

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**COLLEGE OF HEALTH SCIENCES**

**SCHOOL OF MEDICAL SCIENCES**

**DEPARTMENT OF COMMUNITY HEALTH**



**ASSESSMENT OF KNOWLEDGE, ATTITUDES AND PRACTICES  
TOWARDS INGUINAL HERNIA AMONG ADULT-MALES IN THE EAST  
MAMPRUSI DISTRICT**

**BY**

**TIA ROBERT SULE**

**SEPTEMBER, 2014**

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TOWARDS INGUINAL HERNIA AMONG ADULT-MALE IN THE EAST  
MAMPRUSI DISTRICT**

**A THESIS SUBMITTED TO THE DEPARTMENT OF COMMUNITY  
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TECHNOLOGY, KUMASI IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE OF MASTERS OF PUBLIC HEALTH  
(MPH) IN HEALTH EDUCATION AND PROMOTION**

**BY**

**TIA ROBERT SULE**

**SEPTEMBER, 2014**

## DECLARATION

I hereby declare that except for references to other people's work which have been duly acknowledged, this work is the result of the original research work taken by me under supervision. It contains no materials previously published by another person which has been accepted for the award of any degree elsewhere.

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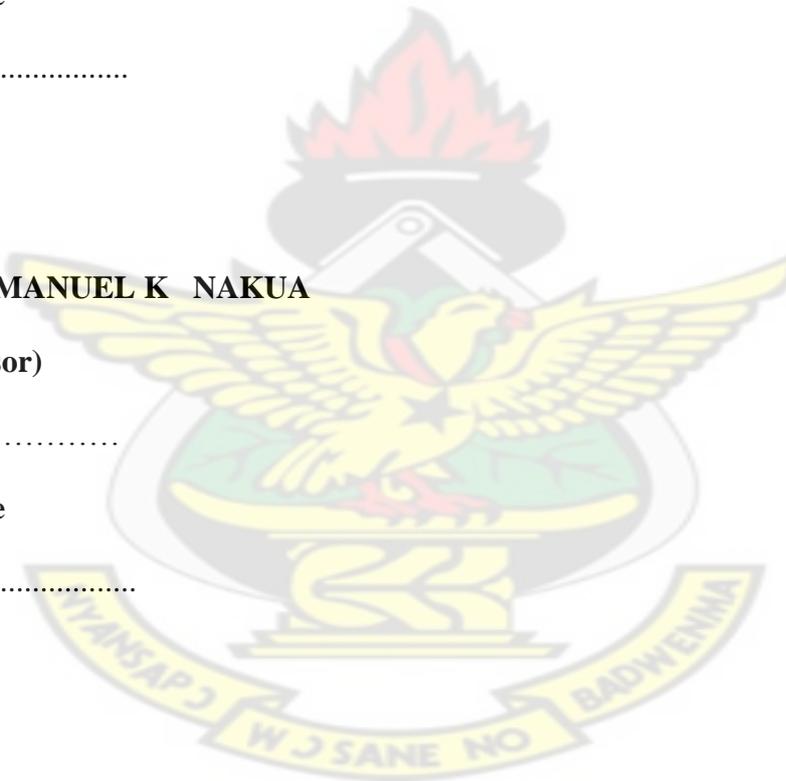
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## DEDICATION

I dedicate this thesis to my daughter Azabu-Tia Greenway and my brother Mr. Tia Joseph Azabu for their love and supports for me.

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I am very grateful to the Almighty God for His divine help and protection throughout my stay on KNUST campus and for the knowledge He gave me to finish this programme successfully.

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## LIST OF ABBREVIATIONS/ACRONYMS

CAM	Complementary Alternative Medicine
CBOs	Community Based Organisations
DHS	Demographic and Health Survey.
FP	Family Planning.
GD	Ghana Districts
GDHS	Ghana Demographic and Health Survey
GFTMPA	Ghana Federation of Traditional Medicine Practitioners Association
GSS	Ghana Statistical Service
HHP	Harvard Health Publications
HLB	Healthy lifestyle behaviour
KAP	Knowledge, Attitudes and Practices
KATH	Komfo Anokye Teaching Hospital
KNUST	Kwame Nkrumah University of Science and Technology
MDG	Millennium Development Goal
MOH	Ministry of Health
NGOs	Non-Governmental Organizations
OPD	Out- Patient Department
RH	Reproductive Health
SPSS	Statistical Product for Social Solutions
TMP	Traditional Medicine Practitioner
TMU	Traditional Medicine Unit
TP	Target Population

WHO World Health Organization

WIRA Women in Reproductive Age

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## ABSTRACT

Globally, inguinal hernia is the most common type of hernia, comprising of approximately 75% of all abdominal wall hernias. It is one of the most common general surgical operations worldwide accounting for 10 to 15% of all surgical procedures. There is paucity of published data on the knowledge, attitudes and practices towards inguinal hernia in our environment as there is no local study which has been done in the East Mamprusi District.

This study was a community-based cross-sectional study with the aim of assessing the knowledge, attitudes and practices towards inguinal hernia in the East Mamprusi District among adult-males. A sample of 216 respondents was selected through a multi stage sampling technique.

It was revealed that the knowledge about inguinal hernia was inadequate, even though majority (61.6%) attributed the cause of inguinal hernia to hereditary factors, with more than half (52.7%) reporting food/drink to be the cause. Majority (34.5%) indicated they would prefer to see a medical doctor upon suspicion of inguinal hernia, with 1.4% reporting that they would rather inform a priest/pastor about the medical condition in question. The predominant attitude towards the treatment of inguinal hernia was found to be fear of surgery (28.8%), followed by adverse effects of surgery (25.4%) and high hospital cost (24.5%). About one-fifth believed inguinal hernia is as a result of ancestral curse. Eighty percent of the respondents reported to have ever engaged in heavy lifting, with almost an equal proportion (84.1%) reporting the frequency of lifting to be occasional.

The study indicates inadequate knowledge about inguinal hernia among adult-males in the East Mamprusi District. Intervention programmes by stakeholders particularly the East Mamprusi District Health Directorate could, therefore, address the issue of inadequate knowledge about the condition by intensifying IEC programmes in the communities.

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## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background information

An inguinal hernia is a “condition in which intra-abdominal fat or part of the small intestine, also called the small bowel, bulges through a weak area in the lower abdominal muscles. An inguinal hernia occurs in the groin –the area between the abdomen and thigh. This type of hernia is called inguinal because fat or part of the intestine slides through a weak area at the inguinal ring, the opening to the inguinal canal. An inguinal hernia can occur anytime from infancy to adulthood and is much common in males than females” (NIH, 2008).

Inguinal hernias are categorized in to two: indirect and direct inguinal hernias. In the former, herniation results from congenital circumstances and is much more common in males than females owing to the way males develop in the womb. In a male fetus, “the spermatic cord and both testicles-starting from an intra-abdominal location-normally descend through the inguinal canal in to the scrotum, the sac that holds the testicles” (NIH, 2008). This explains, in part, why males are more susceptible to suffer indirect inguinal hernia. As a matter of fact, indirect inguinal hernias are the most commonly occurring inguinal hernias and even premature infants are particularly at risk of indirect inguinal hernias. This is true with premature infants because there is usually less time for the inguinal canal to close shortly after birth.

The inguinal canal is a passageway through the abdominal wall near the groin. Indeed, inguinal hernias are up to ten times common in men than it is the case with women. It is equally important to observe that indirect inguinal hernias are diagnosed within the

early years of life and may not show up until adulthood. Indirect inguinal hernias affects between 1% and 5% of normal newborns and up to 10% of premature infants. Direct inguinal hernias are more common in adults, but less so with children (HHP, 2013).

Globally, inguinal hernia is the most common type of hernia, comprising of approximately 75% of all abdominal wall hernias (Garba, 2000; Williams et al., 2008). Inguinal hernia repair is one of the most common general surgical operations worldwide accounting for 10 to 15% of all surgical procedures and is the second most common surgical procedure after appendectomy (Schools et al., 2001). It has been estimated that worldwide over 20 million repairs of inguinal hernia are carried out each year, the specific operation rates varying between countries from around 100–300 per 100,000 population per year (Kingsnorth and LeBlanc, 2003). In the United Kingdom some 100,000 inguinal hernias are repaired each year and approximately 750,000 inguinal hernias are repaired each year in the United States (Rutkow, 2003).

Inguinal hernia has generally been overlooked as a public health priority in Africa, with its high prevalence largely unrecognized, and traditional public health viewpoints assuming that not enough infrastructure, human resources, or financing capacity are available for effective service provision.

In sub-Saharan Africa, the epidemiologic and clinical picture of hernia is somewhat different. Although an estimated 7.7% of adult men in rural southern Ghana had inguinal hernia during the 1970s, the prevalence of this condition was found to be as high as 30% on the island of Pemba in East Africa in 1969 (Belcher et al., 1978; Yardov and Stoyanoy, 1969). Current data on hernia prevalence and incidence in Sub-Saharan Africa are lacking. Most cases therefore go untreated in resource-poor settings,

resulting in massive, painful hernias that often preclude engaging in work (Shillcutt et al., 2010; Harouna et al., 2000). Recent research indicates that up to two-thirds of inguinal hernias are repaired under emergency conditions in Ghana, resulting in increased costs both to the patient and medical system (Rutkow, 2003). Whereas hernia complications are rarely deadly in wealthy countries, mortality from hernia strangulation even with access to surgical care is 40% in Niger (Hair et al., 2001).

Complications of inguinal hernia include incarceration, bowel obstruction, and bowel strangulation (which is potentially fatal), with the greatest risk being found among older persons. Although risk of death is small, hernia deaths was listed as the underlying cause of death for 1,595 people in the US in 2002 (Kochanek, 2002).

Two studies found increased risk with strenuous exertion to be one of the major risk factors of hernia (Flich et al., 1992; Carbonel et al., 1993). Interestingly, being overweight was associated with lower risk in two studies (Abramson et al., 1978; Carbonel et al., 1997). Associations with inguinal hernia were found in individual studies for varicose veins (Abramson et al., 1978), history of haemorrhoids (Abramson et al., 1978), smoking (Sorensen et al., 2002), and hiatal hernia (De Luca et al., 2004).

