**KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS PRESBYOPIA AMONG PATIENTS AGED 40 YEARS AND ABOVE ATTENDING SABATIA EYE HOSPITAL, VIHIGA COUNTY, KENYA**

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**Reg No.HSM212-0323/2022**

**A Research Proposal Submitted to the Department of Clinical Medicine in Partial Fulfillment of The Requirements for the Award of Degree in Comprehensive Ophthalmology and Cataract Surgery of Jomo Kenyatta University of Agriculture and Technology**

**2024**

**DECLARATION**

I declare that my research proposal is my original work, that it has never been published or presented for a degree at any other university, and that any additional material used in the production of my proposal from other authors has been duly recognized in the reference area.

Signature **………………………**  Date**……………......**

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**Approval**

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**ACKNOWLEDGEMENT**

I take this opportunity to thank the staff members at Sabatia hospital eye clinic for their support and great fully to my supervisors Mrs Eunice Chelogoi and Mr. Leonard Wanyonyi for their guidance and encouragement throughout the project preparation. I will forever be indebted to you and sincerely am lucky to work under your supervision.

I also thank my classmates for the tireless support on my work, their concern and endless love.

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# **ABBREVIATIONS AND ACRONYMS**

|  |  |
| --- | --- |
| **D** | Dioptres |
| **KAP** | Knowledge, Attitude and Practices |
| **KMTC** | Kenya Medical Training College |
| **LMICs** | Low- and Middle-Income Countries |
| **MoH** | Ministry of Health |
| **RE** | Refractive Error |
| **SDGs** | Sustainable Development Goals |
| **SPSS** | Statistical Package for Social Studies |
| **SSA** | Sub Saharan Africa |
| **UK** | United Kingdom |
| **USA** | United States of America |
| **VA** | Visual Acuity |
| **VI** | Visual impairment |
| **WHO** | World Health Organization |

**CHAPTER ONE: INTRODUCTION**

**1.1 Background Information**

Presbyopia (literally, old eye) is the most common ocular affliction in the world. It comes about due to the progressive decline in the accommodative amplitude hence effectively pushing away the near point towards the far point. The rate of decline occurs with very little inter-individual variability even in different populations and is considered a reliable biomarker for human age (Wolffsohn & Davies, 2019). Early presbyopia is characterized by patient complaining of requiring lighter to read or being able to read better in the morning hours compared to night, difficulty reading fine print and their eyes taking too long to focus on near point. Presbyopia is a decline in accommodation that diminishes the ability of the eye to focus on near objects. This is due to reduced elasticity of the crystalline lens as the age increases, and the eye cannot focus clearly at near distance (Khalaj et al., 2018). It is the most common physiological change occurring in the adult eye and is thought to cause universal near-vision impairment with advancing age. Blurred vision and the inability to see fine details at the customary near-working distance are the hallmarks of presbyopia (Fasih et al., 2019).

Presbyopia is a global problem affecting over a billion people older than 34 years worldwide (World Health Organization, 2019). It is a progressive age-related loss in the amplitude of accommodation due to crystalline lens growth and changes in its elastic properties with the onset of less than 40 years of age in females and Africans (Olarewaju, 2016). According to WHO (2019) estimates, inadequate knowledge and practices of presbyopia lead to at least 1-1.6 million age-related visual loss per year (WHO, 2019). Knowledge of presbyopia symptoms ranges from 75% to 93% in high income nations such as Spain (77.9%), the United States (91.3%), Singapore (75.0%), the United Kingdom (76.5%), Finland (80.0%), Norway (89.9%), and Switzerland (88.5%) (Khanna & Rao, 2018; Lira & Sung, 2021; Wolffsohn & Davies, 2019). However, healthcare seeking for presbyopia have been between 50-70% developed countries with USA (62.3%), Canada (65.8%), Germany (54.3%), Netherlands (56.8%) and UK (58.6%) (Majithia et al., 2020; Radhakrishnan et al., 2019; Romín et al., 2017).

In South India, Brazil and Iran recorded presbyopia knowledge was 55.3%, 54.7% and 58.2% respectively (Fasih et al., 2019; Radhakrishnan et al., 2019) and the number of people with presbyopia who do not have spectacles was estimated to be less than 55% in these countries (WHO, 2019). The symptoms of presbyopia known are visual discomfort such as eye strain, headache, and difficulty to perform near visual tasks such as reading (Handayani et al., 2022; Miranda, 2019).

In African countries there are limited data on presbyopia, but studies have shown increase in risk of visual impairment among population utilizing ocular care (Robinson et al., 2016). And barely 20 percent of populations in Sub-Saharan Africa (SSA) have adequate knowledge on presbyopia (Jansen, 2017). In South Africa 57%, Zambia (54.3%), Botswana (54.0%), Ethiopia (55.3%), Uganda (51.8%), and Tanzania (62.0%) of general population had inadequate knowledge on presbyopia symptoms (Lira & Sung, 2015; Seidu et al., 2017). In Kenya (46.6%) of the population of the patients in the eye clinic had presbyopia (Wanyonyi et al., 2017). In addition, over 60 percent of general population had inadequate understanding of presbyopia symptoms. Early health seeking behaviour are critical to national and global control efforts towards reducing age related visual loss (Kirimi, 2018).

