

**SCHOOL OF PUBLIC HEALTH
COLLEGE OF HEALTH SCIENCES
UNIVERSITY OF GHANA**



INTEGRI PROCEDAMUS

**PERCEIVED QUALITY OF LIFE OF PATIENTS WITH BENIGN PROSTATIC
HYPERPLASIA AT THE KOMFO ANOKYE TEACHING HOSPITAL,
KUMASI, ASHANTI REGION**

PATRICIA MANTE

(10635159)

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LEGON IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE
AWARD OF MASTER OF PUBLIC HEALTH DEGREE**

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DECLARATION

I, Patricia Mante hereby declare that apart from references to other people's works which have been duly acknowledged, this proposal is as a result of my own independent work and has not been submitted for the award of any degree in any institution.

.....

DATE:

PATRICIA MANTE

STUDENT

.....

DATE:

DR. ERNEST TEI MAYA

SUPERVISOR

DEDICATION

This work is dedicated to the Most High God who gave me the strength, favour, grace and wisdom to be able to complete this piece of work. To my husband Mr. Aaron Kwarteng and children Nana Obeng Kwarteng, Akua Bosomah Kwarteng and Nana Osei Akuoko Kwarteng who supported and encouraged me to complete this work. Also to my unborn baby who was my companion and endured all the stress with me. Finally to my Mum, Florence Ofosuhemaa Amoateng, who took care of my children to enable me to finish my academic work. To you all, I say God richly bless you.

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ABSTRACT

Background: The commonest ailment of the prostate of men is Benign Prostatic Hyperplasia (BPH) and it is the common histologic condition among older men throughout the world. All men from age 50 are at a higher risk of getting BPH and it is common among blacks than the white race. The urology department of the Komfo Anokye Teaching Hospital (KATH) has recorded the highest number of BPH among all the urological cases. It is therefore necessary to identify the problems these men face and the degree at which the disease impact on their life positively or negatively. In spite of these facts, data on perceived quality of life of patients with benign prostatic hyperplasia presenting at KATH is limited.

Aim: This study sought to determine the perceived quality of life of patients with benign prostatic hyperplasia at the Komfo Anokye Teaching Hospital (KATH) by determining the proportion of BPH patients whose quality of life is affected.

Method: The study design was cross-sectional and the study type was descriptive. A sample size of 310 was used to carry out the study. The study population was men visiting the urology department of KATH and has been diagnosed of having BPH. The study used consecutive sampling method to recruit the study participants after they have consented to partake in the study. Data was collected by using structured questionnaire. Ethical clearance was sought from the Ghana Health Service Ethics Review Committee and that of the Komfo Anokye Ethical Review Board. The data was analysed using StataSE version 15. Bivariate analysis using Chi-square was performed to test the associations between independent variables and perceived quality of life. Multiple logistic regression was carried out on the factors that were significant at the bivariate level, crude and adjusted odds ratio were computed and statistical significance was accepted at $p \leq 0.05$.

Results: The results of this study shows that the overall proportion of BPH patients with good perceived quality of life is 5.0%. The educational level (AOR=0.11; CI=0.03-0.43), support from friends and families (AOR=13.42; 95% CI=3.62-49.76), sleep disturbances and inability to support financially were the factors found to be significantly associated with perceived quality of life of BPH patients.

Conclusion

This study has revealed that good perceived quality of life among BPH patients is low. These therefore implies that BPH patients need to be supported by family members and friends in order to improve their quality of life

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LIST OF ACRONYMS

ACA –	American Cancer Association
AUA –	American Urology Association
AUAG-	American Urological Association Guideline
AUR –	Acute Urinary Retention
BPH –	Benign Prostatic Hyperplasia
BPH-QOLs –	Benign Prostatic Hyperplasia - Quality of Life scale
DRE –	Digital Rectal Examination
ED –	Erectile Dysfunction
GHS-ERC-	Ghana Health Service – Ethics Review Committee
GSS -	Ghana Statistical Service
IPSS –	International Prostate Symptom Score
KATH –	Komfo Anokye Teaching Hospital
LUTS –	Lower Urinary Tract Symptoms
PSA –	Prostate Specific Antigen
QOL –	Quality of Life
SD –	Sexual Dysfunction
WHO –	World Health Organization

DEFINITION OF TERMS

The prostate gland: It is a small gland that is positioned beneath the bladder and lies anteriorly to the rectum. Its main function is to secrete an alkaline fluid that comprises 70% of seminal volume that lubricates and provide nutrients for the sperms respectively (Sydney et al., 2014).

Benign Prostatic Hyperplasia (BPH): It is defined as the enlargement of the prostate gland that is very common as men age, and this enlargement can press on the urethral which can also lead to irritative symptoms such as the need to urinate frequently, difficulty holding urine in and needing to urinate during the night and obstructive symptoms such as slowing of the urinary stream, difficulty starting urination, and not completely emptying the bladder after urination (Sydney et al., 2014).

Quality of life: It is a “broad concept incorporating the person’s physical health, psychological state and level of independence, social relationship, personal beliefs and their relationship to salient features of the environment” (Sydney et al., 2014). Quality of life can also be an “individuals perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns” (Michalak et al., 2010).

CHAPTER ONE

INTRODUCTION

1.1 Background

Benign Prostatic Hyperplasia (BPH) is a noncancerous increase in size of the prostate gland (Overview et al., 2015). The prostate gland is a small gland that is situated below the bladder and lies anteriorly to the rectum. Its main function is to secrete an alkaline fluid that comprises 70% of seminal volume that lubricates and provide nutrients for the sperms respectively (Sydney et al., 2014). Benign prostatic hyperplasia progresses with age (O'Sullivan et al., 2004).

The disease process has a prevalence of approximately 10% among men who are thirty, 20% among those in their forties, 50–60% among the sixty year olds, and 80–90% among 70 year old men and above (Bushman, 2009). Prostate enlargement among Ghanaian men between the ages of 40 and 70 is reported to be 64% (Obu, 2014).

The symptoms of BPH are mostly lower urinary tract symptoms (LUTS) and these include waking up to urinate at night, urgency, frequency, incontinence of urine and inability to empty the bladder completely and weak urine stream (Wang et al., 2015). Nocturia in particular has been found to have negative effect on quality of sleep, energy or vitality (Kenneth et al., 2016). Men realizes they have prostate enlargement when they start experiencing lower urinary tract symptoms (LUTS) (Roehrborn, 2011a, 2011b).

Benign prostatic hyperplasia although not deadly, it is accompanied by serious morbidities such as depression and decreased health related quality of life such as sleep, psychological conditions, activities in daily life, and sexual activities (Wang et al., 2015).

Further studies have established that about 15% of the patients with the normal sexual life before the development of BPH but had surgery done on them to correct it experience erectile dysfunction (ED), especially among the middle-aged patients (Wang et al., 2015). Also, due to high cost in both direct medical bills and indirect losses in daily functioning, there will be negative impact on quality of life (QOL) for patients and partners (Speakman et al., 2015). Some of the untreated cases of BPH can result to severe complications such as acute urinary retention (AUR) which is a medical emergency, renal insufficiency and failure, urinary tract infections and bladder stones. All the above mentioned disease conditions causes a higher economic problem to the entire household of the patients (Wang et al., 2015).

1.2 Problem Statement

The commonest disease of the prostate of men around the world is Benign Prostatic Hyperplasia (Kirby, 2017). It is common among older men throughout the world (Barry, 2001). All men from age 50 are at a higher risk of getting BPH (American Cancer Association, 2014). Globally, several studies have reported racial difference in prevalence of Lower Urinary Tract Symptoms (LUTS) suggestive of BPH. A study done in the US reported that, up to 25% of men aged 50-65 years have LUTS suggestive of BPH with sufficient severity to interfere with their quality of life (Roehrborn, 2012). In Africa, a study done in a hospital among the Nigerian men shows an incidence rate of 88% similar to the prevalence of 84.4% reported in Ethiopia (Kenneth, 2016).

A population study done in Ghana recently reported an incidence rate of 19.9% for men between the ages of 45-60 and 62.3% for men above 65 years respectively using the Digital Rectal Examination (DRE) and International Prostate Symptom Score (IPSS) as an assessment tool (Obu, 2014). On the other hand, prevalence of BPH using ultrasound detected 40% enlarged prostate among men between the ages of 31-90 (Obu, 2014). This increases with age and present in approximately 8% of men aged 31-40, 50% of men aged 51-60, 70% of men aged 61-70 and 90% of men aged 80 and above. In the Kumasi metropolis, a study reported that 88.9% of men between the ages of 50-90 years were having LUTS suggestive of BPH (Kenneth et al., 2016). Enlarged prostate is higher with high incidence of lower urinary tract symptoms and erectile dysfunction (Obu, 2014).

In 2012, the Korle-bu Teaching Hospital (KBTH) reported that 30% of cases seen with genitourinary conditions were BPH (Annual Report, 2012). This increased to 79% between a period of 5 years (from 2012 to 2017). This shows a significant increase in the number of BPH cases.

At the Komfo Anokye Teaching Hospital, 50% of patients seen at the urology clinic have BPH (Annual Report, 2016). The records show how there had been significant increase from 2010 to 2016.

