**SCHOOL OF PUBLIC HEALTH**

**COLLEGE OF HEALTH SCIENCES**

**UNIVERSITY OF GHANA**

# THE USE OF EYE CARE SERVICES AMONG CIVIL SERVANTS IN ACCRA

**BY**

**DR HARRIETTE APIO-ADIH**

**(10395071)**

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

**MAY, 2014**

# DECLARATION

I declare that apart from other peoples investigations which have been presented and duly acknowledged, this work is the result of my own research and that this dissertation, either in whole or in part has not been presented elsewhere for another degree.

……..

DR. HARRIETTE APIO-ADIH

(STUDENT)

MAY, 2014

……..

REV.DR. MERCY MAWUFENYA ACKUMEY

(ACADEMIC SUPERVISOR)

MAY, 2014

# DEDICATION

This dissertation is dedicated to my dad.

# ACKNOWLEDGEMENTS

I thank God Almighty for granting me the needed insight and understanding without which I would not have been able to complete this course successfully.

I would like to express my heartfelt gratitude and appreciation to my academic supervisor Rev. Dr. Mercy Mawufenya Ackumey for her guidance and constructive criticisms which have helped shape this dissertation.

I also wish to convey a special thank you to my husband Mr Bubune Peter Adih for all your support and help over the years.

Finally, thank you to my parents, siblings and friends for their prayers and wise counsel.

# ABSTRACT

Vision 2020 aims to eliminate avoidable blindness in the world by 2020 and targets the leading causes of avoidable visual impairment (WHO, 2010). Many eye and vision problems have no obvious signs and symptoms. Early diagnosis and treatment of eye and vision problems are important for maintaining good vision and eye health, and when possible, preventing vision loss. This study attempted to find the eye health seeking behaviours of workers in Ghana.

A descriptive cross – sectional survey using a structured questionnaire was carried out among civil servants. Simple random sampling was used to select respondents and logistic regression used to determine factors that influence the use of eye care services among respondents.

Two hundred and one respondents were interviewed with equal numbers of male and female respondents. Fifty- six per cent of all respondents had used eye care services. Respondents with some history of an eye problem were more likely to have used an eye care facility than (OR 0.096, CI 0.032-0.291), than those who had no history of eye problems.

Intensive health education is needed to inform people of the need for regular comprehensive eye examinations.

**TABLE OF CONTENTS**

# LIST OF TABLES

# LIST OF FIGURES

# LIST OF ABBREVIATIONS

WHO -------- World Health Organization

ARMD -------- Age Related Macular Degeneration

D Ret -------- Diabetic retinopathy

NHIS -------- National Health Insurance Scheme

NHIA -------- National Health Insurance Authority

NGOs -------- Non Governmental Organizations

# CHAPTER ONE

## 1.0 INTRODUCTION

### 1.1 Background

Globally, it is estimated that 285 million people are visually impaired; 39 million people are blind and another 246 million have low vision. Majority of these people are blind due to treatable and/or preventable causes (WHO, 2010). Eighty per cent of these people live in the lesser developed countries where chronic deprivation is worsened by the added challenge of failing vision. If nothing is done, the number of blind people may reach 76 million by the year 2020 (Pizzarello L, 2004).

The increasing burden of blindness globally especially in developing countries led to a global initiative for the elimination of avoidable blindness, VISION 2020: THE RIGHT TO SIGHT initiative in 1999 (WHO, 1999). However the task of implementing VISION 2020 rests with governments of the countries that have identified blindness and visual impairment as a public health problem, assisted by inter-governmental organisations such as the World Health Organisation (WHO) and other international Non- Governmental Organisations (NGOs), which are collaborators (WHO, 2010).

According to Pascolini (2010), visual impairment in 2010 is a major health issue that is unequally distributed among countries forming the WHO; the preventable causes being as high as 80% of the total global burden. Vision 2020 aims to eliminate avoidable blindness in the world by 2020 and targets the leading causes of avoidable visual impairment: uncorrected refractive errors and cataract which form 43% 33% respectively. Other causes are glaucoma 2%, age related macular degeneration (ARMD), diabetic

retinopathy, trachoma and corneal opacities, all about 1%, with up to 18% of causes undetermined (WHO, 2010).

Visual impairment plays a significant role in the development of disability and it is one of the strongest predictors of limitations in the activities of daily living. Regular eye examinations have been found to reduce the decline in vision and functional status (Picone G et al., 2004; Sloan F. A. et al., 2005). However, a substantial proportion of people are unaware of their eye diseases and attend eye examinations too rarely (Bylsma G. W et al., 2004).

Studies have shown increase in risk of visual impairment due to refractive error and how the risk increases significantly with time since last eye examination (Munoz et al., 2002; Robinson et al., 2011). Several studies from different continents indicate that changes occur in the ocular health and refractive status of adults more so as they grow older. (Chandrasekaran et al., 2006; Guzowski et al., 2003; Klein et al., 2002a; Klein et al., 2002b; Lee et al., 2002; Mitchell et al., 2002; Mukesh et al., 2002; Wang et al., 2007; Klein et al., 2007).

The American Optometric Association recommends that a healthy adult should have a comprehensive vision exam every two years between the ages of 18 and 61, and once a year thereafter. Individuals with risks factors for eye disease should have exams more frequently (www.livestrong.com/article/131623). According to the Canadian Optometric Association, adults aged between 20 and 39 years should undergo an eye examination every 2 to 3 years. Those aged 40 to 64 years should undergo an eye examination every 2 years (Mairs K et al., 2011). However the ophthalmological societies of both countries

mentioned above recommend an initial comprehensive eye exam early in adulthood and routine examinations as and when necessary. These examinations are warranted if the initial examination puts an individual at higher risk for developing disease based on ocular and medical history, family history, age or race and these individuals should have periodic examinations determined by the particular risk, even if no symptoms are present (www.one.aao.org/CE/PracticeGuidelines).

In most African countries, eye health, like general health services is organized and delivered through a mixture of public and private institutions. Eye care centres within the public health care system include eye clinics in some government hospitals and in some non- governmental institutions. There are also eye care centres in the private sector. These offer a variety of services to patients (Melese et al 2004). Currently, Ghana has a few ophthalmologists, optometrists, eye nurses, optical technicians all totalling about 300 as at 2005 (Ghana National Eye Care Secretariat, 2005). This number is far from satisfactory. It is difficult to say much for the demand and use of eye care services however.

Eye care services are often considered to be deferrable and patients usually seek remedies to their eye problems when the condition becomes acute or when they are unable to manage on their own any more. However, this alone cannot account for the pattern seen in Ghana on the use of eye care services. Other factors need to be investigated including those related to organization and distribution of health services, and issues of knowledge gaps.

## 1.2 Statement of the problem

In Ghana as in many African countries, availability and accessibility of eye care services are seriously constrained and provision of essential eye care is limited. While studies on the level of access and patterns of utilization of eye care services have been undertaken in many developed countries, this has largely been a neglected field of research in Ghana and other developing countries and there is very little if any national data on the prevalence of blindness and other eye conditions in these countries (Resnikoff S et al., 2004). This makes it difficult to plan for the realization of goals of VISION 2020, the right to sight initiative. What little data is available on the utilization of eye care services pertains to that of rural areas completely neglecting those in urban centres like Accra. An example is a study in Ghana on Some Barriers to the uptake of cataract surgery in Ghana (Gyasi, Amoaku, & Asamany, 2007) and on the Utilisation of eye care services in rural south India: the Aravind Comprehensive Eye Survey (Nirmalan et al., 2004).The ability to see is often a sense taken for granted. But a myriad of problems can arise that have the potential to cause complete loss of vision. It has been reported severally that individuals do not report to eye care centres routinely for eye care services.

In Ghana the government is the single largest employer. The Office of the Head of Civil Service includes a large team of administrators, executive and management analysts, and other technical experts. These officials supervise a hierarchy of graded personnel working in such areas as health, agriculture, transportation and communications, and local government. Working in cooperation with them are other state bodies such as the Chieftaincy Secretariat, Audit Service, Public Services Commission, and the Ghana

Cocoa Board this represents the largest number of the Ghanaian work force (Office of the head of the civil service www.ohcs.gov.gh. retrieved 12-05-2014).

This study thus aims to provide data on the use of eye health services among civil servants in Ghana.

## 1.3 Conceptual Framework

The Andersen and Newman Framework of Health Services Utilization also known as the Andersen Newman model of health seeking behaviour was adopted. However for the purposes of this study it will be referred to only as The Andersen and Newman Framework of Health Services Utilization.

This framework seeks to expose conditions which facilitate or impede utilization. The goal is to develop a behavioural model that provides measures of access to medical care.

An individual's access to and use of health services is considered to be a function of three characteristics; predisposing factors, enabling factors and need factors.

- Predisposing Factors: The socio-cultural characteristics of individuals that exist prior to their illness.

    a. Social Structure: Education, occupation, ethnicity, social networks, social interactions, and culture.

    b. Health Beliefs: Attitudes, values, and knowledge that people have concerning and towards the health care system

    c. Demographic: Age and Gender

- Enabling Factors: The logistical aspects of obtaining care.

    a. Personal/Family: Access to health services and the knowledge about health services, income, health insurance, a regular source of care, distance to health facility, extent and quality of social relationships.

    b. Community: Available health personnel and facilities, and waiting time.

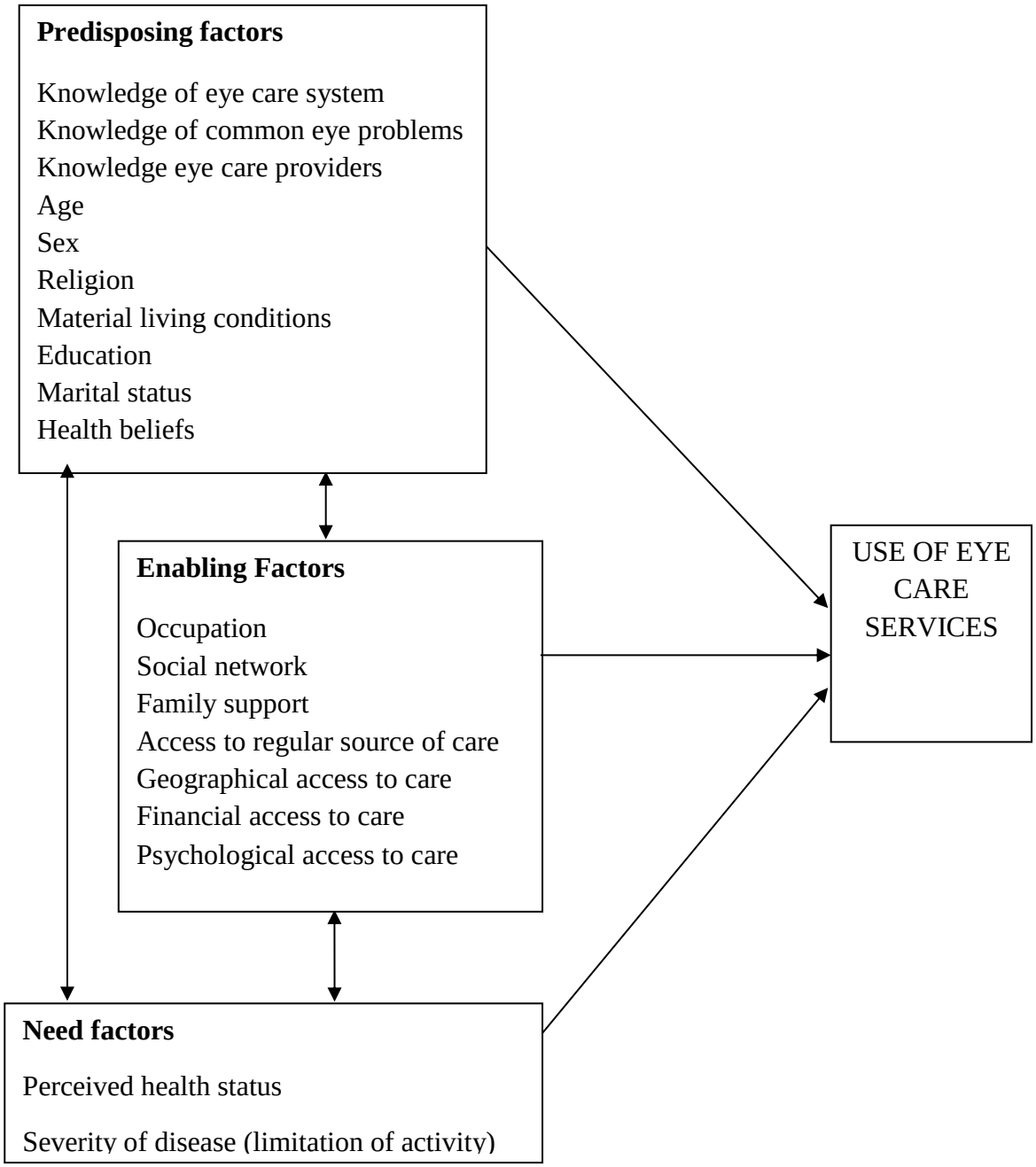
    c. Other factors : Genetic factors and psychological characteristics

