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KNOWLEDGE, ATTITUDE AND PRACTICES OF EYE HEALTH AMONG BASIC SCHOOL TEACHERS IN TALENSI DISTRICT

BY

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DECLARATION

I, Michael Oboo-Gyan , hereby declare that this proposal has been composed solely by me and that it has not been submitted, in whole or in part, to any other University for the award of another degree. Except where the reference or acknowledgment is stated, the work presented is entirely my own work done under supervision.

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DEDICATION

I would like to dedicate this dissertation to the late Antonio Quarshie Awusah of blessed memory, for his unwavering source of support and inspiration for me to begin this academic journey.

To my family especially my wife and children, I say thank you for your unconditional love and support. Your belief in me has been a driving force behind my success, and I am forever grateful for all that you have done for me.

I would also like to dedicate this dissertation to myself. This journey has not been easy, and there were times when I felt like giving up. But I persevered, and I am proud of what I have accomplished. This dissertation is a testament to my hard work, determination, and resilience.

Lastly, I express my gratitude to God Almighty, whose strength has enabled me to successfully complete this study.

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ABSTRACT

Background: Vision is very important in early child development. Teachers perform critical roles in delivering school-based eye health interventions for school children, or school eye health programmes. In that regard, this study sought to examine the knowledge, attitude and practices of eye health and their associated factors among basic school teachers in the Talensi district of Ghana.

Methods: This was a cross-sectional study involving 220 teachers in the Talensi district. A self-administered questionnaire was used to collect data from participants. Data was collected on sociodemographic characteristics, knowledge, attitude and practices regarding eye health. Multivariate logistic regression was used to determine factors associated with adequate knowledge at 95% significance level.

Results: Two hundred and twenty teachers participated in this study with a mean age of 35.2± (6.11). The main eye conditions known to the teachers were myopia (79.1%), glaucoma (73.2%) and cataract (68.2%). Overall, only 35.5% had adequate knowledge on eye health, 71.4% showed good attitude towards eye health and 69.1% had good eye health practices. The main sources of information on eye health were from health personnel (77.3%), workplace (26.4%) and television/radio (20.0%). Male teachers were nine times more likely to have adequate knowledge compared to their female counterparts [AOR= 9.12; 95% CI: 3.44-24.18; p<0.001]. Furthermore, teachers with postgraduate education were also four times more likely to have adequate knowledge of eye health conditions compared to those with diploma education [AOR= 9.12; CI: 3.44-24.18; p<0.001].

Conclusion: Though adequate knowledge on eye health was low, there was good attitude and practices towards eye health among the teachers. Sex and education were significant factors associated with adequate knowledge on eye health among the teachers.

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National Center for Children's Vision and Eye Health at Prevent Blindness- NCCVEH

World Health Organization - WHO

American Academy of Ophthalmology- AAO

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Vision is very important in early child development. According to the National Center for Children's Vision and Eye Health at Prevent Blindness (NCCVEH) (2020) , vision plays an important part in children's physical, cognitive, and social development. Empirical evidence suggests that one in 17 children and one in five preschool-age children enrolled in school do not know they have a vision disorder (Ying et al., 2014). This is corroborated in the world report on vision which notes that at least 2.2 billion people have a vision impairment or blindness of which at least 1 billion have a vision impairment that could have been prevented (World Health Organization, 2019). Global prevalence of amblyopia a common vison disorder and cause of mononuclear blindness in children was 1.36% (Hu et al., 2022).

According to the world report on vision, cataracts and uncorrected refractive errors are among the prominent causes of vision impairment (World Health Organization, 2019). Earlier studies have found that common vision disorders among children include refractive error, amblyopia, and strabismus (Hu et al., 2022; Kulp et al., 2022; Ying et al., 2014). With vision being classified by the World Health Organization as the most dominant sense at every stage of our lives, it is important to give eye care a priority (World Health Organization, 2019). Delay in detecting and treating vision disorders especially in children is detrimental to child development, obstruct learning, and can cause permanent blindness (Hu et al., 2022; National Center for Children's Vision and Eye Health at Prevent Blindness, 2020; Ying et al., 2014). Early-onset of profound vision impairment can lead to decreased scholastic attainment in young children and may continue to affect health and well-being through to adulthood and old

age (World Health Organization, 2019). This is corroborated by Alvarez-Peregrina et al. (2021) who found that effective functioning of the eye is associated with good academic performance among school children.

Services related to eye health such as screenings, eye care, treatment and eye health education can be provided in a multiplicity of environments. These include primary care offices, public health clinics, schools, childcare facilities, eye care provider offices, and community health program settings (National Center for Children's Vision and Eye Health at Prevent Blindness, 2020). Timely identification, diagnosis, and treatment of a vision impairment are crucial for a child's long-term visual health, and vision screenings can help detect children who require eye care and encourage them to go for treatment.

Though vision impairment and blindness affect all nations, its impact is disproportionate. Due to limited options to get the most basic eye care services among countries in the global south, the burden of vision impairment and blindness can be significantly large (World Health Organization, 2019). This suggests that a visually impaired child faces a lifelong psychologic, emotional and socioeconomic challenges which have consequences for the family and society at large (Okoloagu et al., 2019).

A recent systematic review found that myopia affects about one in twenty African school aged children with a prevalence of 4.7% for the past two decades (Ovenseri-Ogbomo et al., 2022). Within the context of school environments, due to limited or non-existent school eye health programmes in many sub-Saharan African countries, visually impaired children have been identified as having a lower chance of ever enrolling in school, completing elementary education, and becoming literate (Wodon et al., 2019).

Teachers perform critical roles in delivering school-based eye health interventions for school children, or school eye health programmes (National Center for Children's Vision and Eye Health at Prevent Blindness, 2020; Wodon et al., 2019). Moreover, screening children in schools and providing eyeglasses to those who need them, as well as more advanced care are the easiest strategies to combat visual impairment among school children (Wodon et al., 2019). Because they live in areas with limited eye care alternatives, most children in sub-Saharan Africa do not have the opportunity to screen for vision impairment in school or any other place (Wodon et al., 2019).

In Ghana, health education in relation to eye care remains low (Boadi-Kusi et al., 2021). This can be attributed to the limited availability of eye care personnel in the school setting (Ceesay et al., 2019). Hence, teachers can provide vital role for maintaining eye health in school aged children in Ghana. A recent study found that junior high school teachers had adequate knowledge on red eye, refractive error and eye injury but inadequate knowledge on crossed eyes, cataract, corneal ulcer, pterygium, glaucoma and low vision. In that regard, it is prudent to obtain up-to-date information on eye health care among basic school teachers since they serve as knowledge imparters to school children (Tchiakpe et al., 2016). Teachers in Ghana play an essential role in promoting health care services including eye health as part of the school health program. They help identify students with eye problems by conducting basic eye screenings and referring them to eye health professionals for further evaluation and treatment. Teachers also educate students on the importance of eye health, such as regular eye check-ups, eye protection, and healthy eye habits. Additionally, teachers collaborate with Ghana Health Service and other stakeholders to organize eye health campaigns and programs, such as World Sight Day, to raise awareness about eye health issues. By promoting eye health services and

educating students, teachers contribute to reducing the prevalence of eye diseases and improving the quality of life of students in Ghana. It is against this background that the current study seeks to assess the knowledge, attitude and practices of eye health among basic school teachers in the Talensi District of Ghana.

1.2 Problem statement

Teachers play a key role in ensuring access, participation, and achievement of learners in the classroom. As such there is a need for them to have good knowledge, attitudes and practices towards any condition that may hamper effective teaching and learning in the classroom including visual impairments in school children. Undetected and untreated vision problems interfere with the ability to perform to one's full learning potential and place a greater socioeconomic burden on the society (Alemayehu et al., 2018). In order to reduce this burden, there is the need for teachers to have good knowledge, attitudes and practices to help in early detection, diagnosis and treatment of eye problems among school children (Saxena et al., 2015). Alemayehu et al. (2018) found that teacher's knowledge about refractive error plays an important role in encouraging students to seek treatment that helps in reducing the burden of visual impairment. When teachers help to screen for vision in schools, it provides an excellent way to discover students with eye disorders and impaired vision early (Okoloagu et al., 2019; Saxena et al., 2015). This method could be beneficial in lowering the workload of eye care professionals and enhance school children's eye health (National Center for Children's Vision and Eye Health at Prevent Blindness, 2020).

According to Akuffo et al. (2020), school eye screening is largely missing in most Ghanaian schools though major stakeholders like teachers are of the view that such programmes would

improve eye health in school children. Delay in the early detection, diagnosis and treatment of eye conditions among school children could increase the number of blind years children have to live with (Wodon et al., 2019). Previous research found that children are often not able to articulate their complaints as they remain ignorant of their problems (National Center for Children's Vision and Eye Health at Prevent Blindness, 2020). These children mostly struggle academically, demonstrate classroom behavioural issues, and miss developmental milestones. Since teachers spend most times with school children they play an important part in early detection of children's eye impairments (Gilbert, Morjaria, & Khan, 2016).

Few studies have been conducted on childhood visual impairments. For example, Akuffo et al. (2020) examined the level of awareness and perception of stakeholders regarding preschool vision screening, its availability and related policies/programmes in the Kumasi Metropolis, Ghana. They found that preschool vision screening was to a large extent missing in most Ghanaian schools. Ceesay et al. (2019) also examined perception of primary school teachers on pupils' eye health in the Ga West Municipality of Ghana and found that, teachers in the municipality had good knowledge of the features of healthy eyes and a fair knowledge of the causes of visual impairments in basic schoolchildren. Tchiakpe et al., (2016) also found that junior high school teachers in the Ledzokuku Krowor Municipality had adequate knowledge on ocular diseases and eye health practices that promote good visual health. However, most of these studies are done in southern part of Ghana and focused primarily on the knowledge of teachers on eye health. They did not address other key elements such as attitudes and practices. Empirical evidence which would provide dynamics from the northern part of the country appears to be missing in the literature. Beside knowledge, attitude and practices are also key preventive concepts in promoting health. Thus, the inadequacy of current data on knowledge,

attitudes and practices on eye health among basic school teachers could be detrimental to the overall health of their pupls who are under the constant tutelage of their teachers. It is therefore relevant to conduct this study. This study will fill this gap by focusing on the Talensi District of the Upper East Region. Hence central to this study is to examine the knowledge, attitude and practices of eye health among basic school teachers in the Talensi District of Ghana.

1.3 Objectives

1.3.1 General objectives

This study seeks to examine the knowledge, attitude, practices of eye health and their associated factors among basic school teachers in the Talensi District of Ghana.

1.3.1 Specific objectives

Specifically, this study seeks to:

1. Assess knowledge on eye health among basic school teachers in the Talensi District of Ghana.
2. Examine basic school teachers' attitude towards eye health in the Talensi District of Ghana
3. Examine practices regarding eye health among basic school teachers in the Talensi District of Ghana.
4. Examine factors influencing knowledge on eye health among basic school teachers in the Talensi District of Ghana.