Most researches done in Ghana have focused on the awareness, prevalence, knowledge, perception and screening of BPH among elderly men from 50 and above (Obu, 2014 ; Arthur et al., 2005). Researches done on BPH at the Komfo Anokye Teaching Hospital has also focused on screening, awareness and the assessment of prostate disorders Kenneth et al.,

2016). However, much is not known about quality of life of BPH patients in Ghana. This therefore create a theory gap for identification.

1.3 Conceptual framework for perceived quality of life of patients with BPH

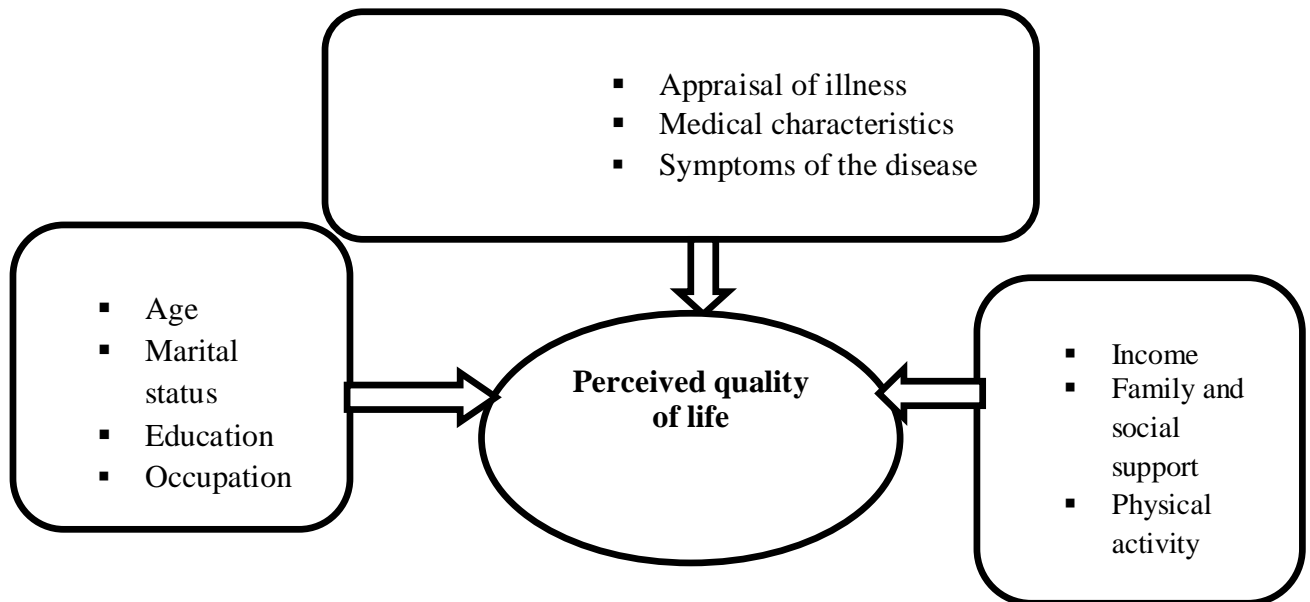


Figure 1: Conceptual framework

1.4 Narrative of the conceptual framework

The conceptual framework shows a reflective link between the independent variables and dependent variable factors that affects perceived quality of life positively or negatively. A Socio-demographic factor includes the age, marital status, education, occupation and religion. The age is very important because the disease is related to one's age as evidenced by the incidence increasing with age. The older you are the more risk you have for developing BPH (Roehrborn, 2012). Marital status plays a very vital role in BPH as the partner may not understand the treatment regimen and cannot tolerate the man's inability to work effectively to provide for the family's needs and also be able to satisfy her sexually which can even lead to a divorce (Wang et al., 2015). Being educated will help the BPH patient to explore the various treatment options available and understand the treatment

regimen which will help reduce fear and anxiety and facilitate easy compliance to treatment regimen (Walles and Alamrew, 2014).

Physical activity talks about what the patient goes through physically after being diagnosed of BPH. The patient experienced nocturia, urinary incontinence, overactive bladder and acute urinary retention which can influence the quality of life in a negative direction. Physical activity of the patient can also affect the income generating activity. This income generating activity deals with how the man gets money to support the home, whether the whole family depend on him for survival, and whether the patient is gainfully employed or unemployed. All these questions are necessary as the disease will affect the income level of the man and supposed he is unable to work at that moment, what happens to the family. The demographic factors affect the household income directly because since BPH occurs mostly in the elderly, the person might have retired from active service or near retirement so the income level might have been decreased already so if part of it is to be used for his health then the household income will be affected (Wang et al., 2017).

With education, the patient can read and hear a lot about the condition and know the treatment options available which will enhance early health care seeking behavior to avoid possible complications. This will help minimize spending. If the man is having a supportive working wife, then she may be of help by providing for the family but if he is divorced or the wife is not working then the household income will also be negatively affected (Walles and Alamrew, 2014).

Family function and social support influence the household income directly and vice versa. The social support deals with how supportive the society is to you after you developed the

condition. These deals with either there is anybody in or around the area who can sacrifice to take the patient to the hospital to seek for healthcare, whether patients get friends and family supporting them with some money or any other form of assistance. Most men with the indwelling catheters experience social isolations which negatively affect their quality of life if they need to walk everywhere with the catheters. This will however compel such patients to refuse to attend social functions as they use to do. This can result in breaking up of some valued or cherished relationships as they will also feel neglected. This however will fall directly on the household income and affect it (Wang et al., 2017).

Illness related factors are other things to consider. These illnesses related factors have contributing factors like medical characteristics and symptoms of the disease. This occurs after the individual has developed the condition. The sudden changes that will occur in the body and the symptoms one might experience. The troubles in terms of the bothersome clinical symptoms and the fear of how long it will last will have emotional impact on the individual's life. These illnesses related factors will either make the individual seek for health care at the hospital or elsewhere (Hyeok et al., 2015).

This, however, will affect the appraisal factors directly because coping with stress and challenges or adapting to a new situation is very difficult at the initial stage when unexpected situation happens. Appraisal Factors include appraisal of illness and coping strategies. The illness include the disease stage and the number of symptoms, appraisal deals with threat, challenge and controllability whiles coping strategies deals with bothersome symptoms associated with the disease and emotion-focused like anxiety, depression, and stress. All the various factors described in the framework affect the appraisal factors directly and finally lead to the quality of life (Wang et al., 2017).

For many conditions, medical factors alone do not adequately account for the extent of illness-related dysfunction. Functioning therefore, may be affected significantly by psychological factors which include how patients appraise and cope with the stress of their illness (Kirby, 2017). However, clearer understanding of the relationships among illness appraisal, coping and health-related outcomes may lead to better treatments and improved functioning. All the above factors will merge to ensure that the individual's quality of life is improved.

1.5 Research questions

1. What proportion of BPH patients at KATH have good quality of life?
2. Does the level of support received from close relations affect perceived quality of life of BPH patients at KATH?
3. What are the factors associated with perceived good quality of life of BPH patients at KATH?

1.6 Objectives

1.6.1 General objective

To determine the perceived quality of life of patients with benign prostatic hyperplasia at KATH and factors associated with good quality of life.

1.6.2 Specific objectives

1. To determine the proportion of patients with benign prostatic hyperplasia with perceived good quality of life at KATH.
2. To determine the association between good quality of life and support received from family and friends on BPH patients at KATH.

3. To identify the factors associated with perceived good quality of life in patients with BPH at KATH.

1.7 Justification of the study

Benign prostatic hyperplasia is common among the blacks than the whites (Obu, 2014). Incidence of BPH is on the increase. Although research works have been done on quality of life of patients with BPH in the western world and in other nearby countries like Uganda, Ethiopia Nigeria and others, yet little research work has been done in Ghana. Studies have focused on the awareness, prevalence, knowledge, perception and screening of BPH among elderly men from 50 and above (Obu, 2014; Arthur et al., 2005).

By exploring the extent of perceived quality of life among BPH patients, the findings would help policy makers and stakeholders to prepare specific solutions to improve on the quality of life of BPH patients. The findings may contribute towards policy decisions and help in developing integrated interventions to turn around the unmet needs of patients with BPH in the study area and Ghana as a whole. In addition, findings from this study would serve as a primary source of information for future studies regarding perceived quality of life.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview of Benign Prostatic Hyperplasia

Benign Prostatic Hyperplasia (BPH) is defined as the enlargement of the prostate gland caused by a benign overgrowth of chiefly glandular tissue that occurs especially in some men over 50years old (Acheampong, 2016). Benign prostatic hyperplasia tends to obstruct urination by constricting the urethra. The gland is only present in men and produces fluid that is part of the semen (Arthur et al., 2010). The commonest among the prostate diseases is BPH and it affect mostly elderly men (D.J. & S., 2003).

2.2 Aetiology of BPH

Benign prostatic hyperplasia is believed to occur as a natural process of ageing but the actual mechanism is not fully understood but it is believed to be under hormonal influence (Kassabian, 2005). The cause is still not well known but there are risk factors associated with the development of the condition. These include; age, race, androgens, diet, genetics and growth factors (Sydney et al., 2014). As there are no known causes of BPH, there are no known ways to prevent it. However, lifestyle changes may help to stop the symptoms of BPH getting worse and may even help to improve symptoms. These include avoiding constipation, reducing body weight, stopping smoking and increasing exercise levels may also be helpful (Overview et al., 2015).