- Need Factors: The most immediate cause of health service use, from functional and health problems that generate the need for health care services. "Perceived need will better help to understand care-seeking and adherence to a medical regimen, while evaluated need will be more closely related to the kind and amount of treatment that will be provided after a patient has presented to a medical care provider." (Andersen, 1995)

    a. Perceived: "How people view their own general health and functional state, as well as how they experience symptoms of illness, pain, and worries about their health and whether or not they judge their problems to be of sufficient importance and magnitude to seek professional help." (Andersen, 1995)

    b. Evaluated: "Represents professional judgment about people's health status and their need for medical care." (Andersen, 1995)

**Fig 1: The Andersen and Newman Framework of Health Services Utilization**




As shown in the diagram, the use of eye care services is directly influenced by the predisposing factors in an individual's life, the resources available to him/her as well as his/her perceived needs.

## 1.4 The Significance of the Study

This research is important because it aims to identify reasons why individuals fail to use available eye care services regularly. This failure usually leads to complications in later life when presenting conditions worsen as they normally do in later life.

Findings from this research will serve as information for planning a comprehensive national eye care program to facilitate the attainment of the VISION 2020 targets. Specifically pointing at reasons why people fail to use available eye care services and targeting these problems. This research will also provide information for advocacy activities at the regional and national levels for eye programs. It will also serve as a starting point to monitor the utilization/use of eye care services among civil servants. Furthermore, this research will provide information for health promotion and education activities among civil servants who form a large part of the working population in Ghana. This research will also provide information to the national eye care program on the level of resource mobilisation needed for an effective eye care service delivery. Lastly this research is important because it will add to the scanty literature available on eye care practices in Ghana as well as serve as a starting point for further research into this area.

## 1.5 Study Objectives

### 1.5.1 General objective

To assess the knowledge and attitudes towards eye care services among civil servants in Accra.

### 1.5.2 Specific objectives

1. To identify eye health seeking behaviours among civil servants in Accra.
2. To assess knowledge about common eye problems among civil servants in Accra.

3. To assess awareness of available eye care services among civil servants.
4. To identify factors that influences the choice of eye-care providers/ services among civil servants.

# CHAPTER TWO

## 2.0 LITERATURE REVIEW

This section introduces similar studies that have been conducted in this area of research. Its main focus is on previous works done in relation to the use of eye care services, reviewing their results and methodology and identifying the gaps in them in light of this study. In this section, literature on eye health seeking behaviours, awareness of eye problems, and awareness of eye care services as well as factors which influence eye care services are reviewed.

### 2.1 Eye health seeking behaviours

Health seeking behaviour refers to all those actions human beings take to prevent diseases and detect diseases in asymptomatic stages. There is growing recognition both in developed and developing countries that providing education and knowledge at the individual level is not sufficient to promote change in behaviour. There is the need for a dynamic, collective and interactive element to bring about effective changes in health indicators. Understanding of the social capital and proper understanding of health seeking behaviour could reduce delay to diagnosis, improve treatment compliance and improve health promotion strategies in a variety of contexts (McKain, 2009).

Certain attitudes about eyesight and eye examinations influence the reception of preventive and curative eye care. Little knowledge of eye diseases on the part of patients and the absence of information about these from most general practitioners may be the reason for this trend noticed (Alexander et al., 2008). Increasing age and education seems to influence the utilisation of eye care services positively as more individuals

advanced in age and well educated see the need to have their eyes examined frequently (Robin et al., 2004, Nirmalan et al., 2004, Kovai et al., 2007, Tajunisah et al., 2011). Many visually impaired people particularly the elderly have not had a recent vision examination and lack adequate low vision rehabilitation. Thus there is the need to encourage people to attend regular eye checks and to supply information about rehabilitation services (Laitinen et al., 2008). Other reasons accounting for the poor uptake of eye services include, a lack of awareness of the severity of ocular conditions and difficulty coping with the diseases once diagnosed (Cano, 2007), inadequate understanding about the impact of poor vision on activities of daily living leading to a reduction in access of quality eye care, inadequate distribution of eye care personnel, inadequate assessment of the need for eye care protection and inadequate assessment of the vision needs of patients (Frazier & Kleinstein, 2009).

In India, even with increase in awareness of glaucoma, a common eye condition, no significant change in the health seeking behaviour of those educated about glaucoma was reported (Baker & Murdoch, 2008). This finding further reiterates earlier findings that people may be aware of certain eye problems but may not feel the need to seek care for them either because of a lack of felt need for the eye examination and possible correction or because they may not perceive themselves at risk of acquiring the said condition.

The control of many eye conditions particularly congenital cataracts is linked directly with early detection and management upon presentation. Delays in presentation of non-traumatic paediatric cataract have been reported as a significant problem in the state of

Rio de Janeiro, Brazil and there is the need for early recognition, prompt referral and appropriate treatment in the state facilities (Leite & Zin, 2011).

## 2.2 Awareness of common eye conditions

Knowledge of eye conditions and in particular common conditions affords individuals the ability to recognise these conditions and when there is the need for a comprehensive eye examination. Awareness of eye conditions aids health promotion activities and leads to better outcomes. Little knowledge about common eye diseases and conditions has been reported as been the cause of limited use of eye care services. A gap in communicating information about eye conditions as well as failure to conduct routine eye screening has been reported as the main reason for this little knowledge (Alexander et al., 2008). Mention has also been made of the absence of eye health information in the media and public service announcements compared with other diseases (Alexander et al., 2008, Adriono G, 2011). In India, data from a study on the awareness of eye diseases in an urban population suggest that there is the need for health education to increase the level of awareness and knowledge of common eye diseases in the population. This is due to the fact that knowledge of all the eye diseases assessed was poor (Dandona, Dandona, John, McCarty, & Rao, 2001). A community survey revealed that up to eighty per cent (80%) of those interviewed had no prior knowledge of at least one eye condition from which they suffered (Huang et al., 2013).

Some systemic diseases have been found to cause ocular complications when not properly managed, examples are diabetes, hypertension, sickle cell anaemia but to mention a few. Usually, knowledge of such conditions means that individuals are also aware of the possibility of ocular complications such as diabetic retinopathy and thus

individuals may be better motivated to seek timely eye care helping in reducing the burden of visual impairment (Cano, 2007, Adriono G, 2011, Kadri, 2011, Tajunisah et al., 2011). However, the knowledge of the presence of some of these diseases failed to cause a significant number of individuals in a Malaysian study to undergo eye examinations even after referrals by their general practitioners (Tajunisah et al., 2011). The duration of chronic systemic disease in individuals has also been found to influence the use of eye care services as those found to have been suffering longer from a chronic disease are more likely to undergo eye examinations (Cano, 2007). Though previous knowledge of systemic disease has been construed as knowledge of the need for eye examinations, it has been found elsewhere that this may not be entirely true as some studies suggest that individuals may still not be aware of the ocular implications of such diseases (Namperumalsamy et al., 2004, Pal, Pal, Barua, & Ghosh, 2010, Kadri, 2011).

The ocular complications of diabetes are increasingly gaining audience as the number of people suffering from diabetes increases. Although both general practitioners and diabetic patients are aware of the need for regular fundoscopy to ascertain the health of the fundus, just over half of patients had been screened in a study conducted in Myanmar thus recognising the need to induce a behavioural change in the diabetic patients and their general practitioners with regards to screening examinations (Muecke et al., 2008). It is estimated that in India, diabetics are 25 times more likely to become blind that non diabetics due to diabetic retinopathy (Rani et al., 2008). The complications of diabetes including ocular complications can be minimized drastically if the condition is properly controlled in an individual (Khandekar, Harby, Harthy, & Lawatti, 2010).

Hypertension is the leading cause of death in the world today. In addition, systemic hypertension is a leading cause of visual impairment. The eye as an end arteriolar system is susceptible to changes in blood pressure (Wolffsohn et al., 2002). Hypertensive retinopathy, neuropathy and choriodopathy are common in persons with long standing and /or poorly controlled systemic arterial hypertension. The commonest and most easily recognisable sign is hypertensive retinopathy as it is a recognised cardiovascular risk stratification factor. Systemic hypertension may also be responsible for worsening of micro vascular disease of the eye like increased intraocular pressure, retinal micro vascular abnormalities, and prevalence of retinal vein occlusion and diabetic retinopathy. (Catterjee, Cattopadhya, & Lip, 2002, Wang et al., 2009). Ocular changes can be the initial finding in an asymptomatic patient with hypertension, necessitating a primary care referral. In other instances, a symptomatic patient may be referred to an ophthalmologist for visual problems caused by hypertensive changes (Oh, 2013). Early detection of micro vascular changes using reliable and reproducible imaging techniques is important for the prevention and management of both the ocular and systemic complications of hypertension (DellaCroce & Vitale, 2008). However, this is only possible if eye examinations are undertaken regularly.

Other eye diseases are genetically inherited such as glaucoma, cataracts, age- related macular degeneration. Knowledge of such diseases appeared poor thus did not have a positive effect on utilisation of eye care services. Few people knew about glaucoma and that it has a genetic orientation. Higher level of education proved to increase awareness of glaucoma in some studies (Cross et al., 2007, Tenkir, Solomon, & Deribew, 2010) Other reports suggest that the determinants of glaucoma awareness and knowledge are

higher levels of education, females, older age, religion, family history of glaucoma and previous history of eye check-up (Sathyamangalam et al., 2009, Gyawali & Sarkar, 2013). Knowledge of the signs and symptoms of cataract play a pivotal role in identifying and seeking treatment for the condition. Most patients are found to be unaware of the existence of cataract and do not seek help from qualified professionals even though they experience a reduction in vision (Leite & Zin, 2011). Elsewhere patients' awareness of cataract disease was found not to correlate with their perception of the potential treat of the disease as they still refused to seek medical care for the condition. The main barriers to treatment were lack of felt need for improvement in vision and financial problems. Thus there is the need to educate patients on eye health care and to provide low cost but high quality cataract surgery to these patients (Zhou et al., 2008, Thapa et al., 2011).