1.4 Research questions

The research sought to answer the following research questions:

1. What is the level of knowledge on eye health among basic school teachers in the Talensi District of Ghana?

2. What are basic school teachers' attitude towards eye health in in the Talensi District of Ghana?
3. What are eye health practices among basic school teachers in the Talensi District of Ghana?
4. What are the factors influencing knowledge, attitude and practices on eye health among basic school teachers in the Talensi District of Ghana?

1.5 Justification

Undetected and untreated vision problems interfere with the ability to perform learning task. It places a greater socioeconomic burden on society (Alemayehu et al., 2018). In order to reduce this burden, there is the need for teachers to have good knowledge, attitudes and practices on eye health in order to help in early detection, diagnosis and treatment of eye problems among school children (Saxena et al., 2015). What children learn in school from their teachers about their eyes and eye health, including how to protect their eyes and what to do to prevent eye diseases, has a significant impact on their lives as adults (Okoloagu et al., 2019).

Findings from the study would provide empirical evidence on teachers' knowledge, attitudes and practices towards children's eye health which would help target programs appropriately for eye health education and community participation. There is a huge impact on children's life as adults from what they learn in school from their teachers about their eyes and eye health, including how to protect their eyes and what to do to prevent eye illnesses. Findings from this study will empower these teachers to impact the eye health of their students. This study will enable teachers to achieve early detection and prompt referral of eye health issues to relevant authorities for necessary corrective actions as children tend not to complain often about visual

difficulties. Findings would also provide knowledge to implement systems-level changes by various actors such as public health practitioners, primary health care providers, parent advocates, early childcare providers, policy makers, community and business leaders, community-based organizations, educators, school nurses and others interested in improving the health of children. Also, the findings would provide information needed for effective community and state level health promotion strategies that will lead to improved vision among school children.

1.6 Conceptual framework

The conceptual framework is adapted from the health belief model. This model is very popular in public health discipline. The model is premised on various perceptions and motivations of the individual and utility driven healthcare seeking decision steps (Pushpalata & Chandrika, 2017). Emphasis is placed on the contextual elements of an individual and the prevailing health system characteristics when it comes to the healthcare seeking behaviour of an individual (Kim & Kim, 2020). Many scholarly works on healthcare services utilization research have focused on determining the most appropriate factors (both individual and environment) that may influence the choice of the health care services provider (Pushpalata & Chandrika, 2017). The model contains:

Beliefs about the impact of illness and consequences which depend on perceived susceptibility, or the beliefs about how vulnerable a person considers himself in relation to a certain illness or health problem and its consequences.

Health motivation or readiness to be concerned about health matter.

Beliefs about the consequences of health practices and about the possibilities and efforts to put them into practice. The behavioural evaluation depends on 'willpower' with regard to a certain health practice.

Cues to action, entails different internal and external factors, which determines an individual's action. For example, the nature and intensity of illness symptoms mass media campaigns, advice from relevant others such as spouse, friends among others

Beliefs and health motivation are conditioned by sociodemographic variables such as age, marital status, and sex as well as psychological characteristics of the interviewee (Jiang et al., 2021).

Knowledge

Good knowledge of eye health is always associated with satisfactory eye health behaviours and outcome (World Health Organization, 2019). This suggests that, understanding the correlates of good eye health through knowledge leads to improved eye care attitudes in both teachers and school children (Tchiakpe et al., 2016). Knowledge related to acquisition, retention, and use of information or skills. Knowledge accrues from both education and experience. In this study, knowledge assesses the extent to which basic school teachers know about eye health and eye care services, eye disorders among others. Sources of these knowledge may come through previous encounters with eye health promotion, mass media among others.

Attitude

Attitude is a person's perception, position and feeling about various eye intervention (perceived benefits). Attitude identifies the values people have about their eye health and the health care

system. Teachers' attitude is influenced by their knowledge about eye health care and the interaction between these factors may promote or obstruct the practice of eye health for school children. A teacher's positive attitude will translate to the willingness to help screen school children in order to detect eye disorders which may hamper effective learning (National Center for Children's Vision and Eye Health at Prevent Blindness, 2020).

Practices

Teachers with good knowledge about the characteristics of healthy and diseased eyes, as well as positive attitudes towards eye health among school children tend to develop good eye health practices such as encouraging regular eye check-ups among school children, encouraging early detection, diagnosis and management of suspected school children with eye conditions among others. Also, teachers who had personal experiences with eye conditions tend to develop positive attitudes and practices towards eye health among school children. Sociodemographic characteristics such as educational levels among others tend to influence teachers eye health practices (Ceesay et al., 2019). With respect to preventive eye health practices, a study indicate that teachers suggest regular eye examination at least once a year, vitamin A intake and facial hygiene (Tchiakpe et al., 2016).

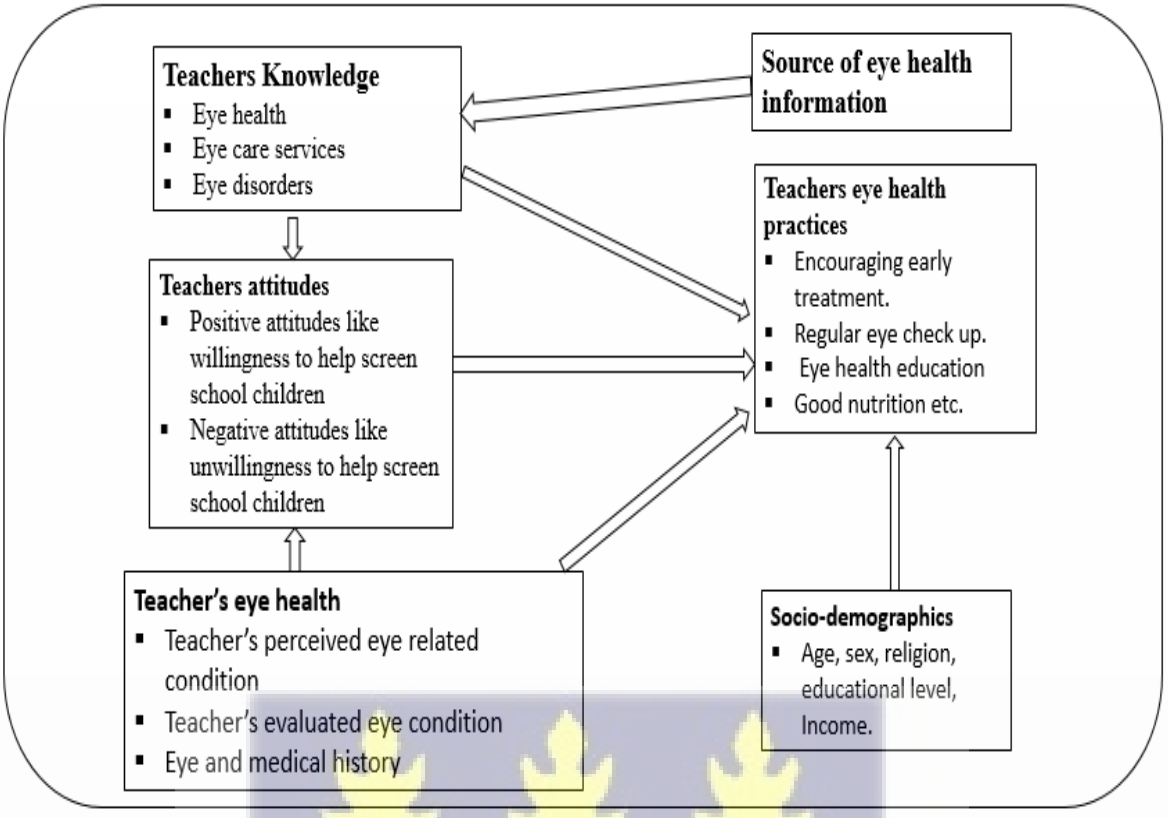

Figure 1 Conceptual framework on knowledge, attitude and practices of eye health among basic school teachers.

Source: Adapted from Bruce et al., (2018)

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Knowledge on Eye Health

Diseases that affect the eye could lead to all forms of visual impairment, including blindness. Hence, seeking eye care is an imperative for all demographic, be they young or old, male or female, and belonging to any socioeconomic or educational status (Titiati, 2019). Consequently, the World Health Organization (WHO) has reported that eye care seeking-behaviour has been on the rise in recent years as a result of increasing population growth across the globe (WHO, 2019). According to Wiafe (2015), the prevalence of visual impairment in Ghana is 1.07%, with about 0.74% of the population suffering from blindness. The researcher indicated from the results of his study that most Ghanaians who had become blind was as a result of glaucoma and cataract, which are diseases of the eye that can be prevented (Wiafe, 2015). Similar to these findings, the WHO (2021) noted in a report on blindness and vision impairment that refractive errors and cataracts are the leading causes of blindness and vision impairment across the globe. It is noteworthy that most disease conditions that result in visual impairment are preventable (Okoloagu et al., 2019). Consequently, it is imperative to assess knowledge of individuals especially teachers on eye health.

According to the WHO (2021), there are more than 2.2 billion people who suffer from vision impairment globally. This can be attributed to the fact that most individuals do not undertake regular checks of their eyes. Titiati (2019) argues that ageing individuals in the population should be encouraged to undertake regular eye checks as they at risk of developing visual impairments and blindness. The WHO (2021) has indicated that individual experience with eye health varies depending on several factors, including access to vision health facilities,

availability of treatment and prevention interventions, accessibility to information, as well as access to assistive products such as spectacles, refracted and magnifying glasses, and hand-held magnifiers Further, these factors invariably dictate knowledge of eye health among individuals in a community. The American Academy of Ophthalmology (AAO) recommends different time intervals for eye examinations, depending on several demographic factors, to ensure optimal eye health (AAO, 2015). Whereas an interval of 2-4 years is suggested for asymptomatic individuals aged 40-54 years, individuals aged 55-64 years are encouraged to have their eyes checked every 1-3 years (AAO, 2015).

Poor knowledge on eye health can be attributed to the age of respondents involved in the study. Wiafe (2015) argues that increasing age is associated with poor eye health, thus, elderly individuals are more likely to seek eye care, and have better knowledge on eye health, compared to younger individuals. Consequently, Titiati (2019) discovered age to have a statistically significant correlation with knowledge of eye health, with most of the respondents aged 20-29 years, enforcing the finding of Wiafe (2015) who indicates that elderly are more likely to have good knowledge of eye health.

In a study conducted to investigate the perspectives of Junior High School teachers on child eye health, it was reported that the teachers had adequate knowledge on various kinds of visual impairments, including injuries to the eye, refractive error and red eyes (Tchiakpe et al., 2016). Teachers were found to possess adequate knowledge of eye health because most of them involved in the study had attained higher formal education (Tchiakpe et al., 2016). To corroborate these findings, Titiati (2019) reported that individuals with background in medical studies were more likely to possess good knowledge on eye health, compared to other students

of other disciplines in the same school setting. Adequate eye health was documented by a study that was conducted by Islam et al. (2015), who reported a significant association between religion and eye health. The researchers reported from the findings of their study that more Muslims than Christians possessed adequate knowledge of eye health. This finding can be attributed to the fact that the study was conducted in Bangladesh, a predominantly Muslim geographic location, hence individuals of other religious backgrounds were few (Islam et al., 2015).