2.3 Diagnosis of BPH

Diagnosis of BPH can be made based on;

1. History taking

2. Physical examination
3. Digital Rectal examination
4. Simple investigations to exclude urinary tract infection
5. Renal damage
6. Ultrasound of the prostate gland
7. Prostate Specific Antigen (PSA) testing (Roehrborn, 2012).

2.4 Clinical signs and symptoms of BPH and its effect on quality of life

The symptoms of (BPH) are manifested by the lower urinary tract symptoms example nocturia, urine incontinence etc and sometimes accompanied by retention of urine, blood in the urine and urinary tract infection. This can have serious health issues among the elderly men if strategies are not developed to manage it. (Mitropoulos et al., 2002).

A quality of life study revealed that severity of BPH is accompanied by associated with depressive moods and poorer role functioning related to emotional problems arising from illness among people with high-moderate LUTS and those with severe LUTS were associated with additional quality of life deficits related to vitality, ability to work and carry out daily task as a result of the illness (Welch, 2008).

2.4.1 Effect of nocturia on quality of life

A patient waking up to urinate more than once can affect the individual's sleep (Suekane et al., 2013). A study revealed that nocturnal voids do not only affect quality of sleep at night but also the perceived daytime quality of life and general feeling of health (Suekane et al., 2013).

If someone experience nocturia, it can lead to tiredness and inability to absorb things. This can pose a threat to the patient in terms of accidents both at work place and home (Suekane et al., 2013).

A study in London, UK, on measurement of nocturia and its effect on quality of life in BPH patients revealed that nocturia affects the quality of sleep which intends to affect the patient's feelings the next day. This may result in a rise in long-term morbidity and mortality (Chartier-Kastler, 2006). Another prospective study in Sweden to assess the mortality in the elderly with BPH in relation to nocturnal micturition shows that, BPH patients who need to void three or more times per night had a greater mortality rate (Asplund, 2008). Urinating more at night and inability to sleep makes a person prone to feeling dejected. It is therefore important for people to realise how nocturia can seriously affect general health of the individual (Kapelian et al., 2006).

2.4.2 Effect of urinary incontinence on quality of life

Urinary incontinence is when urine occasionally leaks on a person without knowing or feeling like voiding. It is projected that 13million Americans are living with incontinence of urine. Even though incontinence is not deadly, it has social consequences on the patient and the whole society at large. Treatment of incontinence of urine in the USA is projected to 10-16 billion dollars each year (Coyne et al., 2003). Psychosocial adjustment to illness is as important as the status of the physical disease itself. Resent research have shown that, urge incontinence is associated with emotional problems, reduce social and recreational activity and sexual dysfunction (Jackson, 2017).

2.4.3 Burden of overactive bladder, specifically urine urgency and frequency on quality of life

Urinary urgency with or without urge incontinence, and usually with urinary frequency and nocturia can be described as overactive bladder (OAB). Studies have shown that, the impact of OAB on quality of life has a negative impact on physical, social and psychological well-being and interferes with daily activities). Overactive bladder is estimated to be 16.6% in the United States (Karen et al., 2008).

2.4.4 Acute urinary retention in relation to BPH and its impact on quality of life

Acute urinary retention (AUR) is the most common urological emergency characterized by a sudden inability to pass urine and associated by lower abdominal pain. In recent study, the risk of an episode of AUR was identified to be 1.6% for men aged 40-49 and 10% for men at age 70-79years. This however implies that, AUR is likely to become an increasingly prevalent problem with an ageing population (Kirby et al., 2015). Further studies reviewed that LUTS can significantly compromise the daily life of affected men because of the degree of bother, interference with daily activities, degree of worry, psychological well-being and frequent embarrassment caused by the urinary symptoms can negatively affect the health related quality of life (Namasivayam et al., 2006). Recently, a study done in England shows that, up to 25% of men undergo prostatectomy because of acute urinary retention, which doubles the risk of death and morbidity compared with elective surgery. Moreover, chronic urinary retention can lead to renal failure, and is responsible for 15% of prostatectomies (Thorpe & Neal, 2010).

2.4.5 Symptomatic benign prostate hyperplasia and its effect on patients' relationships

Symptomatic BPH may affect the relationship with partners as well besides the effect LUTS have on its patients. BPH is a disease that affects quality of life and may affect relationships

so including partners in decision making in treatment options can be helpful (Overview et al., 2015). A study was done with focus on partner morbidity in cases of symptomatic BPH and the component of partners' morbidity were sleep disturbance, social disruption, inability to take care of essential task inside and outside their home, psychological burden, inadequate sex life, fear of cancer and fear of surgery (Mitropoulos, 2002). The study reported the following results in percentages in terms of the component of partners' morbidity stated above. Those with sleep disturbance recorded 28%, those with social disruption 30%, those unable to take care of their homes recorded 8%, then those with psychological burden recorded 66%, those with inadequate sex life recorded 48%, for fear of cancer partners recorded 62% and finally those for fear of surgery recorded 82% (Mitropoulos, 2002). This clearly shows how partners of patients with symptomatic BPH suffer in their relationship in terms of fear and anxiety as well as other psychological burden.

2.5 Economic costs of BPH and its effect on quality of life

The effects of BPH in working aged men have been established in some studies. According to Saigal, 2005, direct medical costs associated with BPH treatment are paid by the patients. However, indirect costs associated with loss of work are primarily borne by the employer. Recent study to estimate the costs associated with BPH in working age males revealed that the average yearly expenditure was \$4,193 for men without a medical claim for BPH and in contrast, annual expenditure was \$5,729 for men with medical claim for BPH. This shows that the incremental cost associated with a diagnosis of BPH was \$1,536 yearly. The study further explained that an average employee with BPH missed 7.3 hours of work yearly while 10% of the workers also reported work loss related to a health care encounter for BPH (Saigal, 2005). The study concluded that, treatment of men with BPH places a significant burden on employees and their employers through direct medical costs as well

as loss of work time. Recent study done in the USA revealed that, BPH is an exceedingly common condition affecting 40% to 70% of older men and a cause for 335,000 prostatectomies performed annually at a cost of about \$3.5billion. This shows that treatment for BPH is very costly and can negatively affect the quality of life of the patient (Barry et al., 2017).

2.6 The effect of sexual life on the quality of life of BPH patients

Benign Prostatic Hyperplasia (BPH) progressively decreases patient self-esteem and lower urinary tract symptoms have effect on the patient's sexuality (Emberton et al, 2006).

Studies have shown that, sexuality in men also decreases as they age due to a decline in serum androgen levels and a decrease in testosterone production compared to that of the younger men which results in decrease in serum free and total testosterone levels without a rise in luteinizing hormone (Kassabian, 2003). Since both BPH and sexual dysfunction occurs more often in the elderly, it is very difficult to conclude whether BPH alone causes sexual dysfunction (Kassabian, 2003). Symptoms of depression are common in patients diagnosed with benign prostatic hyperplasia (BPH) and are usually a reaction to deterioration of health, severity of lower urinary tract symptoms, and erectile dysfunction (Shvartzman et al., 2001, Barbara et al., 2015). Studies have shown that, there is a link between the occurrence of LUTS (frequent urination, urgent urination, and weakened urine flow) associated to BPH and sexual dysfunction, including libido, erectile, and ejaculation disturbances, as well as decreased satisfaction with sexual life (Rosen et al, 2003, Rosen et al, 2005). Severity of LUTS in men, the risk of ejaculation and erectile dysfunction is doubled and the risk of painful ejaculation is six times greater than in men without LUTS (Brookes et al, 2008).

2.7 Effect family and social relationship on quality of life of BPH patients

It is broadly known that social influence play a vital role in the health results aside the care given at the health facilities. Social factors of health like educational and income levels are seen to bring great changes in illness and death (Link et al, 1995; CSDH, 2008). It is also believed that the geographical location of an individual and the rules that governed the person also play a vital role in terms of morbidity and mortality. Studies show that the partner or the family of a patient with BPH/LUTS will eventually suffer because they take care of them (Emberton et al, 2006). Studies have shown that there were so many factors that troubles men after they have been diagnosed of having BPH. These include the severity of symptoms, bad assessment made about BPH and the psychological trauma about the prognoses of the illness. The above mentioned factors can also lead to a decrease in physical role function, energy level, social functioning and mental ability (Hunter et al, 1995). Studies have also focused on the partner and the family of these patients know the effect of BPH on their QOL. A study done in France, South Korea, United Kingdom and The Netherlands among 3473 couples on the effect of LUTS on QOL reported that, among the women whose partners experience urinary symptoms, 28.7% would be dissatisfied if their symptoms prolonged, 4.5% were very disturbed due to their partners waking up to urinate plenty at night and 11.8% were also troubled due to the fact that their partner's nocturia disturb their sleep as they always have to awake as many times as their partners wake up to void (Boyle et al, 2003).

