back as signs and symptoms of PC. Half of the respondents, 50.0%, indicated that they did not know weakness and numbness in the legs and feet may be a warning sign of PC (Table 4.3).

On risk factors for PC, 51.9% of the respondents indicated a previous history of PC in the family and 42.5% indicated older men were at risk of PC than men below the age 40 (Table 4.3). On the knowledge about screening tests and treatment option for PC, only 37.5% of the respondents indicated that Prostate Specific Antigen (PSA) blood test and Digital Rectal Examination (DRE) were screening tests for PC while a majority of the respondents, 70.6% indicated that PC could be treated through surgery (Table 4.3).

The overall knowledge levels about PC was examined using 10 questions. The questions were scored on a 3 point Likert-like scale of agree, don't know and don't agree. The response "agree" was assigned a score of "1", "don't know" and "don't agree" were assigned a score of "0" each, for positive statements. For negative statements the scores were "don't agree", "1", "don't know" and "don't agree", "0" each. The scores were added up to give the total marks scored by respondents on knowledge about PC.

Respondents who scored 5 and above were classified as having high knowledge and those with scores less than 5 were classified as having a low knowledge. From that, 57.5% of the study respondents had a high knowledge level about PC while 42.5% of the respondents had low knowledge levels about PC (Table 4.3).

Table 4.3: Distribution of respondent's knowledge levels about PC (N=160)

Statements on knowledge	Agree N (%)	Don't know N (%)	Don't Agree N (%)
Prostate cancer has no known cause	32 (20.0)	27 (16.9)	101 (63.1)
Prostate cancer may not present with signs and symptoms at the early stages	60 (37.5)	28 (17.5)	72 (45.0)
Difficulty in urinating may be a warning sign of PC	128(80.0)	18(11.2)	14(8.8)
Weakness and numbness in the leg and feet may be a warning sign of PC	56(35.0)	80(50.0)	24(15.0)
Passing bloody urine may be warning sign of prostate cancer	72(45.0)	39(24.4)	49(30.6)
Prostate cancer may present with pain in the waist and back	67(41.9)	66(41.2)	27(16.9)
Men aged 40 and below are not at risk of developing prostate cancer than older men	68(42.5)	24(15.0)	68(42.5)
Men who have a previous history of prostate cancer in the family are at risk of PC	83(51.9)	31(19.4)	46(28.7)
Prostate Specific Antigen (PSA) and Digital Rectal Examination (DRE) are screening methods for PC	60(37.5)	100(62.5)	0(0.0)
Prostate cancer can be treated through surgery	113(70.6)	37(23.1)	10(6.3)

Knowledge levels about PC	Frequency N (%)
Low	68(42.5)
High	92(57.5)
Total	160(100)

Data are presented in frequency (N) and proportions (%); PC=prostate cancer

4.4 Perceptions about PC

Perceptions about PC were examined based on perceived causes, self-susceptibility risk, screening and treatment, and prevention. Table 4.4 summarizes the distribution of respondents' responses on the perceptions held about PC.

A proportion of the respondents (34.4%) mentioned that they had a high risk of getting prostate cancer while 39.4% of the respondents thought otherwise; 26.3% of the respondents did not know whether they were at a high risk of getting prostate cancer (Table 4.4). Even though, the majority of the respondents were within the high risk age group (45-50 years), most of the respondents did not perceive themselves as being at a high of getting PC. However, almost half of the respondents 46.3% indicated that one was likely to get PC at the age of 50 years (Table 4.4).

Majority of the respondents, 93.8%, perceived PC as a fatal disease. However, 84.4% indicated that one is not certain to die when diagnosed with PC (Table 4.4). Most of the respondents, 88.1%, believed PC could be cured and a majority of the respondents, 96.9%, indicated PC could be treated if diagnosed early. About 79% of the respondents believed one could live a normal life after been treated for PC (Table 4.4).

Even though most of the respondents, 63.1%, believed PC has an underlying cause, almost all the respondents (98.1%) did not believed the assertion that PC is caused by a curse and/or seen as a taboo. About 59% of the respondents also did not perceive PC to be a sexually transmitted disease (Table 4.4). However, whereas a little more than half of the respondents (51.9%) did not agree to the assertion that the intake of too much fatty food could cause PC, half of the respondents (50.6%) indicated eating a lot of vegetables and fruits could prevent PC (Table 4.4).

The overall perception level about prostate cancer was assessed using 14 questions. The questions were scored on a 3 point Likert-like scale of agree, don't know and don't agree. The response "agree" was assigned a score of "1", "don't know" and "don't agree" were assigned a score of "0" each, for positive statements. For negative statements the scores were "don't agree", "1", "don't know" and "don't agree", "0" each. The scores were added up to give the total marks scored by respondents on perceptions about PC. Respondents who scored 7 and above were classified as having good perception and those with scores less than 7 were classified as having a poor perception. While 9.4% of the respondents had poor perception levels about PC, almost all the respondents, 90.6%, had good perception level about PC (Table 4.4).