Refractive errors are a group of eye conditions which constitute the third cause of visual impairment in the world and especially in developing countries (WHO, 2010). In the developed world, most people are aware of their refractive status owing to the fact that there are systems in place especially during their school going ages for all school children to have had at least three eye screening exercises before they leave school (Aldebasi, 2011). However this is not the case in the developing world. The general public is basically unaware of the problems which affect vision. This is particularly so among the poorly educated and those in the rural communities. The role of health education/promotion thus cannot be overemphasized. Steps to improve visual health may include public education using the media, mass screening sessions in schools, work places and in the communities and government subsidies especially for optical equipment

and services (Rosman, Wong, Wong, Wong, & Saw, 2009, Aldebasi, 2011, Marmamula, Keeffe, Raman, & Rao, 2011).

## 2.3 Awareness of eye care services

Knowledge of the availability of eye care services and their locations could enable individuals to access such facilities when there is the need. However, there appears to be a trend where even though individuals know of such services, they do not access them. Also, many eye patients have difficulty distinguishing between the various eye care providers and may confuse one with another (Bruninga, Enzenauer, & Robbs, 1997, Dandona, Dandona, John, McCarty, & Rao, 2001, Baker & Murdoch, 2008). A study in Fiji showed that people are aware of at least one conventional eye care service. However, barely half of these people with previous eye problems had consulted one of these services. This proportion was found to be even lower among the elderly (Du Toit, Ramke, Naduvilath, & Brian, 2006).

In Nigeria a study among government workers revealed that whereas most respondents had knowledge of the existence of eye care services, only a small fraction purported to be unaware of existing eye care services. Based on this awareness, it was found that majority of the respondents had a correct perception, some had a wrong perception and the rest knew nothing about eye care services (Ayanniyi, Olatunji, Adeboye, & Ayanniyi, 2010). Another study in Tanzania revealed that most respondents were aware of the existence of eye care services for the treatment of cataract and that surgery is the treatment for this condition, however, there was limited understanding among respondents and health facility workers of what the surgery entailed. In this study, it was found that the use of the word upasuaji (surgery) which when translated locally means to “cut the eye” gave a bad

impression thus it needed to be changed for words like cleaning the eye, removing the cataract or correcting the eye (Banzi, 2007).

Other findings suggest that though people may be aware of the benefits of western medicine and seek access to it, the inconvenience of or necessity to take up multiple modes of transport to do so may result in lack of uptake of western medical facilities leading patients to seek alternative medical attention closer to home (Ogwurike & Pam, 2004, Robin et al., 2004).

In Nairobi Kenya many patients were unaware of the presence of eye care services in their localities and family played an important role in the decision making process of whether to seek help from a formal healthcare facility. Patients were in the habit of consulting members of the family before making a decision on seeking help. Patients were found to patronise other channels of treatment like using over the counter drugs and some traditional eye medicines (Mwaura, 2009).

## 2.4 Factors which influence the choice of eye care services

Access to vision, eye and health care services is a major problem across the globe. Without access to care individuals may experience reduced health and quality of life because diseases cannot be prevented, diagnosed, treated or managed. Access to eye care services in particular affords individuals the ability to participate effectively in their communities, drive safely, perform effectively at work, read, learn at school, and avoid injuries and accidents. All other vision, eye and health care issues are therefore secondary to having access to care (Frazier & Kleinstein, 2009). It is clear that some people lack basic knowledge in how to be healthy and in what behaviours are healthy and promote

good health, however most people lack health care because of socioeconomic barriers which hinder their access to care (Russell, 2008). Access to health care is dramatically affected by changes in demography owing to an increase in life expectancy in recent times. Increased life expectancy comes with attendant health care needs such as presbyopia which affects all persons forty years and older and cataract which is also quite common among the elderly (Frazier & Kleinstein, 2009).

Many studies have been conducted on utilisation of eye care services across the globe elucidating barriers to uptake of eye care services (Nirmalan et al., 2004, Ogwurike & Pam, 2004, Gyasi et al., 2007, Chang et al., 2008, Bekibele & Murthy, 2012, Shen et al., 2013). The barriers to eye care services are numerous and more often than not overlapping. Therefore a multifaceted approach is needed to address them. Some of these barriers affect all ages, races, genders and are independent of income and other socio-economic factors. Other barriers are group specific and more open to localised solutions (Frazier & Kleinstein, 2009).

It is common knowledge that most healthcare systems are concerned with acute diseases as well as provide some care for chronic diseases. Baring these, very little care is provided for multiple health prevention and other health needs from infants to persons across all life spans. Thus health care is delivered in fragments and hardly ever provided in a holistic manner (Frazier & Kleinstein, 2009). The choice of eye care service provider is an important factor when reviewing factors which influence use of eye care services. Studies have indicated that individuals usually report to general hospitals before they are

referred to eye care facilities for management (Nirmalan et al., 2004, Tajunisah et al., 2011).

Socio- cultural barriers such as age, gender and ethnicity may also influence the use of a particular eye care service. Having noticed a decline in visual acuity, barriers to seeking treatment include personal reasons which may be due to the way the individuals live in society and the culture from which the individuals hail, economic reasons and social reasons in order of importance (Kovai et al., 2007). Eye care utilisation among women aged forty years and above with eye diseases in nineteen states in the US, found that the two main reasons cited for not attending an eye care facility were cost of the visit which was cited by almost half of the respondents and having no reason to go for follow up which was cited by a fifth of the respondents (Schaumberg, Christen, Glynn, & Buring, 2000). Affordability of eye care services was seen as a main barrier to the uptake of eye care services amongst those with refractive errors. Among people with uncorrected presbyopia, lack of justification for correction featured as the leading barrier to the utilisation of eye care services. A lack of awareness of visual impairment, lack of access to an eye care centre, economic issues as well as personal issues featured as the main reasons for low uptake of refractive error correction services (Marmamula et al., 2011).

Other factors likely to influence the choice of eye care services are monthly income, knowledge of available services and the need for regular eye examinations (Owsley et al., 2006, Ntsoane et al., 2012). The lack of eye health information, in certain cases, has been reported to affect prioritization of receiving eye care services relative to other health care services and personal responsibilities (Alexander, Miller, Cotch, & Janiszewski, 2008).

Concerning their awareness of the various eye care providers, individuals are basically unaware of the different eye care providers and are willing to visit either one. Majority of individuals asked reported that that they sought treatment from either an optometrist or an ophthalmologist. Others went to eye camps, opticians and very few to traditional healers and allopathic practitioners (Nirmalan et al., 2004, Tajunisah et al., 2011). Some reports found that factors such as distance to a health centre, available resources, perceived gravity of an illness and underlying medical problems, satisfaction of treatment, and general knowledge about health and diseases all influenced subjects' decisions to seek care.

Cataract services were found to be unaffordable to most individuals who are blind due to cataract in a study to determine cataract blindness, surgical coverage, outcome and barriers to cataract services in Nigeria. The main barriers to uptake of cataract services among subjects with monocular blindness due to cataract were a lack of awareness of cataract followed by the expense of surgery (Odugbo, Mpyet, Chiroma, & Aboje, 2012, Bekibele & Murthy, 2012). Transportation cost and availability was also cited elsewhere (Ogwurike & Pam, 2004, Owsley et al., 2006). The environment in which individuals live may influence their access to eye care services. Individuals depending on their home or work environment may be more motivated to attend eye screening, diagnosis, treatment and rehabilitation programs or not. Pressures from home or work may cause individuals to delay consulting an eye care practitioner when there are signs or symptoms that the individual should visit said practitioner (Kovai et al., 2007). Example a care giver may delay a visit to an eye care practitioner until their care is no longer needed. The health status of an individual may also pose as a barrier to accessing other health care. For

example, individuals suffering from sickle cell disease may not be aware of the ocular complications of this disease thus may ignore any signs that may present on the ocular front. Even if aware of the ocular complications, individuals may not have access to the diagnostic and treatment services needed or may not have the necessary financial support needed to access such services (Bekibele & Murthy, 2012).

# CHAPTER THREE

## 3.0 METHODS

This is the methods section of the study. It covers the measurements of the variables in the research, the sampling design, data collection procedures, methods of data collection as well as ethical issues.

## 3.1 Type of study

A descriptive cross-sectional survey of urban civil servants using an interviewer-administered structured questionnaire was undertaken.

## 3.2 Study location

Collection of data was at the headquarters of ten ministries in Accra. There are twenty-three ministries in Ghana. This study was targeted at only a section of civil servants such as those who work in the headquarters of the twenty- three ministries. The headquarters of most of these ministries can be found within the central business district in Accra, Ghana. Therefore the study was located within the central business district in Accra, Ghana.

## 3.3 Target Population

The Ghana Civil Service is at the heart of the Government Administrative Machinery. Its objective is to assist the government in the formulation, implementation, monitoring and evaluation of its policies and programmes for the development of the country. The Civil Service as of December 2011 was made up of sixty- three organisations: twenty- three ministries, five extra ministerial organisations and thirty- four departments. The human resource analysis of the service reported an overall staff strength of 11,348 with the ministries taking up 3,154 of this number. Approximately sixty per cent are males and the

remaining forty per cent are females (Ghana Civil Service Annual Performance Report, 2011). All the ministries have their headquarters in Accra. Below is a list of all the ministries in Ghana.

- Ministry of chieftaincy and culture
- Ministry of Communications
- Ministry of Defence
- Ministry of Employment and social welfare
- Ministry of Education
- Ministry of Environment Science and Technology
- Ministry of Finance
- Ministry of Food and Agriculture
- Ministry of Foreign Affairs
- Ministry of Health
- Ministry of Information
- Ministry of Interior
- Ministry of Justice
- Ministry of Lands and Natural resources

- Ministry of Local Government and Rural Development
- Ministry of Energy
- Ministry of Roads and Highways
- Ministry of Tourism
- Ministry of Trade and Industry
- Ministry of Transport
- Ministry of Women and Children's Affairs
- Ministry of Water Resources, Works and Housing
- Ministry of Youth and Sports

Data was collected from ten of these ministries namely the ministries of Education, Finance, Lands and Natural Resources, Food and Agriculture, Communication, Water Resources Works and Housing, Roads and Highways, Transport, Trade and Industry and Information.

### 3.4 Sampling

The sampling method involved two stages. All twenty three ministries were written on separate sheets of paper; these papers were shuffled together and then a sheet of paper-bearing the name of a ministry was picked. This process was repeated till ten ministries were selected. Twenty respondents were randomly chosen from each ministry. In order to ensure fair representation, every other office was visited on an office block. Only two

persons were interviewed from an office. Upon entry, "yes" and "no" were written on separate sheets of paper to represent the number of people present in the office at the time. Since the intention was to interview only two persons, only two of these sheets of paper had "yes" written on them. Those who chose "yes" were interviewed. The selection was based on the respondents' willingness to participate in the study.

### 3.4.1Sample size

- **Sample size determination (Cochran's sample size formula for categorical data)**

- target Population = 3,154

Assuming a set alpha level of .05, a plan to use a proportional variable, a level of acceptable error at 5%, and an estimated standard deviation of the scale as .5,

Sample size:

$n = [t^2 (p\ q)]/d^2$

$n = [1.96^2 (0.5)\ (0.5)]/0.05^2$

$n = 384$

However, since this sample size exceeds 5% of the population (3154*.05=157), Cochran's (1977) correction formula is used.

$n_1 = n_o/ (1+n_o/\text{population})$

$= 384/ (1+384/3,154)$

= 343

Thus, a sample size of 343.