2.8 Appraisal of illness and Illness-related factors that affect the Quality of life in BPH patient

Studies have recommended that a BPH patient seeking early care play a very vital role in treatment regimen and has good effect on his quality of life. Again if an effective diagnosis

is made it becomes a good indicator for proper or effective management. According to Yu-Hua Fan., et al, (2016) the only major reasons a patient will seek for medical advice is when they need proper management of BPH and when they are afraid of the adverse effect that the treatment regimen brings. Recent study shows that the reasons that will compel patients to seek for health care is as follows; majority of the patients (71%) visited a hospital because of the disturbing urinary symptoms, (9%) were afraid of getting prostate cancer, (15%) come for physical reviews and (1%) said they came because their family or friends asked them to. To conclude, almost half of the respondents were worried about the long term complications the disease will bring to them (Yu-Hua Fan et al, 2016). A survey done on 502 men having BPH revealed that two thirds of the patients got to know that they have problems with their prostate, one third recognized they have BPH and virtually one third also thought their symptoms could be as a result of cancer of the prostate. Despite the treatment the patients were receiving, about three quarters of them needed a drug that will decrease their danger by 50% and prevent them from going for surgery than a medication that will release their symptoms quickly (Emberton et al, 2005).

For a patient to receive treatment or make choice on his treatment, it depends on both the doctor and the patient. All the treatment options will be explained to the patient by the doctor and it is the patient who makes the final decision on his treatment choice based on the information giving to him by the doctor (Emberton et al, 2006).

According to American Urological Association Guideline (AUAG) on Management of Benign Prostatic Hyperplasia (BPH) 2007; treatment options for BPH including watchful waiting, lifestyle changes and physiotherapy are the first-line treatments to relieve their urinary symptoms (Allkanjari, 2015). Individuals who are not at risk of acute urinary

retention are often offered watchful waiting and lifestyle changes include: increasing physical activity; modifying diet to avoid excessive alcohol consumption; avoiding highly seasoned and irritative foods; regulating fluid intake, especially in the evenings; and examining if other prescribed medications are contributing to the symptoms, and surgical procedures (AUAG, 2007).

2.9 Benign Prostatic Hyperplasia in Ghana.

Benign prostatic hyperplasia (BPH) is the most common neoplasm and a significant cause of urinary symptoms in the adult males. Enlargement of the prostate occurs with age leading to bladder outlet obstruction, which manifests with symptoms of impaired urine voiding and/or storage referred to as lower urinary tract symptoms (LUTS). Although BPH is not life threatening, its clinical manifestation as LUTS reduces the patient's quality of life (Barry, 2010).

The clinical factors used in the assessment of prostate disorders and the differentiation of malignant and benign prostatic conditions includes prostate specific antigen (PSA) , digital rectal examination (DRE), clinical symptoms, heterogenic echo lesion on trans rectal ultrasound, PSA derivatives such as age specific PSA, PSA density (PSAD), PSA velocity, and free PSA percentage, international prostate symptoms score (IPSS) and identified risk factors such as age, family history, race, body mass index (BMI), prior prostatitis and medications respectively (Berges and Oelke, 2011).

Benign prostatic hyperplasia (BPH) prevalence in Ghana is responsible for 60% acute retention of urine and 28.6% of haematuria. Previous study conducted among the Ghanaian population observed that 83.6% of the subjects had their PSA levels above the upper limit

of the reference range (4.0ng/ml) with their ages ranging between 56 to 85 years (Arthur et al., 2012). At Korle Bu Teaching Hospital (KBTH), clinical BPH is the leading cause of retention of urine in adult men and haematuria in adult men based on ultrasound abdominal examination (Laryea et al., 2014).

2.10 Quality of Life

In comprehensive understanding of perceived quality of life, the Response Shift Model (RSM) for quality of life was adopted. This model was developed by Sprangers and Schwartz (1999), and it proposes that an experience of a change in life (such as a change in health), acts as the ‘catalyst’ for change in the quality of life. This is to say that, the model suggests change over time in perceived quality of life as a result of the interaction of the antecedents, mechanisms, and the response shifts of the individual.

According to the response shift model, antecedents include characteristics of the person that is assumed to have an influence on the type of catalysts and mechanisms to be employed. These are the personality and socio-demographic characteristics. Personality consists of an individual’s optimism and self-esteem. Catalysts refer to health state or changes in health state, as well as other health-related measures, treatment interventions, the indirect experience of such events, and other life events assumed to have an impact on quality of life. Mechanisms include behavioral, cognitive, or affective practices used to accommodate to the changes induced by the catalysts. It entails coping, social comparisons, social support, and spiritual practices.

Coping relates to the direct involvement with the catalyst to bear with the new life. In social comparison, the individuals compare themselves to people who have not been affected by same catalyst. Also, social support entails the support that the affected individuals receive

from society to accommodate the new life induced by the catalyst. Spiritual practices discuss the spiritual activities individual engage in as they live with the catalyst. Response shift includes changes in the meaning to life after a self-evaluation of quality of life resulting from changes in internal standards, values, or conceptualization. Based on the response shift model, the assumption is that men living with an Benign Prostate Hyperplasia (BPH) may either experience a positive or negative quality of life based on the interaction with their subjective antecedent and their subjective mechanism which will influence how they will construct the meaning of their life with the indwelling of BPH (Bello et al., 2013).

The common side effects of prolonged suffering from BPH, loss of dignity, loss of job or being out of school, lack of sexual intercourse, peri-catheter leakage of urine and recurrent urinary tract infection (Bello et al., 2013). This phenomenon is a painful experience and often associated with several side-effects which subsequently affect the patients' quality of life and constitutes a significant financial burden to the patients and the government. In a study conducted to measure and compare the quality of life of BPH patients in Brazil and Portugal, the results showed that Brazilian patients presented higher mean quality of life scores in the psychological domain and lower scores in the physical domain compared to Portuguese patients (Fumincelli, Mazzo, Martins, Henriques, & Orlandin, 2017).

Physiologically, quality of life of people can be compromised due to signs and symptoms of infections, making patients uncomfortable and thus may need to report to health facilities (Mohammed et al., 2014). A study conducted in Nigeria showed that patients who had urine retention from BPH were mostly relieved by catheterization, however, most of the study participants suffered complications such as pyuria, pericatheter sepsis and haemorrhage during change of catheter (Ugare, Bassey, Udosen, Essiet, & Bassey, 2014). This could be

deduced that as patients suffered these complications, their comfort was compromised and quality of life affected.

2.10 Conclusion of Literature review

This study sought to investigate the perceived quality of life of patients with benign prostatic Hyperplasia at the Komfo Anokye Teaching Hospital in the Ashanti Region, Ghana. With the knowledge from other studies, it was evidently clear that most researchers have investigated and reported comprehensively on risk factors such as; genetic, lifestyle risk, dietary patterns among other risk factors as closely associated with the development of BPH. However, the researcher found little research work on quality of life which have reported to contribute significantly to worsening the condition of patients diagnosed to have BPH. Most of the studies reviewed however, are also from the developed countries, hence it may not reflect the quality of life of men living with BPH in Ghana. This therefore create a theory gap and knowledge in literature. It is anticipated that findings from the study will help improve applicable interventions that would help address the quality of life needs of men living with BPH.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This section presents details of how the study was carried out. It starts from the design stage through data collection to analysis of the data collected. It gives details on the study design, location (brief description of the study area), variables of interest, sample size determination, instrument for data collection, data processing and analysis. It also describes quality control as well as ethical considerations.

3.2 Study design

The study was a hospital-based cross-sectional study using quantitative method. The pre-designed questionnaire was distributed to collect key demographic data from the participants with the help of the research assistants.

3.3 Study Area

The study was conducted at the Urology clinic of the Komfo Anokye Teaching Hospital (KATH) in Ashanti region of Ghana. The hospital is situated in Kumasi, the regional capital with total estimated inhabitants of 4,780,380 (Ghana Statistical Survey, 2012). The hospital has a 1,500 bed capacity (Ghana Statistical Service, 2012). It is the second leading hospital in Ghana and a referral teaching hospital. The hospital also receives referrals from other regions such as Central, Eastern, Western and some parts of the Volta region of Ghana. The urology clinic is located within the surgical block with staff strength of forty (40). The clinic is run thrice a week with an average of hundred (100) urological cases seen per day. Out of these, fifty (50) of them are diagnosed of having BPH and ten out of it usually goes

for admission. On the average, thirty (30) of these BPH patients are new cases. (Urology clinic, KATH).

3.4 Study population

The study population were male patients visiting the urology clinic of Komfo Anokye Teaching Hospital and have been diagnosed of having BPH.

3.4.1 Inclusion Criteria

Recruited patients were every male patient visiting the facility and diagnosed of BPH no matter their age.

3.4.2 Exclusion Criteria

Male patients who were brought as emergency cases and the critically ill patients were not recruited. Respondents that refuse to give their consent were also excluded.

3.5 Variables

3.5.1 Dependent variable:

The dependent variable for the study is perceived quality of life. The perceived quality of life was measured by the use of 5 item likert scale technique with five point ratings as follows; “Not at all”, “A little “bit, “moderately”, “Quite a bit” and “Extremely”. However, five disease specific symptoms and how it bothers the patients were used to assess the perceived quality of life.

Did you have the following symptoms and to what degree have they interfered your life?