Table 4.4: Perceptions about PC (N=160)

Perception statements	Agree N (%)	Don't known N (%)	Don't agree N (%)
Prostate cancer cannot be sexually transmitted	94(58.8)	29(18.1)	37(23.1)
Prostate cancer can lead to death	150(93.8)	5(1.1)	5(1.1)
One can live a normal life after treatment of PC	127(79.4)	14(8.7)	19(11.9)
I believe I am at high risk of getting prostate cancer	55(34.4)	42(26.2)	63(39.4)
I believe that if you are diagnosed with prostate cancer then you are doomed to die.	12(7.5)	13(8.1)	135(84.4)
Prostate cancer is as a result of a curse and it's seen as a taboo	0(0.0)	3(1.9)	157(98.1)
PC has no cure even when it is detected early	4(2.5)	15(9.4)	141(88.1)
One is likely to get PC when one passes the age of 50	74(46.2)	24(15.0)	62(38.8)
PC treatment is painful and it deters affected persons from seeking timely treatment	40(25.0)	71(4.4)	49(30.6)
Regular check-up for prostate cancer indicates that one has prostate cancer	12(7.5)	8(5.0)	140(87.5)
Prostate cancer can be caused by continuously placing a mobile phone in your pocket	21(13.1)	65(40.6)	74(46.3)
Prostate cancer can be treated when found early	155(96.9)	5(3.1)	0(0.00)
I believe that eating too much fatty food can cause prostate cancer	13(8.1)	83(51.9)	64(40.0)
I believe that eating a lot of fruits and vegetables can prevent prostate cancer	81(50.6)	66(41.3)	13(8.1)

Perception levels about PC	Frequency N (%)
Poor	15(9.4)
Good	145(90.6)
Total	160(100)

Data are presented in frequency **(N)** and proportions **(%)**; PC=prostate cancer

4.5 Attitudes toward screening for PC

Most of the respondents, 90.0%, had not been screened for PC while only 10.0% of the respondents had ever screened for PC, despite the fact that all the respondents had attained the age that required them to routinely screen for PC. Among the respondents who had screened for PC, 12 of them representing 7.5% of the study respondents reported been screened with PSA screening test and 4 of the respondents representing 2.5% of the study respondents indicated been screened with DRE screening test. Most of the respondents, 97.5%, indicated that screening for PC is important and 95.0% agreed to the assertion that PC screening is beneficial and will settle any ambiguities about whether on has the disease or not (Table 4.5). Most of the respondents (72.1%) disagreed with the assertion that going through PC screening is embarrassing. Most of the respondents did not know whether screening for PC was painful (49.3%) and whether regular screening was expansive (76.9%) (Table 4.5), which reflects the fact that majority of the respondents had never been screened for PC. Even though, most of the respondents had not been screened, majority of the respondents making up to 95.6% indicated they would be willing to screen for PC and only 4.4% of the respondents indicated they were not willing to screen for PC. The distribution of the respondent's responses on attitudes toward screening for PC is summarized in Table 4.5.

The overall attitude toward screening for PC was measured on 9 questions. The questions were scored on a 3 point Likert scale of agree, don't know and don't agree. The response "agree" was assigned a score of "1", "don't know" and "don't agree" were assigned a score of "0" each, for positive statements. For negative statements the scores were "don't agree", "1", "don't know" and "don't agree", "0" each. The scores were added up to give

the total marks scored by respondents on attitude towards screening for PC. Respondents who scored 5 and above were classified as having positive attitude and those with scores less than 5 were classified as having a negative attitude. Thus, 79.4% of the study respondents had positive attitude while 20.6% of the respondents had negative attitude toward screening for PC (Table 4.5).

Table 4.5: Attitudes toward screening for prostate cancer (N=160)

Attitude statements	**Agree N (%)**	**Don't know N (%)**	**Don't agree N (%)**
It is important to screen for Prostate Cancer	156(97.5)	3(1.9)	1(0.6)
Prostate cancer screening would be painful	19(11.9)	79(49.3)	62(38.8)
Going through prostate cancer screening is embarrassing	11(6.9)	35(21.9)	114(71.2)
Prostate Cancer screening will aggravate the disease	12(7.5)	25(15.6)	123(76.9)
I believe that going through prostate cancer screening will help me to be healthy	125(78.1)	8(5.0)	27(16.9)
PC screening is beneficial and will settle any ambiguities about whether I have the disease or not	152(95.0)	3(1.9)	5(3.1)
Regular screening for prostate cancer is expensive	12(7.5)	123(76.9)	25(15.6)
	Yes	**No**	
Have you ever screened for prostate cancer	16(10)	144(90.0)	
If given the opportunity will you be willing to screen for PC	153(95.6)	7(4.4)	
Attitude towards screening for PC	**Frequency N (%)**		
Negative	33(20.6)		
Positive	127(79.4)		
Total	160(100%)		

Data are presented in frequency **(N)** and proportions **(%)**; PC=prostate cancer

4.6 Associations between the outcome variables and the independent variables

The association between the outcome variables (Perceptions and Attitude towards PC screening) and the independent variables (socio-demographic characteristics and knowledge on Prostate Cancer) was determined by running Chi-square test and Fisher's exact test between them at 5% significant level. Subsequent logistic regression was done to find the strength of the associations and to control for possible confounders of the outcome variables

4.6.1 Associations between knowledge about PC and socio-demographic factors, and family and friends' history of PC

Chi-square test and Fisher's exact test showed that the age distribution between the respondents with low and high level of knowledge about PC was statistically similar (p=0.654). The analysis also revealed that marital status (p=0.809), educational level (p=0.373), current rank (p=0.386), religious affiliation (p=0.373), ethnicity (p=0.419), and having family and friends history of PC (p=0.091) were not associated with knowledge about PC (Table 4.6).