Ideally, the sample size should have been 343 however due to time and logistical constraints a sample size of 200 was agreed on.

### 3.5 Data collection technique

Data was collected in the month of June, 2013. A structured questionnaire was administered to all respondents by an interviewer. This was done across in all the ten ministries selected for the study. However, only those workers who were present at work on the day of data collection and willing to partake in the study were included in the study.

The study sought to establish a relationship between the use of eye care services and other variables namely knowledge of eye care services, knowledge of common eye problems, knowledge of the different eye care service providers, access to eye care, perceived eye health status, as well as demographic variables

### 3.6 Quality control

Research assistants underwent a two day training programme, to ensure that questions and methods were well understood. During the training, the questionnaire was explained to the researchers and clarifications made where there was any misunderstanding. This training was according to a developed protocol on data collecting tools. The research assistants were monitored and refreshed during the survey period.

There were daily checks of data collected for errors, completeness and necessary corrections. One per cent of administered questionnaires in each ministry were randomly re administered to check for accuracy and authenticities of data.

Completed questionnaire and transcripts were kept in clearly labelled files before and after data entry. Data was doubly entered into Microsoft Excel and comprehensive cleaning was done.

## 3.7 Data Processing and Analyses

### 3.7.1 Statistical methods

Data were entered into Microsoft Excel and processing and analysis done using IBM SPSS Statistics 20.0.

Characteristics of the study sample were described and frequency distributions used to highlight the socio- demographic status of participants.

Unadjusted analyses were performed to evaluate associations between responses to the use of eye care services and various variables.

Adjusted analysis was performed to estimate the relative risk (odds ratio) of the independent variables, to explain the use of eye care services. Estimates were presented at 95% confidence intervals.

## 3.8 Ethical Considerations/Issues

Ethical clearance was obtained from the Ghana Health Service ethical review board before commencement of the study.

The head of the office of the Civil Service was informed of the study and permission sought from him. In addition, permission was sought from the heads of ministries which partook in the study. Findings will be shared with the respective institutions.

The study involved civil servants who work in the headquarters of the various ministries in Accra.

No potential risks were anticipated for those who choose to participate in this study. Benefits for participating in this study amongst others were the contribution this study would make to the little available literature on eye issues in the country. It would provide the management of the civil service with information pertaining to the eye health of the staff working in the various ministries. Thus help them in planning for the health of their staff.

The information collected was treated with the strictest of confidentiality and not shared with any third party who was not directly involved in the study.

Data was collected using an interviewer administered semi structured questionnaire. There were daily checks of data collected for errors, completeness and necessary corrections were carried out.

Even though no foreseeable harm was anticipated from participating in this study, consent was sought from all participants before the questionnaire was administered. However, participants were free to refuse or leave the study as and when they wanted and this was not held against them.

There was no financial benefit to participants who agreed to the survey.

There is no conflict of interest as a result of conducting this study.

The whole study was self sponsored by the principal investigator. There was no funding from any sources other than that which has been stated.

### 3.9 Pre-test or Pilot Study

This was undertaken in the Ministry of Tourism which was not included in the main study. Corrections and adjustments were made after the pilot study.

# CHAPTER FOUR

## 4.0 RESULTS

### 4.1 Demographic Characteristics of the Study Sample

Two hundred and one (201) respondents aged between twenty-five and sixty years who work in the headquarters of ten ministries were interviewed. The highest number of respondents belonged to the twenty five to thirty four age group 83(41%), the majority of respondents were married 128(63%), and had attained tertiary level education 135(67.2%). Most respondents were higher level staff 108(53.7%) having graduated from a tertiary education facility and paid for their health using the NHIS card 156(77.6%), table 1.

**Table 1: Demographic Characteristics of Respondents**

| Demographic Characteristics | Frequency N(201) | Percentage |
|---|---|---|
| **Sex** | | |
| Male | 101 | 50.2 |
| Female | 100 | 49.8 |
| **Age** | | |
| 25-34 | 83 | 41.3 |
| 35-44 | 56 | 27.9 |
| 45-54 | 43 | 21.4 |
| ≥55 | 19 | 9.5 |
| **Marital Status** | | |
| Married | 128 | 63.7 |
| Single | 54 | 26.9 |
| Divorced/Separated | 4 | 2.0 |
| Widowed | 15 | 7.5 |
| **Education** | | |
| Primary | 8 | 4.0 |
| JHS/Middle School | 11 | 5.5 |
| SHS | 30 | 14.9 |
| Tertiary | 135 | 67.2 |
| Technical/Vocational | 17 | 8.5 |
| **Rank** | | |
| Senior Level | 108 | 53.7 |
| Junior Level Staff | 64 | 31.8 |
| Casual Worker | 22 | 10.9 |
| Contract Worker | 7 | 3.5 |
| **Health Finance Plan** | | |
| Out of Pocket | 34 | 16.9 |
| NHIS | 156 | 77.6 |
| Private HIS | 11 | 5.5 |

Source: Survey data, 2013.

## 4.2 Knowledge of Common Eye Problems

More than half of respondents (56%) had ever made a visit to an eye care facility. Overall, (53.2%) of respondents had ever had an eye problem. An overwhelming majority of (83.6%) respondents reported satisfaction with the way they see at present. However, (39.3%) of respondents had problems with their vision which inhibited their daily activities. Of all respondents, more than half (50.7%) reported painful eyes as more feared, thus considered a more serious eye problem than not seeing well. Others mentioned itchy eyes or tearing from the eyes as potentially serious eye problems (table 2). However, these are self reported by the respondents' and may or may not reflect the professional view.

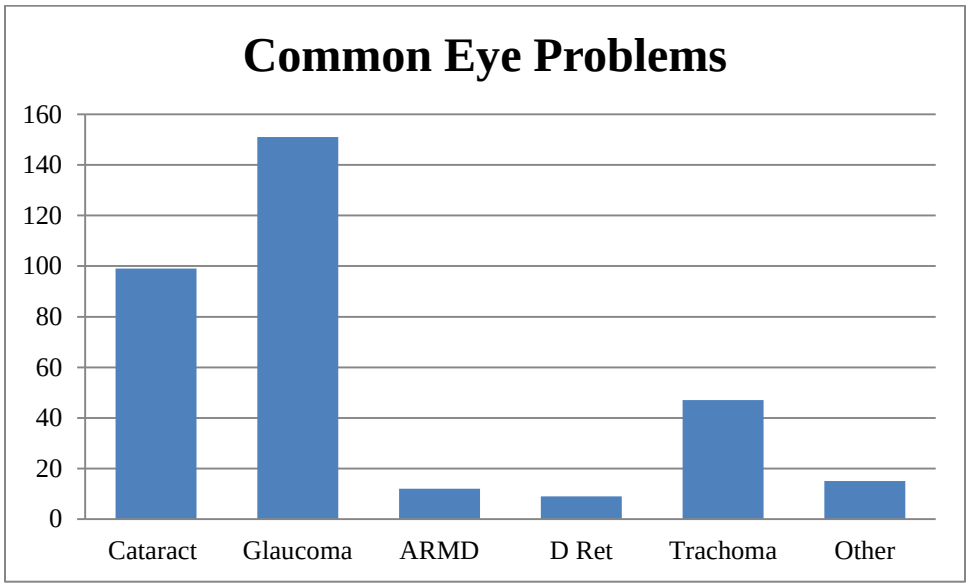
**Table 2: Distribution of respondents' self reported knowledge about Eye Conditions**

| Knowledge of Eye Problems | Frequency N(201) | Percentage |
|---|---|---|
| **Experience of Eye Problem** | | |
| Yes | 107 | 53.2 |
| No | 90 | 44.8 |
| **Satisfaction with vision** | | |
| Yes | 168 | 83.6 |
| No | 33 | 16.4 |
| **Limiting vision problems** | | |
| Yes | 79 | 39.3 |
| No | 122 | 60.7 |
| **Severity of Eye problem** | | |
| Pain in eyes | 102 | 50.7 |
| Red shot eyes | 52 | 25.9 |
| Poor vision | 44 | 21.9 |
| Other | 2 | 1.0 |

Source: Survey data, 2013.

All respondents had knowledge of at least one common eye problem. Glaucoma 151(45.3%) was the most popular eye condition mentioned with diabetic retinopathy 9(2.7%) trailing in popularity (figure 2).

**Fig 2: Distribution of respondents' knowledge about Eye Problems**




**Source: Survey data 2013**

Questions on Eye health related beliefs revealed most respondents 190(94.5%) agreed that eye disease is as important as other diseases. Equal numbers of respondents (150) reported that eye diseases cause other diseases and other diseases also cause eye disease. Only 61(30.3%) of respondents believed that visiting an eye care facility is leads to the wearing of spectacles.

### 4.3 Awareness of Available Eye Care Services

Majority of respondents 111(50.2%) however, did not know where to find an eye clinic around their place of residence. On the issue of services provided by eye care centres, majority of respondents 152(40.6%) knew that eye care centres undertake general eye

examinations with an overwhelming minority of 19(5.1) respondents aware of surgical procedures as a service provided at these centres (table 3).

**Table 3: Distribution of respondents' awareness of available eye care services**

| Awareness of available eye care services | Frequency N(201) | Percentage |
|---|---|---|
| **Location of Eye clinic** | | |
| Yes | 90 | 44.8 |
| No | 111 | 55.2 |
| **Types of services provided** | | |
| General Eye exams | 152 | 40.6 |
| Refraction | 33 | 8.8 |
| Treatment of disease | 70 | 18.7 |
| Management of disease | 24 | 6.4 |
| Provision of spectacles | 76 | 20.3 |
| Surgery | 19 | 5.1 |

Source: Survey data 2013

## 4.4 Factors Influencing Choice of Eye Care Service Providers

Table 4 shows that majority of respondents 100(49.8%) were unable to distinguish between eye care providers thus did not respond to the question on which eye care provider they saw the last time they went to have their eyes examined. However, among those who could distinguish, majority of respondents 56(27.9%) were examined by an optometrist. On the issue of type of service provider, majority 99(49.3%) could not remember which type of clinic they last visited but of those who could distinguish, majority 59(29.4%) had visited a private clinic. Proximity to their places of residence topped 61(30.3%) reasons for visiting a particular eye care facility and majority of respondents 81(40.3%) believed that visits to an eye centre should be as frequent as every one to six months.

**Table 4: Distribution of factors influencing choice of eye care providers.**

| Awareness of available eye care service providers | Frequency N (201) | Percentage |
|---|---|---|
| **Choice of practitioner** | | |
| Ophthalmologist | 25 | 12.4 |
| Optometrist | 56 | 27.9 |
| Optician | 13 | 6.5 |
| General Practitioner | 7 | 3.5 |
| No response | 100 | 49.8 |
| **Type of service provider** | | |
| Public | 43 | 21.4 |
| Private | 59 | 29.4 |
| Others | 99 | 49.3 |
| **Choice of service provider** | | |
| Friendly staff | 24 | 11.9 |
| Cost of the visit | 13 | 6.5 |
| Proximity | 61 | 30.3 |
| No response | 103 | 51.2 |
| Total | 201 | 100.0 |
| **Frequency of visits** | | |
| Every 1-6 months | 81 | 40.3 |
| 9-12 months | 37 | 18.4 |
| every 2 years | 15 | 7.5 |
| Over 2 years | 6 | 3.0 |
| Don't know | 56 | 27.9 |
| Other | 6 | 3.0 |
| Total | 201 | 100.0 |

Source: Survey data 2013

## 4.5 Unadjusted Analyses

Table 5 shows the unadjusted analysis of demographic characteristics. The use of eye care services was not significantly associated with sex, education and health finance plan ($p>0.05$) but age, marital status and occupation were found to have an association. Respondents who are 55 years old and above were 7 times more likely to use eye care facilities than those between 25-34 years (OR 7.243, CI3.145-9.462). Respondents

between 35-44 years were 3 times more likely to use eye care facilities than those aged 25-34 years (OR 3.543, CI 1.598-7.854). It was found that there was some association between marital statuses of respondents. There is a significant difference with the use of eye care services for casual workers and senior staff (p =0.002). Casual Workers were less likely than Senior Staff (OR 0.180, (CI 0.062-0.525)) to use eye care services.