## **1.2 Statement of the problem**

Inguinal hernia repair is one of the commonest surgical operations in Africa. An estimated 175 people per 100000 require hernia repair in Africa every year. Indeed, there is a reported prevalence estimates as high as 1400 per 100,000 in Carpenter, Ghana (Kingsnorth unpublished work, 2008, cited in Shillcut et'al 2010). Admittedly, significant successes have been chalked in greater Accra, for example, strangulated inguinal hernia remains a big problem in rural settings owing to either dear or

unavailability of simple surgical services (Samuel D. et al, 2010). Additionally, the prevalence of inguinal hernia in Ghana is 7.7% of the population. But the elective operation rate is significantly lower due to the fact that many of the hernias are repaired as emergency cases only. This unfortunate discrepancy calls for a pool of longstanding large hernias in Ghana (Sanders et al 2008).

There have been little or absolute dearth of publications in various communities in Africa especially in Sub-Saharan Africa on surgical diseases. There is, therefore, little or non-existent population-based studies about the epidemiology of inguinal hernias except dozens of work on hospital-based (clinical) studies that do not reflect the true burden of groin (inguinal) hernias among Africans. For the most part, deaths from surgical diseases are often recorded as other cause of death (Ohene-Yeboah, 2011).

Moreover, inguinal hernia repair has been largely undermined as a great public health concern in Africa. As a result, its high prevalence remains unrecognized. African governments have often cited inadequate infrastructure, human resources (nurses and doctors), inadequate financing as the underlying reasons for ineffective service provision for surgical diseases including inguinal hernias. Clearly, emerging evidence suggests that inguinal hernias in Ghana are nearly ten (10) times as prevalent as in high income countries (Kingsnorth, 2009)

A study on the knowledge, attitudes and practices regarding inguinal hernia would provide available epidemiological data that may inform decisions and efforts required in order to reduce the burden of hernia in Africa (Ohene-Yeboah, 2011).

### **1.3 Justification for the study**

The study would provide the platform upon which need for surgical diseases such as inguinal hernia would be taken seriously at all levels of the health system in Ghana and beyond.

Again, the study would bring to the limelight the need to offer health education on surgical diseases such as inguinal hernia at all levels of national life such as school health education programme as it is the case with other diseases such as HIV/AIDS.

The study would also bring to the fore the prevalence rate of inguinal hernia and or the case load of inguinal hernia in the East Mamprusi district of the northern region of Ghana.

The study further seeks to provide ample data on inguinal hernia in Ghana so as to augment the limited population –based literature on surgical diseases including inguinal hernia in West Africa and beyond.

Lastly, the study would help remove some of the misconceptions that many a people have about inguinal hernia as well as reduce the social stigma associated with the disease under consideration- inguinal hernia.

### **1.4 Research Questions**

1. What beliefs do people hold about the causes of inguinal hernia?
2. Which alternative sources of care are available for people who delay surgical care for inguinal hernia?
3. What is the attitude of people towards inguinal hernia and people living with inguinal hernia?
4. What is the prevalence rate of inguinal hernia in the East Mamprusi District?

## **1.5 Study Objectives**

### **1.5.1 Main Objective**

The main objective of this study was to assess the knowledge, attitudes and practices towards inguinal hernia among adult-males in the East Mamprusi District.

### **1.5.2 Specific objectives**

1. To identify misconceptions (knowledge) people have about the causes of inguinal hernia,
2. To examine the perceptions (fears/barriers) people have about surgical treatment of inguinal hernia,
3. To assess the attitudes of people towards inguinal hernia and people living with inguinal hernias, and
4. To assess the practices related to the management or treatment of inguinal hernias.

## **1.6 Conceptual framework**

Theoretical frameworks may be defined as “a group of theories that underpin research. They can be considered as statements that predict the relationships among variables, and assist in guiding the choice of research strategy and methods that will be used” (GAC, 2006). A conceptual framework on the other hand is the operationalization of the theoretical framework. The conceptual framework may summarize the major dependent and independent variables in the research and the relation between them” (Stewart, 2013). It follows, then, that theoretical frameworks provide the seed bed necessary for the seeds of conceptual framework to germinate. In other words, theoretical framework is the mother of conceptual framework.

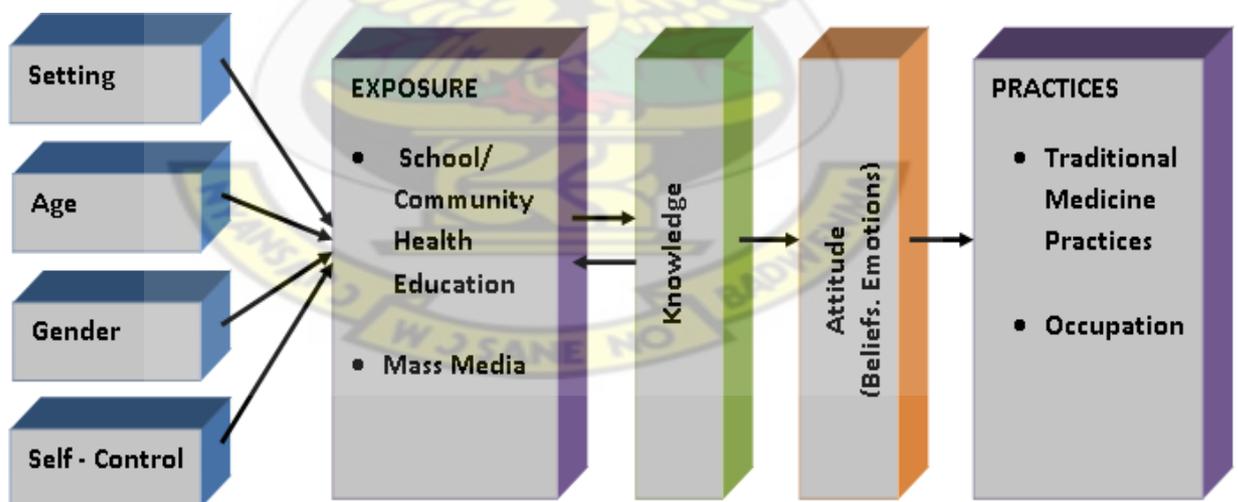
The basic tenet of this framework is the examination of the influence that personal beliefs have on the overall health behavior (s) of individuals.

Thus, the model is helpful in offering counseling to persons who have inguinal hernia to adopt healthful attitudes (actions) towards inguinal hernia and the need to seek early surgical repairs of hernia. The values and beliefs of individuals or the attitudinal system of a society as shown in the conceptual framework work singly or in combination to influence the health behavior of humans. In this framework (as shown in figure 1.0) certain variables need to be explained. Exposure refers to strategies that promote positive behavioral outcomes such as the mass media, school and community health education on inguinal hernia. The setting, age, gender and self-control determine the susceptibility of an individual to the condition of inguinal hernia. Setting refers to the locality (urban or rural) and self-control underlie the ability of individuals to avoid acts that make them liable to getting inguinal hernia or to go by post-surgery pieces of advice to avoid recurrence of inguinal hernias. For example, it has been reported that most adults are usually advised against heavy lifting and vigorous activity for a number of weeks (NIH, 2008).

Thus, the framework seeks to change the beliefs and emotions aspects of the attitudinal system by manipulating knowledge through exposure. If the exposure strategies are successful then there would be positive outcomes on the knowledge, attitudes and practices of the people towards inguinal hernia (GAC, 2006). Knowledge represents the misconceptions or poor understanding that people have about the causes of inguinal hernia. The variable attitudes also refers to the degrees of fear or perceptions that people nurse or have for accessing surgical care/treatment for inguinal hernia as well as

reactions towards inguinal hernia and people living with inguinal hernia. The variable practices represent indigenous methods or activities (such as traditional medicine practices) that expose people to the condition of inguinal hernia and local knowledge of the people in treating or managing the condition of inguinal hernia. The conceptual framework is guided by certain assumptions: first, individuals are not born with the attitudes (attitudes are learnt) that they have towards diseases such as inguinal hernia. Also attitudes die hard and are not easy to change. Attitudes thus make us unwilling or willing to seek surgical care and also to despise those who have (large-size) inguinal hernias (GAC, 2006). Knowledge influences attitudes which in turn influence practices as shown in Figure 1.0 by the double arrows between Exposure and Knowledge.

**Figure 1.0 Conceptual framework for Knowledge, Attitudes and Practices towards Inguinal Hernia**



Source: Ghana AIDS Commission (2006).

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 Background

Knowledge, Attitudes and Practices (KAP) studies are carried out in order to investigate human behavior as regards a certain topical issue. KAP studies identifies what people know (Knowledge), how the people feel (Attitude) and what the people do or Practice (Ellen, 2009).

Literature review for this study was subsumed under the following four broad headings:

- (i) Misconceptions (knowledge) about the causes of inguinal hernia
- (ii) Perceptions (fears / barriers) people have about surgical treatment of inguinal hernia
- (iii) Attitudes of people towards inguinal hernia and people living with inguinal hernia
- (iv) Practices related to the management or treatment of inguinal hernias

#### 2.2 Misconceptions (Knowledge) about inguinal hernia

It is said that knowledge, and therefore education, is one of the fundamental capabilities that a person needs to make a sense of oneself and the world one lives in. It enables him or her to comprehend, compare, analyse, communicate, relate to, act upon, and assess the self, and the nature of their fellow human beings.

In many developing countries, lack of awareness and financial constraints make many patients present very late with giant inguinoscrotal hernia which is a serious life-threatening condition (Osifo and Amusan, 2010). As in other studies done in other developing countries (Osifo and Amusan, 2010; Rai et al., 1998; Nesterenko and

Shovskii, 1993), financial constraints and lack of awareness were reported as the most common reasons for the late presentation in our study.

Admittedly, misconceptions about diseases are not synonymous with inguinal hernia alone. It is same with many other diseases of humankind such as malaria, TB, HIV/AIDs, Anaemia and the like. Among the Kasena-Nankana and Balsa in the Upper East region of Ghana, for example, it is believed that groin or inguinal hernia, genital hydrocele and elephantiasis are the result of febrile condition known as ‘**Pua**’ in their dialect. Their justification for this view is that people who suffer from hernia, hydrocele and elephantiasis experience acute fevers and body pains (Adongo et’al, 2005).

In a related study, it has been observed that urogenital diseases such as hydrocele is caused by genetic factors as well as over consumption of sweet drinks such as palm wine or over riding of bicycles(Evans et’al 1993 cited in Frimpong, ,2010).