Presbyopia cannot be cured, but individuals can compensate or correct it by wearing single vision, bifocal, or progressive eyeglasses, and recently, contact lens can be an option too. Generally, a convex lens is used to make up for the lost automatic focusing power of the eye (Giridhar, 2020). There are evidence that showed a strong link between presbyopia with sociodemographic variables of the population. In Coastal Region of Kenya, a population-based study found that increase in age and female sex were directly associated with presbyopia, and women become presbyopia earlier than men (Chan et al., 2018; Wolffsohn & Davies, 2019). Most of people in coastal region would not notice symptoms. Alternatively, they may use traditional medicine, self-medicate or develop coping strategies to counter presbyopia symptoms. This may delay presentation to eye care services (Hong et al., 2016), leading to complications and even irreversible visual loss. A person adequate knowledge could benefit from earlier identification, counseling and referral (Patel et al., 2017). Lack of accessible eye care services and lack of awareness of where to seek services are some of the reasons why patients remain visually impaired or seek unorthodox treatment, even though outcomes are poor, other eye conditions which cause ocular morbidity for which access to eye care is needed include presbyopia (age-related decline in near vision), and other conditions which may cause distress and warrant treatment at the primary level

**1.2 Statement of the Problem**

People living with presbyopia suffer with their day-to-day activities due to reduce near vision. Even though presbyopia is easily corrected, globally, there are 517 million (49.7%) presbyopes who had no spectacles or inadequate spectacles (World Health Organization, 2019). Uncorrected presbyopia has significant effect on the quality of life. So, knowledge of the importance of eye health is a critical prerequisite for motivating eye care behaviours and access to care. With failing accommodation, doing near work becomes associated with headache and eye strain. Reading and writing become a challenge. Even in communities, where literacy levels may be low, dissatisfaction occurs when presbyopia sets in, because the condition affects near work like sewing, sorting rice and winnowing grain. Moreover, mobile phones are increasingly being used in communities, unmasking the need to address the presbyopia challenge there (Mathenge et al., 2018). Eye health is an important public health concern because visual impairment can negatively impact the public healthcare burden, independent living, quality of life, mental health, and accident rates, as well as increasing the need for community services, family support, and earlier institutional care.

Previous studies from low- and middle-income countries including Kenya suggest that 22% of population below 30 years as well as 38% of adults aged 30 years and above have adequate knowledge on presbyopia, with women being less unaware of presbyopia symptoms. Education and literacy have been identified as important tools in achieving Sustainable Development Goals (Mukuria et al., 2020). At Vihiga county, patients who develop visual impairment will become dependent on family members and caregivers for activities of daily living. They may also lose their jobs and become financially dependent on family members. Emotionally, they may become withdrawn and depressed, productivity level will go down and if this situation is not addressed, it would subsequently affect the economy negatively.

At Sabatia Eye Hospital, according to DHIS (2022) there are increased visual impairment among patients above 40 years from 20.3% in 2020, 27.8% in 2021, and 34.5% in 2022, with over 65% seeking the care when the effect can’t be reversed. This can be compounded by the poor knowledge within community of appropriate management and the availability of specialist eye care services. This trend of patients reporting rate for eye care services leads to poor quality of life, thus, the importance of carrying out the study to access their knowledge, attitude, and practices towards presbyopia.

**1.3 Justification**

Presbyopia is the age-related reduced accommodation and is often associated with a progressive inability to read fine print and to write (Kirimi, 2018). The onset of presbyopia depending to the near tasks but is gradual and the patient’s accommodative amplitude becomes inadequate for his or her visual needs. There are substantial optical changes in the human lens with increasing age and during accommodation, since both the magnitude and the sign of the spherical aberration change with age and stretching (Mukuria et al., 2020). Good near vision is important, even among populations who use it for tasks other than reading and writing. Provision of effective and accessible eye care services is key for effectively controlling visual impairment including blindness. The preference is given to strengthening eye care services through their integration into the health system rather than through their provision in the vertical program approach.

Utilization of eye care leads to early identification of eye diseases and conditions that may cause visual impairment and blindness. Knowledge and positive attitude on the universal eye care will help lead to avoidance visual complications and hence a decrease the prevalence of visual impairment. Therefore, this study seeks to address the knowledge gap therefore to highlight the association of knowledge, attitude and practices of eyecare services. The significance of this study also lies in the fact that although there is considerable information and knowledge about visual impairment, a critical need exists for a comprehensive study in this area.

In addition, 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 level of knowledge of eye care services among community. Findings from this research will serve as information for planning a comprehensive national eye care program to facilitate the attainment of the VISION 2030 targets. Specifically pointing out the needs of minimizing visual impairment caused by preventable causes.

This research will also provide information for advocacy activities at the regional and national levels on prevalence of presbyopia. It will also serve as a starting point to monitor the utilization of these services among community members with eye conditions. Furthermore, this research will provide information for health promotion and education activities to the patients and Vihiga community at large. This research will also provide information to the national eye care program on the level of resource mobilization needed for effective use of eye care services.