**Table 5: Unadjusted analyses of background characteristics associated with the use of eye care services**

| Demographic Characteristics | Have used eye care Service | Have not used eye care service | Unadjusted OR (95% CI) | P value |
|---|---|---|---|---|
| | n(%) | n(%) | | |
| **Sex** | | | | |
| Male | 51(25.4) | 50(24.9) | Ref | |
| Female | 61(30.3) | 39(19.4) | 1.533 (0.876-2.685) | 0.135 |
| **Age** | | | | |
| 25-34 | 35(17.4) | 48(23.9) | Ref | |
| 35-44 | 28(13.9) | 28(13.9) | 1.371 (0.694-2.711) | 0.364 |
| 45-54 | 31(15.4) | 12(6.0) | 3.543 (1.598-7.854) | 0.002* |
| 55+ | 18(9.0) | 1(0.5) | 7.243 (3.145-9.462) | 0.002* |
| **Marital Status** | | | | |
| Married | 77(38.3) | 51(25.4) | Ref | |
| Single | 19(9.5) | 35(17.4) | 0.360 (0.186-0.696) | 0.002* |
| Divorced/Separated | 3(1.5) | 1(0.5) | 1.987 (0.201-19.635) | 0.557 |
| Widowed | 13(6.5) | 2(1.0) | 4.305 (0.932-19.886) | 0.062 |
| **Education** | | | | |
| Primary | 3(1.5) | 5(2.5) | Ref | |
| JHS/Middle school | 5(2.5) | 6(3.0) | 1.389 (0.216-8.916) | 0.729 |
| SHS | 18(9.0) | 12(6.0) | 2.500 (0.501-12.469) | 0.264 |
| Tertiary | 75(37.3) | 60(29.9) | 2.083 (0.479-9.071) | 0.328 |
| Technical/Vocational | 11(5.5) | 6(3.0) | 3.056 (0.535-6.462) | 0.209 |
| **Rank/Level** | | | | |
| Senior Level Staff | 67(33.3) | 41(20.4) | Ref | |
| Junior Level Staff | 37(18.4) | 27(13.4) | 0.839 (0.447-1.575) | 0.584 |
| Casual Worker | 5(2.5) | 17(8.5) | 0.180 (0.062-0.525) | 0.002* |
| Contract Worker | 3(1.5) | 4(2.0) | 0.459 (0.098-2.155) | 0.324 |
| **Health Finance plan** | | | | |
| Out of pocket | 18(9.0) | 16(8.0) | Ref | |
| NHIS | 87(43.3) | 69(34.3) | 1.121 (0.533-2.358) | 0.764 |

| | | | | |
|---|---|---|---|---|
| Private HIS | 7(3.5) | 4(2.0) | 1.556 (0.383-6.314) | 0.536 |

* p< 0.05 variables with significant association with use of eye care

Table 6 shows that people who have never had an eye problem are (0.92) less likely to use eye care facilities than those who have had an eye problem. Respondents with no vision problems which limit their activities were (0.81) less likely to visit eye health facilities than those who had. There was not sufficient association for respondents' satisfaction with present vision or with the respondents' perception of severity of eye problems.

**Table 6: Unadjusted analysis of respondents' self reported knowledge of eye problems associated with the use of eye care services**

| Knowledge of Eye Problems | Have used eye care Service | Have not used eye care service | Unadjusted OR (95% CI) | P value |
|---|---|---|---|---|
| | n=112 | n=89 | | |
| **Experience of eye problem** | | | | |
| Yes | 89(44.5) | 20(10.0) | Ref | |
| No | 23(11.5) | 68(34.0) | 0.076 (0.039-0.150) | 0.000* |
| **Satisfaction with vision** | | | | |
| Yes | 90(44.8) | 78(38.8) | Ref | |
| No | 22(10.9) | 11(5.5) | 1.733 (0.791-3.799) | 0.169 |
| **Limiting vision Problem** | | | | |
| Yes | 62(30.8) | 17(8.5) | Ref | |
| No | 50(24.9) | 72(35.8) | 0.190 (0.100-0.364) | 0.000* |
| **Severity of eye problem** | | | | |
| Pain in eyes | 54(26.9) | 43(21.4) | Ref | |
| Not Seeing well as before | 46(22.9) | 35(17.4) | 1.047 (0.577-1.897) | 0.881 |
| Others | 12(6.0) | 11(5.5) | 0.869 (0.349-2.160) | 0.762 |

*p< 0.05 variables with significant association with use of eye care

Respondents' knowledge of the common eye problems had no significant association with their use of eye care services.

Unadjusted analysis of the enabling factors for use of eye care facility showed that three factors had significant association. Respondents who used eye care facilities were (OR= 0.9) times less likely to discuss eye problems with doctors than friends with (CI 0.010-0.964) and p value of (0.046). In addition, respondents who used eye care facilities were (0.521) times more likely to be able to afford private transportation with (CI 0.265-0.867)

and p value of (0.015). Respondents who seemed indifferent about satisfaction with last visit were associated with their counterparts who are satisfied with (OR=0.082 CI 0.039-0.173) and p value (0.000).

**Table 7: Unadjusted analysis of enabling factors associated with the use of eye care services**

| Enabling factors for use | Have used eye care Service | Have not used eye care Service | Unadjusted OR (95% CI) | P value |
|---|---|---|---|---|
| | n=112 | n=89 | | |
| **Source of advice** | | | | |
| Friends | 22(10.9) | 11(5.5) | Ref | |
| Parents | 11(5.5) | 13(6.5) | 0.423 (0.144-1.247) | 0.119 |
| Siblings | 15(7.5) | 5(2.5) | 1.500 (0.423-5.206) | 0.523 |
| Co-workers | 4(2.0) | 3(1.5) | 0.667 (0.126-3.516) | 0.633 |
| Nurse | 35(17.4) | 41(20.4) | 0.427 (0.182-1.001) | 0.050 |
| Doctors | 1(0.5) | 5(2.5) | 0.100 (0.010-0.964) | 0.046* |
| Pharmacist | 24(11.9) | 11(5.5) | 1.091 (0.395-3.015) | 0.867 |
| **Transport** | | | | |
| Private | 59(29.4) | 33(16.4) | Ref | |
| Public | 42(20.9) | 49(24.4) | 0.479 (0.265-0.867) | 0.015* |
| Official vehicle | 11(5.5) | 7(3.5) | 0.879 (0.311-2.484) | 0.808 |
| **Access to eye care services** | | | | |
| Close | 24(11.9) | 17(8.5) | Ref | |
| Very close | 11(5.5) | 8(4.0) | 0.974 (0.323-2.933) | 0.974 |
| Far | 36(17.9) | 33(16.4) | 0.773 (0.354-1.686) | 0.517 |
| Very far | 41(20.4) | 31(15.4) | 0.937 (0.431-2.037) | 0.869 |
| **Satisfaction with service** | | | | |
| Yes | 84(41.8) | 31(15.4) | Ref | |
| No | 16(8.0) | 4(2.0) | 1.476 (0.458-4.759) | 0.514 |
| No response | 12(6.0) | 54(26.9) | 0.082 (0.039-0.173) | 0.000* |

*p< 0.05 variables with significant association with use of eye care

Respondents' belief about eye health indicates that respondents who do not see clearly had an (OR= 2.324) of using eye care facilities than those with pain in their eyes with (CI 1.161-4.651), and p value (0.017). The importance of eye care in relation to other diseases was not found to be significantly related to its use. Nor was the knowledge that other disease may or may not cause other diseases.

Respondents who did not know how often to use eye care services where (OR=0.986 CI 0.208-0.840) less likely to use eye care facility than those who reported that the visit should be every 1-6 months.

### 4.6 Adjusted Analysis

In the adjusted analysis it is seen that respondents who are casual workers are less likely to visit eye care facilities (OR=0.030, 95% CI 0.003-0.291).Those who have never had eye problems are less likely to visit eye care facility (OR= 0.096 95% CI 0.032-0.291). Respondents are less likely to discuss eye problems with parents (OR=0.084 95% CI 0.012-0.576), nurse (OR=0.044, 95% CI 0.007-0.266) and doctors (OR=0.008, 95% CI 0.000-0.146).

Finally those who said they couldn't see properly were about 5 times more likely to visit eye care facility with p value (0.021).

**Table 8: Adjusted Analysis**

| Categorical Predictor | Unadjusted OR | p value | Adjusted OR | Adjusted LR p value |
|---|---|---|---|---|
| **Age** | | | | |
| 35-44 vs. 25-34 | 1.371 | 0.364 | 0.413 (0.113-1.509) | 0.181 |
| 45-54 vs. 25-34 | 3.543 | 0.002 | 0.771 (0.182-3.273) | 0.725 |
| ≥55 vs. 25-34 | 7.243 | 0.002 | 1.002 (0.050-3.078) | 0.921 |
| **Marital Status** | | | | |
| Single vs. Married | 0.360 | 0.002 | 0.545 (0.153-1.935) | 0.348 |
| Divorced/Separated vs. Married | 1.987 | 0.557 | 0.116 (0.005-2.968) | 0.193 |
| Widowed vs. Married | 4.305 | 0.062 | 0.202 (0.015-2.766) | 0.231 |
| **Rank** | | | | |
| Junior vs. Senior | 0.839 | 0.584 | 0.399 (0.130-1.226) | 0.109 |
| Casual Worker vs. Senior | 0.180 | 0.002 | 0.030 (0.003-0.291) | 0.002* |
| Contract vs. Senior | 0.459 | 0.324 | 0.279 (0.040-1.967) | 0.200 |
| **Experience of eye problem** | | | | |
| No vs. Yes | 0.076 | 0.000 | 0.096 (0.032-0.291) | 0.000* |
| **Limiting vision problems** | | | | |
| No vs. Yes | 0.190 | 0.000 | 0.354 (0.114-1.101) | 0.073 |

*p< 0.05 variables with significant association with use of eye care

**The key findings of the study were:**

1. The study showed that 56% of the respondents had some experience with using eye care services.
2. Respondents who had some experience with an eye problem were more likely to have used an eye care facility (OR=0.096, CI 0.032-0.291) than those who had no experience with problems.

3. Respondents who were in permanent employment were more likely to use eye care services (OR=0.030, CI 0.003-0.291) than those who were not. But the employment level in this had no influence on the use of eye care services.

# CHAPTER FIVE

## 5.0 DISCUSSION

This chapter discusses the findings of the study in relation to reviewed literature on the study subject in order to address the main and specific objectives of the study.

The study focused on workers who work in the civil service in Ghana. The study sought to identify eye health seeking behaviour of civil servants capturing their particular behaviours across all ages. The intent of the study was to document the knowledge, attitudes and practices of civil servants pertaining to the use of eye care services.