Table 4.6: Associations between Knowledge about PC and socio-demographic factors, and family and friends history of PC

Variables	Knowledge level, N (%)		$X^2(df)$	*P* –value
	Low	High		
Age				
45-50	45(66.2)	64(69.6)		
51-55	14(20.6)	20(21.7)	0.8487(2)	*0.654
56-60	9(13.2)	8(8.7)		
Marital status				
Single	9(13.2)	11(12.0)		
Married	59(86.8)	81(88.0)	0.0585(1)	*0.809
Level of education				
University graduate	60(88.2)	85(92.4)		
College of education	8(11.8)	7(7.6)	0.7949(1)	*0.373
Current rank				
Assistant Director I	4(5.9)	13(14.1)		
Assistant Director II	27(39.7)	36(39.1)		
Principal Superintendent	30(44.1)	36(39.1)		**0.386
Snr. Superintendent	7(10.3)	7(7.6)		
Religious Affiliation				
Christian	60(88.2)	85(92.4)		
Muslim	8(11.8)	7(7.6)	0.7949(1)	*0.373
Ethnicity				
Akan	44(64.7)	61(66.3)		
Ga	3(4.4)	0(0.0)		
Ewe	7(10.3)	11(12.0)		**0.419
Northern	12(17.7)	16(17.4)		
Others	2(2.9)	4(4.4)		
Family and friends with PC				
No	59(86.8)	70(76.1)		
Yes	9(13.2)	22(23.9)	2.8538(1)	*0.091

Data are presented in frequency **(N)** and proportions **(%)**; X^2= chi-square statistic; ***df*=**degree of freedom;**P*-value from chi-square test; ***P*-value from fisher's exact test; PC=prostate cancer

4.6.2 Associations between Perceptions about PC and socio-demographic factors, family and friends history of PC, and knowledge about PC

A Fisher's exact test revealed that there were no observed association between age (p=0.523), marital status (p=1.000), educational level (p=0.635), current rank (p=0.218), religious affiliation (p=0.635), ethnicity (0.068), having family and friends history of PC (p=1.000) and perceptions about PC (Table 4.7). However, having high or low knowledge about PC ($p<0.001$) was found to be significantly associated with perceptions about PC. As shown in Table 4.7, a majority of male teachers (62.1%) with good perceptions about PC had high knowledge about PC as compared to 37.9% of male teachers with good perceptions about PC who had low knowledge about PC.

Table 4.7: Associations between Perceptions about PC and socio-demographic factors, family and friends history of PC, and knowledge about PC

Variables	Perception level, N (%)		*P*-value
	Poor	Good	
Age			
45-50	12(80.0)	97(66.9)	0.523
51-55	3(20.0)	31(21.4)	
56-60	0(0.0)	17(11.7)	
Marital status			
Single	2(13.3)	18(12.4)	1.000
Married	13(86.7)	127(87.6)	
Educational level			
College of education	2(13.3)	13(9.0)	0.635
University graduate	13(86.7)	132(91.0)	
Current rank			
Snr. Superintendent	2(13.3)	12(8.2)	0.218
Principal Superintendent	9(60.0)	57(86.4)	
Assistant Director II	4(26.7)	59(40.7)	
Assistant Director I	0(0.0)	17(11.7)	
Religious affiliation			
Christian	13(8.7)	132(91.0)	0.635
Muslim	2(13.3)	13(9.0)	
Ethnicity			
Akan	8(53.3)	97(66.9)	0.068
Ga	2(13.3)	1(0.7)	
Ewe	2(13.3)	16((11.0)	
Northern	3(20.0)	25(17.2)	
Others	0(0.0)	6(4.4)	
Family and friend with PC			
No	12(80.0)	117(80.7)	1.000
Yes	3(20.0)	28(19.3)	
Knowledge on PC			
Low	13(86.7)	55(37.9)	**<0.0001***
High	2(13.3)	90(62.1)	

Data are presented in frequency **(N)** and proportions **(%)**; *p-value< 0.05; *P*-value from fisher's exact test; PC=Prostate cancer

4.6.3 Predictors of Perceptions held about PC

Logistic regression analysis was done with variables which were statistically significant at p< 0.25 from the chi-square test and fisher's exact test purposefully to control for potential confounders (Bursac, Gauss, Williams & Hosmer, 2008). The multivariate analysis results showed that, after adjusting for age, educational level, current rank and ethnicity, male teachers with high knowledge about PC (OR 9.12; 95% CI, 1.88-44.42) were more likely to have good perceptions about PC than those with low knowledge about PC (Table 4.8).

Table4.8: Factors associated with Perceptions about PC

Variable	Perception level, N (%)		Unadjusted	Adjusted
	Poor	Good	OR, (95% CI)	OR, (95% CI)
Current Rank				
Snr. Superintendent*(Ref)*	2(14.3)	12(85.7)	1	1
Principal Superintendent	9(13.6)	57(86.4)	1.06(0.20-5.51)	0.88(0.13-5.72)
Assistant Director II	4(6.3)	59(93.7)	2.46(0.40-14.98)	2.34(0.33-16.51)
Assistant Director I*	0(0.0)	17(100.0)		
Ethnicity				
Akan*(Ref)*	8(7.6)	97(92.4)	1	1
Ga	2(66.7)	1(33.3)	0.04(0.00-0.51)	0.13(0.01-1.71)
Ewe	2(11.1)	16(88.9)	0.66(0.13-3.39)	0.44(0.07-2.82)
Northern	3(10.7)	25(89.3)	0.69(0.17-2.78)	0.45(0.09-2.34)
Others*	0(0.0)	6(100.0)		
Knowledge on PC				
Low *(Ref)*	13(19.1)	55(80.9)	1	1
High	2(2.2)	90(97.8)	10.64(2.31-48.93)	9.12(1.88-44.42)

Data are presented in frequency **(N)** and proportions **(%)**; Logistic regression analysis using variables with p-values <0.25 in fisher exact test analysis as candidate variables; *Ref*= Reference group of the categorical variable; OR=odds ratio; Adjusted for age and educational level; **CI**= Confidence interval; *categories were omitted from the model

4.6.4 Associations between Attitudes toward PC and socio-demographic factors, family and friends' history of PC, knowledge about PC, and perceptions about PC

Pearson's chi-square test and Fisher's exact test as shown in Table 4.9 revealed that there were no significant associations observed between age (p=1.000), marital status (p=0.768), educational level (p=0.738), current rank (p=0.502), religious affiliation (p=0.514), ethnicity (0.304), having a family and friends history of PC (p=0.325) and attitudes toward PC (Table 4.9). However, there was significant association between the knowledge on PC (p<0.0001) and attitudes toward PC. As shown in Table 4.9; there was a high proportion of male teachers (65.4%) with positive attitudes toward PC who had high knowledge about PC as compared to male teachers (34.7%) with positive attitudes toward PC who had low knowledge on PC. Furthermore, there was significant association between perceptions about PC (p=0.051) and attitudes toward screening for PC. Male teachers with positive attitudes toward PC (92.9%) who had good perceptions were significantly higher when compared to male teachers (7.1%) with positive attitudes who had poor perceptions (Table 4.9).