### **2.3 Attitudes of people towards inguinal hernia and people living with inguinal hernia**

People living with inguinal hernia have suffered various kinds of stigma and discrimination in many parts of the world. In a study on giant hydrocele associated with inguinal hernia in South Sudan; it was revealed that public ridicule to victims of these conditions of giant hydrocele and inguinal hernia has been a major problem. In that people living with these conditions either had difficulties to marry or remained unmarried for life. As a result, victims of inguinal hernia and hydrocele are considered infertile and worthless. This further makes people living with inguinal hernia to hide their positive status until they became gangrenous and gigantic resulting in emergency

treatments or deaths. Thus, people with these conditions have severe psychological traumas rather than physical problem (Salih, 2008).

Another study found that urogenital disorders such as hydrocele and inguinal hernia are sources of social stigma, lower chances for employment, problems with sexual activities, physical deformation, and loss of work due to daily or frequent attacks of fever, pain, adenolymphangitis and low self-esteem or confidence (WHO, 2002).

In a related study, victims of giant hydrocele and inguinal hernia were reported to have poor health-seeking behavior. In that people living with inguinal hernia were either negligent about their conditions, ignorant about the side effects or complications associated with their conditions, fear of impotency and death from surgical repairs of their conditions (Salih, 2008).

Across the globe, urogenital diseases have often been associated with contempt. In India, for example, an unfortunate vulval fibroma that assumed the form or shape of a male scrotum resulted in the patient's husband divorcing her on the grounds of sexual ambiguity (Sanjoy et'al, 2012).

It is common knowledge among the Mamprusi of the Mole-Dagbani ethnic group in the northern region of Ghana that any persons of royal descent who are unfortunate to have physical defects cannot become or aspire to become the king of Mamprugu. That is to say that a royal may not lack an eye, a nostril, a finger, a toe, an ear as well as swelling of the body including inguinal hernia ,blindness and insanity. As a matter of fact, any such persons with these defects are said to have suffered from misuse of an oath or an offence to the ancestors (Drucker, 1975).

## **2.4 Perceptions (fears and barriers) people have about surgical treatment of inguinal hernia**

The barriers to accessing and demanding surgical care revolve around three important categories: socio-cultural, financial and structural. Structural (availability) factors refer to the location of facilities of health care and the readiness and capability of the available health services to the health needs of the population. The financial barriers involve both the direct and the indirect costs of accessing health care. Lastly, the socio-cultural factors underlie the beliefs, expectations and perceptions that people have about surgical care (Caris et'al, 2011).

In a related study, insufficient resources, inappropriate allocation of health care facilities, inadequate quality of manpower and tools are great obstacles to the demand and supply of health care that reaches the poor. Access to health care in developing countries depends on four (4) dimensions of the word “access”: availability, accessibility, affordability and acceptability. Clearly, the demand and supply factors are also supremely important in trying to understand access to health care. On the demand side, cultural and educational factors may prevent the realization of illness and the associated benefits from seeking health care, while economic constraints might suppress proper utilization of health services available. Turning to the supply side, unwillingness to provide appropriate interventions deny people access to health care (O'Donnell, 2007).

## **2.5 Practices related to the management or treatment of inguinal hernia**

Globally, literature indicates that the percentages of people who adopt healthy lifestyle behaviour (HLB) are disappointing (Eshah, 2011). In a study conducted by Eshah

(2011) to identify the level of adoption of HLB in Jordanians and to compare the socio-demographic and reported clinical history based on the HLB adoption level, it was revealed that participants were not adopting HLB regularly. Women, the married, the educated, and those having higher income had a higher HLB adoption level.

The high rate of both varicose veins and haemorrhoids in developed countries has been attributed to the consumption of refined foods, through the effects of straining at stool or the exertion of local pressure by the loaded bowel (Burkitt, 1972).

Traditional medicine provides the best possible alternative to about 70% of Ghana's population. During the colonial era the only recognized medical system was allopathic. However, after independence successive governments recognized the need for Complementary Alternative Medicine (CAM). As a result, there is one Traditional Medicine Practitioner (TMP) for every four hundred (400) people and a corresponding ratio of one allopathic doctor for every 12000 people. In Ghana, TMPs use various kinds of herbs, spiritual beliefs and, above all, local wisdom in offering health care to the sick (WHO, 2001).

The need for traditional medicine is weighty to the extent that in 1991 the Traditional Medicine Unit (TMU) was created under the Ministry of Health (MOH), and the unit was revised in to a full directorate under the MOH in Ghana. Better still; the various associations of traditional and alternative medicine were combined in to one unit known as the Ghana Federation of Traditional Medicine Practitioners Association (GFTMPA).

Ghana has roughly 45000 traditional healers. Admittedly, it is the rural communities that serve as the mecca of traditional medicines and the greatest consumers of

traditional products and healings. This unfortunate “popularity” for consumption of herbal products stems from the difficulty or high cost of mainstreaming traditional and alternative medicines in to the national health care system , doctor shortages (inadequate manpower ) and deep-seated spiritual beliefs that are used to define the causes of diseases(Antoinette,2010).

In China, for example, Acupuncture and herbal treatment are some of the natural ways of treating inguinal hernias. The treatment of inguinal hernia with Acupuncture “involves inserting small needles in to the lower abdominal region to relieve pain and aid the **qi** [life’senergy] in the liver channels. Indirect moxibustion is also used in distal acupuncture on points on the liver and spleen channels. Moxa is then wrapped around the tip of the needle inserted into an acupoint. The tip of the needle is lit, causing heat to be generated and applied to the point and surrounding body area. The Moxa is then extinguished the needle removed after the desired result is reached” (Zohixin, 2011).

Herbs are also used “to move the liver **qi**, warm the channels, nourish the spleen and balance **yin** and **yang** include: 1.Gotu kola leaf (jixuecao) useful for healing wounds and as a general tonic

1. Ginseng helps strengthen internal defenses
2. Slippery elm (yushu) and Chamomile (ganju) are both tested and potent cures for hernia” (Zhixin,2011)

In Northern Ireland, Complementary and Alternative Medicine is used for varying reasons such as a specific health problem, general health and well-being, leisure or relaxation. However, the most common health problems that call for the use of CAM therapy include women’s health, stress and mental health issues such as anxiety and depression (McDonough, 2007).

## **CHAPTER THREE**

### **3.0 METHODOLOGY**

#### **3.1 Introduction**

This chapter presents the methodology and design of the study, a brief description of the study area, study population, sample size, sampling method, data collection, data handling, data analysis, ethical consideration(s), assumptions and limitations.

#### **3.2 Study Methodology**

A community-based descriptive cross-sectional study design was used to assess the knowledge, attitudes and practices of people about groin or inguinal hernia. The study was conducted from October to November; 2013. The study used quantitative methods to collect data by aid of a structured questionnaire. The study included a medical team that confirmed positive cases of inguinal hernia and offered recommendations for repairs at the district hospital in Nalerigu.

#### **3.3 Study Site**

The East Mamprusi District is one of the twenty districts in the Northern Region of Ghana. The capital town is Gambaga. It is located in the north eastern-corner of Ghana and shares boundaries with the Garu Tempene ,Talensi Nabdam and Bawku West districts to the North ,Bunpkurugu-Yunyoo district to the East ,West Mamprusi district to the West and the Gusheigu and Karaga districts to the South (GD,2006).It has a population of 121,009 comprising 59,453 males and 61,556 females (GSS,2012).The district has only one hospital located at Nalerigu. There are other health centre located at Wundua, Langbinsi, Gbintiri, Sakogu and Gambaga and most recently Namangu.

The district hospital is the Baptist Medical Centre located at Nalerigu. The most often reported Out-Patient Department (OPD) disease is Malaria and other complications such as gynecological problems as well as inguinal hernia among other complications (GD, 2006).

**Table 3.1: Number of inguinal hernia repairs (January-December 2013) at the East Mamprusi District Hospital, Baptist Medical Centre; Nalerigu.**

Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov	Dec	Total
16	25	14	20	34	18	18	17	22	44	24	21	273

**Source: Unpublished records of the Baptist Medical Centre, Department of Theatre, Nalerigu-Ghana (2013)**

### **3.4 Study Population**

The study population comprised males 15 years and above. The study was conducted in 12 communities in the East Mamprusi district. Respondents who were found to be positive was given the needed counseling as to the necessity of surgical repair for hernia and the desired strategies to minimize the risks of incurring inguinal hernias. However, the research team did not interfere with the decision or choice of the participants as regards their participation or otherwise.

### **3.5 Sample Techniques and Sample Size**

A multi-stage sampling technique was employed. Estimated sample size of 216 respondents was recruited for this study. The district has over 80 villages and towns. The primary sampling unit was the household. We visited 200 households and males were interviewed. For administrative purposes the district is divided in to five zones. The study was conducted within four of the five zones (towns/area councils) of the

district namely: Gbintiri, Langbinsi, Gambaga, Sakogu and Nalerigu. In the first Phase, four of the five zones were randomly selected. The selected communities were considered as clusters. Probability proportion to size was applied to estimate the number of respondents that were interviewed in each community. A systematic random sampling technique, with a sampling interval of three (3) was employed to randomly select households. The second step involved the researcher choosing a direction in a random way by spinning a bottle on the ground and then choosing the direction where the bottleneck pointed to. In the third step, the researcher then walked in the specified direction of the bottle neck and selected every third household (depending on the size of the village) until the required 18 households were obtained. In situations where the boundary of the town/village was reached and the required households were not obtained, the researcher then returned to the centre of the village and walked in the opposite direction and continued to select households until the mark was obtained. In cases where there was nobody in a selected household, the nearest or next household was considered (WHO, 2004).

### **3.6 Data collection and study instrument**

A structured questionnaire was used for the data collection. The questionnaire was adopted and modified from the unpublished work of the Department of Surgery of the Kwame Nkrumah University of Science and Technology (KNUST) and Komfo Anokye Teaching Hospital (KATH) (KNUST & KATH Unpublished Work, 2013). The research team consisted of a Medical Officer and two Nurses who confirmed positive cases of inguinal hernia. Also included were two research assistants and the principal investigator who administered the questionnaires. The questionnaire was divided into five sections. The first part centred on the demographic and socio-

economic status of the respondents .The second part elicited responses on the causes of inguinal hernia, while the third part dwelt on the attitudes towards inguinal hernia diagnoses. The fourth part focused on the attitudes towards inguinal hernia treatment. The last part focused on the misconceptions about inguinal hernia treatment.