This study having been structured around the Andersen and Newman Framework of Health Services Utilization sought to report conditions which facilitate or impede utilization of eye care services amongst civil servants in Ghana. However since the framework was structured around health care services in general, a few modifications have been made to accommodate its use in the eye care services. This study attempts to assess knowledge of common eye care services, awareness of eye care services and providers as well as health seeking behaviour of civil servants.

The regular use of eye care services has been advocated for in recent times. Irregular eye examinations have been found to increase the risk of visual impairment especially due to refractive errors and this risk has been found to increase significantly since last eye examination (Munoz et al., 2002; Robinson et al., 2011). In this survey, (56%) of respondents had patronized an eye care facility in their lives. The remaining had never had a simple eye test to ascertain their level of visual acuity. Out of this, (25.4%) of male respondents have used eye care services and (30.3%) of female respondents had used eye

care services. Although eye health reports normally cite more females reporting to clinics than males, this may just be a reflection of the illness perception and the social roles of females.

Increasing age was found to be significantly associated with the use of eye care services and this finding is commensurate with findings from India (Nirmalan et al., 2004, Tajunisah et al., 2011). Education was however not found to have a significant association with the use of eye care services in this study and this contradicts findings from India as well (Robin et al., 2004, Kovai et al., 2007). This may have been due to the unequal number of persons interviewed per educational level.

Even though respondents knew of at least one common eye condition, this did not change their patronage of eye care facilities. The common eye problems namely uncorrected refractive errors, cataract, glaucoma, ARMD, diabetic retinopathy, trachoma and corneal opacities are the top conditions cited by WHO as the leading causes of avoidable blindness in the world (WHO, 2010). This finding contradicts findings from the United States of America that little knowledge of common eye problems is the cause of limited use of eye care services (Alexander et al., 2008) but supports findings from India where participants were found to be indifferent towards the use of eye care services even with increased knowledge of glaucoma upon education about it (Baker & Murdoch, 2008). Unfortunately, there was no data from Ghana to compare with. Thus people's knowledge of common eye problems is not directly linked to their use of eye care services. This may be as a result of poor education on the part of eye care providers since anyone who knows about a common eye disease such as glaucoma should know also of its progression

pattern. This pattern should guarantee that persons at risk of developing glaucoma should be evaluated regularly to forestall any complications. It may also be because people do not perceive themselves at risk of acquiring the said conditions or because they do not feel the need to have corrections done.

Respondents who had some history with eye problems and vision problems which limit activity were more likely to have visited an eye care facility. Of course it goes without saying that people with a recognised problem would naturally go in search of a solution for the problem provided they are in a position to do so. Dissatisfaction with present vision and perception of severity of eye condition was not found to be significant in the use of eye care services.

The presence of systemic disease was not found to be significant in the use of eye care services in this study either. This is mainly because a majority of respondents (49.3%) indicated that they are in very good health and only (15.9%) responded positively when asked about hypertension with (5%) suffering from diabetes. The rest had answered no to the presence of a chronic disease. This however did not affect the most sufferers' behaviour towards eye care services use. This finding is supported by findings from previous studies that suggest that previous knowledge of systemic disease may not always equate to knowledge of ocular implications of the disease (Namperumalsamy et al., 2004, Pal, Pal, Barua, & Ghosh, 2010, Kadri, 2011). It follows, therefore, that people may not change their eye care practices based on what the know only. However, with diabetic retinopathy among the top causes of avoidable blindness in the world (WHO,

2010), it goes without saying that in order to reduce this burden as is advocated by the WHO, awareness of and measures for control will need to be intensified.

Majority of respondents in this study did not have the right perception about how often it was appropriate to see an eye care provider and reported that this should be every few months. Eye care practitioners' advice that a scheduled visit to an eye care facility should be once every two years (Mairs K et al., 2011). A good number of respondents (27.9%) did not know of when it is appropriate to schedule a visit and only thought that a visit was necessary only when there is a problem with the eyes. Most respondents were unable to distinguish between care givers. This finding supported findings by previous researchers, (Bruninga, Enzenauer, & Robbs, 1997, Dandona, Dandona, John, McCarty, & Rao, 2001, Baker & Murdoch, 2008). Also, the study found that most respondents (40.6%) were aware that eye clinics were responsible for general eye examinations but failed to distinguish exactly what such examinations entailed. A study in Nigeria also reported similar findings (Ayanniyi et al, 2010).

The decision to seek or not to seek eye care services could be influenced by a number of persons. This study revealed that respondents were more likely to use eye care services if they were asked to by medical personnel such as nurse (37.8%) or pharmacist (17.4%) than if they were asked to do so by friends (16.4%) and siblings (10%).

Access to eye care services can take several forms. Geographical access in terms of distance of place of residence to an eye care facility was very poor with only 9.5% of respondents stating that the eye care service centres are very close to their places of residence. The remainder reported varying distances, close (20.4%), far (34.3%), and

very far (35.8%), suggesting that eye care centres are not at all proximal to their places of residence. This finding is consistent with a study in Nigeria which stated that even though residents may be ready to visit western medical facilities, the inconvenience of taking multiple modes of transport to do so resulted in lack of uptake of those services and leading patients to seek alternative medical attention closer to home (Ogwurike & Pam, 2004, Robin et al, 2004).

Lack of financial access to care did not feature prominently in this study however. The majority of respondents pay for their health services using the NHIS card. This may have been the reason for this trend which was not reported elsewhere. Therefore the results on financial access to care reported from this study contradict those from other studies (Schaumberg et al., 2000; Kovai et al., 2007). Lack of economic access to care was a feature in almost all articles reviewed on financial access (Owsley et al., 2006, Marmamula et al., 2011, Ntsoane et al., 2012). Other features of access such as personal reasons and the like did not feature prominently in this study.

This study also showed that the three constructs of the health seeking behaviour model namely, predisposing factors, enabling factors and need factors do influence peoples use of eye care services. Predisposing factors which would make a person use eye care services such as the age of a person was significant for the use of eye care services. Enabling factors which would propel people to use eye care services such as occupation was found to be significant in this study but access to care was not significantly linked to increase in use of eye care services. The last construct namely need factors such as peoples perceived health status was also found to be significant in this study. Thus even

though some variables in the constructs were significantly linked to the use of eye care services, others were not found to be linked to use of eye care services.

## 5.1 Limitations of the study

1. The selected ministries were assumed to be of comparable size in terms of number of employees.
2. The research assistants only admitted respondents to the study based on their willingness to participate as the data collection was done within working hours and thus some workers could not make the time to be interviewed. Though this method is acceptable for other purposes, it may not have been ideal for this study which sought to be as representative as possible.
3. The appropriate sample size was not used due to logistical and time constraints.

# CHAPTER SIX

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

This chapter draws conclusions on the study so far and makes recommendations on what can be done to increase the use of eye care services in the country and contribute to the achievement of vision 2020 "The Right to Sight".

### 6.1 Conclusions

Even though a relatively small sample size was used, measures were taken in the methods section to ensure that findings can be used as a yardstick especially by future investigators into the various causes of avoidable eye conditions/ blindness among workers in Ghana.

This study set out to provide data on the use of eye care services among civil servants in Ghana. From the results, it is evident that workers at the ministries in Accra use eye care services (56%). More females than males use these services and advanced age is also related to the use of eye care services. Knowledge about common eye disease and awareness of available services did not cause a positive shift in the attitude and practices of civil servants towards the use of eye care services but this is important if there is to be shift in people's behaviour toward eye care services. Periodic remainders of the need to schedule a visit to the eye care facility may be the only way to ensure that eye disease is detected early and treated.

The office of the head of civil service should collaborate with health facilities to bring eye health education and services to the doorstep of workers.

## 6.2 Recommendations

**Institutions:** Eye health education remains the only way to increase workers knowledge of the need to have comprehensive eye examinations. The Ghana Health Service should educate and encourage all persons to take regular eye examinations. This will ensure the avoidance of visual impairment and blindness in the populace.

The inclusion of eye examinations and some eye surgeries by the NHIA on the scheme is a welcome initiative but more needs to be done such as the inclusion of payments for the provision of spectacles which is not included on the scheme.

It is also recommended that the Ghana Education Service should incorporate visual screening as part of medical examination requirements at the various levels of education so that by the time all school going children reach early adulthood they would have had at least one eye examination in their lives and any juvenile conditions flashed out.

**Individuals:** Individuals should take their health into their own hands and not wait for conditions to get complicated before seeking help for them. This can be done through regular eye examinations. This involves sensitization and public education on the topic by the ministry of health, NGOs in the eye care sector and private eye care service providers.

**Research:** More studies need to be undertaken to investigate eye issues in general in Ghana since there is so little data available on eye care service patterns. More research also needs to be done to report on what is happening at the eye care centres such as commonly reported cases. Again this must be initiated by the ministry of health and NGOs in the eye care sector.

# REFERENCES

Adriono G, W. D. (2011). Use of eye care services among diabetic patients in urban Indonesia. Archives of Ophthalmology, 129(7), 930–935. doi:10.1001/archophthalmol.2011.147

Aldebasi, Y. (2011). Young Public's Awareness to Refractive Error Deficiency. International Journal of Health Sciences, 5(1), 9–15.

Alexander, R. L., Miller, N. A., Cotch, M. F., & Janiszewski, R. (2008). Factors That Influence the Receipt of Eye Care. *American journal of health behaviour*, 32(5), 547–556. doi:10.5555/ajhb.2008.32.5.547

Andersen RM. Revisiting the behavioral model and access to medical care: does it matter? J Health Soc Behav 1995;36(March):1-10.

Ayanniyi, A. A., Olatunji, F. O., Adeboye, A., & Ayanniyi, R. O. (2010). Awareness and knowledge of eye care providers among government workers in Ilorin, Nigeria. *The Nigerian postgraduate medical journal*, 17(2), 133–137.

Baker, H., & Murdoch, I. E. (2008). Can a public health intervention improve awareness and health-seeking behaviour for glaucoma? *The British journal of ophthalmology*, 92(12), 1671–1675. doi:10.1136/bjo.2008.143537

Bekibele, C. O., & Murthy, G. V. S. (2012). Barriers to cataract surgery of persons screened at camps in Ibadan, Nigeria. *African journal of medicine and medical sciences*, 41(3), 257–264.

Bruninga, H. J., Enzenauer, R. W., & Robbs, R. S. (1997). A southern Illinois eyecare provider survey. The CLAO journal: official publication of the Contact Lens Association of Ophthalmologists, Inc, 23(2), 138–144.

Bylsma GW, Le A, Mukesh BN, Taylor HR, McCarty CA. Utilization of eye care services by Victorians likely to benefit from eye care. Clin Experiment Ophthalmol 2004; 32:573-7.

Catterjee, S., Cattopadhya, S., & Lip, P. (2002). Hypertension and the eye: changing perspectives. , Published online: 25 October 2002; | doi:10.1038/sj.jhh.1001472, 16(10). doi:10.1038/sj.jhh.1001472

Chandrasekaran, S., Cumming, R.G., Rochtchina, E., & Mitchell, P. (2006). Associations between elevated intraocular pressure and glaucoma, use of glaucoma medications, and 5-year incident cataract: The Blue Mountains Eye Study. Ophthalmology, 113(3), 417-424.

Chang, M. A., Congdon, N. G., Baker, S. K., Bloem, M. W., Savage, H., & Sommer, A. (2008). The surgical management of cataract: barriers, best practices and outcomes. International ophthalmology, 28(4), 247–260. doi:10.1007/s10792-007-9121-2

Cross V, Shah P, Bativala R, Spurgeon P. ReGAE 2: glaucoma awareness and the primary eye-care service: some perceptions among African Caribbeans in Birmingham UK. Nature Publishing Group Eye 2007; 21: 912–920.