Gilbert, Morjaria and Khan (2016) have indicated that knowledge of child eye health can be improved among teachers through health promotion and education, since teachers are the main human resource that interact with students on a day-to-day basis, even more than their parents. Consequently, teachers can be trained and equipped with skills for early detection of eye conditions among their students (Gilbert, Morjaria, & Khan, 2016). In their study, Ceesay, Braimah, and Abaidoo (2019) reported that teachers had good knowledge on eye health, indicating accurately the features that characterize healthy eyes and diseased eyes. Further, the researchers reported that the teachers involved in their study demonstrated good knowledge in indicating the common causes of visual impairments among children of school-going age (Ceesay, Braimah, & Abaidoo, 2019). It is noteworthy that eye health is not included in the curriculum of basic school teachers, however, these teachers possessed knowledge on child eye health (Ceesay, Braimah, & Abaidoo, 2019). This corroborates the findings reported by Gilbert, Morjaria and Khan (2016), who argued that equipping teachers with knowledge on child eye health would significantly improve the early detection and treatment of visual impairments among children.

Poor eye health was documented from a study conducted among primary school teachers in Enugu, Nigeria (Okoloagu et al., 2019). To compound this challenge, most of the basic school teachers involved in the study reported a lack of school-based eye care services in their institutions (Okoloagu et al., 2019). To curb this challenge the WHO (2019) has recommended the incorporation of eye screening and refractive error services in basic schools and institutions of higher education. Further, it has been proposed that basic school teachers teach their pupils on the parts of the eye, and common conditions that could result in visual impairments (Ceesay, Braimah, & Abaidoo, 2019).

2.2 Attitudes towards Eye Health

It has been documented that primary school teachers are cardinal in promoting eye health among their pupils. They serve the role as being the first point of call in the primary prevention of visual impairments and blindness among school children, and ensure to promote primary health care in basic schools (WHO, 2012). The role of primary school teachers cannot be downplayed in ensuring adequate eye health among primary school pupils because children are known not to complain when they experience challenges in their health. Thus, early detection and prevention by trained teachers is imperative for prevention and treatment purposes (Okoloagu et al., 2019). This implies that a positive attitude of child eye health is expected among primary school teachers. When left unattended to, poor childhood eye health could lead to a lifetime of blindness and permanent eye damage, which could have been prevented.

To enforce a positive attitude towards child eye health among teachers, the WHO (2012) recommended the need to train teachers in order for them to be able to detect visual impairments among their students on the onset. It has been documented that primary school

children learn significantly from their teachers' behaviours, as well as from what they are taught in school. Thus, incorporating eye health education into the basic school curriculum will ensure both teachers and pupils are equipped with knowledge on eye health, common causes, detection and prevention of visual impairments (Okoloagu et al., 2019). Okoloagu et al. (2019) argue that primary school teachers are better to suited to provide eye health education for school children, as well as detect visual abnormalities because teachers spend most of the daily hours with their pupils in school, and would be prompt to notice when children demonstrate challenges with their vision, including tearing, redness, blurry visions, and dizziness, among others.

In a study that was conducted in Pakistan to evaluate the attitude of teachers of primary school children, the researchers reported good attitude towards eye health among the teachers (Habiba et al., 2017). The finding was attributed to the fact that most of the teachers had a relative who suffered some form of visual impairment, and so were more likely to be empathetic towards school children with similar eye conditions (Habiba et al., 2017). Contrary findings were found in a study that was conducted in Nigeria, which reported that because respondents held diverse perspectives on the prevention and treatment of eye health, poor attitude was observed (Adegbehingbe & Bisiriyu, 2012).

In their study, Ceesay, Braimah, and Abaidoo (2019) reported that teachers were able to accurately detect such eye conditions as hypermetropia, allergies, cataracts and red eye among their pupils, citing them as being among the commonest causes of visual impairment among children. Further, teachers reported their ability to detect quickly whenever students developed challenges with their vision, because of such characteristics as squinting of the eyes and

difficulties to see the writing board, relocating from sitting position in the classroom, among others (Ceesay, Braimah, and Abaidoo, 2019). Habiba et al. (2017) reported that teachers exhibited positive attitude towards children with various visual impairments because they had knowledge that certain visual impairments could be cured. Okoloagu et al. (2019) reported that positive attitudes towards eye health among teachers of primary school children was associated with being gender, educational status and marital status. The researchers reported from the findings of their study that being a female, attainment of higher educational qualifications, and being married would result in positive attitude towards child eye health (Okoloagu et al., 2019). This can be attributed to the fact that married women are likely to have children, which would make them concerned about their pupils' health as they would be with their own children.

In evaluating the attitudes of individuals towards cataract surgeries, a study that was conducted in Cambodia reported good attitude among the respondents (Ormsby et al., 2012). This was because most of the respondents believed that blindness could be prevented. Titiati (2019) reported that such factors as cost of surgical procedure, fear of surgical procedure, and lack of accessibility to prevention and treatment centres could influence the attitude of patients towards eye health. Consequently, out of fear of complications from surgical procedures, individuals with cataract may refrain from undergoing surgery as a corrective measure for the cataract. In a study that was conducted in Nigeria, Onwubiko et al. (2016) reported that respondents, who were elderly folk with eye conditions including cataracts, refractive error, diabetic retinopathy and glaucoma, demonstrated a willingness to prevent blindness among school children. They also reported a good attitude towards prevention and treatment of eye diseases, visual impairments and blindness.

In their study, Tchiakpe et al. (2016) reported a positive attitude of teachers towards students who wear spectacles. Consequently, stigma and negative perceptions towards school children who wear spectacles can be minimized because of teachers' attitudes (Tchiakpe et al., 2016). Further, primary school teachers in Ledzokuku Krowor Municipality of Ghana, reported that wearing spectacles would not prevent children from attaining great feats in their education, and indicated support for such students (Tchiakpe et al., 2016). In Nigeria, prevalence of visual impairment and poor eye health has been reported among illiterates. Consequently, primary school teachers seek to ensure school children do not develop eye conditions which would hamper their education and academic path (Onwubiko et al., 2016). This positive attitude of prevention of visual impairments was reported among primary school teachers of basic schools in the south-east geo-political zone of Nigeria (Onwubiko et al., 2016).

2.3 Practices regarding Eye Health

According to the American Academy of Ophthalmology (AAO), undertaking regular eye examinations is imperative for optimal eye health (AAO, 2015). The Academy recommends that because African-Americans are at a higher risk of developing glaucoma, individuals under the age of 40 years should undertake routine eye examinations every 2-4 years, whereas individuals aged 40-54 years go for regular eye examinations every 1-3 years. Further, even in the absence of any eye disease conditions or symptoms, it is recommended that individuals aged 55 years and above should undertake regular eye checks every 1-2 years (AAO, 2015). In accordance with these recommendations, a study conducted in Switzerland reported that more than 70% of the respondents had an eye examination done within the past 12 months, whereas more than 85% had undertaken an eye examination within the past 24 months (Konstantinidis et al., 2017).

Good practice towards eye health can be attributed to the fact that respondents had adequate knowledge towards eye health. In a study that was conducted to evaluate the practices on eye care of diabetic patients with diabetic retinopathy, the researchers reported that good knowledge on diabetes and diabetic retinopathy was associated with good practices (Srinivasan et al., 2017). Diabetic retinopathy is an eye condition that requires attention. However, most diabetic patients that visited a tertiary eye centre in India were reported to have poor knowledge on eye care in retinopathy. Consequently, the researchers reported poor practices towards eye care (Srinivasan et al., 2017). Contrary to these findings, however, Konstantinidis et al. (2017) reported from their study in Switzerland that only about 3.7% of the population had never had a visit to the ophthalmologist to undergo an eye examination. Titiati (2019) suggests that good eye practices would result from enhancing eye health education. Consequently, among primary school children, teachers should be equipped with knowledge that bothers on visual acuity measurement, identification of symptoms of visual impairments, basic eye examination, and early diagnosis and referral of children suspected of having any form of visual impairment (Titiati, 2019).

In assessing practices of eye health among primary school teachers towards their students, Tchiakpe et al. (2016) reported good practices exhibited among them. Teachers were reported to encourage their pupils to undergo regular eye check-ups, and to wear protective glasses if it was necessary (Tchiakpe et al., 2016). Further, other practices advocated for children by their teachers included vitamin A intake, practicing facial hygiene, and ensuring adequate illumination during times of study (Tchiakpe et al., 2016). In a study conducted to evaluate the perceptions of elementary school teachers about vision and learning and vision therapy, Hinkley, Schoone, and Ondersma (2012) reported that teachers found a positive association

between vision and academic achievement. Thus, students who had good vision in the classroom were more likely to perform better academically, compared to those with poor vision (Hinkley, Schoone, & Ondersma, 2012). This finding is similar to the findings from Tchiakpe et al. (2016) which indicates adequate knowledge exhibited by teachers. Ormsby et al. (2012) have reported that individuals tend to refrain from utilizing eye examination services as a result of the cost involved, with further challenges being as a result of poor knowledge on the importance of eye health. Thus, teachers encouraging their pupils to consider their eye health important is a step in the right direction towards fighting visual impairments including childhood blindness experienced during childhood.(Tchiakpe et al., 2016).

According to Okoloagu et al. (2019), sociodemographic factors such as age, gender, marital status, and educational status are significantly associated with positive practices of teachers towards their students' eye health. According to the researchers, teachers who had obtained higher educational accomplishments were more likely to exhibit positive practices compared to those who had attained lower levels of educational accomplishments (Okoloagu et al., 2019). This can be attributed to the fact that attaining higher levels of education predisposes individuals to be conscious about their health, as well as possess knowledge on several factors pertaining to health. Further, being married could contribute to good practices towards eye health of students because married teachers are likely to have children and be concerned about their eye health, consequently extending the same care towards the students they teach. In their study, Ceesay, Braimah and Abaidoo (2019) reported good levels of knowledge of teachers on child eye health, which invariably translates to good practices. Consequently, the researchers suggest the need to promote healthy eye practices, including practicing facial hygiene, and to increase awareness of various disease conditions that affect the eye and complications that

could result from their non-prevention and non-management (Ceesay, Braimah, & Abaidoo, 2019).

Prozesky, Stevens, and Hubley (2022) suggests practices that would enforce students and teachers to be abreast with proper eye health, including showing an attitude of concern and care towards students who suffer from a visual impairment, encouraging students to educate their family and friends from neighbouring schools on common causes of visual impairments, and providing a checklist on the symptoms of various eye conditions as teaching and learning tools, among others. It is imperative that students learn better by what they see being demonstrated to them. Thus, teachers, in teaching their students eye health, should incorporate demonstrations, and ensure students perform the same demonstrations under supervision, to ensure they adequately understand what they are being taught (Prozesky, Stevens, & Hubley, 2022). Consequently, good knowledge will translate to good practices among the children.