1. Having to urinate more frequently than before and bother due to frequent urination

2. Painful or burning sensation during urination and bother due to painful or burning sensation during urination
3. Do you wake up to urinate during the night and bother due to getting up to urinate during the night
4. Does urine leaks on you occasionally and bother due to leakage of urine
5. How often have you worried about the urinary condition during the past 4 weeks

Participants' who ticked "Not at all", "A little bit", and "moderately" as an option pertaining to their condition were given a score of 0 while those that chose "Quite a bit" and "Extremely" were given a score of 1. Each question dichotomized to 0 or 1. The summative score of 3/5 (60%) were classified as having good quality of life while those with scores below 3/5 were classified as having poor quality of life (Ministry of Health, Ethiopia, 2011).

3.5.2 Independent variable

The independent variables include:

1. Age
2. Marital status
3. Educational status
4. Occupation
5. Family responsibilities
6. Medical characteristics and symptoms of the disease

3.6 Sample size

The sample size for the study was calculated by using the formula below:

$$N = \frac{Z^2 \times P(1-P)}{D^2}$$

N represents the estimated minimum sample size

Z represents the constant for 95% confidence interval given as 1.96

P represents the average prevalence of BPH patients whose quality of life is affected (22%) in recent study conducted in Uganda (Champelle et al., 2015)

D represents the percentage error margin taken as 5% = 0.05

$$N = \frac{1.96^2 \times 0.22 \times 0.801}{0.05^2}$$

$$N = 282$$

$$\text{Additional 10\% of the sample} = \frac{(10 \times 282) + 282}{100}$$

$$N = 310$$

The additional 10% of the sample was estimated for non- response. Therefore, the final sample size for the study was 310 participants.

3.7 Sampling Method

The study included male patients visiting the urology clinic of Komfo Anokye Teaching Hospital and has been diagnosed of having BPH irrespective of their ages. Any patient diagnosed with BPH was interviewed and selected after he has agreed and consented to participate in the study. This was done until the sample size was obtained. However, the selected patients who refused to be interviewed or to participate were dropped and the next

available patient who consented to participate was replaced. The study included both old and new cases.

3.8 Data Collection

The collection of data occurred through administering structured questionnaires to sampled respondents. The questionnaire was interviewer administered for respondents. The items on the questionnaires were read and explained to each respondents and answers were ticked as they answer. This was done with the help of the research assistants. Patients that were seen by the physicians and have been diagnosed of having BPH were identified at the nurses station of the consulting room. These patients were talked to about the research and the purpose of the study. Those who agreed and consented to participate were taking to a separate place with privacy where no one can see them or hear them to be interviewed.

3.9 Training of research assistants

Research assistants who can read and write English and are also fluent in Twi and or Hausa were trained. Training entailed explanation of the questionnaire, ethical issues governing the research and seeking of informed consent from study participants. Questions in the questionnaire was explained to research assistants. Three days were used to train the research assistants on how the questionnaire will be administered and how to conform to the ethical guidelines of the study.

3.10 Pre-testing and review of instrument

The questionnaire was pre-tested in Kumasi South Hospital among the BPH diagnosed patients of the urology department. After pre-testing, the questionnaire was reviewed according to the information gathered before the main survey took place.

3.11 Data processing and analysis

The data collected were entered in Excel 2013 and then exported into Stata version 15 for further cleaning, validation and analysis. Frequency and percentages were used in describing the demographic and background characteristics of the study participants. The mean and standard deviation were also used in summarizing the age of the study participants. Bivariate analysis using Chi-square and Fisher's exact test where appropriate, was performed to test the associations between independent variables and perceived quality of life. Multiple logistic regression was carried out on the factors that were significant at the bivariate level, crude and adjusted odds ratio were computed and statistical significance was accepted at $p \leq 0.05$.

3.12 Ethical Considerations

Ethical approval for the study was obtained from the Ghana Health Service Ethics Review Committee and the Ethics Review Board of the Komfo Anokye Teaching Hospital (KATH). Participation was voluntary and written informed consent was obtained from each participant. Respondents were assured on confidentiality of their responses. Lastly, the respondents were given the freedom to stop participating any time they feel like doing so. Administrative approval was obtained from the management of KATH.

3.12.1 Privacy and Confidentiality

In order to ensure privacy and confidentiality, the questionnaires were coded and names of respondents were not required in filling out the questionnaire. The interview was conducted in such a way with individual respondents so as to guarantee their privacy. Participants' names were not mentioned in the report of the study and information that was gathered on participants was kept strictly confidential between the principal investigator and the study

participants. The patients were sent to a private room where privacy was ensured where no one could see or hear them if he agrees to partake in the study.

3.12.2 Compensation

Participants were not given any monetary compensation. However, a drink and pastries (costing 5 GH cedis) were given to the respondents for the time spent in providing the necessary information.

3.12.3 Risks and Benefits

Apart from the time that was lost by study subjects in answering the questionnaires, there was no risk or cost associated in participating in the study. Participants would not gain any direct benefits. However, it is expected that the results of the study may contribute towards health policy decisions which may be beneficial to both the study participants, Government and the principal investigator.

3.12.4 Voluntary participation

Respondents were informed that their participation in the study was purely out of their free will. They can also decide to withdraw at any point of the survey. Respondents were assured that declining to complete questionnaire will have no effect on their treatment even if they agreed to do so earlier.

3.12.5 Data storage and usage

The data were stored with passwords on my personal computer with the password known to me alone.

3.12.6 Funding of the study

This study is in partial fulfilment of requirements towards the award of a Master of Public Health (MPH) degree at the School of Public Health, College of Health Sciences, University of Ghana, Legon. Hence, there is no funding from any source and all estimated cost of the study were borne solely by the researcher.

3.12.7 Quality Assurance and Control

Proper quality assurance procedures and precautions were taken to ensure the reliability and validity of the data. Two research assistants with public health background were given adequate training in order to assist the principal investigator during the data field collection. The content of the training involved; the purpose and objectives of the study, data collection techniques and tools to be used, translation of questionnaires into local languages, data collection ethical guidelines. The principal investigator was part of the team during the interviews to ensure that relevant information in line with the objectives of the study are collected. The questionnaire were checked for mistakes and completeness before final entry into STATA software's for statistical analysis. Errors and omissions detected were discussed with the respective assistants and asked to make the necessary corrections.

3.12.8 Declaration of conflict of interest

The researcher as the principal investigator does hereby declare no conflict of interest in this study.

3.13 Strength and Limitations of study

The strength is that, the study has brought to fore the perceived quality of life and factors associated with BPH which has significant interventions on public health.

The study did not establish a causal relationship among the variables. Also recall bias could have limited the findings of the study.

CHAPTER FOUR

RESULTS

4.1 Demographic characteristics of study participants

A total of 310 BPH patients were involved in this study with an average age of 67.5 (± 0.7). Majority (55.5%, n=172) of them were married with the remaining 44.5% (n=138) of them not married. Less than a tenth (7.1%, n=22) of the study participants had no form of formal education, with majority (59.7%, n=185) of them having primary education. About a quarter (23.6%, n=73) of them had secondary level of education while 9.7% (n=30) of them had tertiary level of education. Majority (54.8%) of the study participants were unemployed (Table 4.1).

Table 4.1: Demographic characteristics of study participants

Characteristics	Frequency (N=310)	Percentage
Age (mean \pm SD)	67.52 \pm 0.65	
20 - 49	21	6.77
50 - 59	50	16.13
60 - 69	85	27.42
70 - 79	113	36.45
80+	41	13.23
Marital status		
Unmarried	138	44.52
Married	172	55.48
Educational status		
No formal education	22	7.1
Primary education	185	59.68
Secondary education	73	23.55
Tertiary education	30	9.68
Employment status		
Employed	140	45.16
Unemployed	170	54.84

SD: standard deviation

4.2 Support received by study participants

Of the 310 study participants that were in the study, about a tenth (9.0%, n=28) of them said they receive no support while 81.6% (n=253) of them said they receive some support. The results indicated that, 84.5% (n=262) of the study participants received financial support, 90.0% (n=279) of them received psychological support while 90.3% (n=280) of them received emotional support. Majority (57.4%, n=178) of them reported to have inadequate sexual life with their partners and most of them were dissatisfied with the level of support they received from either their friends (61.0%, n=189) or their co-workers (68.4%, n=212). More on the support received by study participants can be seen in table 4.2.

With regards to bothersome symptoms, 80% had bother due to urination at night, 49.7% had moderate urine leaks occasionally and 76.1% had moderate worried level about urinary condition in the past 4 weeks (Table 4.3).

Table 4.2: Support received by study participants

Variable	Frequency	Percentage
Receive general support		
None	28	9.03
Some	253	81.61
Frequent	29	9.35
Receive financial support		
Yes	262	84.52
No	48	15.48
Receive psychological support		
Yes	279	90
No	31	10
Receive emotional support		
Yes	280	90.32
No	30	9.68
Inadequate sex life		
Yes	178	57.42
No	132	42.58
Level of satisfaction with friends' support		
Dissatisfied	189	60.97
Neutral	28	9.03
Satisfied	93	30
Level of satisfaction with co-workers' support		
Dissatisfied	80	57.10
Neutral	25	17.90
Satisfied	35	25.00
Frequency of family visits		
High	24	7.74
Low	286	92.26

Table 4. 3: Botherome Symptoms of study participants

Characteristics	Frequency (N=310)	Percentage
Bother due to urination at night		
Not at all/slightly	30	9.7
Moderate	248	80.0
Severe/very severe	32	10.3
Urine leaks on you occasionally		
Not at all/slightly	88	28.4
Moderate	154	49.7
Severe/very severe	68	21.9
Worried level about urinary condition in past 4 weeks		
Not at all/slightly	20	6.5
Moderate	236	76.1
Severe/very severe	54	17.4

4.3 Perceived Good Quality of life of BPH patients.

Of the 310 study participants, 95% (n=296) had poor quality of life with the remaining 5% (n=14) having their lives to be of good quality

4.4 Association between the demographic characteristics and perceived good quality of life.

The Pearson's and Fishers exact chi-square test of association were used in assessing the demographic characteristics of study participants that are associated with the perceived good quality of life of the BPH patients. Education level was the only demographic characteristics of the study participants that was significantly associated with the perceived good quality of life of the BPH patients (P-value <0.05).

