



MAKERERE UNIVERSITY
COLLEGE OF HEALTH SCIENCES

**KNOWLEDGE, ATTITUDES AND PRACTICES OF PRIMARY AND SECONDARY
SCHOOL ADMINISTRATORS ON EYE HEALTH INTEGRATION IN NANSANA
DIVISION, WAKISO DISTRICT, UGANDA**

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**A Research Report submitted to the Department of Optometry in partial fulfillment of
the requirements for the Degree of Bachelor of Optometry of Makerere University**

June, 2026.

DECLARATION

We, the undersigned, declare that this research report entitled “Knowledge, Attitudes, and Practices of School Administrators on Eye Health Integration in Nansana Division, Wakiso District, Uganda” is our original work and has not been submitted to any other university or institution for any academic award.

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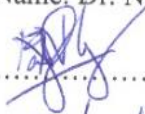
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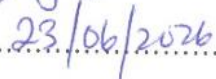
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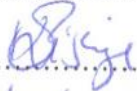
This research report entitled “Knowledge, Attitudes, and Practices of School Administrators on Eye Health Integration in Nansana Division, Wakiso District, Uganda” submitted by Maganda Titus (22/U/22596) and Adongo Jane (22/U/5640) in partial fulfillment of the requirements for the award of the Degree of Bachelor of Optometry at Makerere University, has been reviewed and approved for submission to the Makerere University School of Health Sciences Research and Ethics Committee (MakSHS-REC).

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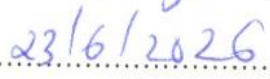
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ABSTRACT

Introduction: Childhood visual impairment remains a significant public health challenge in Uganda and can negatively affect learning, academic performance, and overall child development. Integrating eye health into school health programs offers an effective strategy for early detection, referral, and management of eye conditions. However, successful integration depends largely on the knowledge, attitudes, and practices of school administrators who oversee school health activities. This study assessed the knowledge, attitudes, and practices of primary and secondary school administrators regarding eye health integration in Nansana Division, Wakiso District, Uganda.

Methods: A descriptive cross-sectional study employing a quantitative approach was conducted among 154 school administrators selected through stratified random sampling from primary and secondary schools in Nansana Division. Data were collected using semi-structured questionnaires covering socio-demographic characteristics, knowledge, attitudes, and practices related to eye health integration. Data were analyzed using SPSS Version 25. Descriptive statistics were used to summarize findings, while Chi-square tests, Fisher's exact tests, Spearman's rank-order correlation, and binary logistic regression were used to examine associations and predictors of practice.

Results: The study found that the majority of respondents (72.7%) had poor knowledge of childhood eye health, with a mean knowledge score of 38.2%. Despite this, most administrators (76.6%) demonstrated positive attitudes toward integrating eye health into school health programs, with a mean attitude score of 82.5%. Practices related to eye health integration were generally poor, with only 5.8% of administrators demonstrating good practice and a mean practice score of 55.8%. Although 96.8% supported integrating eye health into routine school health programs, 90% of schools had never organized eye screening activities. Teacher encouragement of parents to seek eye care was common (87.0%), and 71.4% of schools reported providing eye health education. Staff training (62.3%) emerged as the most frequently identified need for improving eye health integration. A statistically significant association was found between sex and attitude towards eye health integration ($p = 0.005$), while training showed a marginal association with better practice ($p = 0.053$).

Conclusion: School administrators in Nansana Division exhibited positive attitudes towards eye health integration but had inadequate knowledge and poor implementation practices. The

findings reveal a substantial gap between administrators' willingness to support eye health programs and their capacity to effectively implement them.

Recommendations: Capacity-building initiatives, regular training of school administrators and teachers, strengthened partnerships between the education and health sectors, and incorporation of routine eye screening into school health programs are recommended to enhance sustainable integration of eye health services in schools and reduce preventable visual impairment among schoolchildren.

LIST OF ABBREVIATIONS AND ACRONYMS

IAPB: International Agency for the Prevention of Blindness

IPEC: Integrated People-Centered Eye Care

KAP: Knowledge, Attitudes, and Practices

LMICs: Low- and Middle-Income Countries

MoE: Ministry of Education

MoH: Ministry of Health

NICU: Neonatal Intensive Care Unit

ROP: Retinopathy of Prematurity

SEN: Special Education Needs

SVI: Students with Vision Impairment

WHO: World Health Organization

OPERATIONAL DEFINITIONS

Eye Health Integration: Refers to the systematic inclusion of eye health activities (such as screening, referral, health education, record keeping, and collaboration with eye care providers) within existing school health programs.