2.4 Factors Influencing Knowledge of Eye Health

Co-morbid disease conditions has been reported to be a factor that influences knowledge of eye health. According to Srinivasan et al. (2017), because individuals with diabetes are likely to develop diabetic retinopathy, they are expected to possess some knowledge on eye health. However, the findings from their study proved otherwise. Although respondents from their study were diabetic patients who were undergoing eye care at a tertiary facility in India, the researchers indicated that they were unaware of the complications of poor eye health among diabetics (Srinivasan et al., 2017).

Tchiakpe et al. (2019) reported good knowledge of eye health among school teachers in Ledzokuku Krowor Municipality in Ghana. These researchers attributed good knowledge to be

as a result of higher levels of education of the teachers. Consistent with these findings, Okoloagu et al. (2019) reported from their study that teachers who possess a bachelor's degree were more likely to have adequate knowledge on children's eye health, compared to those who did not. This can be attributed to the fact that higher educational attainment implies exposure to diverse sources of knowledge, placing teachers with a bachelor's degree at an advantage of coming into contact with information pertaining to children's eye health. Further, higher levels of education translates into improved literacy, ensuring that information provided on eye health, whether via print, mass, or social media, is better appreciated.

According to Titiati (2019), varying educational backgrounds tend to influence knowledge of eye health. Results from her study indicated that students who were in the medical school, and those pursuing any course in the health sciences, were more likely to possess knowledge of eye health, compared to those who were pursuing other fields of study not related to the health sciences (Titiati, 2019). This can be explained to be as a result of the fact that students pursuing health sciences are taught on parts of the human body and disease conditions that each body part is likely to suffer from. Thus, eye health is a subject such students would invariably be taught.

In a study conducted to evaluate the factors associated with awareness and practices regarding common eye diseases in Bangladesh, Islam et al. (2015) reported a significant association between gender, religion and knowledge of eye health. The researchers reported that Muslims were more likely to be knowledgeable on eye health than individuals of other religions (Islam et al., 2015). It can be argued that the results may be biased because Bangladesh is known to be populated predominantly by Muslims. Consequently, in a study to evaluate the knowledge,

attitude and practices of eye health care among graduate students in a university in Ghana, Titiati (2019) reported no significant association between religion and knowledge of eye health.

According to Wiafe (2015), visual impairments and blindness is predominant among the aged. Thus, ageing is a factor that could influence knowledge on eye health. Wiafe (2015) argues that because the aged are more likely to be diagnosed with various eye conditions, they tend to possess adequate knowledge on eye health. This is only an assertion that was not proven from the results of his study. It is noteworthy that Srinivasan et al. (2017) has reported that eye conditions are predominantly higher among the older generation. Contrary to these reports, however, Onwubiko et al. (2016) reported knowledge of eye health to be significantly higher among the younger population. They argue that due to the advent of social media and the ease of getting information, which is a characteristic associated with young age, individuals aged less than 40 years are more likely to possess adequate knowledge on eye health. Titiati (2019) reported from the results of her study that most respondents exhibited positive attitude towards eye health because of adequate knowledge, indicating the reason to be because majority of the respondents were aged 20-29 years. TV commercials on eye health has been reported to be on the rise, consequently increasing the awareness of individuals on visual impairments, their complications, and other important aspects of eye health.

Conclusion

In conclusion, this literature review has provided an overview of current knowledge, attitudes, and practices regarding eye health, with a focus on teachers and students. Several key findings emerge from the studies reviewed:

- Knowledge of eye health tends to be higher among those with more education, medical backgrounds, and in some cases, older age groups. However, knowledge gaps exist, even among those expected to be more knowledgeable like diabetic patients and teachers.

- Attitudes are generally positive towards promoting eye health and vision care, though some studies found ambivalent attitudes related to use of services, stigma, and varying cultural perspectives. More work is needed to promote positive attitudes universally.

- Reported practices around eye exams and care vary widely based on context. While some populations report high rates of eye exams, others face barriers like costs. Practices promoted by teachers towards students are generally encouraging, but implementing comprehensive vision screening and follow-up care in schools remains a challenge.

Overall, the research indicates a need for improved eye health education, attitude change strategies, and increased access to affordable vision care services. Teachers represent a vital conduit for promoting children's eye health. More intervention studies are needed to identify effective programs for training teachers, integrating eye health into curricula, and linkages with vision care services. Gaps remain in understanding cultural factors influencing eye health beliefs and practices. Additional research can help strengthen the evidence-base for policy and programming aimed at reducing the burden of visual impairment globally.

CHAPTER THREE

3.0 METHODS

3.1 Introduction

This section outlines the procedures used in the conduct of the study. It includes the study design, location, population, sample size and sampling techniques. Data collection techniques, analysis, and ethical considerations.

3.2 Study design

This was an analytical cross-sectional study among primary school teachers in the Talensi District. A cross-sectional study is appropriate for this study as this type of study design enables researchers to measure both outcome [eye health] and exposure variables (socio-demographic characteristics of primary school teachers, knowledge on eye health, attitude towards eye health and perception of primary school teachers in relation to eye health).

3.3 Study site

This study was conducted in the Talensi District in the Upper East Region of Ghana. The district was created in 2012 with Tongo as its district capital. It shares borders with the Bolgatanga municipality to the north, West and East Mamprusi districts to the south, Baku West and Nabdam districts to the east and Kassena-Nankana district to the west. According to the 2021 Population and Housing Census the district has a population of 87021 with 43,849 males and 43,172 females (Ghana Statistical Service, 2021). The District is home to 218 educational institutions in total, 151 of which are public and 67 private. There are six (6) circuits that make up the District. In the District, there are 896 trained teachers, that is, 77.17 % of the total, and 265 untrained teachers, or 22.83 %. The district's pupil-teacher ratios are as follows: Pre-school 1:35, Primary 1:34, and J.H.S. 1:11

(Ministry of Finance, 2020)

Figure 2 Map of Study Talensi

Source:(Ghana Statistical Service, 2010)

3.4 Study population

The study population comprised primary school teachers in the Talensi district

3.5 Inclusion and exclusion criteria

3.5.1 Inclusion criteria

All primary school teachers in the study area were eligible for inclusion into the study.

3.5.2 Exclusion criteria

Eligible primary school teachers who were absent at the point of data collection were excluded.

3.6 Sample size calculation

The sample size for this study was determined using the Cochran formula (Cochran, 1977). The formula is given by: $n= \frac{z2 \times p \times q}{d \times d}$

where: z= 1.96, p= 15%=0.15 from a similar study in Nigeria which found knowledge on eye health among primary school teachers to be 15% (Okoloagu et al., 2019), q=1-p= 1-0.15=0.85 and d=5%=0.05.

Therefore, $n= \frac{1.96 \times 1.96 \times 0.15 \times 0.85}{0.05 \times 0.05} = \frac{0.48980}{0.0025}$= 195.9=196.

To cater for non-response, the sample size was upwardly adjusted by a 10%, yielding: 1.10 × 196= 215.6= 216. Thus, the sample size is 216 primary school teachers.

3.7 Sampling procedure

A multistage sampling procedure was utilized to select participants for this study. The target population was primary school teachers in the Talensi District. To begin, a sampling frame was generated consisting of a list of all eligible teachers in the district obtained from the district education office. This list contained the names and school location (urban vs. rural) of all teachers. To ensure proportional representation in the sample, the list was stratified by school location. There were 300 eligible teachers in urban schools and 200 eligible teachers in rural schools within the district. Keeping with proportionate sampling, 60% of the required sample was taken from urban schools and 40% from rural schools to reflect their relative proportions in the full district teacher population.

In the first stage of sampling, schools were selected from each stratum. Five urban and five rural schools were randomly selected using simple random sampling. In the second stage, teacher lists for the selected schools were used as sampling frames. The required number of teachers were sampled from each school proportionate to the number of eligible teachers in that school compared to the total teachers in that urban or rural stratum. For example, if School A contained 20% of all urban school teachers, then 20% of the required urban sample was selected from School A. This ensured appropriate representation from each school.

Finally, simple random sampling was used to select the required number of individual teachers from the list for each selected school. This multistage proportionate stratified random sampling approach helped ensure the sample reflects the profile and characteristics of the total population of primary school teachers in District A. The sample is representative in terms of key parameters including school location and distribution across schools.

3.8 Data collection

Data collection was done using a pre-tested semi-structured questionnaire with the help of research assistants. This questionnaire was self-administered and included open and closed-ended questions categorized into four sections: sociodemographic characteristics, knowledge on eye health, attitude towards eye health and practices of primary school teachers on eye health.

3.9 Quality control

Three research assistants were recruited for the study. They were trained for one week. The questionnaire was pretested on 5% sample size at two primary schools; one rural and one urban primary school in a different district with similar characteristics as the study sites.

The pre-testing of the questionnaire helped identify gaps in both the questionnaire and mode of administration for necessary modifications and corrections to be made. It also enabled research assistants to familiarise themselves with the data collection tools and instruments.

3.10 Data management

A univariate analysis of background characteristics was conducted and reported in frequencies and percentages. Knowledge on eye health was created as a composite variable from 20 variables. For each variable, there was right answer and wrong answers. For each correct answer, a score of 1 was assigned and 0 if otherwise. Thus, a scale from 0 to 20 was created, 0 being the lowest score and 20 being the highest score. The Shapiro-Wilk test was used to test for normality of the knowledge scores. The test yielded a p-value of 0.00001 signifying the scale was not normally distributed. Therefore, the mean [14] was used as the cut off value to distinguish between inadequate knowledge (scores below the mean [0-13]) and adequate knowledge (scores from 14-20). The same preamble was used to generate attitude towards eye heath. For this composite variable, 12 variables were used. A score of 1 was assigned to individuals who had responses depicting positive attitude and 0 for negative attitude. With this, a scale of 0 to 12 was also generated. The scale was also subjected to the Shapiro-Wilk test for normality and it yielded a p-value of 0.4745 which indicated the distribution of the attitude scale was normally distributed. Thus, the mean value (9.1 approximated to 9.0) was used to categorize the scale into negative attitude (0-8) and positive attitude (9-12). Eye health practices was also constructed as a composite variable from ten variables; a score of 1 for good practice and 0 for poor practice. A scale of 0-10 was generated to measure practices regarding eye health. A Shapiro-Wilk test for normality produced a p-value of 0.0005 indicating the

distribution was not normally distributed. Hence, the median of the scale (5) was used as a cut-off to categorize the scale into poor practices (0-4) and good practices (5-10).