All of the 22 study participants in the study who had no formal education rated the quality of life to be poor, 97.3% (n=180) of the 185 study participants with primary level of education rated their quality of life to be poor, while 95.9% (n=70) and 80.0% (n=24) of the

73 and 30 study participants with Secondary and tertiary level of education respectively rated their life to be in poor quality (Table 4.4).

Table 4. 4: Association between demographic characteristics and perceived good quality of life of BPH patients

Characteristics	Total (%)	Quality of life		Chi-square	P-value
		Good (%)	Poor (%)		
Age (mean ± SD)	67.5 ± 0.7	66.21 ± 3.14	67.57 ± 0.67	-0.43#	0.677
≤ 59 years	71	2 (2.8)	69 (97.2)	Φ	0.744
> 59 years	239	12 (5.0)	227 (95.0)		
Marital status				0.46	0.498
Unmarried	138	5 (3.6)	133 (96.4)		
Married	172	9 (5.2)	163 (94.8)		
Educational status				φ	0.003*
No formal education	22	0 (0)	22 (100)		
Primary education	185	5 (2.7)	180 (97.3)		
Secondary education	73	3 (4.1)	70 (95.9)		
Tertiary education	30	6 (20)	24 (80)		
Employment status				0.85	0.357
Employed	140	8 (5.7)	132 (94.3)		
Unemployed	170	6 (3.5)	164 (96.5)		

SD: standard deviation. #: Welch's t-test. Φ: Fishers' exact chi-square test. %: row percentage. *: p<0.05.

4.5 Association between support received and perceived good quality of life.

From the Pearson's chi square and Fishers' exact test of association, receipt of general support and level of satisfaction of supports from friends, occasional leakage of urine, worried level about urinary symptoms in the past 4 weeks, nocturia interference with sleep, sleep disturbance affecting partner relationship, inability to take care of task affecting partner relationship and avoidance of meeting or other situation with many people were the factors that had significant association with the perceived quality of life of the BPH patients ($P < 0.05$) (Table 4.5a and 4.45).

Almost all the 28 study participants 96.4% (n=27) who said they receive no support said their life were in poor quality, while 97.2% (n=246) of the 253 study participants who said

they receive some support reported to have poor quality of life and 79.3% (n=23) of the 29 study participants who frequently receive support said they had a poor quality of life.

All of the 28 study participants who were indifferent (neutral) to their level of satisfaction with the support they receive from their friends had poor quality of life, 97.4% (n=184) of the 189 study participants who were dissatisfied with supports from their friends said their life were in poor quality and of the 93 study participants who were satisfied with their friends support 90.3% (n=84) of them said they had poor quality of life (Table 4.5a and 4.5b).

Table 4. 5a: Association between support received and perceived good quality of life of BPH patients

Characteristics	Total (%)	Quality of life		Chi-square	P-value
		Good (%)	Poor (%)		
Receive support					0.001*
None	28	1 (3.57)	27 (96.43)	φ	
Some	253	7 (2.77)	246 (97.23)		
Frequent	29	6 (20.69)	23 (79.31)		
Receive financial support					0.704
Yes	262	13 (4.96)	249 (95.04)	φ	
No	48	1 (2.08)	47 (97.92)		
Receive psychological support					0.639
Yes	279	12 (4.3)	267 (95.7)	φ	
No	31	2 (6.45)	29 (93.55)		
Receive emotional support					1
Yes	280	13 (4.64)	267 (95.36)	φ	
No	30	1 (3.33)	29 (96.67)		
Level of satisfaction with friends' support					0.024*
Dissatisfied	189	5 (2.65)	184 (97.35)	φ	
Neutral	28	0 (0)	28 (100)		
Satisfied	93	9 (9.68)	84 (90.32)		
Level of satisfaction with co-workers' support					0.35
Dissatisfied	212	8 (3.77)	204 (96.23)	φ	
Neutral	17	0 (0)	17 (100)		
Satisfied	81	6 (7.41)	75 (92.59)		
Frequency of family visits					1
High	24	1(4.2)	23(95.8)	φ	
Low	286	13(4.6)	273(95.4)		

#: Welch's t-test. φ: Fishers' exact chi-square test. %: row percentage. *: p≤0.05.

Table 4.5b: Association between bothersome symptoms and perceived good quality of life of BPH patients

Characteristics	Total (%)	Quality of life		Chi-square	P-value
		Good (%)	Poor (%)		
Bother due to urination at night				φ	0.371
Not at all/slightly	30	1(3.3)	29 (96.7)		
Moderate	248	10(4.0)	238 (95.6)		
Severe/ very severe	32	3 (9.4)	29 (90.6)		
Urine leak on you occasionally				φ	0.013 *
Not at all/slightly	88	9 (10.2)	79(89.8)		
Moderate	154	3 (1.9)	151 (98.1)		
Severe/ very severe	68	2 (2.9)	66 (97.1)		
Worried level about urinary condition in past 4 weeks				φ	<0.00 1*
Not at all/slightly	20	1 (5.0)	19 (95.0)		
Moderate	236	3 (1.3)	233 (98.7)		
Severe/ very severe	54	10 (18.5)	44 (81.5)		

#: Welch's t-test. Φ: Fishers' exact chi-square test. %: row percentage. *: p<0.05.

Table 4.5c: Association between family/ social responsibility and perceived good quality of life of BPH patients

Characteristics	Total (%)	Quality of life		Chi-square	P-value
		Good (%)	Poor (%)		
Nocturia interfere with sleep				ϕ	0.02*
Yes	105	9 (8.6)	96 (91.4)		
No	205	5 (2.4)	200 (97.6)		
Current condition affect work performance				0.06	0.803
Yes	123	6 (4.9)	117 (95.1)		
No	187	8 (4.3)	179 (95.7)		
Sleep disturbance affect partner relationship				ϕ	<0.001
Yes	90	11(12.2)	79 (87.8)		
No	220	3 (1.4)	217 (98.6)		
Inability to take care of task affect partner relationship				ϕ	0.002
Yes	213	4 (1.9)	209 (98.1)		
No	97	10 (10.3)	87 (89.7)		
Inadequate sex life affect partner relationship				1.18	0.278
Yes	178	10 (5.6)	168 (94.4)		
No	132	4 (3.0)	128 (97.0)		
Inability to support financially affect partner relationship				ϕ	0.65
Yes	106	4 (3.8)	102 (96.2)		
No	204	10 (4.9)	194 (95.1)		
Given up some hobbies				ϕ	0.766
Yes	226	11 (4.9)	215(95.1)		
No	84	3(3.6)	81(96.4)		
Avoid meetings or other situation with many people				ϕ	0.043
Yes	212	6 (2.8)	206 (97.2)		
No	98	8 (8.2)	90 (91.8)		

#: Welch's t-test. Φ : Fishers' exact chi-square test. %: row percentage. *: p<0.05.

4.6 Factors associated with perceived good quality of life of BPH patients

The simple and multiple binary logistic regression model were used. All factors that were significantly associated with the perceived good quality of life were those that were considered in the logistic regression model.

From the multiple logistic regression model, educational level, receipt of support, sleep disturbance affecting the relationship with partner and inability to support financially were the factors that showed significant influence the perceived good quality of life of BPH patients ($P < 0.05$).

For education, all those who had lower formal education had less odds of having good perceived quality of life when compared to those with tertiary level of education. Those with primary education had 89% (AOR: 0.11, 95% CI: 0.03-0.43) less odds of having good perceived quality of life compared to those with tertiary level of education.

For receipt of support, those who frequently received material support were 1.42 times more likely to have good perceived quality of life compared to those who receive no support (AOR: 1.42, 95% CI: 1.02-4.76) (Table 4.5).

Patients who did not have sleeping disturbances affecting their relationship had 97% (AOR: 0.03, 95% CI: 0.00-0.3) reduced odds of having good perceived quality of life compared to those who had sleeping disturbances affecting their relationship.

Patients who have the ability to support their partner had an increased odds (AOR: 9.12, 95% CI: 2.93-12.96) of having good perceived quality of life compared to those with inability to support their partner.