### 3.7 Study Variables

Independent Variable: knowledge, attitudes and practices

Dependent Variables: Inguinal Hernia

**Table 3.2: Operationalization of study Variables**

<b>Variables</b>	<b>Defined operations/indicators</b>	<b>Scale of measurement</b>
Sex	Male or female	Binary
Age	All ages from 15 years and above	Ordinal
Marital status	The state of being married, divorced, separated, single or widowed.	Nominal
Knowledge	The understanding that people have about inguinal hernia	Ordinal
Attitude	The beliefs and emotions people have about inguinal hernia and persons living with inguinal hernia	Binary
Practices	Activities that expose people in to getting inguinal hernia.	Binary
Misconceptions	The knowledge gaps or poor knowledge that people have about the causes of inguinal hernia.	Binary
Perception	The degree of fear or hesitations that people nurse or have about accessing surgical treatment for inguinal hernia	Ordinal
Residents	The inhabitants or people living in the east Mamprusi district.	Nominal

### **3.8 Ethical Considerations**

The interview of the selected respondents commenced with a thorough explanation of the objectives and purposes of the research in the local language of Mampulli (the predominant spoken language in the study area) to the participants to feel at home so as to give off their best in the researcher –respondent interactions. The respondents were told that their participation or otherwise was voluntary and as such they had the free-will to do so.

Admittedly, informed consent of respondents was obtained verbally from the research participants. Additionally, Ethical clearance was obtained from the Committee on Human Research Publication and Ethics of the Kwame Nkrumah University of Science and Technology and approval was given before the data was collected on the participants.

Again, the necessary community entry protocol was observed in all the twelve communities where the data was collected .This gesture made it possible for the researcher to explain the purpose or objectives of the research to the gate keepers of each of the communities visited in order to mobilize their support before going in to the community to collect data on the specified respondents: household by household.

Lastly, each of the participants was assured of confidentiality, anonymity and other ethical considerations necessary to promote positive researcher – respondent relationships throughout the period for the field work.

### **3.9 Assumptions of Study**

1. The sample size of 216 participants was assumed to be the true representative sample of the views of residents in the study area.
2. It was also assumed that the views of all 216 respondents were a true reflection of the realities on the ground
3. The instruments used were accurate and reliable in capturing the required the data.

### **3.10 Limitations of Study**

The first major limitation of the study was the paucity or limited population-based literature on the subject of inguinal hernia.

Also, human subjectivity and cultural factors brought about some challenges as the subject of the data was on the genital area.

Again, the time frame of three months for the research was also too short to come by the needed output.

Lastly, the medical research assistants used for the field work could not participate in the entire period of the field work due to heavy workloads on them.

### **3.11 Pre-testing**

The questionnaire for the study was pretested in about 20 households in the Langbinsi zone of the east Mamprusi district. This process was necessary to allow for certain modifications of the questionnaire to be done. As a result, some of the questions in the questionnaire were reworded to cater for inconsistencies, and ambiguities that were detected during the pretesting exercise.

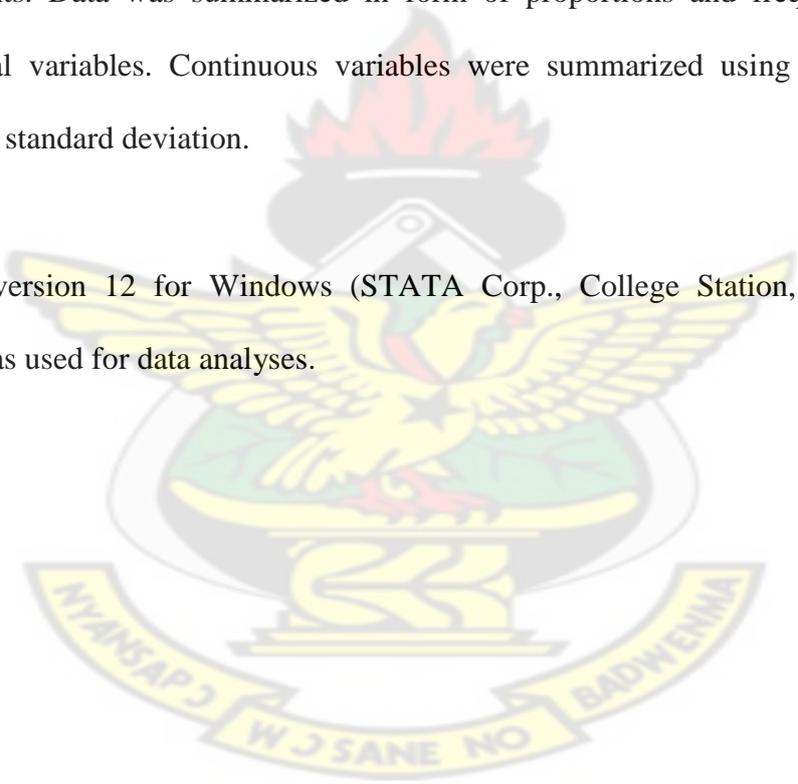
### **3.12 Data Handling and processing**

The questionnaires were stored safely with regard to basic ethical requirements. The questionnaires were then coded, cleaned, edited and re-entry made so as to guarantee quality control.

### **3.13 Data Analyses**

The questionnaires were coded before the analysis was carried out. Descriptive analysis was employed to show the level of knowledge about inguinal hernia among the respondents. Data was summarized in form of proportions and frequent tables for categorical variables. Continuous variables were summarized using mean, median, mode and standard deviation.

STATA version 12 for Windows (STATA Corp., College Station, Texas, United States) was used for data analyses.



## **CHAPTER FOUR**

### **4.0 RESULTS**

#### **4.1 INTRODUCTION**

The findings of the study are presented in this chapter. It is based on the objectives of the study. The results are presented in tables and graphs. It involves a presentation of the quantitative analysis of the background characteristics, knowledge, attitude and practices towards inguinal hernia among adult-males in the East Mamprusi district.

#### **4.2 BACKGROUND CHARACTERISTICS OF RESPONDENTS**

Table 4.1 shows the percentage distribution of the respondents' background characteristics. Majority (23.6%) of the respondents were within the age range of 21 – 30 years, with a mean age of 38 years. More than half (54.6%) of them practiced Islam. Most (81.5%) of the respondents were married. Most (57.4%) of them however had no formal education, with only about two percent having obtained a tertiary education. Almost two-thirds (64.8%) were agricultural workers, with more than ninety percent of them being northerners.

**Table 4.1: Socio-demographic characteristics of respondents**

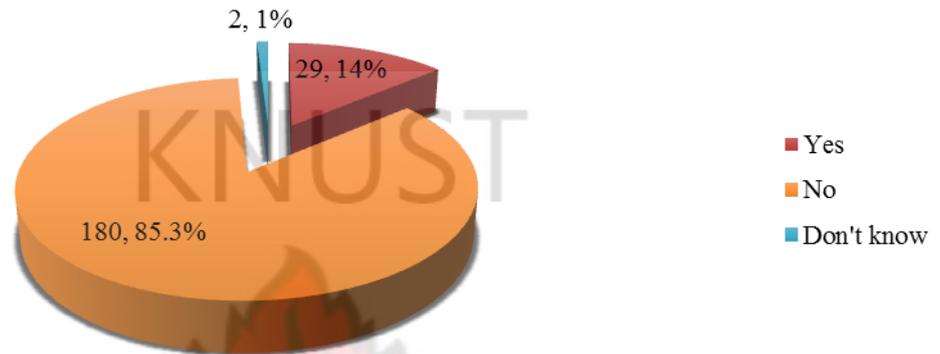
Variables	Frequency (n)	Percentage (%)
<b>Age</b>		
≤ 20	32	14.8
21 – 30	51	23.6
31 – 40	44	20.4
41 – 50	37	17.1
51 – 60	31	14.4
61 – 70	17	7.8
71 +	4	1.9
<i>Mean = 38, SD = 15.3</i>		
<b>Religion</b>		
Christianity	28	13.0
Islam	118	54.6
Traditionalist	70	32.4
<b>Marital Status</b>		
Single	35	16.2
Married	176	81.5
Divorced/ Widowed	5	2.3
<b>Education level</b>		
No formal education	124	57.4
Primary	17	7.9
JHS	29	13.4
Secondary/Post-secondary	41	19.0
Tertiary	5	2.3
<b>Occupation</b>		
Agricultural worker	140	64.8
Salaried employment	18	8.3
Trader	14	6.5
Daily laborer	1	0.5
Domestic activities	1	0.5
Student	33	15.9
Unemployed	1	0.5
Retired	3	1.4
Other	4	1.9
<b>Tribe</b>		
Akan	3	1.4
Northerner	211	97.7
Ewe	2	0.9

**Source: Field Data, 2013**

### 4.3 PROPORTION OF RESPONDENTS WITH INGUINAL HERNIA

Of the 216 respondents interviewed (97.7% response rate), about 29 (14%) had inguinal hernia while 180 (85.3%) did not have the condition (Figure 4.1).

**Figure 4.1** Prevalence of Inguinal Hernia



Source: Field Data, 2013

### 4.4 ATTITUDES OF THE PROPORTION OF RESPONDENTS WITH INGUINAL HERNIA TOWARDS SURGICAL TREATMENT.

Table 4.2 shows the attitudes of the proportion of respondents with inguinal hernia towards surgical treatment. Out of the proportion of respondents with inguinal hernia 72.2% consulted a doctor, while only 27.6% did not see a doctor about their condition. Also, majority (62.1%) of those living with inguinal hernia cited pains as the principal reason for consulting a doctor, but only 3.5% cited Stigmatisation as their reason for seeing a doctor about their condition. Again, out of those reported to have inguinal hernia about 41.4% preferred medication for treatment of their condition, while only 24.1% of the proportion of respondents with inguinal hernia did not know the best of treatment yet. Lastly, out of the 29 respondents who had inguinal hernia, about 31.0%

chose to have surgical operation of their inguinal hernias the next month, whereas only 13.8% of the proportion of respondents with inguinal hernia opted to have the operation the very day they consulted the doctor.