Table4.9: Associations between Attitudes toward PC and socio-demographic factors, family and friends' history of PC, knowledge about PC, and perceptions about PC

Variables	Attitude level, N (%)		$X^2(df)$	*P*-value
	Negative	Positive		
Age				
45-50	23(69.7)	86(67.7)		
51-55	7(21.2)	27(21.3)		
56-60	3(9.1)	14(11.0)		**1.000
Marital status				
Single	3(9.1)	17(13.4)		
Married	30(90.9)	110(86.6)		**0.768
Level of education				
College of education	2(6.1)	13(10.2)		
University Graduate	31(93.9)	114(89.8)		**0.738
Current rank				
Assistant Director I	3(9.1)	14(11.0)		
Assistant Director II	12(36.4)	51(40.2)		
Principal Superintendent	17(51.5)	49(38.6)		
Snr. Superintendent	1(3.03)	13(10.2)		**0.502
Religious Affiliation				
Christian	29(87.9)	116(91.3)		
Muslim	4(12.1)	11(8.7)		**0.514
Ethnicity				
Akan	23(69.7)	82(64.6)		
Ga	2(6.1)	1(0.8)		
Ewe	2(6.1)	16(12.6)		
Northern	5(15.2)	23(18.1)		
Others	1(3.0)	5(3.9)		**0.304
Family and friends with PC				
No	29(87.9)	100(78.7)		
Yes	4(12.1)	27(21.3)		**0.325
Knowledge				
Low	24(72.7)	44(34.7)		
High	9(27.3)	83(65.4)	15.5443(1)	*<**0.0001**
Perceptions				
Poor	6(18.2)	9(7.1)		
Good	27(81.8)	118(92.9)	3.7953(1)	***0.051**

Data are presented in frequency (N) and proportions (%); X^2= chi-square statistic; ***df***=degree of freedom; ****P*-values from chi-square analysis; bolden *P*-value< 0.05; ***P*-value from fisher exact test; PC=prostate cancer

4.6.5 Predictors of Attitudes toward PC

Logistic regression analysis was done with variables which were statistically significant at p< 0.25 (Bursac et al., 2008) from the chi-square test and fisher's exact test. The results from a multivariate analysis as shown in Table 4.10 indicated that, after adjusting for age, educational level and perception about PC, male teachers with high knowledge were significantly more likely to have a positive attitude toward screening for PC when compared to respondents with low knowledge on PC (OR 4.23; 95% CI, 1.74-10.28). Furthermore, after adjusting for knowledge on PC, the respondents who had good perception about PC (OR 1.69; 95% CI, 0.52-5.55) were more likely to have positive attitude towards screening for PC, however this association was statistically insignificant when compared to those who had negative attitude (Table 4.10).

Table 4.10: Factors associated with Attitudes toward screening for PC

Variables	Attitude level, N (%)		Unadjusted	Adjusted
	Negative	Positive	OR, (95% CI)	OR, (95% CI)
Knowledge on PC				
Low *(Ref)*	24(72.7)	44(34.6)	1	1
High	9(27.3)	83(65.4)	5.03(2.15-11.76)	4.23(1.74-10.28)
Perceptions of PC				
Poor *(Ref)*	6(18.2)	9(7.1)	1	1
Good	27(81.8)	118(92.9)	2.91(0.96-8.88)	1.69(0.52-5.55)

Logistic regression analysis using variables with p-value <0.25 in bivariate analysis as candidate variables; *Ref*= Reference group of the categorical variable; OR= odds ratio; Adjusted for age and educational level; CI= confidence interval; PC=prostate cancer

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CHAPTER FIVE

DISCUSSIONS

5.0 Introduction

This study was undertaken to examine the perceptions of prostate cancer and attitudes of male teachers towards the screening for the disease, while exploring their knowledge and sources of information on Prostate Cancer (PC).

The study found high awareness and Knowledge about PC, good perceptions about PC and positive attitudes toward PC screening among male teachers in the Sunyani Municipality. In addition, the study found television and radio as the major sources from which male teachers in the Sunyani Municipality access information on PC. Socio-demographics were found not to be associated with knowledge, perceptions about PC, and attitudes toward PC screening; however knowledge about PC predicted perceptions and attitudes toward PC screening.

5.1 Socio-demographic characteristics of the respondents

In this study, the socio-demographic characteristics were found not to influence knowledge about PC, perceptions and the attitudes toward PC screening, probably because frequencies of some demographic variables such as age, marital status and education were skewed. For instance, in term of age all the respondents had attained the risk and screening age; for marital status majority of the respondent were married; and for educational level majority of the respondents had attained a University education and therefore have good educational background.

This finding is consistent with findings from a study in Nigeria among Benu State University male students (Terwase, Asuzu, & Mtsor, 2014). In another study by Mofolo, Betshu, Kenna, Koroma, Claassen, & Joubert, (2015) among patients in South Africa, age, marital status and been previously screened were found not to be associated with level of knowledge about PC among male patients attending urological clinic in South Africa. However in the same study, level of education, race and language were found to influence knowledge about PC, and age was found to also influence screening for PC. In another study, ethnicity, age and education was found to be associated attitude whereas ethnicity and age were found to be associated with perceived susceptibility and severity of PC among black men in the Florida PC Disparity Project which is contrary to the findings of this study (Odedina et al., 2011).