Chi-square/Fisher's Exact where appropriate were used to determine the relationship between socio-demographic characteristics, attitude, practice and knowledge on eye health. P-values less than 0.05 were considered statistically significant. Multivariate logistic regression was used to determine factors associated with knowledge on eye health. Based on this, a dichotomous variable was created "0" (inadequate knowledge) and "1" (adequate knowledge). The outcome of interest was adequate knowledge. Strengths of association between independent variables and adequate knowledge were determined using crude odds ratio. Variables with p-value of <0.05 in unadjusted logistic regression model (COR) were considered for inclusion into the multivariate logistic regression analyses, adjusted logistic regression (AOR). Issues relating to cofounders were addressed using multilinear collinearity using the Variance of Inflation Factor (VIF) command in Stata. To test for goodness of fit of Model II, the likelihood ratio test was used to examine the likelihood of data under the full model as against the likelihood of the data under a model with reduced number of independent variables. A p-value for the overall model obtained was less than 0.05. These results indicate that the model was good. P-values less than 0.05 were considered statistically significant. AOR and CI were interpreted to indicate if the independent variable has more or less likelihood for the dependent variable to occur.

3.12 Ethical considerations

This study's protocol was submitted to the 37 Military Hospital Institutional Review Board for ethical approval. Permission was also sought from the Talensi District Education Directorate

and the heads of the respective schools included in the study after ethical approval was obtained from the review board of the 37 Military Hospital.

Before data collection started, the enrolled primary school teachers were given an information sheet which summarized all information about the study including the purpose of the study, procedures, risks and benefits related to their participation. The participants were then allowed to ask questions based on the purpose, procedures, risks and benefits of the study to clarify doubts. Upon reading, they were asked to if they would agree to consent to be part of the study. Those who agreed to participate in the study were given two copies consent informs to sign. One signed copy of the informed consent form was given to the teacher to take home, while the principal investigator kept the second copy. Also, participants were told that participation in the study is purely voluntary. They can decide not to participate, decline to answer a particular question or opt out of the study anytime. They were also told that there was no compensation for participating in the study. Data collected was kept under lock and key, with only the principal investigator having access. To ensure anonymity, participants were only identified with codes and numbers instead of their actual names during and after data collection.

CHAPTER FOUR

4.0 RESULTS

4.1 Sociodemographic characteristics of participants

Two hundred and twenty teachers were recruited to be part of this study (Table 1). The mean age of the participants was 35.2 (±6.11) with 45.4% of them aged 30-39 years. Majority (55.5%) of the teachers were male and 44.5% female. The least group of teachers (15%) were aged 40 years and above. With regard to education, 50.4% had acquired diploma certificate in the teaching field, 34.6% had first degrees and 15.0% were postgraduate teachers. A large proportion of participants were Christians (80.9%) and (91.4%). had NHIS as their health finance plan. Generally, the participants' assessment of their general health was good while only 7.7% rated their vision to be poor. Overall, only 21.4% stated they undergo periodic medical screening (Table 1).

Table 1 Sociodemographic characteristics of respondents

Characteristics	Frequency	Percentage
Sex		
Female	98	44.5
Male	122	55.5
Age	*)*	
Mean (SD) 35.2± (6.11)		
< 30 years	69	31.4
30-39 years	100	45.4
40+ years	51	23.2
Education		
Diploma	111	50.4
First degree	76	34.6
Postgraduate	33	15.0
Religion		
Christians	178	80.9
Moslem	42	19.1
Marital status		

Single	73	33.2
Married	147	66.8
Health finance plan		
NHIS	201	91.4
Private insurance	19	8.6
Vision rating		
Poor	17	7.7
Good	114	51.8
Excellent	89	40.5
Periodic medical screening		
No	173	78.6
Yes	47	21.4

4.2 Awareness of eye conditions

Regarding awareness of eye conditions; myopia was rated highest (79.1%) followed by glaucoma (73.3%) and cataract (68.2%). Some (12.3%) indicated they have never heard about the eye conditions under review in this study (Figure 3).

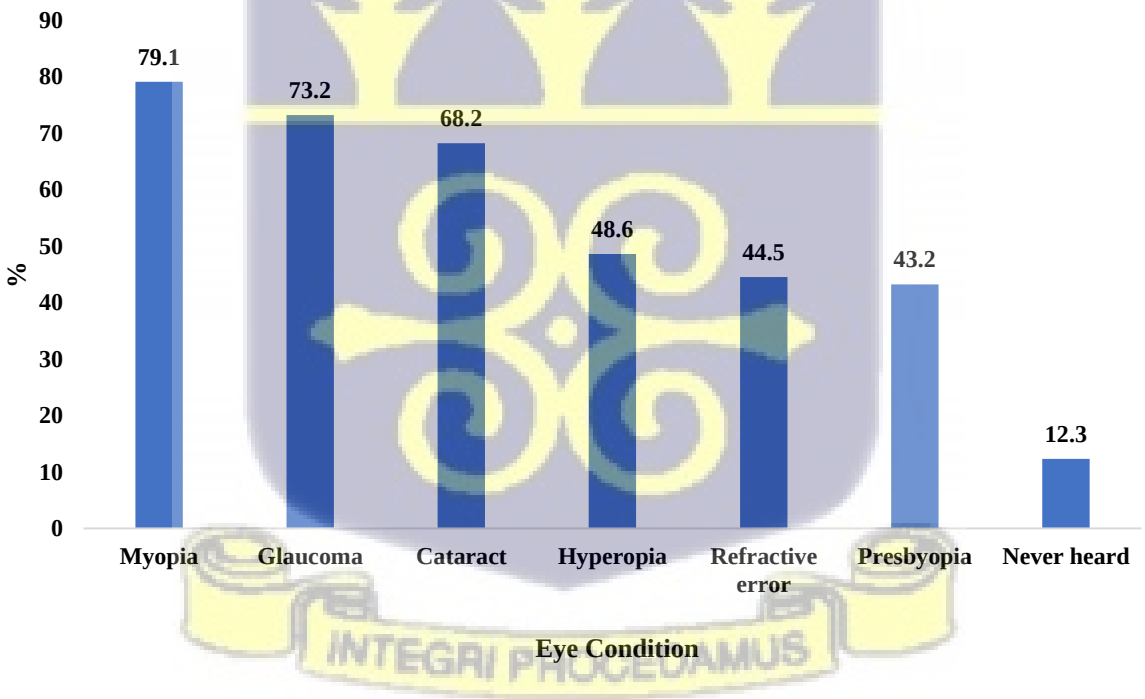

Figure 3 Awareness of eye conditions among teachers

4.3 Eye wear use among teachers

Overall, the prevalence of eye wear use among the participants was 15.4% (Table 2). The most common sources of eye wear were the eye clinic (64.7%) and outreaches (20.6%). Various reasons were given for using eye wear. They included for near vision and computer use (38.2%) and for both far and near vision (8.8%). Some (14.7%) used eye were for fashion. Almost all (92.7%) have had a visual acuity test conducted on them while only 2.3% have had a fundus examination.

Table 2 Eye wear use among teachers

Variables	Frequency	Percentage
Use any eye wear		
No	186	84.6
Yes	34	15.4
Where did you get your eye wear?		
Eye clinic	22	64.7
Outreach	7	20.6
Road side	5	14.7
Eye wear prescriber		
Optician	3	8.8
Optometrist	19	55.9
Outreach by NGOs	7	20.6
Self-diagnosis	5	14.7
Eye wear purpose		
Both far and near vision	3	8.8
Computer use	13	38.3
Fashion	5	14.7
Near vision	13	38.3
Eye tests undertaken		
Visual acuity test	204	92.7
Fundus examination	5	2.3
Intraocular pressure check	8	3.6

4.4 Knowledge on eye conditions

Knowledge on eye conditions in this study was assessed using disease definition, symptom identification and treatment (Table 3). The maximum expected knowledge score was 20. A total score of 14 and above was considered as adequate knowledge and below 14 regarded as inadequate knowledge. The highest score among the participants was 18 (2.3%). Overall, majority (64.6%) had inadequate knowledge on eye conditions (Figure 4). However, 74.5% knew the worst effect of glaucoma, knew what myopia was (88.5%) and could define presbyopia (62.1%).

Table 3 Knowledge of eye conditions among teachers

Variables	Frequency	Percentage
Heard of Glaucoma		
No	59	26.8
Yes	161	73.2
Best way to describe glaucoma		
High pressure on eye	37	23.0
Disease which limits visual field	67	41.6
Disease which damages the optic nerve	72	44.7
Increase internal liquid of the eye	9	5.6
Problem at the back of the eye	20	12.4
Tunnel vision blindness	14	8.7
Eye disease	64	39.8
Eye inflammation/infection	32	19.9
Worst effect of glaucoma		
Blindness	120	74.5
Low vision	36	22.4
Pain	5	3.1
First presentation of glaucoma in most cases		
Presents with no alarming symptoms/signs	76	50.0
Pain	55	36.2
Visual loss	21	13.8
Treatment for glaucoma		
Do not know	28	17.4
Drugs/Medication	17	10.6
No treatment required	13	8.1
Surgery	103	64.0
Heard of refractive error		

No	122	55.5
Yes	98	44.5
Heard of myopia		
No	46	20.9
Yes	174	79.1
What is myopia?		
Do not know	17	9.8
Focus before retina	3	1.7
Not seeing distant objects	154	88.5
How is myopia treated		
Do not know	16	9.2
Eye drops	5	2.9
Surgery	33	19.0
Wearing glasses	120	67.0
Heard of hyperopia		
No	113	51.4
Yes	107	48.6
How is hyperopia treated?		
Do not know	9	8.4
Surgery	22	20.6
Wearing glasses	76	71.0
Ever heard of presbyopia		
No	125	56.8
Yes	95	43.2
What is presbyopia		
Age related impaired vision	59	62.1
Poor vision from far	36	37.9
How is presbyopia treated?		
Surgery	27	28.4
Wearing glasses	68	71.6
Ever heard of cataract		
No	70	31.8
Yes	150	68.2
What is cataract?		
Changes in eye lens making it unclear or white in colour	21	14.1
Loss of vision due to covering shield in front of light rays	5	3.3
Opacification of eye	8	5.3
White spot in the eyes	116	77.3
Worst effect of cataract		
Blindness	88	58.7
Low vision	47	31.3
Pain	15	10.0
Do you think cataract is treatable?		
No	5	3.6
Yes	132	96.4

What is the treatment for cataract?		
Do not know	13	9.8
Eye drops	13	9.8
Surgery	106	80.2

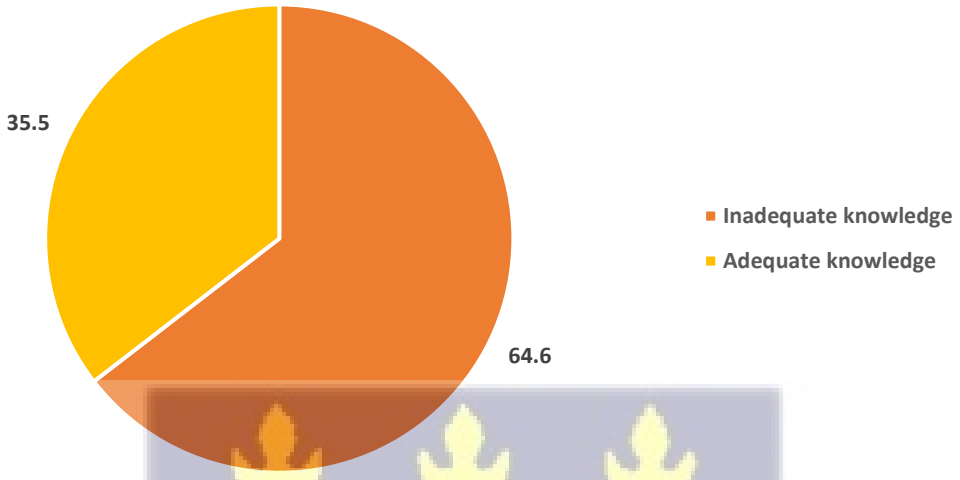

Figure 4 Overall knowledge on eye conditions among teachers

4.5 Attitude of teachers toward eye health

The attitude of teachers towards eye health is summarized in table 4. Most teachers (97.3%) agreed there is the need for regular eye check-ups even in the absence of eye problems. More (95%) also indicated that personal beliefs and cost of eye health care can be a hindrance to accessing eye care (95.9%) Some disagreed (32.7%) that the fear of using eye wear could be a hindrance for accessing eye care. Additionally, majority (87.3%) disagreed that herbal concoctions can be used to resolve eye problems. Overall, most (71.4%) showed positive attitude towards eye health (Figure 5).