**Table 4.2: Attitudes of the proportion of respondents with inguinal hernia towards surgical treatment.**

Variable	Frequency (n)	Percentage (%)
<b>Have you seen a doctor about your hernia?</b>		
Yes	21	72.4
No	8	27.6
<b>Reasons for seeing doctor</b>		
Pains	18	62.1
Disturbing size	2	6.9
Stigmatization	1	3.5
Don't know	8	27.6
<b>How would you like the doctor to treat your inguinal hernia?</b>		
Give me medicines that will make the hernia go	12	41.4
Perform a surgical operation	10	34.5
Don't know	7	24.1
<b>When would you like the doctor Operate on you?</b>		
Today	4	13.8
Next month	9	31.0
Next year	8	27.6
Don't know	8	27.6

Source: Field Data, 2013

#### 4.5 HEALTH BEHAVIOURS

Table 4.3 shows a summary of respondents' life style in conjunction with inguinal hernia occurrence. About eighty percent of the respondents reported to have ever engaged in heavy lifting, with almost an equal number reporting the frequency of lifting to be occasional. Twelve respondents (representing **8.4%**) reported lifting heavy objects prior to their inguinal hernia occurrence, a suspicion of possible cause of the condition.

**Table 4.3: Health Behaviors of the Respondents**

Variable	Frequency (n)	Percentage (%)
<b>Ever engaged in heavy lifting</b>		
Yes	167	80.0
No	39	18.6
Don't know	3	1.4
<b>Frequency of lifting</b>		
Very often	16	8.8
Occasional	153	84.1
Once	1	0.6
Don't know	12	6.5
<b>Lifting of heavy object prior to inguinal hernia occurrence</b>		
Yes	12	8.4
No	6	4.2
Don't know	124	87.3

Source: Field Data, 2013

#### 4.6 KNOWLEDGE ABOUT INGUINAL HERNIA

In order to assess the knowledge of the respondents with regard to inguinal hernia, two sets of questions were asked which included the possible cause of the condition (Table 4.4). Majority (61.6%) of the respondents attributed the cause to hereditary factors. More than half (52.7%) also reported food/drink to be the cause.

**Table 4.4: Knowledge about Inguinal Hernia**

Variable	Frequency (n)	Percentage (%)
<b>Cause of Inguinal hernia</b>		
Spiritual/Curse/Witchcraft	68	32.2
Hereditary	130	61.6
Hard/manual work	5	2.4
Don't know	8	3.8
<b>Food/drink cause inguinal hernia</b>		
Yes	109	52.7
No	51	24.6
Don't know	47	22.7

*Source:* Field Data, 2013

#### **4.7 ATTITUDE TOWARDS INGUINAL HERNIA DIAGNOSIS**

Respondents were asked to indicate the step they will take when they suspect that they may have inguinal hernia (Table 4.5). The predominant step reported was to “see a doctor” (34.5%), followed by “inform a close relative” (28.7%) and “observe for a while” (23.4%). The least reported was to “inform the priest/pastor” (1.4%). Almost two-thirds (65.2%) reported that they will see a doctor within one month after discovering a lump in their groin area.

**Table 4.5: Attitude towards diagnosis of inguinal hernia**

Variable	Frequency (n)	Percentage (%)
<b>Suspicion about inguinal hernia</b>		
Inform a close relative	60	28.7
Inform the priest/pastor	3	1.4
Seek spiritual intervention	10	4.8
Observe for a while	49	23.4
See the doctor the same day	72	34.5
Hide it as a protected secret	11	5.3
Inform the doctor only if the hernia is painful	0	0.0
Use herbs before reporting to doctor	4	1.9
<b>How soon to see a doctor after discovering lump in groin area</b>		
After three months	16	7.7
Within one to three months	41	19.8
Within one month	135	65.2
Any time you are free	13	6.3
When you are able to make some time	2	1.0

Source: Field Data, 2013

#### 4.8 ATTITUDES TOWARDS INGUINAL HERNIA TREATMENT

Table 4.6 shows the percentage distribution of attitude of respondents towards diagnosis of inguinal hernia. About 97.1% reported inguinal hernia to be curable. They also indicated fear of surgery (28.8%) to be their major cause of delay in early treatment, followed by adverse effect of surgery (25.4%) and high hospital cost (24.5%). Majority (93.4%) believed an orthodox doctor could effectively treat inguinal hernia. However, most of them (86.3%) had not seen a doctor to confirm their state of hernia. Of the 20 respondents who met with their doctor concerning their state of hernia did so because of pains (90.9%) and 9.1% disturbing size. Yet, less than half (43.5%)

indicated they will allow operation to be performed the next month while about one-fifth (21.7%) indicated they would allow operation the same day after seeing any unusual symptoms.

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**Table 4.6: Attitude towards inguinal hernia treatment.**

Variable	Frequency (n)	Percentage (%)
<b>Curability of inguinal hernia</b>		
Yes	205	97.1
No	2	1.0
Don't know	4	1.9
<b>*Cause of delay in early treatment</b>		
I don't have time/busy	0	0.0
High hospital cost	154	24.5
Delay at hospital	23	3.7
Fear of surgery	181	28.8
Adverse effect of surgery	160	25.4
Preference of traditional remedies	89	14.1
Observation	22	3.5
<b>Practitioners who can effectively treat Inguinal hernia</b>		
Spiritual pastor /spiritual intervention	4	1.9
Herbalist / traditional doctor	10	4.7
Orthodox doctor	198	93.4
<b>Seen a doctor about state of hernia</b>		
Yes	23	13.1
No	152	86.3
Don't have hernia	1	0.6
<b>Reasons for seeing doctor</b>		
Pains	20	90.9
Disturbing size	2	9.1
Stigmatization	0	0.0
<b>Time to allow operation to be performed</b>		
Today	5	21.7
Next month	10	43.5
Next year	8	34.8

Source: Field Data, 2013

#### 4.9 MISCONCEPTIONS ABOUT INGUINAL HERNIA TREATMENT

Table 4.6 shows the percentage distribution of misconceptions about inguinal hernia among the respondents. Though more than half (56.1%) did not believe inguinal hernia is as a result of ancestral curse, about one-fifth of them however believed otherwise. The predominant reason for which some respondents refused to have early treatment of inguinal hernia was fear of death (28.8%), followed by the desire to hide it (16.4%). The least reason indicated by the respondents was size of hernia being small (9.7%). Almost half (46.4%) of the respondents believed “Pito” (a local beer) was the cause of inguinal hernia. About 29.8% of the respondents also believed persons living with inguinal hernia could experience pains during sexual intercourse. Majority of the respondents also indicated that one can acquire inguinal hernia by laughing or insulting (46.9%) and having sexual intercourse with someone’s wife (43.1%) and also riding bicycle (43.0%).



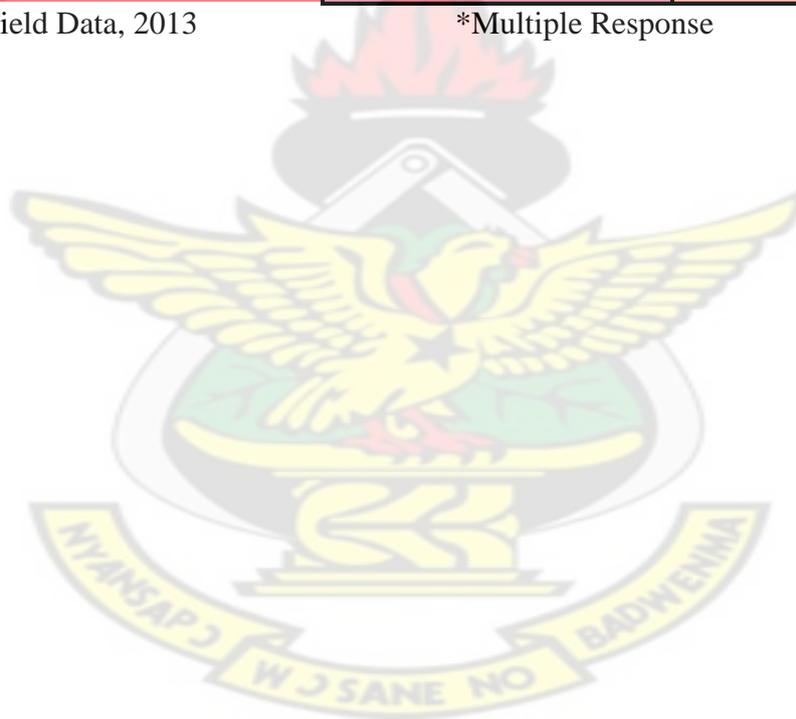
**Table 4.7: Misconception about treatment of inguinal hernia**

Variable	Frequency (n)	Percentage (%)
<b>Inguinal hernia is the result of ancestral curse</b>		
Yes	55	25.7
No	120	56.1
Don't know	39	18.2
<b>*Why persons living with inguinal hernia refuse to have early surgical treatment</b>		
Soothsayers' advice	62	11.2
Desire to hide it	91	16.4
Size of hernia being small	54	9.7
Desire for more children	87	15.6
Fear of death	160	28.8
Preference of traditional remedies	63	11.3
Observation	39	7.0
<b>Excessive drinking of Pito (local beer) cause inguinal hernia</b>		
Yes	96	46.4
No	54	26.1
Don't know	57	27.5
<b>Persons living with inguinal hernia could experience pains during sexual intercourse</b>		
Yes	62	29.8
No	37	17.8
Don't know	109	52.4
<b>Inguinal hernia can be acquired by laughing or insulting those who have it</b>		
Yes	98	46.9

No	111	53.1
<b>Inguinal hernia can be acquired after having sexual intercourse with someone's wife</b>		
Yes	90	43.1
No	57	27.3
Don't know	62	29.7
<b>Riding of bicycles can cause inguinal hernia</b>		
Yes	40	43.0
No	94	27.3
Don't know	78	29.7

Source: Field Data, 2013

\*Multiple Response



## **CHAPTER FIVE**

### **5.0 DISCUSSION**

#### **5.1 Introduction**

This chapter discusses the results of the study in relation to the objectives and key variables of the research. The purpose of this study was to assess the knowledge, attitudes and practices towards inguinal hernia among adult-male in the East Mamprusi District.