Lastly this research is important because it will add to the scanty literature available on KAP towards presbyopia in Vihiga County as well as serve as a starting point for further research into this area. The study can be used as base line for further research and for requirement in completion of my higher national diploma.

**1.4 Research Questions**

1. What is the level of knowledge towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County?
2. What is the attitude towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County?
3. What are the practices towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County?

**1.5 Objectives of the Study**

**1.5.1 Broad Objective**

To assess the knowledge, attitude and practices towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County.

**1.5.2 Specific Objectives**

1. To assess the level of knowledge towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County.
2. To establish attitude towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County.
3. To identify the practices towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County.

**CHAPTER TWO: LITERATURE REVIEW**

**2.0 Introduction**

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 presbyopia among patients receiving eye care services, reviewing their results and methodology and identifying the gaps in them in light of this study. In this section, literature on knowledge, attitude as well as practices toward presbyopia are reviewed.

**2.1 Knowledge Towards Presbyopia**

It is perceived that lack of inadequate knowledge and awareness affects the eye health utilization and products. In a study conducted by Handayani et al., (2022), among community members in Kerala, India, on barriers to the utilize eye care services, they concluded that, lack of awareness among community was the greatest barrier to the undergo for eye checkup for presbyopia. Khalaj et al., (2018), in a study to assess the patients’ perspective to barriers to accessing eye care also concluded that in addition to other factors, there was lack of knowledge and awareness of the importance of eye care amongst patient with presbyopia. The study by Balarabe et al., (2019) and Miranda, (2019) found that 65% of patients had satisfactory knowledge on association between family history visual impairment with presbyopia. Several population surveys have shown higher level of knowledge of presbyopia among patients with a nuclear family with visual impairment (Chan et al., 2018; Venkateshwarlu et al., 2020; Wanyonyi et al., 2017). The probability of being diagnosed with presbyopia was thrice likely among patients with a family history of visual impairment and blindness (Uche et al., 2018).

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 (Damien & Liji, 2018; Gil-Cazorla et al., 2017; Romín et al., 2017). 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 (Silveira, 2016). Additionally, the study found that only 40% were aware that smoking during childhood and teenage age group was associated with increased presbyopia in early thirties. Presbyopia rises acutely among smokers and further, smoking increases the risk of visual impairment. In a longitudinal study of 19 smokers, presbyopia rose from 12.3% to 26.9% in a five-year period. In another related study on knowledge, attitudes and practices on presbyopia, Nepal, the level of knowledge on presbyopia among adults was found to be poor (45.8%) (Hutchins & Huntjens, 2021). Researchers have indicated that due to the limited knowledge of presbyopia, respondents have expressed serious concerns about the dangers they are exposed to in the various communities regarding quality of life. It is therefore important that general population have adequate knowledge of presbyopia in order to reduce the rate of visual impairment among them in health care settings. However, knowledge of patients towards presbyopia does not guarantee proper practice of eye seeking behaviour in the community (Giridhar, 2020).

A study conducted in a teaching hospital of Malaysia revealed that 58 respondents (69%) had moderate knowledge towards presbyopia; 21 respondents (25%) had high knowledge and 5 respondents (6%) had a low score of knowledge (Majithia et al., 2020). A study conducted at a tertiary care hospital in Peshawar, Pakistan found that none of the participants had poor knowledge regarding presbyopia while 6.7% of the participants had average knowledge, 71.7% had good knowledge and 21.7% had excellent knowledge towards presbyopia (Gil-Cazorla et al., 2017). According to the study conducted in Bangladesh to assess patients in public health facilities knowledge towards presbyopia, 65.6% had moderate level of knowledge, 23.7% had low level and the rest 10.8% were at high level (Damien & Liji, 2018). A study done in Australian to investigate knowledge, attitude and practices towards presbyopia among patients aged from 50 years found that 51.4% had moderate knowledge towards presbyopia, and 18.6% had excellent knowledge towards presbyopia (Fasih et al., 2019).

In Nigeria a study among government workers revealed that whereas most respondents had knowledge of the existence of presbyopia in their sections, only a small fraction purported to be unaware of existing universal eye health. 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 presbyopia (Ayanniyi, et al., 2020). A study by Lira & Sung, (2021) in Malawi revealed that most (58.4%) respondents were unaware of the existence of presbyopia or any form of eye examination to detect presbyopia. In this study, it was found that the most patients would go to a health practitioner when traditional healers are unable to heal any eye condition or when the condition has worsened. 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 (Ndubuisi, 2016). The study by Koduah et al., (2019) found that there are still many superstitions and cultural beliefs surrounding presbyopia which hamper its prevention, early diagnosis and treatment. It has been reported that patients seek assistance for treatment when the disease is well advanced and that this delay is the result of factors, such as a lack of knowledge, lack of awareness of the significance of the symptoms or a negative attitude.