5.2 Awareness and knowledge levels of Prostate Cancer, and sources of information

In Ghana awareness of PC is low among the general population (MOH/GHS, 2014). However in this study group there was a high level awareness of PC. Similar high level of awareness of PC was found among male university students in Ghana (Binka, Nyarko, Doku, & Antwi, 2014) and among older men in Oyo State of Nigeria (Oladimeji, Bidemi, Olufisayo, & Sola, 2010). The result from this study is however contrasted by a study among public servants in Nigeria where 94.2% of the study participants were completely uninformed of PC (Ajape, Babata, & Abiola, 2010). This variation could be because in the previous study about 23% of the respondents had no formal education as compared to this study where all the respondents have had tertiary education and therefore are enlightened and can access information from various sources. Most of the study participants have attained university education and could therefore access information.

High level of knowledge about PC has also been reported in a study among University staffs in Nigeria (Ebuehi, & Otumu, 2011) and among Africa immigrants (63%) in the United State (Magnus, 2004). However, low levels of knowledge about PC were found in Burkina Faso (Kabore, Kambou, Zango, & Ouédraogo, 2014). The study by Kabore et al. (2014) was however among the general public and about 63% of the study group had primary education or less as compared to this study group who have had a tertiary education and are more enlightened; this could justify the contrary findings found. Furthermore, high level of knowledge about PC reported in this study could be due to the increased public discussions and media coverage of PC to increase awareness and early screening for the disease which form part of Ghana's strategy to reducing morbidities and mortality from PC (MOH/GHS, 2014).

Even though the overall level of knowledge about PC among the study participants was slightly higher, the specific knowledge on the cause, and signs and symptoms was generally low. Majority of the respondents did not know that PC has no known cause and PC may be asymptomatic at the early stages, and could not identify some major warning signs and symptoms of PC. However, majority of the respondents correctly identified difficulty in urinating as a sign and symptom, previous family history of PC as a risk factor and surgery as a treatment option for PC. The study further found that majority of the respondents were unaware of the PSA blood test and DRE screening methods for PC, similar to the observations made by Ajape et al. (2010) among public servants in Nigeria, and Kabore et al. (2014) among the general public in Burkina Faso. In the later study, 70.2% of the study respondents indicated they were not aware of any of the screening modalities for PC. On the other hand, a study found that men involved in the study were

knowledgeable about PSA blood test and DRE screening methods for PC (Winterich et al., 2009). This observed difference could be explained by the geographic difference of the studies in that the previous study was conducted in an area where the PSA blood test and DRE screening methods are readily available. This suggest for a comprehensive educational campaign on the availability of PC screening modalities among men in the Sunyani Municipality.

On accessing information on prostate cancer, this study identified the television and radio as the main sources of information on PC in this study group. Similar findings were found in a study among male attending Urological Clinic in South Africa (Mofolo et al. 2015) and a study among Filipino men in the Hawaii state of America (Conde, Landier, Ishida, Bell, Cuaresma, & Misola, 2013). The populace now devotes much time watching television and listening to the radio, and appears that have greatly impacted on what the populace know about cancer and the ways to prevent it, as the media have been identified as an essential means to circulate health information (Arafa, Rabah, & Wahdan, 2012). This could account for the observation made in this study. However, Arafat et al.(2012), report that majority of their study participants received information on PC from their physician (a health professional) and another study identified family and friends and health professionals (Song, Cramer, & McRoy, 2015). These sources could therefore be important sources of information in carrying out PC awareness campaigns.

5.3 Perceptions about Prostate cancer

In this current study, perceptions among the study respondents were determined based on their knowledge on perceptions held about PC. This study revealed respondents held a good perception about PC. The majority of the respondents correctly perceived PC

cannot be sexually transmitted, and believed PC is not as a result of a cure and/or a taboo, and that one is not certain to die when diagnosed with PC, even though they correctly identified PC to be fatal. The majority of the respondents correctly perceived PC to have a cure. This can be reflected in the majority of the respondents indicating PC could be treated through surgery especially when detected early. Furthermore, majority of the respondents correctly perceived that eating lots of vegetable and fruits could prevent PC but did not perceived eating too much fatty food as risk for developing PC. The result from this study is consistent with the study by Binka et al. (2014) among male university students in Ghana where the respondents held an accurate perception about PC. Another study by Atulomah, Olanrewaju, Amosu, & Adedeii (2010) also found level of perception to be slightly above normal in Nigeria. This finding could be a reflection of the high knowledge about PC exhibited among the study respondents.

This study involved male who were aged 45 to 60 years, and being black Africans, Ghanaians for that matter, placed them at high risk of getting PC. However, majority of the respondents did not perceived themselves as been at risk of getting PC, among which 26.3% of the respondents did not know whether they were at risk or not. This is in line with a study which found that Africa Americans perceived themselves at less risk of getting PC when compared to non-Hispanic white men of the same age (Shavers, Underwood, & Moser, 2009). Another study also identified that men who reported of having family histories of PC did not perceive their risk as higher than men without family histories of PC (Bloom, Stewart, Oakley-Girvans, Banks, & Chang, 2006). On the contrary, a study found that male university students perceived all men to be at risk of getting PC (Binka et al., 2014). Another study also found a contrary result where Africa

American men involved in the study recognized they were at a greater chance of getting prostate cancer (Talcott et al., 2007). However, the study by Talcott et al. (2007) was conducted in a geographical location where disproportionate number of the African-American race are diagnosed and die of PC every year, and this could account for the difference in the findings observed in this study.