Table 4.6: Factors associated with perceived good quality of life of BPH patients

Characteristics	Simple logistic		Multiple logistic	
	UOR (95% CI)	P-value	AOR (95% CI)	P-value
Educational level		0.003**		0.014*
Tertiary	ref		ref	
No formal education	0.08 (0-1.57)		0.06 (0.00-1.46)	
Primary education	0.11 (0.03-0.39)		0.11 (0.03-0.43)	
Secondary education	0.19 (0.05-0.74)		0.22 (0.04 -1.1)	
Urine leak on you occasionally		0.023*		0.607
Not at all/slightly	ref		ref	
Moderate	0.19 (0.06-0.68)		0.55 (0.07-4.08)	
Severe/ very severe	0.31 (0.08-1.32)		0.27 (0.02-3.6)	
Worried level about urinary condition in past 4 weeks		<0.001** *		0.169
Not at all/slightly	ref		ref	
Moderate	0.33 (0.05-1.96)		0.46 (0.02-10.74)	
Severe/ very severe	0.06 (0.02-0.22)		0.14 (0.02-1.11)	
Nocturia interfere with sleep		0.02*		0.063
Yes	ref		ref	
No	0.28 (0.09-0.82)		9.16 (0.88-95.07)	
Receive support		0.001**		0.001*
None	ref		ref	
Some	0.2 (0.03-1.27)		3.62 (0.46-28.39)	
Frequently	0.11 (0.04-0.34)		1.42 (1.02-4.76)	
Sleep disturbance affect partner relationship		<0.001** *		0.003**
Yes	ref		ref	
No	0.11 (0.03-0.38)		0.03 (0.00-0.3)	
Inability to support financially affect partner relationship		0.003**		0.002**
Yes	ref		ref	
No	5.59 (1.8-17.33)		9.12 (2.93-12.96)	
Level of satisfaction with friends' support		0.036*		0.417
satisfied	ref		ref	
Dissatisfied	0.27 (0.09-0.78)		0.29 (0.04-1.85)	
Neutral	0.16 (0.01-2.77)		0.25 (0-17.23)	
Avoid meetings or other situation with many people		0.041*		0.493
Yes	ref		ref	
No	2.98 (1.04-8.53)		1.74 (0.36-8.49)	

UOR: unadjusted odds ratio. AOR: Adjusted odds ratio. CI: confidence interval. ref: reference category. *: p<0.05. **: p<0.01. ***: p<0.001

CHAPTER FIVE

DISCUSSION

The results revealed that, the average age was approximately 68 while the least age distributions were below 40 years. This is an indication that, the nature of aetiological development has a connection with ageing process of the population under study. With the least age distribution below 40 years, it can be inferred from this study that the disease no longer affect only the aged but also those below forty can equally be affected. This finding is consistent with other studies conducted by Obu, (2014) and Kenneth et al., (2016) who found the mean age to be 65 in a study highlighting on the age variation among the male populace affected by Benign Prostatic Hyperplasia patients. The commonest disease of the prostate of men around the world is Benign Prostatic Hyperplasia and it is common among older men throughout the world (Kirby, 2017). According to Obu, (2014), all men from age 50 are at a higher risk of getting BPH.

In this study, the estimated proportion of benign prostatic hyperplasia (BPH) patients with good quality of life at the Komfo Anokye Teaching Hospital (KATH) was 5%. This study rated the quality of life based on the perspective of the respondents as poor. This means, most respondents find it very stressful to live with the BPH condition. The proportion of BPH with good quality life obtained in this current study is lower compared to other previous studies and this could partly be attributed to the educational level of patients obtained in the study as 59.7% of the respondents had attended primary /middle school. People with low level of education usually are unaware and do not have much knowledge about BPH and hence think more about their condition and feel more depressed and hence have poor quality of life compared to those with higher education (Hyeok et al., 2015). Patients with high level of education may have higher insight into their condition and are

more likely to have hope of getting better which subsequently affect their quality of life positively. This finding disagrees with the work conducted by Abraham et al., (2016) in Nigeria, where the overall proportion of BPH patients with good quality of life was estimated to be 62%. This finding also disagrees with a similar study carried in a rural area in Korea where 20% of patients with BPH were reported to have good quality of life (Hyeok et al., 2015). The proportion of BPH patients with perceived good quality of life obtained also disagrees with the work of Walle & Alamrew (2014) in a study conducted on perceived quality of life among patients with benign prostatic hyperplasia in Bahir Dar City, Northern Ethiopia. They found the proportion to be 18.5 %.

In contrast to this research, other studies have suggested that, there is a way out to improve the quality of life of patients with BPH when they found a positive association of physical activities with prevalent BPH surgery which may protect against the development of common BPH related outcomes (Maso et al, 2006, Wolin et al, 2015).

The analysis revealed that patients who received frequent support had higher odds of having good perceived quality of life compared to those with some support. Social influence play a vital role in the health results aside the care given at the health facilities. Social factors such as financial support, psychological support, emotional support, frequency of family visits all tends to affect the quality of life among BPH patients (Link et al, 1995; CSDH, 2008). Studies show that support from the partner or the family of a patient with BPH would eventually lead to decrease depressive symptoms and hardships, hence improve the quality of life of such patient. This might have accounted for why patients who receive frequent support had higher odds of having good quality of life (Emberton et al., 2006; Walle & Alamrew, 2014).

This findings agrees with the work of Walle & Alamrew (2014) who found out that support from friends and families increases the odds of having good quality of life in a study conducted among BPH patients in Pakistan. Studies have shown that there are so many factors that troubles men after they have been diagnosed of having BPH and as such social relationship is key to enhancing the quality of the patient (Hyeok et al., 2015). This finding could be attributed to the fact that when patients receive support, they are more likely to have minimal depression as majority of the respondents are not able to take care of essential task inside and outside the home, had inadequate sex life, inability to support financially and sleep disturbance which the partner has to wake and walk the man through the period of urinary disorder which will eventually affect the quality of life with the partner.

In this study, educational level, received support, and inability to support financially affecting partner's relationship were the factors found to influence the perceived good quality of life among BPH patients. Patients who had some form of formal education had higher odds of having good perceived good quality of life when compared to those with no formal education. This finding could partly be attributed to the fact that patients with higher education are usually enlightened and tend to have prior knowledge about the outcomes of their condition and as such very hopeful about the future compared to those with low level of education (Yu-Hua Fan et al, 2016). A survey done on 502 men having BPH revealed that two thirds of the patients got to know that they have problems with their prostate, one third recognized they have BPH and virtually, one third also thought their symptoms could be as a result of cancer of the prostate and this were mostly those with lower education (Emberton M. et al, 2005). Kamal et al., (2013); Akafuah & Sossou, (2008), reported that education has much influence on quality of life among BPH patients. Kamal et al., (2013),

discovered that literacy was seen as strong element for determining the quality of life among patients diagnosed with prostate.

In this study, patients whose nocturia does not interfere with sleep were more likely to have good quality of life compared to those whose nocturia interfere with sleep. Those whose nocturia interferes with sleep turns to have their sleeping patterns affected. A patient waking up to urinate more than once can affect the individual's sleep. Nocturnal voids do not only affect quality of sleep at night but also the perceived daytime quality of life and general feeling of health (Suekane et al., 2013). If someone experience nocturia, it can lead to tiredness and can pose a threat to the patient in terms of accidents both at work place and home (Suekane et al., 2013). A lot of factors can be taken into consideration when examining the episode of quality of life pertaining to patients with BPH condition. So far, previous studies reviewed have indicated that, severity of symptoms leads to low quality of life (Emberton et al, 2006, Jackson, 2017). Other research findings proved that, there is an increased bothersome aspect of the BPH condition which tends to affect the general health and quality of life when a patient starts to go through the disease process thus from moderate to severity (Gannon et al., 2005, Emberton et al, 2006). Besides, there could be fear of not responding properly to treatment as their age progresses and they have to live by aid which seems as a burden.

Considering the receipt of support by participants, receiving support was found to be significantly associated with good perceived quality of life of the BPH patients. The study revealed that, support could affect the perceived quality of life. The analysis revealed that patients who frequently received support from relatives and friends in all forms had increased odds of having good perceived quality of life compared to those who received no

support. This findings agrees with the study conducted by Emberton et al, (2006) which revealed that, it is the spouse, family and or friends who customarily cares for the individual. This current study did not weigh the magnitude of care received from both partner, family and friends and therefore the study cannot help the author to say more care are either given by family or friends.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusion

Majority of patients with BPH have poor quality of life. The educational level, receive support, sleep disturbance affecting partner relationship were the factors found to be significantly associated with the perceived good quality of life of BPH patients. Interference with sleep would lead to poor quality of life. Support from family and friends help to improve quality of life. There would therefore be the need for proper management of nocturia and encouragement of full support to ensure good quality of life among BPH patients.

6.2 Recommendations:

1. There is the need for public health/community health nurses to educate the communities on family and social support during their outreaches and programmes.
2. Future research studies needs to be done in the community since this study was a facility based.

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APPENDICES

Informed Consent Form

Title of study: Perceived quality of life of patients with Benign Prostatic Hyperplasia at the Komfo Anokye Teaching Hospital, Kumasi

Introduction

My name is Patricia Mante a master's student of the School of Public Health, University of Ghana, Legon. As part of the program, we carry out research and my work is on perceived quality of life of patients with benign prostatic hyperplasia (BPH) at the Komfo Anokye Teaching Hospital (KATH). Patient's with BPH goes through a lot of difficulties in terms of urinary problems like urine retention, urinary incontinence, nocturia and others. These symptoms may or may not be bothersome to them. The condition is also known to have complications if not attended to. It is hoped that the findings of this study will help identify how much the quality of life of BPH patients is affected at KATH

Purpose of the study

The study aims at the perceived quality of life of patients with benign prostatic hyperplasia at KATH.