A study done in Zimbabwe Bindura hospital revealed inadequate knowledge with a mean knowledge score of 64% (Miranda, 2019). A study done at Arsis zonal hospital in Ethiopia showed that from 144 participants 65(45.1%) had low knowledge and 79(54.9%) had good knowledge towards presbyopia among patients over 45 years (Andualem et al., 2017). Another descriptive study conducted on 170 patients over 50 years at Mulago hospital in Uganda showed that majority of patients (65.5%) had poor knowledge towards symptoms for presbyopia, more than a quarter of the participants (35.5%) did not know that presbyopia is age related and almost three quarters (73.5%) felt that their knowledge related to presbyopia is not adequate and only (26.5%) felt that it is adequate (Ron, 2022). A cross sectional study with total sample of 396 respondents over 40 years in Tanzania showed that 54% insufficient knowledge towards presbyopia (Seidu et al., 2017). A cross sectional interviewer-administered survey in Tanzania with 143 patients between 50-70 years was carried out to evaluate their knowledge and attitudes regarding presbyopia, and the results showed that 57.7% had inadequate knowledge towards presbyopia. Another study at Muhimbili University of Health and Allied Sciences conducted on 250 patients seeking eyecare services to explore knowledge towards presbyopia indicated that the mean score of inadequate knowledge towards presbyopia was 60.2%. Specifically, knowledge deficits were seen in scoring on symptoms of presbyopia (Kaur, 2017). Additionally, smoking, alcohol consumption and family history of visual impairment were known as risk factors for presbyopia

According to a study conducted in Ethiopia, participants attribute the cause of presbyopia to hard work and malnutrition and therefore initially tended to seek treatment through traditional medicine. Beliefs concerning the prevention of the disease are a crucial determinant of subsequent health seeking behavior (Kasa et al., 2019). A study from Sudan shows that 60% of patients over 55 years lack of awareness on the early symptoms of presbyopia (Trajman et al., 2019). The most worrisome finding in the study is the fact that Somali pastoralists consider presbyopia is a condition for urban populace and 90% had no knowledge on symptoms of presbyopia nor the risk factors contributing to presbyopia (Kasa et al., 2019). A similar finding has been reported from Addis Ababa, Ethiopia (Musasa, 2015). This reflects a lack of awareness of the risk factors associated with presbyopia, which is a serious public health concern that warrants an urgent intervention through enhanced health education. In Vihiga Kenya 45% of patients were unaware of the presence of eye health facility in their localities for eye examination 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 patronize other channels of treatment like using over the counter drugs and some traditional eye medicines (Kirimi, 2018). In a study among persons with presbyopia, Robin et al (2014) found that even though actual eye care was free, underutilization of the available eye care existed because patients were not aware they were free. Steedman et al., (2018) reported that rural dwellers were almost four times more unlikely to seek eye care than their urban counterparts due to lack of awareness of the available eye care service. In a study done at the Moi Teaching and Referral Hospital in Kenya, only 41% of patients over 50 years indicated that they had sufficient knowledge towards presbyopia. And also, another study done in Kenya among nurses at Kisii County Referral Hospital to assess the level of knowledge and attitude regarding presbyopia revealed that 52.3% had inadequate knowledge towards presbyopia (Onsongo, 2020).

**2.2 Attitude Towards Presbyopia**

Attitude always determines one’s motivation to do an action. Indeed, a positive attitude towards a given action will often times lead to action. This has been reported in regards to presbyopia among patients across various studies. According to Bradley (2012), attitudes were defined as personal view concerning the use of health care services and were characterized by four major themes namely: care providers, affordability, social environment, and self-determination. Attitude was also described as having a direct effect on health care utilization. In Canada, one-third to one-fourth of the population still faces a situation of inequality and cultural differences between health providers and users. This has been identified as a major issue of concern for underutilization of health services in the Canadian rural community (Pampalon et al. 2019)

In a study by Venkateshwarlu et al., (2020) on barriers to accessing eye cares service for presbyopia, they added as part of their conclusion that, some patients especially patients between 40-55 years feel embarrassed to use some health aids or low vision devices in the community. Societal and cultural perception about blindness was identified as variables that influence the use of eye care services among patients. Studies by Balarabe et al., (2019); Sherwin et al., (2018) and Uche et al., (2018), found that there was an association between cultural beliefs and societal misconception with uptake of eye care services for presbyopia. Different cultures perceive health care services in different ways and this influence their choice and use of health devices (Chu, 2017).

Ilesh & West, (2017) reported that social attitude towards visual health issues along with need for seeking help for their visual impairment were the principal barriers to uptake of eye care services also reported attitudinal reasons like 'feel there was no need for eye care services' was cited by greater proportion of participants, even though this might have been related to how debilitating the individual perceived the problem to be. Oduntan and Raliavhegwa (2021) found that 5% of the Mankweng sub-district population would consult traditional healers for certain eye problems, rather than seek eye care from the Government or private eye care providers even though public eye care services were readily available to them and affordable. The use of corrective spectacles was also considered highly unconventional and was accompanied by fear of being ridiculed as being blind (Oduntan and Raliavhegwa, 2021).