In this study, perceptions about PC were found to be associated with knowledge about PC. In this study respondents with high knowledge about PC were more likely to have good perception about PC. Increase awareness and knowledge about PC's cause, risk factors, treatment options and preventive measures will demystify negative perceptions and misconceptions about the causes, risk factors, treatment options and low susceptibility to PC, thus the good perceptions. This also shows that educational campaigns aimed at increasing knowledge about PC could allay negative perceptions and misconceptions held about PC which have been identified to influence screening behaviour.

5.4 Attitude towards PC screening

In line with the respondents' unawareness of the screening methods (PSA and DRE) for PC, majority of the respondents had never been screened for PC. Similar low rates of PC screening have also been reported in other studies (Atulomah et al., 2010; Ajepa et al. (2010). Another study has also reported low rate (10%) of PSA screening for PC (So et al., 2014), but this study did not ask about screening with DRE screening method. However, a study has identified a contrary observation where high rate (20%) of PC screening was reported among Australian men (Arnold-Reed et al., 2008) higher than in the current study. In Ghana, screening for PC is generally low (Obu, 2014) and could

explain this observed low rate of PC screening in this study. Moreover among those who had screened for PC, majority of them were screened with the PSA blood test. This is similar to what was found in the study by Bloom et al. (2006) where men in the study were more likely to report of undergoing PSA test as compared to DRE method, and in another study by Arnold-Reed et al. (2008). The results from this study suggest that men in the age group recommended to undergo routine screening for PC should be provided with comprehensive education on PSA blood test and DRE screening method, as reported by Cater, Tippelt, Anderson, & Tameru (2010) where about 48% of the study participants who had not been screened for the last 1 year got screened after an educational intervention.

Furthermore, almost all the respondents indicated their willingness to screen for PC. This observation is similar to that made by Atulomah et al. (2010) and Ajepa et al. (2010). In contrast to this result, Binka et al. (2014) found that most of the respondents (68.3%) were undecided on engaging in future screening for PC. This difference could be explained by the fact that the male university students involved in the previous study had not attained the risk and screening age as against the study respondents in this study. This study however did not find out why respondents were willing to undergo screening for PC but had not been screened. Future research could find out why male teachers in the Sunyani Municipality do not engage in PC screening.

In this study positive attitude towards screening for PC was shown. Most of the respondents recognized the fact that screening for PC is important, helpful as it keeps one healthy, beneficial as early detection of PC could result in better treatment outcomes, and enables one to know his PC status. The positive attitude towards screening for PC

observed in this study is contrasted by a study which has reported negative attitude toward PC screening among male university students (Binka et al., 2014). This observed difference could be due to sampling difference, as this current study involved male teachers of higher educational level and therefore appreciated the importance of PC screening and also had attained the risk age.

The attitudes toward screening for PC observed in this study were predicted by knowledge about PC but not perceptions about PC. The respondents with good knowledge about PC were more likely to have positive attitude towards screening for PC. Others studies have also identified level of knowledge on PC as a predictor of attitude toward screening for PC (Arafat et al., 2012; McNaughton, Aiken, & McGrowder, 2011). Another study has also reported similar observation where lack of knowledge about PC was found to be a barrier to PC screening (Forrester-Aderson, 2005). This is in line with the assertion that acquiring the right knowledge could inform positive attitude and in turn prompt healthy practices (Arafat et al., 2012). This positive attitude however did not translate into screening practices among the study participants, suggesting that knowledge alone may not be a motivational factor for translating favourable attitudes into screening practices. Also, positive attitude towards PC screening is not necessarily always a predictor of men's intentions to screen as reported by (Vugt et al., 2009). But, this is found to be contrary to the study by McNaughton et al. (2011), where attitude strongly predicted PC screening practice.

Attitude (behaviour) towards PC screening was found not to be associated with perceptions about PC. This is different from that found by Atolumah et al. (2010), where level of perception influenced PC screening behaviour. However, a study to find out

whether perceived PC fatalism could predict screening behaviour found that high levels of perceived fatalism could not significant influence screening behaviour among the study group (Cobran et al., 2014).

5.5 Application of the Social Cognitive Theory to Perceptions and Attitudes about PC

The Social Cognitive Theory (SCT) by Bandura (1986), looks at behavioural change based on factors originating from the environment, personal and behaviour, and these factors constantly influence each other. The decision to engage in a behaviour is said to be informed based on the SCT by two main determinants; believe in the benefits of undertaking the behaviour as against the costs, and the individual's self-efficacy in performing the behaviour (Maliski et al., 2006). For the purpose of this study, environmental factors included social support from family and friends, colleagues and sources of information on PC; personal factors looked at knowledge and perceptions held about PC; and the behavioural factor looks at attitude shown towards PC screening. The environmental and personal factors assure one's belief in the benefits of undertaking a PC screening and give him the self-efficacy to perform routine screening for PC. The results from this study revealed that respondents widely accessed information on PC from mainly the mass media (television and radio) and other sources which reflected in the high knowledge about PC recorded among the respondents. This is similar to a study which found an increased in the knowledge about PC after providing information on PC and its screening through a computer tailed intervention (Allen et al., 2008).

PC cancer screening has been found to be influenced by knowledge about PC and its screening, as reported by Owens et al. (2015) where Africa-American men reportedly

took up to screening and undergone annual screening because of their knowledge about PC risks. This is consistent with the findings of this study where knowledge about PC was found to influence attitudes toward PC screening.

The study found positive attitudes toward PC, but could not reflect in screening status of the respondents as majority of them were not screened. However, almost all the respondents were willing to engage in PC screening. The behavioural factor, according to the SCT, is mirrored in one's plan to engage in a healthy behaviour (Ramirez et al., 2012) and this is seen in the result from this study where respondents were willing to engage in screening for PC.