Dandona, R., Dandona, L., John, R. K., McCarty, C. A., & Rao, G. N. (2001). Awareness of eye diseases in an urban population in southern India. Bulletin of the World Health Organization, 79(2), 96–102.

DellaCroce, J. T., & Vitale, A. T. (2008). Hypertension and the eye. Current opinion in ophthalmology, 19(6), 493–498. doi:10.1097/ICU.0b013e3283129779

Du Toit, R., Ramke, J., Naduvilath, T., & Brian, G. (2006). Awareness and use of eye care services in Fiji. Ophthalmic epidemiology, 13(5), 309–320. doi:10.1080/09286580600826629

Frazier, M., & Kleinstein, Robert N. (2009). Access and Barriers to Vision, Eye and Health Care, Optometric Care within the Public Health Community,

Guzowski, M., Fraser-Bell, S., Rochtchina, E., Wang, J.J., & Mitchell, P. (2003). Asymmetric refraction in an older population: The Blue Mountains Eye Study. American Journal of Ophthalmology, 136(3), 551-553.

Gyasi, M., Amoaku, W., & Asamany, D. (2007). Barriers to cataract surgical uptake in the upper East region of ghana. Ghana medical journal, 41(4), 167–170.

Gyawali, R., & Sarkar, N. (2013). Glaucoma Awareness in a Hospital Presenting Population in Eastern Nepal. Journal of glaucoma. doi:10.1097/IJG.0b013e31828700de

Huang, O. S., Zheng, Y., Tay, W. T., Chiang, P. P.-C., Lamoureux, E. L., & Wong, T. Y. (2013). Lack of awareness of common eye conditions in the community. Ophthalmic epidemiology, 20(1), 52–60. doi:10.3109/09286586.2012.751429

James E. Bartlett., II Joe W. Kotrlik., Chadwick C. Higgins. Organizational Research: Determining Appropriate Sample Size in Survey Research. Information Technology, Learning, and Performance Journal, Vol. 19, No. 1, Spring 2001

Kadri, R. (2011, May). Awareness of diabetic and hypertensive eye disease in public. Journal (Paginated). Retrieved June 17, 2013, from http://www.biomedscidirect.com/161/awareness_of_diabetic_and_hypertensive_eye_disease_in_public/articlescategories

Khandekar, R., Harby, S. A., Harthy, H. A., & Lawatti, J. A. (2010). Knowledge, attitude and practice regarding eye complications and care among Omani persons with diabetes - A cross sectional study. *Oman Journal of Ophthalmology*, *3*(2), 60–65. doi:10.4103/0974-620X.64228

Klein, R., Klein, B.E., Knudtson, M.D., Meuer, S.M., Swift, M., & Gagnon, R.E. (2007). Fifteen-year cumulative incidence of age-related macular degeneration: The Beaver Dam Eye Study. Ophthalmology, 114(2), 253-262.

Klein, R., Klein, B.E., Tomany, S.C., Meuer, S.M., & Huang, G.H. (2002b). Ten-year incidence and progression of age-related maculopathy: The Beaver Dam Eye Study. Ophthalmology, 109(10), 1767-1779.

Klein, R., Klein, B.E., Wong, T.Y., Tomany, S.C., & Cruickshanks, R.J. (2002a). The association of cataract and cataract surgery with the long-term incidence of age-related maculopathy: The Beaver Dam Eye Study. Archives of Ophthalmology, 120(11), 1551-1558.

Kovai, V., Krishnaiah, S., Shamanna, B. R., Thomas, R., & Rao, G. N. (2007). Barriers to accessing eye care services among visually impaired populations in rural Andhra Pradesh, South India. *Indian Journal of Ophthalmology*, 55(5), 365–371.

Laitinen, A., Koskinen, S., Rudanko, S.-L., Martelin, T., Laatikainen, L., & Aromaa, A. (2008). Use of Eye Care Services and Need for Assistance in the Visually Impaired. *Optometry and Vision Science*, *85*(5), 341–349. doi:10.1097/OPX.0b013e31816bea29

Lee, K.E., Klein, B.E., Klein, R., & Wong, T.Y. (2002). Changes in refraction over 10 years in an adult population: The Beaver Dam Eye Study. Investigative Ophthalmology & Visual Science, 43(8), 2566-2571.

Leite, C., & Zin, A. (2011). Health seeking behavior of the families of children with cataract attending an eye clinic in Rio de Janeiro, Brazil. Arquivos brasileiros de oftalmologia, 74(4), 271–278.

MacKian, S. (2009, March 20). A review of health seeking behavior: problems and prospects. ArticlesBase.com. Retrieved June 17, 2013, from http://www.articlesbase.com/vision-articles/a-review-of-health-seeking-behavior-problems-and-prospects-825835.html

McCarty, C., Lloyd-Smith, C., Lee, S., Livingston, P., Stanislavsky, Y., & Taylor, H. (1998). Use of eye care services by people with diabetes: the Melbourne Visual Impairment Project. *The British Journal of Ophthalmology, 8*he 2(4), 410–414.

Mitchell, P., Wang, J.J., Foran, S., & Smith, W. (2002). Five-year incidence of age-related maculopathy lesions: The Blue Mountains Eye Study. Ophthalmology, 109(6), 1092-1097.

Muecke, J. S., Newland, H. S., Ryan, P., Ramsay, E., Aung, M., Myint, S., … Selva, D. (2008). Awareness of diabetic eye disease among general practitioners and diabetic patients in Yangon, Myanmar. Clinical & experimental ophthalmology, 36(3), 265–273. doi:10.1111/j.1442-9071.2008.01724.x

Mukesh, B.N., McCarty, C.A., Rait, J.L., & Taylor, H.R. (2002). Five-year incidence of open-angle glaucoma: The Visual Impairment Project. Ophthalmology, 109(6), 1047-1051.

Munoz, B., West, S.K., Rodriguez, J., Sanchez, R., Broman, A.T, Snyder, R., et al. (2002). Blindness, visual impairment and the problem of uncorrected refractive error in a Mexican-American population: Proyecto VER. Investigative Ophthalmology & Visual Science, 43(3), 608-614.

Mwaura, P. N. (2009). The health seeking behaviour of visually impaired patients: a case study of Kikuyu Eye Hospital, Kiambu District (Thesis). University of Nairobi, Kenya. Retrieved from http://erepository.uonbi.ac.ke:8080/xmlui/handle/123456789/5145

Namperumalsamy, P., Kim, R., Kaliaperumal, K., Sekar, A., Karthika, A., & Nirmalan, P. K. (2004). A pilot study on awareness of diabetic retinopathy among non-medical persons in South India. The challenge for eye care programmes in the region. Indian journal of ophthalmology, 52(3), 247–251.

Nirmalan, P. K., Katz, J., Robin, A. L., Krishnadas, R., Ramakrishnan, R., Thulasiraj, R. D., & Tielsch, J. (2004). Utilisation of eye care services in rural south India: the Aravind Comprehensive Eye Survey. The British journal of ophthalmology, 88(10), 1237–1241. doi:10.1136/bjo.2004.042606

Ntsoane, MD., Oduntan, OA., Mpolokeng, BL. Utilisation of public eye care services by the rural community residents in the Capricorn district, Limpopo Province, South Africa. Afr J Prm Health Care Fam Med. 2012;4(1), Art. #412, 7 pages. http://dx.doi.org/ 10.4102/phcfm.v4i1.412

Ogwurike, S., & Pam, V. (2004). Means of transportation and its effect on eye care seeking behaviour of patients in a rural setting. Retrieved from https://tspace.library.utoronto.ca/handle/1807/2824

Office of the head of the civil service www.ohcs.gov.gh. retrieved 12-05-2014.

Office of the Head Civil Service (2011), Annual Performance Report, Accra

Oh, K. T. (2013). Ophthalmologic Manifestations of Hypertension. Retrieved from http://emedicine.medscape.com/article/1201779-overview

Pal, R., Pal, S., Barua, A., & Ghosh, M. K. (2010). Health education intervention on diabetes in Sikkim. *Indian Journal of Endocrinology and Metabolism*, *14*(1), 3–7.

Pascolini D, Mariotti SP, Pokharel GP, et al. 2002 Global update of available data on visual impairment: a compilation of population-based prevalence studies. Ophthalmic Epidemiol 2004; 11:67-115.

Picone G, Brown D, Sloan F, Lee P. Do routine eye exams improve vision? Int J Health Care Finance Econ 2004;4:43-63.

Rani, P. K., Raman, R., Subramani, S., Perumal, G., Kumaramanickavel, G., & Sharma, T. (2008). Knowledge of diabetes and diabetic retinopathy among rural populations in India, and the influence of knowledge of diabetic retinopathy on attitude and practice. Rural and remote health, 8(3), 838.

Robin, A. L., Nirmalan, P. K., Krishnadas, R., Ramakrishnan, R., Katz, J., Tielsch, J., … Friedman, D. S. (2004). THE UTILIZATION OF EYE CARE SERVICES BY PERSONS WITH GLAUCOMA IN RURAL SOUTH INDIA. Transactions of the American Ophthalmological Society, 102, 47–56.

Robinson, B.E., Feng, Y., Woods, C.A., Fonn, D., Gold, D., & Gordon, K. (2011). Risk factors for visual impairment – report from a population-based study (C.U.R.E.S.) Investigative Ophthalmology & Visual Science, 52, E-Abstract 4217.

Rosman, M., Wong, T. Y., Wong, W., Wong, M. L., & Saw, S. M. (2009). Knowledge and beliefs associated with refractive errors and undercorrection: the Singapore Malay Eye Study. *British Journal of Ophthalmology*, *93*(1), 4–10.

Russell, S. (2008). Demand-side Factors Affecting Health Seeking Behavior in Ghana |, *5*(1). Retrieved from https://blogs.commons.georgetown.edu/journal-of-health-sciences/issues-2/previous-volumes/vol-5-no-1-april-2008/demand-side-factors-affecting-health-seeking-behavior-in-ghana/

Schaumberg, D. A., Christen, W. G., Glynn, R. J., & Buring, J. E. (2000). Demographic predictors of eye care utilization among women. *Medical care*, *38*(6), 638–646.

Shen, W., Yang, Y., Yu, M., Li, J., Wei, T., Li, X., … Yuan, Y. (2013). Prevalence and outcomes of cataract surgery in adult rural Chinese populations of the Bai nationality in Dali: the Yunnan minority eye study. PloS one, 8(4), e60236. doi:10.1371/journal.pone.0060236

Sloan FA, Picone G, Brown DS, Lee PP. Longitudinal analysis of the relationship between regular eye examinations and changes in visual and functional status. J Am Geriatr Soc 2005; 53:1867-74.

Tajunisah, I., Wong, P., Tan, L., Rokiah, P., & Reddy, S. (2011). Awareness of eye complications and prevalence of retinopathy in the first visit to eye clinic among type 2 diabetic patients. *International Journal of Ophthalmology*, 4(5), 519–524. doi:10.3980/j.issn.2222-3959.2011.05.12

Thapa, S. S., Berg, R. V. D., Khanal, S., Paudyal, I., Pandey, P., Maharjan, N., … Rens, G. H. M. B. V. (2011). Prevalence of visual impairment, cataract surgery and awareness of cataract and glaucoma in Bhaktapur district of Nepal: the Bhaktapur Glaucoma Study. BMC ophthalmology, 11, 2. doi:10.1186/1471-2415-11-2

Wang, S., Xu, L., Jonas, J. B., Wong, T. Y., Cui, T., Li, Y., Sun, C. (2009). Major eye diseases and risk factors associated with systemic hypertension in an adult Chinese

population: the Beijing Eye Study. Ophthalmology, 116(12), 2373–2380. doi:10.1016/j.ophtha.2009.05.041

Wang, J.J., Rochtchina, E., Lee, A.J., Chia, E.M., Smith, W., Cumming, R.G., et al. (2007). Ten-year incidence and progression of age-related maculopathy: The Blue Mountains Eye Study. Ophthalmology, 114(1), 92-98.

www.livestrong.com/article/131623, The Importance of Eye Exams, Cited 3rd January, 2013

www.one.aao.org/CE/PracticeGuidelines, Clinical Statements: American Academy of Ophthalmology Cited 11th January, 2013.