A study done in Zimbabwe at bandura hospital revealed that positive attitude regarding eye seeking behaviour towards presbyopia by adult patients was average with a total mean attitude score of 56% (Sisay, 2017). A study conducted in Uganda; patients showed a positive attitude towards eye seeking behaviour towards presbyopia. It was reported by 66 respondents (79%) while 18 respondents (21%) had a poor or negative attitude (Masaba, 2017). Study done in Tanzania showed that (51.7%) of patients had favorable attitude towards eye seeking behaviour towards presbyopia. Study done at Muhimbili University of Health and Allied Science in Tanzania showed poor attitudes among patients regarding eye seeking behaviour towards presbyopia, 65% of attitude questions were answered incorrectly by more than 50% of the patients. A study done in Rwanda at referral hospitals showed that from 144 participants nearly half 75(52.1 %) had an unfavorable attitude towards eye seeking behaviour towards presbyopia (Kaur, 2017).

In the Kenya as in other developing countries, lots of people are still becoming blind due to the fact that barriers to the usage of eye health services to prevent blindness are still numerous including factors such as belief, attitudes, and practice of the predominantly rural population (Mwangi et al., 2019). Certain attitudes about eyesight and eye examinations influence the reception of preventive and curative eye care. There is an association between patient negative perception about vision and the use of the eye care services (Ashaye et. al., 2016). Another study done in Kakamega County, Kenya reported that attitudes towards eye seeking behaviour towards presbyopia was not significant. Jepkosgei et al., (2018) found that patients may have very positive attitudes towards eye seeking behaviour towards presbyopia without sufficient knowledge to effectively manage their conditions. Patients in the study done by Jepkosgei et al., (2018) had higher mean attitude score of 62.34% and mean knowledge score of 52.3%. Personal values and beliefs of health care professionals about the meaning of eye seeking behaviour towards presbyopia. A descriptive cross-sectional study among patients conducted at Kisii County Referral Hospital showed that majority of patients (60.3%) have positive attitude towards eye seeking behaviour towards presbyopia with the mean score of 54.22 out of 60. However, results showed that the patients had poor performance regarding the eye seeking behaviour towards presbyopia (with mean value of 68.2%) (Onsongo, 2020). Another analytical study at Moi teaching and Referral Hospital found that 72.3% of respondents had positive attitude towards eye seeking behaviour towards presbyopia (Wanyonyi et al., 2017).

**2.3 Practices Towards Presbyopia**

A study by Ramke et al., (2018) found that pressures from home or work caused individuals to delay consulting an eye care practitioner when there are signs or symptoms that the individual should visit said practitioner. 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, 2022).

Utilization of eye care services in simple terms could be defined as accessing the available eye care services (Umunna, 2018). It has been reported that in rural areas of Iran (Tehran population) despite the availability of eye care services, there is a general under-utilization of available eye care services (Calef, 2017). In a study conducted in a rural county in Ireland, it was also found that there was underutilization of eye care services by presbyopia patients. This low-rate visits for presbyopia may be that, although there was an awareness of presbyopia, patients did not utilize the care that was available to them (Merepa, et al., 2017). Even, in the urban areas of certain countries, under-utilization has been reported. Despite the available eye care services to the Tehran population in Iran, over one third of the participants in a survey had never had an ophthalmic examination, nor had over two fifth of the visually impaired population ever received any eye care service (Giner, 2018). Hickenbotham, (2022) in a study on utilization of eye care services in an urban population in southern India, also reported that a large proportion of people with visual impairment in the urban population of Hyderabad in India are not accessing eye care services. Aiswaryah et al., (2019) also reported that despite the available eye care services, the only group statistically more likely than the general population to remain unassessed up to 5 years were those with under corrected presbyopia. At some villages in India where there were eye camps, only seven percent of people having eye problems go for eye care (Bhagwan et al., 2016).

According to Robin et al. (2018), in a study on utilization of eye care in Baltimore it was found that 35.5% of people 45 years and older were needlessly disabled by presbyopia, 6.6% by diabetic retinopathy, and 4.7% by glaucoma. Had these individuals utilized available eye care, much of this disability might not be present. Alkhawaldeh, (2017) reported that a high proportion of people who could have benefited from eye treatment were not using available services because either they had not sought treatment advice or they had not accepted treatment recommendations. Radhakrishnan et al., (2019) further states that in India despite relatively recent sustained efforts by the ophthalmic community that has seen a doubling of presbyopia to 3.5 million in 2010. Still more than 40% of those with bilateral blindness had never visited an eye doctor. Nirmalan et al., (2019) also states that in rural south India approximately two thirds (61%) of those requiring eye care services had not previously sought such services. According to Dandona et al., (2020), and Whitfield et al., (2020), presbyopia was found to be the leading causes of visual impairment and blindness. Most of the visual impairment from refractive errors could be alleviated by access to optometric services and spectacles.

In view of the above facts, various measures like free primary school screening and provision of free spectacles to remove financial and transportation barriers have been employed. These measures were employed in an attempt to reduce the burden of blindness in the United States because for preventable blindness to be minimized, people must first utilize the available eye care resources (Robin et al., 2018). A study done by Guarino & Mont, (2019) done at health facility and in the community found that majority of the residents visited hospitals when sick, a significant majority indicated that they would go to a health facility if they realized that they had symptoms of presbyopia. Health care service delivery cannot make a desirable change unless the community has an opportunity to access the right information on a timely basis. According to a study done in Pakistan, visual impairment caused by presbyopia were more women than all causes of ocular morbidities combined (Trajman et al., 2019). Underutilization of eye care services has also been reported in the Mankweng area of Limpopo Province, South Africa (Kidd-Man et al., 2020).