In conclusion, the study revealed that social support such as providing information on PC through various means especially the mass media could help increase knowledge about PC and provide informed decision about PC screening. The study findings supported the constructs of the SCT, however subsequent studies should measure directly the constructs of the SCT and/or combine the theory with other behavioural models to better understand perceptions and attitudes toward PC.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

This study has revealed high awareness and level of knowledge about Prostate Cancer (PC) among male teachers in the Sunyani Municipality, although they were not knowledgeable about the screening modalities Prostate Specific Antigen (PSA) blood test and Digital Rectal Examination (DRE) for PC.

Male teachers in the Municipality accessed information on PC from mainly the television and the radio. Other sources of information on PC mentioned included newspaper, and health professionals.

Perceptions held about PC among male teachers in the Sunyani Municipality are good. However, perceived self-susceptibility risk for PC was low among this study group. Knowledge about PC was associated with perceptions held about PC; male teachers who had high knowledge about PC, held a good perception about PC.

Male teachers in the Sunyani Municipality have positive attitudes (behaviour) toward screening for PC and were willing to engage in PC screening. However, PC screening rates were low among the respondents, and PSA blood test screening modality was the commonly used screening method. Attitudes toward screening for PC were influenced by knowledge about PC but perceptions about PC did not influence attitudes toward PC screening.

6.2 Recommendations

6.2.1 Male teachers in the Sunyani Municipality

Male teachers in the Sunyani Municipality should be encouraged through health education and programmes to build upon their positive attitudes and willingness to screen for PC and engage in PC screening. They should make screening for PC part of their routine medical checkup as screening and early diagnosis for PC has a better treatment.

6.2.2 Policy

The Ministry of Health (MOH) and the Ghana Education Service (GES) must work together to organize periodic educational campaigns for male teachers and among all age groups of men in the Municipality as level of education and age were not associated with knowledge on PC. The educational campaigns should be aimed at increasing knowledge on PC, particularly on the screening modalities, the importance of screening and early detection, and the treatment options available, using the identified sources (Television and Radio) of information on PC.

6.2.3 Future Research

This is a quantitative study and was limited in exploring barriers and challenges that influence PC screening among the study group as majority had not screened for PC even though they expressed interest in screening. Future research in this area and the Sunyani Municipality should employ mixed method (both quantitative and qualitative techniques) to explore further, perceptions and attitudes about PC.

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APPENDICES

Appendix 1: Consent Form

Title of Research: Perceptions and attitudes about Prostate Cancer among male teachers in the Sunyani Municipality

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Introduction:

This study aims at examining the perception and attitude about prostate cancer among male teachers in the Sunyani Municipality which is undertaken by Bernard Yeboah-Asiamah, a Master of Public Health student at the School of Public Health, University of Ghana. The study seeks to examine the knowledge levels of male teacher about prostate cancer, their perceptions about the disease and their attitude toward early screening for prostate cancer. The study aims at providing the basis for public health interventions, and in designing awareness and educational campaigns about prostate cancer. This consent form contains all the information you will need to know about the study to be undertaken before you decide to consent to take part in the above mentioned study.

Confidentiality and Anonymity

You are been invited to participate in this study and your participation is voluntary. You will be given the opportunity to ask questions before you decide to take part in the study. If you agree to take part in the study, you will be asked to provide personal information and other related information about prostate cancer. All the information you provide will be kept confidential and the data will be locked in a cabinet. The information will be accessible only to the researcher and the research team. Your name and identity will not be needed for the study. The information you provide will only be identified by a code number and will be treated strictly confidential. Your name shall not appear or be mentioned in any part of the report that will come out of this study.

Benefits and harm

Your involvement in this study will only be through an interview and you will not be exposed to any form risks if you consent to take part. Your participation in the study or your decision to withdraw from the study, will not affect you in any way whatsoever. You will not be given any monetary or any kind of reward. All the information you will give to the researcher will be used for this study.

For further questions and clarification about the study, you contact the principal investigator on asiamahyeboah2006@yahoo.com or 0272731417/0200382232 or the administrator of the Ghana Health Service Ethical Review Committee, Mrs. Hannah Frimpong on 0243235225 or 0507041223.

Participant consent

As a respondent, I have read the forgoing information and the purpose of the study explained to me. I had the chance to ask questions about the study and all questions have been answered to my understanding. I have been informed and have understood that my participation is entirely voluntary and that I can withdraw my consent at any time if I wish so.

I consent voluntarily to participate in this study as a respondent.

Respondent's signature:……..

Date:……

Statement by the Researcher

The researcher has clearly read out the information sheet to the participant and has answered any question about the study to the satisfaction of the respondent. The researcher confirms that the respondent was not in any way forced into giving consent and that the consent has been given freely and voluntarily

Signature of Researcher:……..

Date:……..

Appendix 2: Questionnaire

Dear responder, this questionnaire aims at examining the perception and attitudes towards prostate cancer among male teachers in the Sunyani Municipality. The questionnaire collects information about socio-demographics, perceptions, knowledge about prostate cancer and attitudes toward screening of prostate cancer. Your participation is kindly needed for the study. Thank you.