Inguinal hernias by far are the most common types of hernias seen in most parts of Africa. Previous studies have documented the magnitude of the condition with varying proportions. In Ghana, the prevalence of inguinal hernia among adult men during the 1970s was estimated to be 7.7% compared with 30% found on the island of Pemba in East Africa in 1969 (Belcher et al., 1978; Yardov and Stoyanoy, 1969). In this study, the proportion of male adults with inguinal hernia for the past two years was estimated to be 14%. This is somewhat alarming considering the fact that most cases of inguinal hernia go untreated especially in resource-poor settings, and more prevalent in people with low socio-economic status (Osifo and Amusan, 2010). Most of these cases are therefore reported when complications set in. This results in increased therapeutic costs for both the patient and the health system (Rutkow, 2003). In some cases as reported in Niger, mortality from hernia strangulation even with access to surgical care is high - 40% (Hair et al., 2001).

#### **5.2 Knowledge about Inguinal Hernia**

In many developing countries, lack of awareness and financial constraints make many patients present very late with giant inguinoscrotal hernia which is a serious life-threatening condition (Osifo and Amusan, 2010). In this study, majority of the

respondents attributed the cause to hereditary control (61.6%) and food/drink (52.7%). These findings are consistent with the work of Evans et al (93) that urogenital diseases such as hydrocele is caused by genetic factors as well as over consumption of sweet drinks such as palm wine or riding of bicycles( Evans, et al 1993 cited in Frimpong, 2010). However, some studies have attributed risk of developing inguinal hernia and its complications mainly to overweight, older persons, history of haemorrhoids, smoking and hiatal hernia (Abramson et al., 1978; De Luca et al., 2004; Sorensen et al., 2002). Inadequate knowledge about the signs and symptoms of the condition has a devastating implication, not only with pain during strangulation but also puts more weight on health facilities during emergency. This situation could therefore be curtailed if the public is well sensitized about the nature of the disease.

### **5.3 Attitude towards the Diagnosis and Treatment of Inguinal Hernia**

It has been documented that, people with inguinal hernia not only go through physical pains but also psychological traumas as well (Salih, 2008). Anecdotal evidence suggests that people living with the condition are usually ridiculed by the public. As a result of this individuals with the condition usually hide their condition and refuse to seek prompt treatment. The study revealed that most (28.7%) would rather inform a close relative about a disease upon suspicion. Although a substantial proportion (34.5%) said they would see a doctor the same day upon suspicion, it does not however overwhelm the influence of peoples' attitude towards seeking early diagnosis. Interestingly, about 23.4% would prefer to observe the condition for a while before seeking medical checkup and 5.3% would prefer to hide it completely. This is consistent with a study conducted by Salih (2008), where people with the condition were found to have a poor health seeking behaviour. It was also revealed in this study

that majority (65.2%) would only seek medical attention within one month after discovering a lump in the groin area.

Attitude is an internal or overt feeling or selective nature of intended behavior which represents the affective domain (Bloom, 1956). The attitude towards inguinal hernia treatment was assessed to help better understand how people feel about the condition. The predominant reason revealed in this study ascribed to the cause of delay in early treatment was found to be fear of surgery (28.8%), followed by adverse effect of surgery (25.4%) and high hospital cost (24.5%). Fear of surgery as the cause of delay has the propensity to further complicate the condition especially when it reaches the stage of giant inguinoscrotal hernia, a precursor of hernia strangulation. The situation is usually exacerbated when the populace believes spiritual pastors and herbalist are the appropriate sources where their problem can be resolved. This was however not the case as majority (93.4%) of the respondents in this study believes orthodox doctors can effectively treat the condition. More than ninety percent of those who have the condition reported to have seen a doctor because of the pains they feel, with majority (43.5%) indicating they would only allow surgical operation the following month. This clearly shows a poor health seeking behaviour and attitude towards inguinal hernia treatment.

#### **5.4 Misconception about treatment of inguinal hernia**

Misconception, which is the wrong idea, thought or notion, could affect the health seeking behaviours. Misconception about the treatment of inguinal hernia in this study was found to be sufficient enough to affect an individual's health seeking behaviour. About one-fourth of the respondents indicated that inguinal hernia is as a result of ancestral cause. This proportion of individuals could therefore easily be swayed in

believing that herbalist could be their utmost source of solution. Majority (28.8%) of them reported that persons with inguinal hernia refuse to have early surgical treatment for fear of death. About 11.2% of the respondents also indicated that persons living with inguinal hernia refuse to have early surgical treatment because of a soothsayer's advice. This paints a clear picture of inadequate information about the aetiology of the disease. This could be compounded depending on the socio-economic status and the cultural believes of the people. The study also revealed that the predominant perception among the respondents was that "Pito" (a local beer) could cause inguinal hernia.

About thirty percent of the respondents also believed people living with inguinal hernia could experience pains during sexual intercourse, an opinion which was contrary to about 17.8% of them, with one-half having no idea. Interestingly, almost one-half of the respondents believed that one can acquire the disease by laughing or insulting those who have the disease. Similarly, it was revealed in this study that the predominant perception was that the disease can be acquired by having sexual intercourse with someone's wife (43.1%) and riding bicycles (43.0%).

### **5.5 Practices related to inguinal hernia occurrence**

Strenuous exertion activities have been linked with inguinal hernia as a possible risk factor (Flich et al., 1992; Carbonel et al., 1993). Heavy physical exercise has therefore been the subject of many statements and studies in past literature (Flich et al., 1992). It was revealed in this study that majority (80%) of the respondents had ever engaged in heavy lifting activity, with about 84.1% reporting its frequency to be occasional. Other studies have also documented chronic increased in intra-abdominal pressure as an etiologic factor for inguinal hernia, and this may therefore be provided by the association between obstipation and hernia (Liem et al., 1997).

## CHAPTER SIX

### 6.0 CONCLUSIONS AND RECOMMENDATIONS

#### 6.1 CONCLUSIONS

This study highlighted inadequate knowledge, inappropriate attitudes and practices towards inguinal hernia among adult-males in the East Mamprusi District.

##### 6.1.1 Prevalence of Inguinal Hernia in the East Mamprusi District

In conclusion, the findings of the research showed that about 29 (14%) had inguinal hernia.

##### 6.1.2 Misconceptions (knowledge) about the causes of inguinal hernia

It is again conclusive that majority (61.6%) of the respondents attributed the cause of inguinal hernia to hereditary factors, with more than half (52.7%) reporting food/drink to be the cause. Also, Eighty percent of the respondents reported to have ever engaged in heavy lifting, with almost an equal proportion (84.1%) reporting the frequency of lifting to be occasional. Twelve respondents also reported lifting heavy objects prior to their inguinal hernia occurrence. With respect to the misconception surrounding inguinal hernia treatment, about one-fifth believed inguinal hernia is as a result of ancestral curse, with about 56.1% believing otherwise. The predominant reason for the respondents refusing early treatment was fear of death (28.8%), followed by the desire to hide it (16.4%). Almost half (46.4%) of the respondents also believed “Pito” (a local beer) was the cause of inguinal hernia, with 46.9%, 43.1% and 43.0% having the perception that one could acquire the condition by laughing or insulting, having sexual intercourse with someone’s wife and riding bicycle respectively.

### **6.1.3 Attitudes towards inguinal hernia and people living with inguinal hernia**

As regard attitude towards diagnosis of inguinal hernia, it is conclusive that majority (34.5%) indicated they would see a doctor when faced with the conditions, with less than two percent reporting that they would rather inform a priest/pastor. Moreover, the predominant attitude towards the treatment of inguinal hernia among the respondents was found to be fear of surgery (28.8%), followed by adverse effect of surgery (25.4%) and high hospital cost (24.5%). Majority (93.4%) also believed an orthodox doctor could effectively treat inguinal hernia.

## **6.2 Recommendations**

These findings draw attention to the need for swift intervention. Stakeholders could therefore use the findings of this study to demystify the aura of misconceptions and perceptions surrounding inguinal hernia diagnosis and treatment.

### **DISTRICT HEALTH DIRECTORATE**

The District Health Management Team (DHMT) need to observe the following:

1. Ensure that Information, education and communication (IEC) programmes are intensified in order to demystify the wrong perceptions and practices people have about the condition. This could be done by using local information centers as a platform for providing wider range of education. This would not only increase their knowledge but also help them identify initial signs and symptoms of the condition in order to prevent strangulation. Behaviour Change Communication (BCC) programmes as with IEC would help to undo the deep seated beliefs among the people of East Mamprusi that having inguinal hernia is as a result of ancestral curse. What remains centrally funny is the uncontested belief that anybody who buries any dead persons that have inguinal hernia could easily contract inguinal hernia unless undertakers who are spiritually

fortified to bury such victims of inguinal hernia without contracting the condition in question..

2. Organize hernia related outreach programmes in the community. The programmes could involve practical demonstration of how to identify early signs and symptoms, including how effective the orthodox medicine allows for diagnoses and treatment of the condition. This could help them better understand how inguinal hernia services are provided and indirectly increase their confidence in orthodox medicine as the ultimate source of effective inguinal hernia treatment.

3. Ensure that further research is conducted using qualitative and other quantitative approaches (e.g. Case-Control Study) to better understand the aetiology of the condition and whether efforts to provide IEC under the new programmes have improved their knowledge about the condition. This is expected to help better understand the cognitive level of the people with regard to inguinal hernia in order to provide the appropriate services.

#### **DISTRICT ASSEMBLY**

The district assembly could use the results of this study to guide and facilitate efforts needed by other agencies including Non-Governmental Organisations (NGOs), Community Based Organisations (CBOs) and the like to provide interventions which are geared towards the improvement of surgical services in the district.

#### **MISTRY OF HEALTH (MOH)**

The MOH could ensure that all health service outlets are adequately equipped in order to provide the needed treatment and diagnosis of the condition.