Thus, there is the need to encourage people to attend regular eye checks and to supply information about eye care services (Kolawole et al., 2018). 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 (Silveira, 2019), 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 (May et al., 2020). A study done in Kenya by Katuku et al., (2017) found that there in a period of five years there was no single increase in need to utilize eye care services among general populations and little knowledge towards presbyopia on the part of respondents and the absence of information about these from most general practitioners may be the reason for this trend noticed. Increasing age and education seems to influence the utilization of eye care services positively as more individuals advanced in age and well educated see the need to have their eyes examined frequently (Miranda, 2019; Mukuria et al., 2020). Many visually impaired people particularly the elderly have not had a recent vision examination and lack adequate knowledge on eye care (Mukuria et al., 2020).

**CHAPTER THREE: METHODOLOGY**

**3.0 Introduction**

This chapter provides the various methods to be employed in this study and further describes the study design, study area, sampling method, study procedures, data collection tools and instrument, data analysis as well as ethical considerations.

**3.1 Study Design**

This study adopted a descriptive cross-sectional study design was used to assess knowledge, attitude and practice of patients towards presbyopia at Sabatia Eye Hospital in Vihiga County, Kenya. Cross sectional survey design was selected for this study due to its ability to ensure minimization of bias and maximization of the reliability of evidence collected.

**3.2 Study Area**

The research will be carried out in Sabatia Eye Hospital, Vihiga County. Vihiga County number 038 is situated in Western Kenya and borders Kakamega County to the North, Nandi County to the East, Kisumu County to the South, and Siaya County to the West covering an area of 530.9Km2. According to the 2009 Kenya Population and Housing Census the population was 554,622 with a population density of 1,045 people per Km2 and an annual growth rate of 3.3%. Age Distribution was; 0-14 years 44.2% with the economically productive age of 15-64 years standing at 49.4% and over 65 years at 6.1%. It has an annual average rainfall of between 1,800mm and 2,000mm with an average temperature of 240C. The major economic activity is agriculture characterized by dairy farming and growing of maize, tea, millet and cassava. Sabatia Eye Hospital’s outpatient services offers Visual Acuity, Slit lamp examination, Fundoscopy examination, Tonometry/Gonioscopy, Refraction, Pachymetry, Ultra Sound and Yag Lesser Treatment.

**3.3 Study Population**

The study focused on patients seeking eyecare services at SabatiaEye Hospital. Data from hospital, there are approximately 175 patients per month visiting the clinic.

**3.3.1 Inclusion Criteria**

* Patients aged from 40 years attending Sabatia Eye Hospital during the study period.
* Respondents who volunteered to participate in the study and give a written informed consent.

**3.3.2 Exclusion Criteria**

* Respondents of unsound mind whom will be known to have problems with concentration, speech that are hard to explain and uncharacteristic, peculiar behaviour.

**3.4 Study variables**

Dependent Variables: KAP on presbyopia

Independent variables: Socio-demographic variables: age, educational status, religion, income, marital status; level of knowledge on presbyopia; attitudes towards presbyopia and eye health seeking behaviour.

**3.5 Sample Size Determination**

The Fischer’s et al., (1998) formula illustrated below will be used to determine sample size for patients.

Fischer’s et al., (1998) formula is

Where:

**n** = Sample size [where population> 10,000]

**Z** = Normal standard deviation at the desired confidence interval. In this case it will be taken at 95% confidence interval giving a **Z** value of 1.96.

**P** = Proportion of the population with the desired characteristic.

1- p = Proportion of the population without the desired characteristic.

**d**2 = Degree of precision at 95% confidence interval which is 0.5

Since the proportion of the population with the characteristic is unknown, 50% will be used.

**Therefore n** = 1.962 (0.5) (1-0.5) =384

(0.05) (0.05)

Since the target population is <10,000, the alternative formula which will be applied is using the following formula (Mugenda and Mugenda, 2003).

Where:

nf = the desired sample size for population <10,000

N = total study population which is 175

n= the calculated sample size.

**=120**

The targeted sample size will therefore be 120 patients

**3.6 Sampling Techniques**

The study will use systematic sampling methods to achieve required minimum sample size using daily register as a sampling frame. The sampling starts by selecting an element from the list at random and then every kth element in the frame is selected, where k, the sampling interval (sometimes known as the skip): this is calculated as

where n is the sample size, and N is the population size.

Estimated total number of respondents are 175 and sample size 120 therefore k=2. The first file number will be picked by simple random sampling and the other respondents will be picked by systematic sampling at intervals of 2. The simple random sampling picks patient number 2. Therefore, systematic sample will consiste of units with even serial number i.e., 2, 4, 6, 8, 10…..

**3.7 Data Collection Tools**

Research instruments will include interviewer-administered structured questionnaire for patients KAP towards presbyopia (Appendix v). These captures the necessary information to address the research questions. The questionnaires will be pre-coded and will take into consideration the research objectives of the study. They also will provide detailed information with respect to respondents related factors under examination.