Section A: Socio-demographic characteristics (Please tick the one appropriate)

	Questions	***Response***	***Code***
Q1	How old are you?		
Q2	What is your marital status?	Single ☐ Married ☐ widowed ☐ Separated/divorced ☐	1 2 3 4
Q3	What is your highest level of education?	College of education ☐ Polytechnic ☐ University Graduate ☐	1 2 3
Q4	What is your current rank?	Deputy Director ☐ Assistant Director I ☐ Assistant Director II ☐ Principal Superintendent ☐ Snr. Superintendent II ☐ Superintendent ☐ Assistant Superintendent ☐	1 2 3 4 5 6 7
Q5	What is your religious affiliation?	Christian ☐ Muslim ☐ Traditionalist ☐	1 2 3
Q6	What is your ethnicity?	Akan ☐ Ga ☐ Ewe ☐ Northern ☐ Others ☐	1 2 3 4 5

Section B: Sources of information and knowledge about Prostate cancer (Please tick the preferred choice)

	Questions	***Response***	***Code***
Q7	Have you ever heard of prostate cancer?	Yes ☐ No ☐	1 2
Q8	If yes, what is your source of information about prostate cancer?	TV ☐ Radio ☐ Newspaper ☐ Health pamphlets ☐ Church/Mosque ☐ Internet ☐ Books and Journal ☐ Health professional ☐ Family and friends ☐ Others specify…….	1 2 3 4 5 6 7 8 9
Q9	Have any of your family and friends been diagnosed of prostate cancer?	Yes ☐ No ☐	1 2
The following questions examine your knowledge about prostate cancer			
Q10	Prostate cancer has no known cause?	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q11	Prostate cancer may not present with signs and symptoms at the early stages?	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q12	Difficulty in urinating may be a warning sign of prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q13	Weakness and numbness in the leg and feet may be a warning sign of prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q14	Passing bloody urine may be warning sign of prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q15	Prostate cancer may present with pain in the waist and back	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0

Knowledge about prostate cancer cont'd

	Questions	***Response***	***Code***
Q16	Men aged 40 and below are not at risk of developing prostate cancer than older men	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q17	Men who have a previous history of prostate cancer in the family are at high risk	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q18	Prostate specific antigen (PSA) and Digital rectal examination (DRE) are screening methods for prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q19	Prostate cancer can be treated through surgery	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0

Section C: Information on perceptions about prostate cancer (Please tick the preferred choice)

	Questions	***Response***	**Code**
Q20	Prostate cancer cannot be sexually transmitted	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q21	Prostate cancer can lead to death	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q22	One can live a normal life after treatment of prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q23	I believe I am at high risk of getting prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q24	I believe that if you are diagnosed with prostate cancer then you are doomed to die.	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1

Perceptions about prostate cancer cont'd

	Questions	***Response***	***Code***
Q25	Prostate cancer is as a result of a curse and it's seen as a taboo?	Agree ☐ Don' know ☐ Don't agree ☐	0 0 1
Q26	Prostate cancer has no cure even when it is detected early	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q27	One is more likely to get PC when one passes the age of 50	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q28	PC treatment is painful and it deters affected persons from seeking timely treatment	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q29	Regular check-up for prostate cancer indicates that one has prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q30	Prostate cancer can be caused by continuously placing a mobile phone in your pocket	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q31	Prostate cancer can be treated when found early	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q32	I believe that eating too much fatty foods can cause prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q33	I believe that eating a lot of fruits and vegetables can prevent prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0

Section D: Information on attitudes towards early screening for prostate cancer (Please tick the preferred choice)

	Questions	***Response***	***Code***
Q34	Have you ever been screened for prostate cancer	Yes ☐ No ☐	1 0
Q35	If yes, which of them? If No move to Q36	Prostate Specific Antigen (PSA) ☐ Digital Rectal Examination (DRE ☐ Biopsy ☐	1 2 3
Q36	It is important to screen for prostate cancer	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q37	Prostate cancer screening would be painful	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q38	Going through prostate cancer screening is embarrassing	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q39	Prostate cancer screening will aggravate the disease	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q40	I believe that going through prostate cancer screening will help me to be healthy	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q41	PC screening is beneficial and will settle any ambiguities about whether I have the disease or not	Agree ☐ Don't know ☐ Don't agree ☐	1 0 0
Q42	Regular examination for prostate cancer is expensive	Agree ☐ Don't know ☐ Don't agree ☐	0 0 1
Q43	If given the opportunity will you be willing to screen for PC?	Yes ☐ No ☐	1 0

Thank You

Appendix 3: GHS Ethical Clearance Letter

GHANA HEALTH SERVICE ETHICAL REVIEW COMMITTEE

In case of reply the number and date of this Letter should be quoted.

My Ref. :GHS-ERC: 3
Your Ref. No.

Research & Development Division
Ghana Health Service
P. O. Box MB 190
Accra
Tel: +233-302-681109
Fax + 233-302-685424
Email: Hannah. Frimpong@ghsmail.org

9th April, 2015

Bernard Yeboah-Asiamah
School of Public Health
University of Ghana
Legon, Accra

ETHICAL APPROVAL - ID NO: GHS-ERC: 110/02/15

The Ghana Health Service Ethics Review Committee has reviewed and given approval for the implementation of your Study Protocol titled:

"Perceptions and Attitudes about Prostate Cancer among Male Teachers in the Sunyani Municipality"

This approval requires that you inform the Ethical Review Committee (ERC) when the study begins and provide Mid-term reports of the study to the Ethical Review Committee (ERC) for continuous review. The ERC may observe or cause to be observed procedures and records of the study during and after implementation.

Please note that any modification without ERC approval is rendered invalid.

You are also required to report all serious adverse events related to this study to the ERC within seven days verbally and fourteen days in writing.

You are requested to submit a final report on the study to assure the ERC that the project was implemented as per approved protocol. You are also to inform the ERC and your sponsor before any publication of the research findings.

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Please note that this approval is given for a period of 12 months, beginning April 9th 2015 to April 8th 2016.

However, you are required to request for renewal of your study if it lasts for more than 12 months.

Please always quote the protocol identification number in all future correspondence in relation to this approved protocol

SIGNED.....

DR. CYNTHIA BANNERMAN
(GHS-ERC CHAIRPERSON)

Cc: The Director, Research & Development Division, Ghana Health Service, Accra