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**APPENDICES**

**APPENDIX A**

**QUESTIONNAIRE**

**SCHOOL OF GRADUATE STUDIES**

**KWAME NKURUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY**

**DEPARTMENT OF COMMUNITY HEALTH**

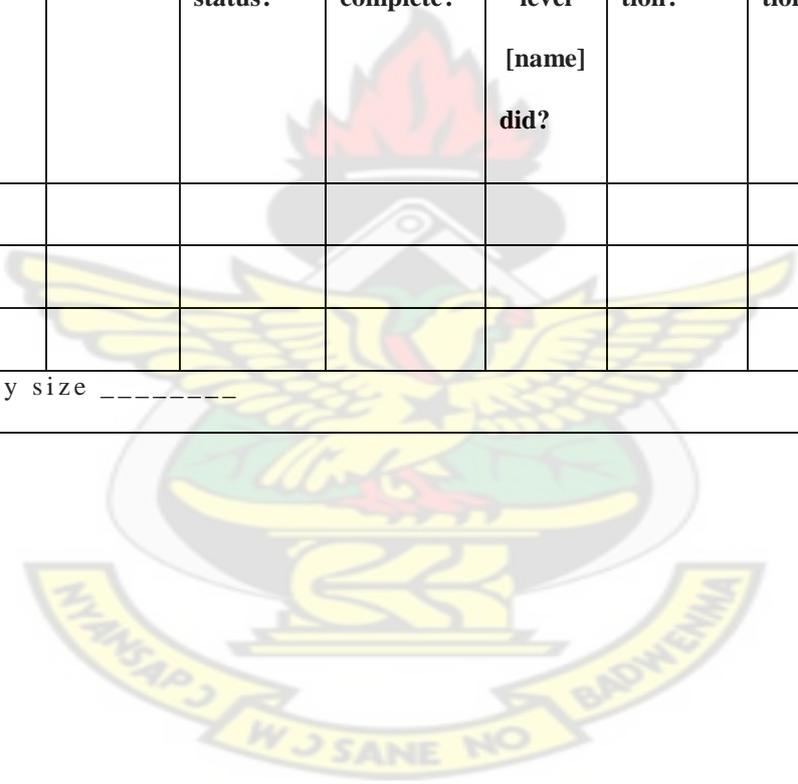
Topic: Assessment of Knowledge, attitudes and practices towards inguinal hernia among adult-males in the East Mamprusi District, Ghana.

Introduction: This questionnaire is designed to obtain information on knowledge, attitudes and practices towards inguinal hernia among adult-males (aged 15 years and above) in the East Mamprusi District of Ghana. I wish to acknowledge that some of the questions of the questionnaire are personal and confidential. However, it is hoped that you would offer genuine and honest answers to all questions contained in this questionnaire. You are reminded that your answers are used purposely for this research and would not be used in any ways to harm or disgrace you. Thank you.

Name of Community.....

**Section A. Background Information - Socio-economic status**

	Relation (to head)	Age	Marital Status	Education		Occupation		Religion	Tribe
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Household ID	What is [name]’ relation to the head of the family?	How old is [name]?	What is [name]’s current marital status?	How many years of schooling did [name] complete?	What is the highest school level [name] did?	What is [name]’s main occupa- tion?	What is [name]’s second occupa- tion?	What is your religion?	What is your tribe?
What is your family size _____									



**CODES: Household Members Registration Form**

<b>Relation (to head)</b>	<b>Marital status</b>	<b>Education</b>	<b>Occupation</b>	<b>Religion</b>	<b>Tribe</b>
<b>Q1</b>	<b>Q3</b>	<b>Q5</b>	<b>Q6&amp;Q7</b>	<b>Q8</b>	<b>Q9</b>
01=Head 02=Child 03=Nephew 04=Uncle 05=Other 07=parent of the head	1=married 2=divorced 3=separated 4=widow 5=single (never married)	0=No school 1=Primary school 2= Senior High school 3= Junior High school 4=College/University 5=Post-secondary	1=Agricultural worker (including animal care), own field 2=Agricultural wage-labor, for cash or in kind 3=Salaried employment 4=Petty trader /marketing 5=Daily laborer 6=Domestic activities 7=Student 8=Unemployed 9=Retired 10=Other 88=Don't know	1=Christianity 2=Islam 3=Traditional 88=None	1=AKan 2=Northerner 3=Ewe 4=Ga 5=other

NO	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
<p><b>HOUSING CONDITIONS</b></p> <p>I would like to start by asking you a few questions about your house.</p>			
Q10	<p>Will you please describe your family’s housing situation? ( CIRCLE THE ONE MOST APPROPRIATE)</p>	<p>We rent a room ..... 1  We rent an apartment..... 2  We rent a house..... 3  We rent part of a house ..... 4  We live in a dormitory ..... 5  We live in an apartment that we own 6  We live in a house that we own .....7  We live in part of a house that we own ..... 8  Other .....</p>	
Q11	<p>How much do you pay for your home per month? [INTERVIEWER: IF RENT IS PAID ON AN ANNUAL BASIS, DIVIDE THE AMOUNT BY 12]</p>	<p>GH¢.....</p>	
Q12	<p>What is the main source of water your household uses for drinking?  [INTERVIEWER: BE SURE OF THE SOURCE OF “PIPED WATER”. IF THE ANSWER IS “PIPED WATER” CHECK THE SOURCE AND CIRCLE THE APPROPRIATE CODE]</p>	<p><u>Piped water/supply water</u>  Piped inside dwelling .....11  Piped to yard/plot.....12  Public tap..... 13  <u>Water from open well/spring</u>  Open well/spring in yard/plot....21  Open public well/spring..... 22  <u>Water from protected well/spring</u>  Protected well/spring in yard/plot.....31  Protected public well/spring.....32</p>	

		<u>Water from borehole</u> Borehole in yard/plot.....41 Public borehole.....42 <u>Surface water</u> Pond/lake.....51 River/stream/spring.....52  Dam.....53  <u>Rain water</u> .....61 <u>Tanker truck</u> .....62 <u>Vendor</u> .....63 <u>Bottled water</u> .....64  No fixed facility.....71 Other .....81	
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**INDIVIDUAL LAND AND FARMS**

And now a few questions about land and farming.

Q13	Tell me, please, does your family have (do you have) any land at your disposal? (IF NO, SKIP TO Q24)	Yes ..... 1 No..... 2 Don't know ..... 88	
Q14	What is the total number of land plots now at your disposal?	_ _  land plots Don't know ..... 88	
Q15	What is the size of all the land your family has at its disposal?  [INTERVIEWER: PROBE FOR AN ESTIMATE]	_ _   _ _ _ _  hectare Don't know ..... 88	
Q16a	Tell me, please, does your family pay for	Yes ..... 1	



b) Wheelcarts, wheelbarrows, sledges	Own.....1	Rent.....2	
c) Water pump	Own.....1	Rent.....2	
d) Power unit	Own.....1	Rent.....2	
e) Tractor, mini-tractor	Own.....1	Rent.....2	
f) Truck	Own.....1	Rent.....2	

Q22	Now I would like to know whether you or your family keep any poultry, livestock, or bees? (IF NO, SKIP TO Q24)		
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Q23	How many of the following animals do you keep?	a) Cows, buffaloes .....  __ __  b) Young cattle.....  __ __  c) Pigs .....  __ __  d) Sheep, goats .....  __ __  e) Horses .....  __ __  f) Rabbits.....  __ __  g) Poultry .....  __ __  h) Number of Bee Hives .....  __ __	
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**SPENDING AND SAVINGS**

Let's talk a little about your spending. I would like to remind you that when you talk about your family, it should apply to all those who share your residence & budget. We understand that you may not remember exact figures.

Q24	How much money did you spend on food in the last 7 days?	_ _   _ _   _ _   <b>GH¢</b> _____ Don't know.....88	
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Q25	Does your family have any savings (in a bank, value of stocks, jewelry or any other)? If yes, please tell me the approximate value.  [INTERVIEWER: MARK 0 IF NO	_ _   _ _   _ _   <b>GH¢</b> _____ Don't know.....88	
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	SAVINGS]		
<p><b>CARING FOR CHILDREN</b></p> <p>Let's now talk about your children's care.</p>			
Q26	<p>If your family has children of pre-school age, please tell me where are these children cared for, most of the time? (IF NO, SKIP TO Q29)</p>	<p><u>In the family:</u></p> <p>By parents themselves.....11</p> <p>By close relatives.....12</p> <p>By other individuals.....13</p> <p><u>In relatives' home:</u></p> <p>On father's side.....21</p> <p>On mother's side .....22</p> <p><u>In pre-schools:</u></p> <p>Run by the Government .....31</p> <p>Run by an enterprise or organization.....32</p> <p>Cooperative or private .....33</p> <p>Elsewhere.....41</p> <p>_____</p> <p>Don't know.....88</p>	
Q27	<p>Did any persons other than members of your family who are not residing with you help care for your children during the last 7 days?</p>	<p>Yes ..... 1</p> <p>No..... 2</p> <p>Don't know.....88</p>	
Q28	<p>In all, what sum of money did you pay for child-care in the last month?</p>	<p> _ _   _ _   _ _   <b>GH¢</b> _____</p> <p>Don't know.....88</p>	
<p><b>FAMILY INCOME</b></p>			

And now we would like you to talk about your family's budget, the size and sources of your income.

Q29	First of all, please tell me to what extent are you satisfied with your family's present income level?	Not at all satisfied ..... 1 Less than satisfied..... 2 Rather satisfied ..... 3 Fully satisfied..... 4 Don't know .....88	
Q30	In the last month did your family receive any assistance in kind (food, clothing, other items) from persons who are not members of your household? (IF NO,SKIP TO Q32)	Yes ..... 1 No..... 2 Don't know.....88	
Q31	Who provided the assistance? How are these persons related to you? (INTERVIEWER: CIRCLE ALL THAT APPLY)	Children ..... 1 Grandchildren ..... 2 Parents..... 3 Grandparents ..... 4 Other relatives ..... 5 Friends/persons not related to you .. 6 Don't know .....88	

**HEALTH SERVICE USE AND MEDICAL EXPENDITURE**

Now I'd like to ask about your family's medical care experiences.