**3.8 Pre-testing**

A Pre-testing will be carried out at Lighthouse Eye for Christ Hospital among patients above 40 years who will be attending eye clinic, it will include 10% (n=12) of sample size and the respondents who will not be included in the study, pretesting will be done to verify the validity of questionnaire and to ensure that questions will be easily understood, assess the flow of variables in the questionnaire, difficulties of obtaining information and other important aspects and do the changes accordingly to fit the study. Pre-test will be done 1 week before the actual data collection begin to check the consistency.

**3.9 Reliability**

Reliability will be also ensured through selection and training of research assistants, engaging them in the pre-test study and supervising them during the data collection process. Completed questionnaires will be checked daily and errors will be corrected.

**3.10 Validity**

Validity of the research instrument will ensure through the use of a well-designed questionnaire to ensure that the measured variables are actually what is intended to be measured and no other variable. Thus, the validity of the instrument will be checked by my supervisor an expert in the field to establish whether it meets the objectives of the study and if the question reflects the desired response. The validity will improve before distribution for actual collection of data.

**3.11 Data Collection Process**

On receiving authorization for the study, the researcher will visit the medical director Sabatia Eye Hospital to inform him of the study. Three research assistants were trained to assist the researcher in speedy collection of data. The research assistants were selected among nursing clinical officers on placement at the health facility. The research assistants were trained on the purpose of the study, how to seek informed consent, interviewing skills, how to use the questionnaire, data collection and data management. They were given two days training and orientation on the above. Study participants was approached to participate in the study, the interviewer explained to the importance of the study and why their participation would be significant.

Patients aged 40 years and above attending Sabatia Eye Hospital who will agree to participate in the study, will sign a consent form before the questionnaire is administered via face-to-face interviews. A structured questionnaire will be administered to all respondents by an interviewer. This will be done for all the respondents selected for the study at the clinic. However, only those patients who will present at the clinic on the days of data collection and willing to partake in the study will be included in the study.

**3.12 Data Analysis**

Once data is collected, it will be edited to ensure consistency across the respondents and location of any omissions, it will be summarized, coded and entered into a computer. Data analysis will be conducted using SPSS statistical software. Quantitative data will be coded and processed using SPSS version 27.0. Descriptive statistics such as frequencies, standard deviation and means will be used to summarize, organize and simplify the data collected. Chi-square analysis will be employed to test the relationship between dependent and independent variables. A significance level of 0.05 will be used. Tables, bar charts, graphs and pie charts will be used to present results.

**3.13 Ethical consideration**

Approval will be obtained from Jomo Kenyatta University of Agriculture and Technology Ethical Review Committee to take to relevant authorities at Sabatia Eye Hospital. Written informed consent will be obtained from the respondents with the right to participate in the study or not rests with the respondents and this will be respected at all times during the study. Respondents will be informed that it is their right to choose whether to participate in the study or not and even withdraw from the study at any time. This will not affect the services they would be receiving. No inducements or rewards will be given to participants to join the study. Confidentiality and anonymity will be maintained at all times. No identifying data will be recorded and all information given will be used strictly for research purposes only and data collected will be stored, analyzed and reported in formats that won’t allow identification of the individual participant. There will be no invasive procedures carried out on the participants, so no physical risks will be encountered. Result of the study will be communicated to Jomo Kenyatta University of Agriculture and Technology and Sabatia Eye Hospital. Furthermore, all attempts will be made to publish the finding in different reputable journal.

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**APPENDICES**

**Appendix i: Timeframe**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Activity** | **Mar-June** | **July-Aug** | **Sept-Oct** | **Nov-Dec** |
| Developing proposal title and writing of proposal |  |  |  |  |
| Proposal corrections |  |  |  |  |
| Submission to JKUAT |  |  |  |  |
| Pre-testing/Data collection/ Data analysis |  |  |  |  |
| Final presentation |  |  |  |  |
| Data dissemination |  |  |  |  |

## Appendix ii: Budget

|  |  |
| --- | --- |
| **Item** | **Total (Ksh)** |
| Printing and Packing | 400 |
| Photocopy of Proposal | 240 |
| Binding Proposal | 360 |
| Proposal Printing 2nd draft | 400 |
| Photocopy of proposal 2nd draft | 240 |
| Binding of proposal 2nd draft | 450 |
| Ethics: Kenya, JKUAT | 1000 |
| **Sub-total** | **3090** |
| Transport | 20000 |
| **Communication** |  |
| Telephone | 4,000 |
| Training and facilitating of assistant | 10000 |
| **Subtotal** | **5,500** |
| **Results** |  |
| Photocopy of checklist | 1500 |
| Printing of results | 6000 |
| Copy of final book | 5000 |
| Binding of final paper | 1,700 |
| **Grand total** | **51290** |

**Appendix iii: Letter Of Approval**

TO JKUAT RESEARCH ETHICS AND REVIEW COMMITTEE,

P.O BOX….

JUJA

**RE: Request for ethical approval**

Iam a student of Jomo Kenyatta University of Agriculture and Technology undertaking a Degree in Comprehensive Ophthalmology and Cataract Surgery with registration number hsm-212-0323/2022. I am carrying out a research onknowledge, attitude and practice towards presbyopia among patients aged 40 years and above attending sabatia eye hospital, vihiga county, kenya

Iam therefore seeking an approval letter for the purpose of conducting this study.