Eligibility criteria

Anyone attending the urology clinic and have been diagnosed of having BPH irrespective of his age was allowed to participate. Critically ill, patients brought in as emergencies and those who were not willing or fail to give their consent were excluded.

Study procedure

Your folders will be used to obtain your contact information, age, educational level, occupation and location. You will be asked to answer some questions which will take 10minutes.

Risk and Benefit

There is no direct benefit to you if you agree to take part in this research. However, the findings of this research may help the health care providers to give better care for patients with Benign Prostatic Hyperplasia.

Freedom to participate/ Voluntary withdrawal

Your participation in this research is completely voluntary and you may refuse to participate at any time even if you agreed initially. This will not affect your care. We will be asking you some questions about your sexual life that you may find uncomfortable to answer. You have the right not to answer any question you feel uncomfortable answering.

Privacy and Confidentiality

We will conduct the interview in a private room where no one will see you or hear what you say. To hide your identity and prevent anyone knowing what you said, we will not write your name on the questionnaire and your name will not appear in any report.

We will keep the questionnaires in a cabinet under lock and key. The data gathered will also be stored in a password protected personal computer. Only the researcher can have access to the data.

Compensation of participants

You will not be paid anything for taking part in this study. We will however give you a snack for your time.

Before taking consent

Do you have any questions you wish to ask about the study? Yes / No

(If yes, please indicate the questions below)

.....
.....
.....

Who to contact

In cases of any questions regarding the research, you can contact:

1. GHS/ Ethical Review Committee administrator, Hannah Frimpong (mobile: 0507041223)
2. School of Public Health, University of Ghana, Legon.
3. Patricia Mante

Mobile number: 0244163139

Email: pat_mante @yahoo.com

Statement of consent

I, declare that the purpose, procedures to be followed, risks and benefits of the study have been read or explained to me and every question(s) have been answered to my satisfaction. I hereby give my consent to participate in this study.

Signature /Thumbprint of participant Date

Statement by the Researcher

I, the undersigned, have explained this consent form to the subject in the language he understands on information regarding this study. I agree to answer any future questions concerning the study and also adhere to the approved protocol.

Signature Date

QUESTIONNAIRE

Section A: Demographic data of Respondents.

Please tick (✓) as appropriate

Marital status

- a) Married []
- b) Divorce []
- c) Separated []
- d) Widowed []

Age in completed years.....

Highest educational qualification

- a) None at all []
- b) Primary school /middle school []
- c) Secondary school []
- d) Tertiary []

Others (specify).....

Occupational status

- a) Employed
- b) Unemployed
- c) If employed state the type of work.....

Section B: The disease specific-symptoms and the bother caused by them / physical functioning

Please circle the correct answer as appropriate

Did you have the following symptoms and to what degree have they interfered your life?

1. Having to urinate more frequently than before

- a) Not at all
- b) Slightly
- c) Moderately
- d) Severe
- e) Very Severe

Bother due to frequent urination

- a) Not at all
- b) Slightly
- c) Moderately
- d) Severe
- e) Very Severe

2. Painful or burning sensation during urination

- a) Not at all
- b) Slightly
- c) Moderately
- d) Severe
- e) Very Severe

Bother due to painful or burning sensation during urination

- a) Not at all

- b) Slightly
 - c) Moderately
 - d) Severe
 - e) Very Severe
3. Do you wake up to urinate during the night?

- a) Not at all
- b) Slightly
- c) Moderately
- d) Severe
- e) Very severe

Bother due to getting up to urinate during the night

- a) Not at all
- b) Slightly
- c) Moderately
- d) Severe
- e) Very severe

4. Does urine leaks on you occasionally?

- a) Not at all
- b) Slightly
- c) Moderately
- d) Severe
- e) Very severe

Bother due to leakage of urine

- a) Not at all
- b) Slightly

- c) Moderately
 - d) Severe
 - e) Very severe
5. Have the symptoms of BPH brought trouble to your life?
- a) Yes
 - b) No
6. Have you been worried that you would block up and not able to urinate?
- a) Yes
 - b) No
7. How often have you worried about the urinary condition during the past 4 weeks
- a) Not at all
 - b) Slightly
 - c) Moderately
 - d) Severe
 - e) Very severe
8. Has the nocturia interfered your sleep?
- a) Yes
 - b) No

Section C: The Effect of BPH on Income generating activities

1. Does the current condition of BPH affect your performance at work?
- b) Yes
 - c) No

If yes, how does the condition of BPH affect your performance at work? Check all that apply

- a) I feel more fatigue at work
 - b) I sleep more in the daytime/ I feel sleepy during the working hours
 - c) Loss of concentration
 - d) Others
 - e) If other specify.....?
2. Do you in anyway stay away from work because of the condition?
- a) Yes
 - b) No
 - c) If yes, how often do you stay away from work.....?
3. To what extent has your working ability been affected by the illness?
- a) Not at all
 - b) A little bit
 - c) Moderately
 - d) Extremely
4. Are you satisfied with your performance at work?
- a) Very dissatisfied
 - b) Dissatisfied
 - c) Neither satisfied nor dissatisfied
 - d) Satisfied
 - e) Very satisfied

Section D: The Effect of BPH on sexual life

1. Is your partner aware of your condition...?

- b) Yes
 - c) No
 - d) If no, why is your partner not aware of your condition.....?
2. Do you discuss with your partner about your sexual concerns?
- a) Yes
 - b) No
3. Do you desire for sex in your current condition?
- a) Yes
 - b) No
- If no, what factors influence your dislike for sex....?
- a) Depression
 - b) Loss of sexual desire
 - c) Discomfort
 - d) Erectile dysfunction
 - e) Ejaculation problem
 - f) Others
 - g) Others specify.....?
4. Are you satisfied with your sexual performance lately....?
- a) Yes
 - b) No
 - c) If no, are you aware of any drug that will enhance your sexual performance
5. Has your sexual life been affected by the disease?
- a) Yes
 - b) No

6. Has the illness estranged you emotionally from your wife?

- a) Yes
- b) No

Section E: The Effect of BPH on family and social relationship

1. In your current condition whom are you staying with?

- b) Partner/spouse
- c) Parents
- d) External family
- e) Friends
- f) Siblings

2. Are the following people aware of your condition.....

- a) Partner/spouse..... Yes No
- b) Parents..... Yes No
- c) External family..... Yes No
- d) Friends..... Yes No
- e) Siblings..... Yes No
- f) Co-workers..... Yes No

3. How frequent is their responsiveness or support to you.

- a) All of the time
- b) Most of the time
- c) A good bit of the time
- d) Some of the time
- e) A little bit of the time

- f) None of the time
4. How do you rate their responsiveness in terms of any support
- a) Very poor
 - b) Poor
 - c) Neither poor nor good
 - d) Good
 - e) Very good
5. Are the family members willing to support you / Do you get the kind of support from relatives, friends, co-workers and neighbours
- a) Financially.....Yes No
 - b) Psychological.....Yes No
 - c) Emotionally.....Yes No
 - d) Others
 - e) Others specify.....?
6. Do you normally feel burden to your family
- a) Yes
 - b) No
- If yes, why are you burden to the family
- a) They use their working hours to care for you
 - b) Inability to do things for yourself
 - c) The cost of medication
 - d) Others
 - e) Others specify.....

7. Do the following factors affect the relationship with your partner? Check all that apply
- a) Sleep disturbance
 - b) Inability to take care of essential task inside and outside the home
 - c) Inadequate sex life
 - d) Inability to support financially
8. Are you satisfied with the support of friends
- a) Very dissatisfied
 - b) Dissatisfied
 - c) Satisfied
 - d) Very satisfied
9. Are you satisfied with the support from co-workers
- a) Very dissatisfied
 - b) Dissatisfied
 - c) Satisfied
 - d) Very satisfied
10. During the past weeks of your condition, how frequent did relatives, friends and co-workers visit you.
- a) All of the time
 - b) Most of the time
 - c) A good bit of the time
 - d) Some of the time
 - e) A little bit of the time
11. Have you given up some hobbies because of the illness?
- a) Yes

- b) No
12. Has your family responsibility been lost because of the illness?
- a) Yes
- b) No
13. Has your contact with friends reduced since your illness?
- a) Yes
- b) No
14. To what extent have your friends become estranged from you because of your illness
- a) Not at all
- b) A little bit
- c) Moderately
- d) Quite a bit
- e) Extremely
15. Have you tried to avoid attending meetings or other situations with many people?
- a) Yes
- b) No
16. How would you rate your quality of life?
- a) Very poor
- b) Poor
- c) Neither poor nor good
- d) Good
- e) Very good
17. How satisfied are you with your health?
- a) Very dissatisfied
- b) Dissatisfied

- c) Neither satisfied nor dissatisfied
- d) Satisfied
- e) Very satisfied

18. If you have to spend the rest of your life with prostate symptoms just as they are now, how would you feel about that?

- a) Delighted
- b) Pleased
- c) Mostly satisfied
- d) Mostly dissatisfied
- e) Unhappy
- f) Terrible