Zhou, J. B., Guan, H. J., Qu, J., Yang, X. J., Peng, D., & Gu, H. Y. (2008). A study on the awareness of cataract disease and treatment options in patients who need surgery in a rural area of Eastern China. *European journal of ophthalmology*, *18*(4), 544–550.

# APPENDICES

## Appendix A: Consent form

UNIVERSITY OF GHANA

COLLEGE OF HEALTH SCIENCES SCHOOL OF PUBLIC HEALTH

**CONSENT FORM**

I am a student of the University of Ghana pursuing a Masters in Public Health (MPH) programme at the School of Public Health College of Health Sciences.

In partial fulfilment of the award of this degree, I am to present a dissertation on the topic: **THE USE OF EYE CARE SERVICES AMONG CIVIL SERVANTS IN ACCRA**.

I have been assigned to this ministry, to collect data for the dissertation. I will therefore be very grateful to you if you will participate in this exercise. By participating in this exercise, you will be interviewed or requested to fill a questionnaire relating to Eye care Services.

This exercise is for academic purposes only and your confidentiality is assured. The study will be between May 2013 and July 2013.

There are no financial or any material benefits for participating in this study, except that your participating will generate knowledge and information for the possible improvement of the system and this will be acknowledge as such.

Your participation is solely voluntary and can be withdrawn at anytime if you feel like doing so. There is no penalty for not participating or withdrawing from participating in this study.

If there is anything you will like to know of, or if you need further clarifications, do not hesitate to contact me through this address (Harriette Apio-Adih, C/o University of Ghana, School of Public Health, College of Health Sciences, Box 13. Legon.)

**By signing below, you acknowledge that you have read the information or it has been read to you and you have understood the information.**

**Thank you**

.....

Signature/ Thumbprint

Name and Signature of Investigator .....

Date .....

## Appendix B: Questionnaire

This questionnaire is to gather information/data for the study of Use of Eye Care Services among civil servants in Accra. Please answer these questions as sincerely as you can. Your responses will be kept as confidential and will be used only for the purposes of the study. Thank you.

**Consent has been received from respondent: yes/ no**

**Name of respondent: …….**

| | VARIABLE | RESPONSE | SKIP TO |
|---|---|---|---|
| **BACKGROUND** | | | |
| 1 | Sex | M [ ] 1 F [ ] 2 | |
| 2 | Age group | 25-34 [ ] 1 35-44 [ ] 2 45-54 [ ] 3 More than 55[ ] 4 | |
| 3 | Marital status | Married [ ] 1 Single [ ] 2 Divorced/Separated [ ] 3 Widowed [ ] 4 Other (specify)…….. | |
| 4 | Religion | Christian [ ] 1 Moslem [ ] 2 Traditional [ ] 3 Other (specify) ……. | |
| 5 | Highest educational level attained | Primary [ ] 1 JHS/Middle school [ ] 2 SHS [ ] 3 Tertiary [ ] 4 Technical/Vocational [ ] 5 None [ ] 6 | |
| 6 | Occupation /Rank | Senior level staff [ ] 1 Junior level staff [ ] 2 Casual Worker [ ] 3 Contract worker [ ] 4 | |
| 7 | Health finance plan | Out of pocket [ ] 1 NHIS [ ] 2 Private HIS [ ] 3 Other (specify) ……. | |
| **GENERAL HEALTH** | | | |

| | | | |
|---|---|---|---|
| 8 | In general how good will you say your health is? | Excellent [ ] 1 Very good [ ] 2<br>Good [ ] 3 Poor [ ] 4<br>Very poor [ ] 5 Bad [ ] 6 | |
| 9 | Do you suffer from any of the chronic disease conditions? | Diabetes [ ] 1 Hypertension [ ] 2<br>Other (pls specify) ..... | |
| **EYE HEALTH SEEKING BEHAVIOUR** | | | |
| 10 | Have you ever used an eye care facility? | Yes [ ] 1 No [ ] 2 | **If No, skip to Q22** |
| 11 | In the past 2 years how many times have you used an eye care facility? | Once [ ] 1<br>1-3 times [ ] 2<br>More than 3 times [ ] 3 | |
| 12 | The last time you had an eye problem what did you do? | Nothing [ ] 1<br>Visited a hospital [ ] 2<br>Visited an eye clinic [ ] 3<br>Visited a traditional healer [ ] 4<br>Visited a pharmacy [ ] 5<br>Self-medicated [ ] 6<br>Modern drugs [ ] 7<br>Herbal drugs [ ] 8<br>Other (specify) …… | |
| 13 | If you did not visit an eye clinic why?<br>**(tick where applicable)** | No reason [ ] 1<br>Cannot afford [ ] 2<br>Long distance [ ] 3<br>Clinic closed [ ] 4<br>Clinic not available [ ] 5<br>Did not have time [ ] 6<br>Did not know what to do [ ] 7 | |

| | | | |
|---|---|---|---|
| | | Other (specify)…… | |
| 14 | What attributes of an eye clinic would facilitate your patronage of the clinic?<br>**(tick if applies)** | If the staff are friendly [ ] 1<br>If the clinic is affordable[ ] 2<br>If the clinic is not far [ ] 3<br>If clinic is open till late [ ] 4<br>Other (specify)……..... | |
| 15 | When was the last time you visited an eye care practitioner | Never [ ] 1<br>1-6 months ago [ ] 2<br>9-12 months ago [ ] 3<br>About 2 years ago [ ] 4<br>More than 2 years ago[ ] 5<br>Do not remember [ ] 6 | **If "never" or "do not remember" skip to 22** |
| 16 | Which eye care provider did you see? | Ophthalmologist [ ] 1 Optometrist [ ] 2<br>Ophthalmic nurse [ ] 3 Optician [ ] 4<br>General Practitioner [ ] 5 | |
| 17 | What was the reason for the visit? | Routine [ ] 1 Curative [ ] 2<br>Review [ ] 4 Other [ ] 5 | |
| 18 | What type of clinic did you visit? | Public [ ] 1 Private [ ] 2<br>Other (specify) …… | |
| 19 | What is the name of the facility visited? | Name of the clinic/facility..... | |
| 20 | Why did you choose to visit that type of practitioner? | Friendly staff [ ] 1 Cost of the visit [ ] 2<br>Proximity [ ] 3 | |
| 21 | Why did you choose to visit that clinic?<br>**(multiple response do not read out** | Less waiting time [ ] 1 Less cost [ ] 2<br>More privacy [ ] 3 Better care [ ] 4<br>Proximity [ ] 5 Friendly staff [ ] 6 | |

| | | | |
|---|---|---|---|
| | **options)** | Other (specify)…….. | |
| **KNOWLEDGE OF EYE PROBLEMS** | | | |
| 22 | Have you ever had an eye problem? | Yes [ ] 1 No [ ] 2 | Skip to 24 if 'no' |
| 23 | What was the problem? | Pls specify..... | |
| 24 | Are you satisfied with your vision? | Yes [ ] 1 No [ ] 2 | |
| 25 | Do you sometimes have vision problems which limit your usual activities | Yes [ ] 1 No [ ] 2 | |
| 26 | When would you say you have an eye problem? **(do not read options)** | Pain in eyes [ ] 1 Not seeing as well as before [ ] 2<br>Others (please elaborate)……..... | |
| 27 | Which eye problems do you know about?<br>**(tick as many as are mentioned, do not read options)** | Refractive errors [ ] 1 Cataract [ ] 2<br>Glaucoma [ ] 3 ARMD [ ] 4<br>Diabetic retinopathy [ ] 5 Trachoma [ ] 6<br>Corneal opacities [ ] 7 Other (pls specify) ..... | |
| 28 | When would you say your eye problem is serious and needs attention? | When in pain [ ] 1<br>When eyes are red shot [ ] 2<br>When vision is affected [ ] 3<br>Other (pls specify)….. | |
| **ENABLING FACTORS FOR USE** | | | |
| 29 | When you have an eye problem who do you discuss it with? (tick as appropriate)<br>**(Please tick one option)** | Friends [ ] 1 Parents [ ] 2<br>Siblings [ ] 3 Co-workers[ ] 4<br>Nurse [ ] 5 Doctors [ ] 6<br>Pharmacist [ ] 7 Spouse/Partner [ ] 8 | |

| | | | |
|---|---|---|---|
| | | Other (pls specify) ..... | |
| 30 | What is your means of transport to work? | Private [ ] 1 Public [ ] 2<br>Other (specify)…… | |
| 31 | How far is an eye clinic from your place of residence? | Close [ ] 1 Very close [ ] 2<br>Far [ ] 3 Very far [ ] 4 | **Skip if never visited** |
| 32 | Were you satisfied with the last visit to the eye clinic? | Yes [ ] 1 No [ ] 2 | **Skip if never visited** |
| 33 | If no, what was the reason for non-satisfaction?<br>**(Please tick one option)** | Staff attitude [ ] 1 Excessive waiting time [ ] 2<br>Clinical procedure [ ] 3 Work environment[ ] 4<br>Cost [ ] 5 Other [ ] 6 | |
| **EYE HEALTH- RELATED BELIEFS** | | | |
| 34 | Eye diseases are as important as other diseases. | Agree [ ] 1<br>Disagree [ ] 2<br>Don't know [ ] 3 | |
| 35 | Eye diseases cause other diseases | Agree [ ] 1<br>Disagree [ ] 2<br>Don't know [ ] 3 | |
| 36 | Other diseases cause eye disease | Agree [ ] 1<br>Disagree [ ] 2<br>Don't know [ ] 3 | |
| 37 | Going to see an eye care practitioner is synonymous with not seeing clearly? | Yes [ ] 1 No [ ] 2 | |
| 38 | Going to see an eye care practitioner is synonymous with pain in the eye? | Yes [ ] 1 No [ ] 2 | |
| 39 | Do you wear | Yes [ ] 1 No [ ] 2 | |

| | | | |
|---|---|---|---|
| | spectacles | | |
| **KNOWLEDGE OF EYE CARE SERVICES** | | | |
| 40 | How often should one visit an eye clinic? | Every 1-6 months [ ] 2 9-12 months ago [ ] 3<br>Every 2 years ago [ ] 4<br>Over 2 years [ ] 5 Do not know [ ] 6<br>Other(pls specify)..... | |
| 41 | Do you know where to find an eye clinic in your place of residence | Yes [ ] 1 No [ ] 2 | **Skip to 43 if "no"** |
| 42 | If yes, which one? | Name of clinic/ location..... | |
| 43 | What types of services are provided by eye clinics?<br>**(multiple response do not read options)** | General eye exams [ ] 1<br>Refractions [ ] 2<br>Treatment of disease [ ] 3<br>Management of disease [ ] 4<br>Provision of spectacles [ ] 5<br>Surgery [ ] 6<br>Other (specify) …….. | |