Attached is my research proposal.

Yours faithfully,

…………………………..

Susan Kingori

## Appendix iv: Consent Form

**Title;** **KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS PRESBYOPIA AMONG PATIENTS AGED 40 YEARS AND ABOVE ATTENDING SABATIA EYE HOSPITAL, VIHIGA COUNTY, KENYA**

Introduction:

You are being asked to be part of a research study. The study is being carried out by susan Kingori, student undertaking a degree in Comprehensive Ophthalmology and Cataract Surgery from the Jomo Kenyatta University of Agriculture and technology. Please take your time deciding to join the study. Carefully consider the following information and ask the study counselor any questions you may have. The information collected from you shall be treated with utmost confidentiality and will only be used for intended purposes only.

Purpose of the study

The purpose of the study is to assess the knowledge, attitude and practices towards presbyopia among patients attending Sabatia Eye Hospital, Vihiga County. Participation in this study will require that I ask you some questions and no procedure will be performed on you. You have the right to refuse participation in this study. Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. During this study, you will be asked to fill a semi structured questionnaire which will take approximately 15 minutes of your time.

Benefits

There are no direct benefits or reward but the results obtained will help in identifying the gaps so that measures to reduce the unmet needs can be undertaken.

Risks and discomforts

There are no questions you will be asked that may be embarrassing or make you uncomfortable. But, if this happens, you may refuse to answer these questions if you choose so. You may also stop the interview at any time. The interview may add approximately half an hour to the time you wait before you receive your routine services.

Compensation

There shall be no compensation for taking part in the study.

Voluntary participation

Your participation in the study is voluntary and you may choose to stop participating. Your decision will not be influenced by anyone and it will be respected.

Confidentiality

Confidentiality of participants will be maintained during data collection process and after the study. To ensure anonymity participant will not write their names anywhere in the questionnaire instead codes will be used.

In case you wish to contact the researcher for any inquiries about the study, feel free to do so through the following contacts;

Researcher; Susan Kingori; 07…………… Email address: ……………………………

Supervisor; …. ………………… Email address: ……………………………

……………………….. Email address: ……………………………

Legal Rights and signatures;

I consent to participate in the above-mentioned study conducted by Susan Kingori. I have understood everything about this project and wish to participate voluntarily in the study.

Signature of interviewee.........................................Date...............................

Signature of researcher............................................Date……….....................

## Appendix v: Questionnaire

Title: **KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS PRESBYOPIA AMONG PATIENTS AGED 40 YEARS AND ABOVE ATTENDING SABATIA EYE HOSPITAL, VIHIGA COUNTY, KENYA**

**Study ID**: …………………………… **Date**: ………/………/…………

**Instructions: *Do not write your name or any other personal data on the questionnaire.***

***Please follow instructions while answering questions in each area.***

***The information given here will remain confidential.***

|  |  |  |
| --- | --- | --- |
| **SECTION A: SOCIO-DEMOGRAPHIC CHARACTERISTICS** | | |
|  | How old are you? (In completed years) | [\_\_\_\_] |
|  | What is your gender? | 1. Male 2. Female |
|  | What is your current marital status? | 1. Single  2. Married  3. Separated  4. Other (Specify)…………… |
|  | What is your educational level? (Based on last completed grade level) | 1. No formal education  2. Primary  3. Secondary  4. College level  5. University level |
|  | What religion do you follow? | 1. Christian 2. Muslim 3. Others (specify)…………….. |
|  | What is your current occupation? | 1. Employed 2. Self-employed 3. Unemployed |
| **Section B: KNOWLEDGE TOWARDS PRESBYOPIA** | | |
|  | Have you ever heard of presbyopia? | 1. Yes 2. No |
|  | What age does presbyopia occur? | …………………….. |
|  | What are the signs and symptoms of presbyopia? | 1. Loss of near vision 2. Diminished visual acuity 3. Headaches from doing close work 4. Eye strain 5. Need lighter when reading |
|  | What are the risk factors for presbyopia? | 1. Age over 40 2. Family history of visual impairment 3. Gender 4. Smoking 5. Alcohol consumption 6. Diabetes 7. Hypertension 8. I’m not sure 9. Others (specify)…………….. |
| **Section C: ATTITUDE TOWARDS PRESBYOPIA** | | |
|  | Is there need for presbyopia screening | 1. Yes 2. No |
|  | Can presbyopia lead to visual disturbance | 1. Agree 2. Disagree 3. Neutral |
|  | Is presbyopia treatable? | 1. Agree 2. Disagree 3. Neutral |
|  | Is it important attending follow-up visits? | 1. Yes 2. No |
| **Section D: PRACTICES TOWARDS PRESBYOPIA** | | |
|  | Have you experienced decrease vision? | 1. Yes 2. No |
|  | If yes, did you seek eye checkup for your symptoms? | 1. Yes 2. No |
|  | If no, what were your reasons? | 1. Beliefs 2. Society related 3. None |
|  | Does vision affect your daily activity | 1. Yes 2. No |
|  | Would you utilize presbyopia surgery | 1. Yes 2. No |

***Thank You for your Cooperation!***