Table 4 Attitude of teachers toward eye health

Statements	Responses		
	Disagree N(%)	Neutral N(%)	Agree N(%)
Regular eye check-up is necessary even when there is no eye problem	0(0)	6(2.7)	214(97.3)
Personal beliefs can hinder people from accessing eye care	11(5.0)	0(0)	209(95.0)
Cost of eye health care can hinder individuals from accessing eye care	9(4.1)	0(0)	211(95.9)
Fear of receiving glasses can be a hindrance for accessing eye care	72(32.7)	7(3.2)	141(64.1)
Surgery to correct cataract can restore sight	0(0)	28(12.7)	192(87.3)
Individuals in urban areas use eye care services more compared to those in rural areas	0(0)	33(15.0)	187(85.0)
One can still have glaucoma even if their vision is very clear from far and near	34(15.5)	61(27.7)	125(56.8)
I strongly believe my eyes are good so I do not need check-up	188(85.5)	19(8.6)	13(5.9)
Herbal concoctions can be used to resolve eye problems	192(87.3)	20(9.1)	8(3.6)
Children should not be allowed to use glasses	170(77.3)	0(0)	50(22.7)

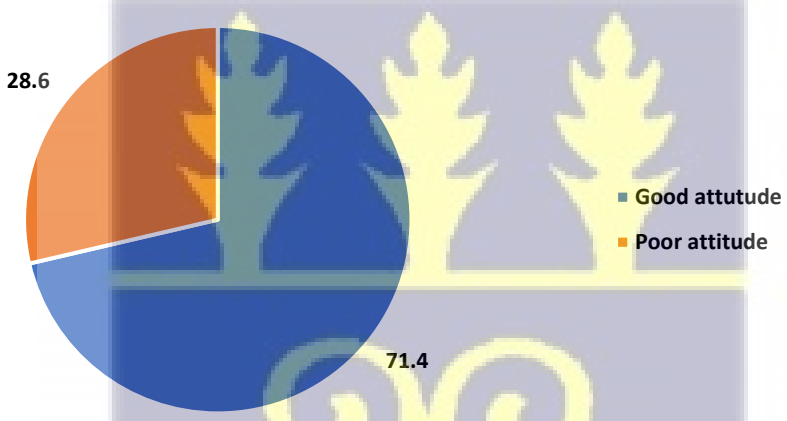

Figure 5 Overall attitude towards eye health

4.6 Sources of information about eye health among participants

Participants outlined various sources of information about eye health in this study (Figure 6).

The main sources of information were health workers (77.3%), the workplace (26.4%) and

from TV/radio (20.0%). Others included social media (18.6%), print media (5.0%) and from religious settings (2.7%).

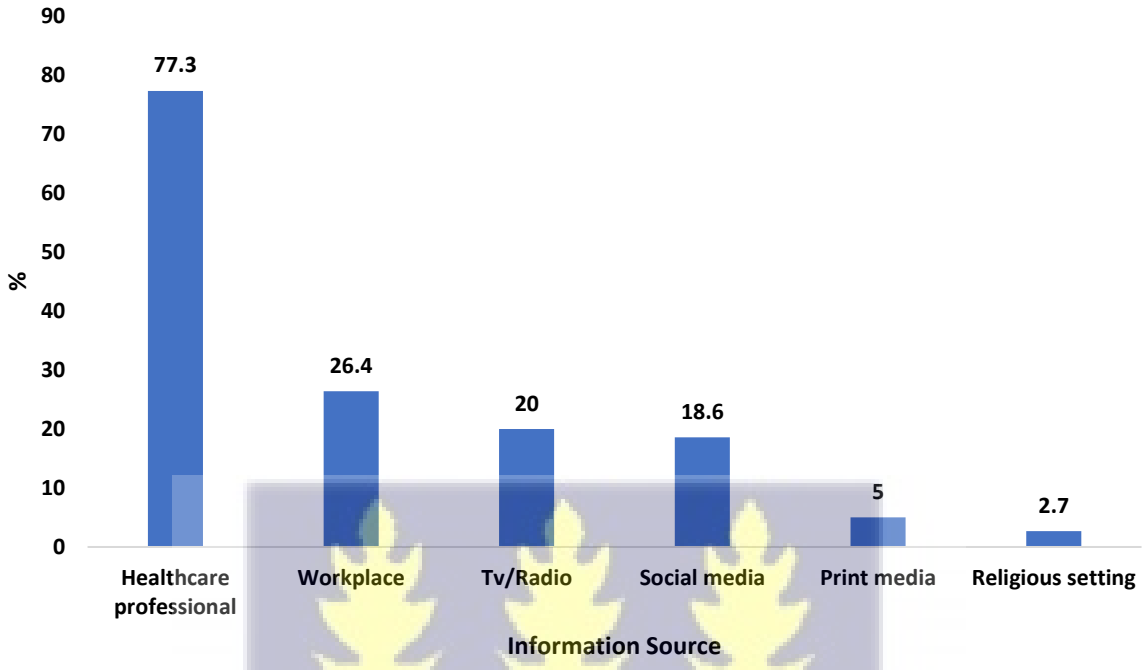

Figure 6 Information sources about eye health among teachers

4.7 Eye health practices

Eye practices among teachers was also assessed (Table 5). Participants were asked what they did when they last had an eye problem. Almost a third (27.3%) did nothing about their condition, 2.3% self-medicated and 48.2% visited an eye clinic while 22.2% went to a hospital. Frequency of eye care services among the teachers revealed that 13.6% have never had their eyes checked. before while for the remaining 86.4%, 52.3% had their eyes checked once and 34.1% had their eyes checked more than once. Regarding, time of last visit, 31.6% do not recall the last time they visited an eye care practitioner, 12.1% had their eyes checked less than 6

months at the time of the study while 35.8% more than two years ago. Majority (91.8%) stated they would alert parents of affected children should they encounter features of poor eye health among their pupils. Overall, only 39.5% stated they use regularly school eye health services (Table 5). Overall, almost a third (69.1%) of the teachers demonstrated good eye health practices (Figure 7)

Table 5 Eye health practices among teachers

Variables	Frequency	Percentage
What did you do the last time you had an eye problem?		
Nothing	60	27.3
Self-medicated	5	2.3
Visited eye clinic	106	48.2
Visited hospital	49	22.2
How many times have you had your eye checked in an eye care facility		
Never	30	13.6
Once	115	52.3
More than once	75	34.1
When was the last time you visited an eye care practitioner?		
Do not recall	60	31.6
1-6 months ago	23	12.1
7-12 months ago	12	6.3
1-2 years ago	27	14.2
More than 2 years go	68	35.8
What step[s] would you take when you notice features of poor eye health in your pupils' eyes?		
Alert the parents to seek eye care	202	91.8
Directly refer to eye Specialist	16	7.3
Ignore the sign/symptom, believing it may resolve later	7	3.9
Do you use school eye-health services?		
No	133	60.5
Yes	87	39.5
Has any of the following ever taken place at your school?		
Eye screening	189	95.9
Eye health education	134	68.0
Eye health material distribution	109	55.3
Do you admit children with visual problems in your school?		
No	19	8.6

Yes	201	91.4
Is eye screening one of the requirements before children can be admitted?		
No	196	89.1
Yes	24	10.9

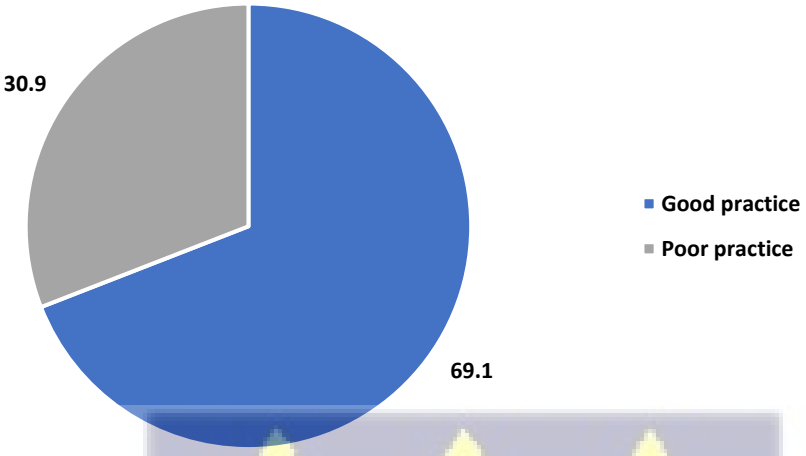

Figure 7 Overall eye health practices

4.8 Factors associated with adequate knowledge on eye conditions

The Pearson's chi square test was used to determine the relationship between knowledge on eye conditions, demographic characteristics and attitude and practice of participants regarding eye health (Table 6). Sex ($\chi2 = 53.29$, $p<0.001$), age ($\chi2 = 35.81$, $p<0.001$), education ($\chi2 = 10.93$, $p=0.004$) and marital status ($\chi2 = 7.07$, $p=0.008$) were significantly related to knowledge on eye conditions. Additionally, there were statistically significant relations between general health rating ($\chi2 = 16.85$, $p<0.001$), regular medical screening ($\chi2 = 4.75$, $p=0.029$) and knowledge on eye conditions.