**MEDICAL EXPENDITURES**

Q32	If you developed inguinal Hernia and needed to pay for medical care, who would pay for your medical expenses?  [INTERVIEWER: CIRCLE ALL THAT APPLY]	Me ..... 1 My spouse/partner..... 2 Other family members ..... 3 My employer..... 4 Use government (free) services ..... 5 Health insurance ..... 6 Other .....	
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		Don't know.....88	
Q33	What is the maximum amount that you are willing to pay for medical services?	<b>GH¢</b> .....	
Q34	Did any member of your family spend money on health insurance?	Yes ..... 1 No..... 2 Don't remember.....88	
Q35	How many of your family members are covered by health insurance?	_ _   adult males  _ _ _   children (< 15 years of age)	
Q36	Did any of your family members including yourself require more money for health and medical care in the last one year than you could afford to spend?	Yes ..... 1 No..... 2 Don't know .....88	
Q37	Have you borrowed money from others to meet your own or family members' medical and health care expenses?	Yes ..... 1 No..... 2 Don't know .....88	

**SECTION B. THE CAUSES OF INGUINAL HERNIA**

Q38	Do you consider inguinal hernia as a serious disease?	Yes..... 1 No ..... 2 Don't know.....88	
Q39	What do you believe is the cause of inguinal hernia?  (INTERVIEWER:CIRCLE ALL THAT APPLY)	Spiritual/Curse/Witchcraft ..... 1 Hereditary ..... 2 Hard/manual work ..... 3 Cause not known ..... 4 Don't know.....88	

Q40	Do you have inguinal hernia?	Yes .....1  No .....2  Don't know.....88	
Q41	Can specific food/drink cause inguinal hernia?	Yes .....1  No .....2  Don't know.....88	
Q42	If yes, name the type of food / drink  [MENTION ALL THAT YOU KNOW]		
Q43	Have you ever engaged in lifting heavy objects before? (IF NO SKIP TO Q47)	Yes .....1  No .....2  Don't know.....88	
Q44	If yes, what kind of objects?  [MENTION ALL THAT YOU KNOW]		
Q45	What was the frequency of lifting the object?	Very often.....1	

		Occasional.....2 Once .....3 Don't know.....88	
Q46	Prior to the occurrence of your inguinal hernia, did you lift any heavy object?	Yes .....1 No .....2 Don't know.....88	

**SECTION C. ATTITUDE TOWARDS INGUINAL HERNIA DIAGNOSIS**

Q47	If you suspect that you have inguinal hernia, what will you do? (SELECT ALL THAT APPLY)	Inform a close relative.....1 Inform the priest/pastor .....2 Seek spiritual intervention .....3 Observe for a while .....4 See the doctor the same day .....5 Hide it as a protected secret .....6 Inform the doctor only if the hernia is painful.....7 Use herbs before reporting to doctor ...8 Other actions .....	
Q48	If you discover a lump in your groin how soon do you see a doctor?	After three months.....1 Within one to three months.....2 Within one month.....3	

(CIRCLE THE MOST APPROPRIATE)	Any time you are free.....4
	When you are able to make some time.....5

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SECTION D. ATTITUDES TOWARDS INGUINAL HERNIA TREATMENT		
Q49	Is inguinal hernia curable	Yes .....1 No.....2 Don't know .....88
Q50	What in your opinion often causes delay in early treatment of inguinal hernia (including your s)?  (SELECT ALL THAT APPLY)	I don't have time/busy .....1 High hospital cost.....2 Delay at hospital .....3 Fear of surgery .....4 Adverse effect of surgery .....5 Preference of traditional remedies .....6 Observation .....7 Don't know.....88
Q51	In your opinion, which of the following practitioners can effectively treat Inguinal hernia?  (CIRCLE THE MOST	Spiritual pastor /spiritual intervention.....1 Herbalist / traditional doctor .....2 Orthodox doctor .....3

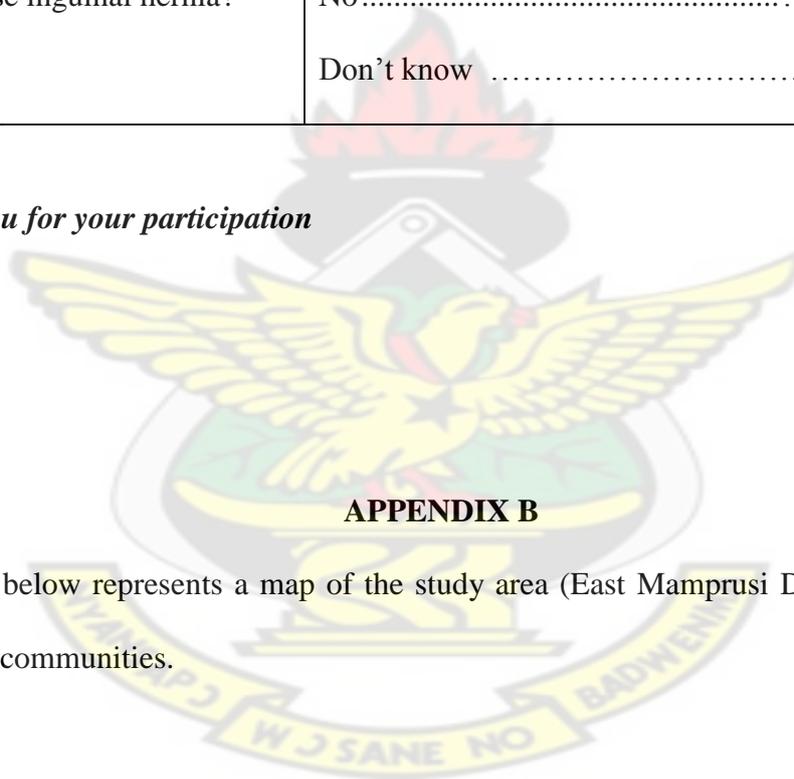
	APPROPRIATE)	Other treatment options .....	
Q52	Have you seen a doctor about your hernia?  (IF NO,SKIP TO Q56)	Yes .....1 No .....2 Don't have hernia.....9	
Q53	Reasons for seeing the doctor?	Pains .....1 Disturbing size .....2 Stigmatization .....3 Other .....	
Q54	How will you like the doctor to treat your hernia?	Give me medicines that will make the hernia go .....1 Perform a surgical operation .....2 Other .....	
Q55	When would you like the doctor to operate on you?	Today .....1 Next month.....2 Next year .....3	

**SECTION E. MISCONCEPTIONS ABOUT INGUINAL HERNIA TREATMENT**

Q56	Is inguinal hernia the result of ancestral curse?	Yes..... 1 No ..... 2 Don't know..... 88	
Q57	Why do you think persons living with inguinal hernia refuse to have early surgical treatment (including you)?  ( <i>SELECT ALL THAT APPLY</i> )	Soothsayers' advice..... 1 Desire to hide it..... 2 The size of hernia being small..... 3 Desire for more children..... 4 Fear of death..... 5 Preference of traditional remedies ..... 6 Observation ..... 7 Don't know..... 88	
Q58	Can excessive drinking of pito (local beer) cause inguinal hernia?	Yes..... 1 No..... 2 Don't know ..... 88	
Q59	Do you think persons living with inguinal hernia could experience pains during sexual intercourse?	Yes ..... 1 No ..... 2 Don't know ..... 88	
Q60	Can you get hernia from	Yes..... 1	

	insulting or laughing at those who already have inguinal hernia?	No .....2	
Q61	Is it possible to get hernia from having sexual intercourse with somebody's wife?	Yes.....1 No.....2 Don't know.....88	
Q62	Does riding of bicycles cause inguinal hernia?	Yes.....1 No.....2 Don't know .....88	

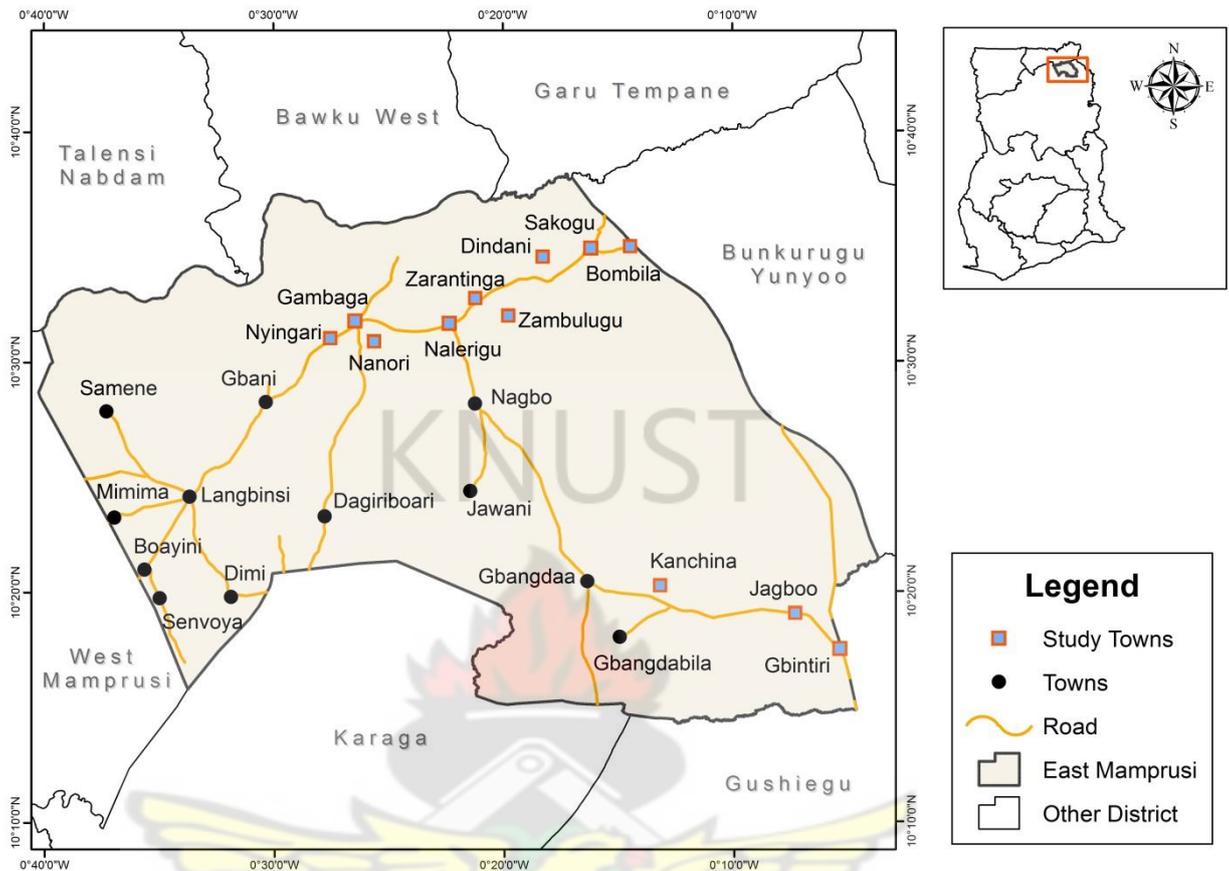
*Thank you for your participation*



**APPENDIX B**

The map below represents a map of the study area (East Mamprusi District) showing the study communities.

**Figure 1.0 Map of the East Mamprusi District showing the study towns.**



**Source: University of Cape Coast: Department of Geography and Regional Planning, Remote Sensing Cartographic Laboratory (2013).**