Table 6 Association between sociodemographic characteristics and knowledge on eye health

Variables	Adequate knowledge N(%)	*x*2 (p-value)
Sex		
Female	9(11.5)	53.29 (<0.001)*
Male	69(88.4)	
Age		
< 30 years	17(21.8)	
30-39 years	25(32.1)	35.81(<0.001)*
40+ years	36(46.1)	
Education		
Diploma	33(42.3)	
Undergraduate	25(32.1)	10.93(0.004)*
Postgraduate	20(25.6)	
Religion		
Christianity	66(84.6)	1.07(0.300)
Islam	12(15.4)	
Marital status		
Single	17(21.8)	7.07(0.008)*
Married	61(78.2)	
Health finance plan		
NHIS	65(83.3)	9.88(0.002)
Private insurance	13(16.7)	
General Health rating		
Good	37(47.4)	
Very good	41(52.6)	16.85(<0.001)*
Excellent	0(0.0)	
Vision rating		
Poor	5(6.4)	
Good	46(59.0)	2.48(0.289)
Excellent	27(34.6)	
Regular medical screening		
No	55(70.5)	
Yes	23(29.5)	4.75(0.029)*
Attitude		
Poor	18(23.1)	1.87(0.176)
Good	60(76.9)	
Practice		
Poor	26(33.3)	0.33(0.564)
Good	52(66.7)	

4.9 Factors associated with adequate knowledge on eye health

A logistic regression model was used to predict factors associated with adequate knowledge on eye conditions. In the unadjusted model, sex, age, education, marital status, health finance plan, general health rating and regular medical screening were significant factors. However, upon adjustment, only sex and education were significant factors associated with adequate knowledge on eye conditions. Male teachers were nine times more likely to have adequate knowledge compared to their female counterparts [AOR= 9.12; 95% CI: 3.44-24.18; p<0.001]. Furthermore, teachers with postgraduate education were also four times more likely to have adequate knowledge of eye health conditions compared to those with diploma education [AOR= 4.65; CI: 1.04-20.80; p=0.044].

Table 7 Factors associated with adequate knowledge

Variables	COR (95% CI)p-value	AOR (95% CI0 p-value
Sex		
Female	1	1
Male	12.87(5.94-27.89)<0.001*	9.12(3.44-24.18) <0.001*
Age		
< 30 years	1	1
30-39 years	1.02(0.50-2.07) 0.957	0.92(0.40-2.13) 0.849
40+ years	7.34(3.25-16.56) <0.001*	1.77(0.58-5.53) 0.312
Education		
Diploma	1	1
Undergraduate	1.15(0.62-2.17) 0.646	2.00(0.67-5.99) 0.216
Postgraduate	3.64(1.62-8.16) 0.002*	4.65(1.04-20.80) 0.044*
Religion		
Christianity	1	
Islam	0.68(0.32-1.42) 0.302	
Marital status		
Single	1	
Married	2.36(1.24-4.41) 0.09*	
Health finance plan		
NHIS	1	1
Private insurance	4.53(1.64-12.46) 0.003*	1.44(0.27-7.67) 0.665
General Health rating		

Good	1	1
Very good	1.50(0.85-2.66) 0.164	2.19(0.56-8.08) 0.237
Excellent	0.04(0.02-0.63) 0.023*	0.17(0.01-3.49) 0.257
Vision rating		
Poor	1	
Good	1.62(0.54-4.91) 0.391	
Excellent	1.05(0.33-3.25) 0.939	
Regular medical screening		
No	1	1
Yes	2.06(1.07-3.96) 0.031*	1.02(0.34-3.07) 0.970
Attitude		
Poor	1	1
Good	1.56(0.82-2.92) 0.178	1.21(0.48-3.03) 0.685
Practice		
Poor	1	1
Good	0.84(0.46-1.52) 0.564	0.40(0.16-1.96) 0.409

CHAPTER FIVE

5.0 DISCUSSION

5.1 Awareness of Eye Conditions

In evaluating the awareness of eye conditions among participants of this study, the commonest eye condition was myopia, followed by glaucoma and cataract. However, some teachers indicated never hearing about eye conditions, consistent with findings from Ceesay et al. (2019) who conducted a similar study among primary school teachers in Greater Accra region, Ghana and found limited knowledge beyond myopia. These findings suggest many teachers have not received comprehensive training on detecting common eye conditions among their pupils. This represents a concerning gap, as teachers play a vital role in identifying vision issues early and referring students for care. As proposed in guidelines for school eye health programs by Sight Savers International, equipping teachers with knowledge and basic screening skills could significantly strengthen the vision care system for children (Mohanty et al., 2021).

To address this gap, the development and evaluation of teacher training programs focused specifically on common pediatric eye conditions is recommended. The training curriculum could cover risk factors, signs/symptoms, and appropriate referral procedures for conditions like myopia, hyperopia, astigmatism, amblyopia, strabismus, allergies, infections, and injuries. Hands-on practice with visual acuity testing could build skills for basic vision screening. Post training surveys could assess knowledge improvements, while tracking referrals/outcomes over an academic year could evaluate the impact on students. If effective at improving teachers' eye health awareness and capacity to support students, this training model could be scaled up through integration in pre-service education and continuing professional development. Ensuring knowledgeable, empowered teachers promotes lifelong vision care for students. Further research is warranted to pilot such teacher training programs and rigorously assess their impact.

5.2 Eye Wear Use among Teachers

The prevalence of eye wear use among teachers in the current study was found to be 15.4%. A study conducted in Gondar City; northwest Ethiopia reported a prevalence of presbyopia among teachers to be 68.7%. It is noteworthy that although presbyopia does not have any definitive cure, it can be corrected by using eyeglasses (Andualem et al., 2017).

Among reasons identified for eye wear use in this current study was are: to correct near vision, and for both far and near vision, for fashion, and for computer use. This finding is similar to findings reported by Andualem et al. (2017) who reported that majority of teachers involved in their study utilized eyeglasses to correct presbyopia (far vision). It has been documented that majority of refractive errors experienced by both teachers and students alike can predominantly be corrected with spectacle use (Habiba et al., 2017). This could account for the reason why teachers who have eye conditions in this study use eye wears.

Most teachers had a visual acuity test done, with few undergoing fundus examinations. Visual acuity tests are usually conducted to establish the sharpness and visual clarity of patients as part of comprehensive ophthalmologic examinations (McClure et al., 2017).

5.3 Knowledge on Eye Conditions

Majority of the participants of this study had inadequate knowledge on eye conditions. Knowledge on eye conditions was assessed based on participants' correct answers to disease definition, symptom identification and disease treatment. Contrary to the findings of this study, Habiba et al. (2017) reported moderate to high knowledge on eye health in a study conducted in Pakistan. It is imperative to appreciate that school teachers' knowledge and awareness of eye health is cardinal in providing better eye health care practices among their pupils (Habiba

et al., 2017). Thus, inadequate knowledge on eye health identified among teachers in this present study could lead to poor eye health practices among their pupils.

Majority of the participants had knowledge of eye conditions including glaucoma, presbyopia and myopia. These eye conditions are typically referred to as refractive errors and can be corrected by use of eyeglasses (Sukati et al., 2018). Similar to the findings of this study, Habiba et al. (2017) reported that school teachers had adequate knowledge on glaucoma. The study associated knowledge of eye conditions among teachers to be as a result of their relatives experiencing such conditions (Habiba et al., 2017). Thus, it could be inferred that experience with eye conditions could have influenced the knowledge of the teachers. Therefore, it is plausible the teachers in this current study might have experienced these eye conditions themselves or knew someone who experienced them.

5.4 Attitudes of Teachers toward Eye Health

According to the findings of this current study, teachers showed a positive attitude towards eye health. Similar to these findings, a survey of teachers' attitudes related to pupils' eye health and school-based eye-health services indicated positive attitudes of teachers (Okoloagu et al., 2019). Contrary to these findings, however, an Ethiopian study reported poor attitudes exhibited by teachers pertaining to eye health (Alemayehu et al., 2018). This contrasting result could be influenced by many factors. For instance, cultural and contextual differences could have influenced this observation. Additionally, variation in the education level of the teachers may create different levels of awareness on eye health which could in turn influence their attitude towards eye health. Furthermore, exposure to information on could also explain the contrast in results. Teachers who have received training or education on eye health may be

more likely to have positive attitude towards eye health than those with no exposure. Finally, the quality of eye health services could also be an influencing factor. This is because if teachers perceive that eye health services are of poor quality or not accessible, it is possible they will have negative attitude towards them.

Teachers involved in this study agreed to the need for regular eye check-ups even in the absence of eye conditions. Similarly, teachers involved in a study conducted by Ceesay et al. (2019) agreed to the need for regular eye checkups in order to handle visual impairments and to ensure adequate eye health at all times. It is noteworthy that early detection of eye problems can prevent and control such complications as blindness (Mohanty et al., 2021).

In determining limitations to accessing eye health, participants mentioned factors such as personal beliefs and cost of care. Teachers were not of the opinion that the use of eye wear is a hindrance to accessing eye care. Similar to these findings, a study conducted among suburban communities in Mozambique reported common barriers such as cost of eye care, transportation costs, personal preference for traditional treatment and fear for medical services as undermining eye health (Sengo et al., 2022). Cost of transportation can be attributed to the situation of the few eye care centers far from communities.

5.5 Sources of Information about Eye Health

The present study found that teachers obtain information about eye health from various sources, including health workers, workplace trainings, television/radio, social media, print media, and religious settings. These results align with prior research demonstrating the multitude of platforms that can be leveraged for health promotion.

Interpersonal communication with health workers was one key source identified. As Rani and Ali (2013) note, personalized advice from medical experts can be highly influential. However, reliance on health workers alone can be problematic given barriers like limited time and variable quality of counsel. The workplace was another reported source, consistent with evidence on the value of workplace health programs reviewed by Song and Baicker (2019). Integration of eye health education into teacher training and professional development could expand reach. Mass media like radio and television can enhance awareness, as demonstrated in an Israeli study where mass media increased glaucoma screening adherence (Kosoko-Lasaki et al., 2009). However, broadcast approaches lack tailoring. Social media may offer advantages in enabling personalized, interactive health messaging (Moorhead et al., 2013). Print media like newspapers and magazines can also be effective for eye health promotion, especially when paired with other strategies (Krishnaiah et al., 2009). Religious settings represent another avenue, though their utility may depend on the eye health messaging incorporated into religious teachings.

5.6 Eye Health Practices

Teachers involved in this study were found to have good eye health practices. A study conducted in Swaziland revealed teachers as having good eye care practices as evidenced by their telling pupils' parents when their children complained about their eye in school (Sukati et al., 2018).

In the instance of an eye problem, majority of the participants of this study indicated they visited an eye clinic. Others self-medicate or do nothing about their eye problem. Sengo et al. (2022) reported similar findings in their study. Their participants stated the practice of self-

medicating as being a tradition among families, and most of the time, the means to skip long queues at the hospital.

According to the findings of this present study, majority of teachers have had their eyes checked either once or more than once. Most of the teachers had an eye check more than two years prior to the study, whereas others could not recall the time of their last visit for an eye check. Contrary to these findings, Sengo et al. (2022) reported some teachers as refusing to visit eye clinics for regular checks due to the absence of symptoms of eye conditions. The disparity in findings can be attributed to the good knowledge on eye health exhibited by teachers in the current study.

Teachers involved in this study indicated they would alert parents of children they identify to have developed eye problems. This finding is similar to reports by Sukati et al. (2021) where teachers indicated they would alert eye health services coordinators in their school, the principal, and parents of students they suspect of having eye conditions.

5.7 Factors associated with adequate knowledge on eye conditions

Demographic factors including sex, age, education and marital status were found to be significantly associated with teachers' knowledge on eye conditions. According to the findings, male teachers were more likely to possess adequate knowledge compared to female teachers. Contrary to these findings, a study that examined the prevalence of presbyopia among schoolteachers reported higher knowledge on eye health among female teachers than their male counterparts (Andualem et al., 2017). The disparities in the findings can be attributed to the differences in geographical settings of the studies. Andualem et al. (2017) reported more female teachers than males in their study, which could explain their findings.

The findings of the current study indicate teachers 40 years and older possess adequate knowledge on eye health compared to those less than 30 years of age. This finding is similar to findings presented by Alemayehu et al. (2018), who reported older age to be significantly associated with knowledge on eye health. These findings can be attributed to the fact that older age is associated with experiencing refractive errors, hence knowledge of eye conditions is common among older teachers.

Teachers who had attained postgraduate education were more likely to have adequate knowledge on eye conditions compared to those with diploma. Similarly, attaining higher level of education was found to be significantly associated with knowledge on eye conditions in a study conducted in northwest Ethiopia (Alemayehu et al., 2018). This can be attributed to the fact that higher educational level exposes individuals to diverse forms of information, including eye health.

According to the findings of the current study, teachers who were married were more likely to possess adequate knowledge on eye conditions compared to those who were single. Alemayu et al. (2018) reported similar findings, indicating that married teachers are more likely to possess adequate knowledge on eye health compared to their unmarried counterparts. These findings can be attributed to the fact that married individuals are likely to have children who experience some form of visual impairment, and would receive information about such conditions during clinical visits.

In the current study, teachers were had regular medical screening were found to be more likely to possess adequate knowledge on eye health compared to those who did not. This is because, individuals who frequently visit health care facilities for medical examinations are likely to be

provided with information about their general health, including the condition of their eyes (Alemayehu et al., 2018).

Teachers who had good practices towards eye health were found to be more likely to have adequate knowledge on eye health. This can be explained to be as a result of the fact that good knowledge would invariably cause an individual to effect good practices.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

School teachers in the Talensi District of Ghana were found to possess inadequate knowledge on eye health but exhibit good attitudes and practices towards eye health. Some practices identified among school teachers in relation to eye health included having their eyes checked, visiting a hospital in the instance of an eye condition, and reporting to parents of school children they identify as having poor eye health. Some factors that were found to influence knowledge on eye health among school teachers included age, sex, marital status and level of education. In addition, teachers who had regular medical screening and excellent general health were more likely to possess adequate knowledge about eye health.

6.2 Recommendations

Ghana Education Service and Ghana Health Service should collaborate to organize education and training sessions for school teachers to equip teachers with adequate knowledge to early detect eye health problems among their pupils. This study found that although teachers were found to possess adequate knowledge on eye health, teachers reported a challenge with detecting specific eye conditions among their pupils.

Further, training of teachers is necessary to ensure good attitudes and practices by teachers towards pupils with visual impairments to ensure they provide equitable opportunities to all their pupils, regardless of their visual challenges. In addition, eye care services should be made readily available, accessible and affordable in most basic schools to eradicate preventable visual impairments and possible blindness. This should be coordinated by Ghana Education Service

To promote eye health, a strategic communication approach should consider multiple information sources and channels tailored to the target audience. As suggested by various models of health behavior like the Health Belief Model, combined messaging can reinforce and motivate healthy practices. Further research is needed on optimal platforms and messaging to improve eye health knowledge and behaviors among key populations like teachers.

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QUESTIONNAIRE

This questionnaire is to obtain information for a study on ***Knowledge, Attitude and Practices of eye health among primary school teachers in the Talensi District.*** You are assured that all information that you will give will be used for academic purposes only. Kindly answer the questions as sincerely as you can. Thank you for your time.

SECTION A- SOCIODEMOGRAPHIC CHARACTERSTICS		
1.	Sex	a. Male b. b. Female
2.	Age [in completed years]	……
3.	Rank:	……..
4.	Educational level	a. Diploma b. Undergraduate/First degree c. Postgraduate d. Others
5.	Religion	a. Christianity b. Islam c. African traditional d. Others
6.	Marital status	a. Single b. Married c. Divorced/Separated d. Others
7.	Health financing plan	a. NHIS b. Private insurance c. Out of pocket d. Others
8.	How would you rate your health in general	a. Excellent b. Very good c. Good d. Poor e. Very Poor f. Bad
9.	How would you rate your vision or eyes	a. Excellent b. Very good c. Good d. Poor e. Very Poor f. Bad
10.	Do you go for periodic medical screening? ***Skip to next section if answer is no***	a. Yes b. No
11.	How often do you go for this screening?	a. Once a year b. Twice a year c. Others
12.	Do you check your eyes during medical screening	a. Yes

		b. No
13.	If no, why	……
	SECTION B- KNOWLEDGE ON EYE HEALTH	
14.	Ever heard of eye condition called glaucoma? ***If no, skip to 20***	a. Yes b. No
15.	Have you been informed you have glaucoma?	a. Yes b. No
16.	What is the best way to describe glaucoma? ***[Select all that is applicable]***	a. High pressure on the eye b. Disease which limits visual field c. Disease which damages the optic nerve d. Increase internal liquid of the eye e. Problem at the back of the eye f. Tunnel vision blindness g. Eye disease h. Eye inflammation/infection i. Do not know
17.	Worst effect of glaucoma?	a. Blindness b. Low vision c. Pain d. Others
18.	First presentation of glaucoma in most cases	a. Presents with no alarming symptoms/signs b. Pain c. Visual loss d. No sign e. Others
19.	Treatment for glaucoma?	a. Surgery b. Drugs/medication c. Laser treatment d. No treatment required e. Do not know f. Others……
20.	Ever heard of eye condition called refractive error? ***If no skip to q23***	a. Yes b. No
21.	Ever been told you have refractive error?	a. Yes b. No
22.	Ever heard of myopia? ***If no, skip to q25***	a. Yes b. No
23.	What is myopia?	a. Not seeing distant objects b.Wearing glasses

		c. Focus before retina d. Do not know e. Others
24.	How is myopia treated	a. Wearing glasses b. Surgery c. Eye drops d. Surgery e. Traditional medicine f. Antibiotics g. Do not know h. Others
25.	Ever heard of hyperopia? ***If no, skip to q28***	a. Yes b. No
26.	What is hyperopia?	a. Not seeing near objects c. Focus behind the retina d. Do not know e. Others
27.	How is hyperopia treated?	a. Wearing glasses b. Surgery c. Eye drops d. Surgery e. Traditional medicine f. Antibiotics g. Do not know h. Others
28.	What is presbyopia? ***If no, skip to 30***	a. Aging related impaired vision b. Poor vision from far c. Do not know d. Others
29.	How is presbyopia treated?	a. Wearing glasses b. Surgery c. Eye drops d. Surgery e. Traditional medicine f. Antibiotics g. Do not know h. Others
30.	Ever heard of cataract? ***If no, skip to q35***	a. Yes b. No
31.	What is cataract?	a. White spot in the eyes b. White pupil c. Opacification of eye d. Changes in eye lens making it unclear or white in colour

		e. Loss of vision due to covering shield in front of light rays f. Others
32.	Worst effect of cataract?	a. Blindness b. Pain c. Low vision d. Do not know e. Others
33.	Do you think cataract is treatable?	a. Yes b. No c. Do not know
34.	If yes, what is the treatment for cataract?	a. Surgery b. Wearing glasses c. Eye drops d. Traditional medicines e. Antibiotics f. Steam from boiling rice g. Others
35.	Have you had any of these eye tests carried on you?	a. Visual acuity test [read letters from a chart] b. Fundus examination [looked inside the eyes] c. Intraocular [eye] pressure check
36.	Do you use any eye wear [glasses, contact lenses or reading lenses]? ***If no, skip to q40***	a. Yes b. No
37.	Where did you get your eye wear?	a. Eye clinic b. Outreach c. Road side d. Market e. Self-bought f. Gift g. Others
38.	Who prescribed your eye wear?	a. Optician b. Optometrist c. Ophthalmologist d. Self-diagnosis e. Ophthalmic nurse f. Outreach g. Others
39.	What is the purpose of your eye wear?	a. Computer use b. Near vision c. Far vision d. Both near and far vision

		e. Do not know f. Fashion
40.	Information source about eye conditions above?	a. Health care professional b. Workplace c. Social media d. Religious organization e. TV/Radio adverts f. Newspaper/magazine g. Market h. Never heard anything about it i. Others
SECTION C- ATTITUDE TOWARDS EYE HEALTH		
41.	Regular eye check-up is necessary even when there is no eye problem	a. Agree b. Disagree c. Neutral
42.	Personal beliefs can hinder people from accessing eye care	a. Agree b. Disagree c. Neutral
43.	Cost of eye health care can hinder individuals from accessing eye care	a. Agree b. Disagree c. Neutral
44.	Fear of receiving glasses can be a hindrance for accessing eye care	a. Agree b. Disagree c. Neutral
45.	Surgery to correct cataract can restore sight	a. Agree b. Disagree c. Neutral
46.	Individuals in urban areas use eye care services more compared to those in rural areas	a. Agree b. Disagree c. Neutral
47.	One can still have glaucoma even if their vision is very clear from far and near	a. Agree b. Disagree c. Neutral
48.	I strongly believe my eyes are good so I do not need check-up	a. Agree b. Disagree c. Neutral
49.	Herbal concoctions can be used to resolve eye problems	a. Agree b. Disagree c. Neutral
50.	Children should not be allowed to use glasses	a. Agree b. Disagree c. Neutral
51.	How would you rate the prevention and treatment of Blindness?	a. Very important b. Important c. Less important

		d. Unimportant
52.	Do you think school eye services are important?	a. Yes b. No
SECTION D- EYE HEALTH PRACTICES		
53.	What did you do the last time you had an eye problem?	a. Nothing b. Visited eye clinic c. Visited hospital d. Visited pharmacy e. Self-medicated f. Used herbal medicine g. Visited a traditional healer h. Others
54.	How many times have you had your eye checked in an eye care facility	a. Never b. Once c. More than once d. Others
55.	When was the last time you visited an eye care practitioner?	a. Never b. 1-6 months ago c. 7-12 months ago d. 1-2 years ago e. More than two years ago f. Do not recall
56.	What step[s] would you take when you notice features of poor eye health in your pupils' eyes?	a. Alert the parents to seek eye care b. Directly refer to eye Specialist c. Self-medication d. Ignore the sign/symptom, believing it may resolve later e. I do not know
57.	Do you use school eye-health services?	a. Yes b. No
58.	Has any of the following ever taken place at your school? Please tick all applicable answers	a. Eye screening b. Eye health education c. Eye health material distribution
59.	Do you admit children with visual problems in your school?	a. Yes b. No c. Unsure
60.	Is eye screening one of the requirements before children can be admitted?	a. Yes b. TUUNo