Good Eye Health Integration was defined as a school implementing at least three out of five key components:

- Conducting vision screening
- Having a referral mechanism for pupils with eye problems
- Maintaining records of pupils with eye conditions
- Providing eye health education or awareness sessions
- Collaborating with eye health professionals or organizations

Poor Eye Health Integration was defined as implementing fewer than three of the above components.

School Administrators: Individuals in leadership and management roles within schools, specifically head teachers, deputy head teachers, and principals or equivalent leaders, who are responsible for decision-making and program implementation.

Knowledge: The level of awareness and understanding primary and secondary school administrators have regarding common childhood eye health problems and available interventions.

Knowledge was assessed using structured knowledge questions where each correct response will score 1 mark, and incorrect or “don’t know” responses will score 0 marks. The total score will be converted into a percentage.

Knowledge levels were categorized as, Good Knowledge ($\geq 70\%$), Moderate Knowledge (50–69%) and Poor Knowledge ($< 50\%$).

Attitudes: The perceptions, beliefs, and opinions of primary and secondary school administrators toward integrating eye health into school health programs.

Attitude was measured using Likert-scale statements scored as follows; Strongly Agree = 5, Agree = 4, Neutral = 3, Disagree = 2 and Strongly Disagree = 1.

Total attitude scores were converted into percentages and categorized as; Positive Attitude ($\geq 70\%$), Neutral Attitude (50–69%) and Negative Attitude ($< 50\%$).

Practices: The actions and strategies undertaken by primary and secondary school administrators to promote eye health, including organizing screenings, health talks, and referrals.

Practice were assessed using structured questions where: “Yes” responses score 1 mark and “No” responses score 0 marks.

The total practice score was converted into a percentage and categorized as: Good Practice ($\geq 70\%$) and Poor Practice ($< 70\%$).

CHAPTER ONE: INTRODUCTION

1.1 Introduction

Vision is essential for learning, social development, and overall quality of life in children. Globally, the World Health Organization estimates that over 2.2 billion people suffer from some form of vision impairment, nearly half of which could be treated or prevented with early detection and access to services. (WHO, 2023).

School-based eye health programs have emerged as cost-effective strategies for reducing childhood visual impairment, particularly in low and middle-income countries. Such programs facilitate regular screening, health education, and referral systems, creating sustainable platforms for early detection and management of ocular disorders (International Agency for the Prevention of Blindness (IAPB), 2024). Recent implementation research further indicates that integration of eye health into existing school health structures enhances efficiency and sustainability compared to vertical, stand-alone approaches (Chan *et al.*, 2023). However, successful integration requires institutional support, governance, and leadership within schools (Harvey *et al.*, 2024).

In Uganda, visual impairment among school-aged children remains a significant public health problem. A study in Kawempe Division, Kampala, found that 15.5% of secondary school students had visual impairment, with refractive errors being the predominant cause (Akampurira *et al.*, 2022). Despite this burden, eye health services are not systematically integrated into school health programs, with existing efforts often hindered by resource shortages, inadequate referral systems, and limited engagement from school leadership (Harvey *et al.*, 2024).

School settings offer an effective platform for early detection of eye problems, health education, and referral – all of which can reduce preventable visual impairment. Successful integration of eye health within school systems (e.g., regular screening, referral pathways, capacity building) has been shown in various settings to improve educational outcomes and reduce long-term disability. However, effectiveness depends heavily on the commitment and capability of school leadership to prioritize eye health.

In Uganda, supportive policies exist (e.g., *School Health Policy, 2008*; *Strategic Plan for Eye Health, 2020–2025*) and according to Uganda school health policy, one of the strategies for child health development was screening for common health conditions (sight, skin, hearing,

mental, speech dental and muscular-skeletal problems) that shall be conducted at least once in a year and on admissions(*Ministry of health*), but implementation remains inconsistent.

Administrative practices remain fragmented in Uganda. Akampurira *et al.* (2022) revealed that most Kampala schools lack structured screening schedules and referral documentation. The *Ministry of Health* (2023) confirmed that eye health is still implemented as isolated outreach activities rather than part of the school health programs. As a result, many children with vision problems remain undiagnosed.

This study will therefore examine the KAP of school administrators in Nansana Division to identify barriers and opportunities for effective integration of eye health into school health programs. The findings will inform policy adjustments aimed at achieving sustainable, school-based eye care aligned with Uganda Vision 2040 and SDG 3: Good Health and Wellbeing.

It also aims at assessing the knowledge, attitudes, and practices of primary and secondary school administrators regarding eye health integration in Nansana Division, Wakiso District, Uganda. The findings are expected to provide evidence for designing interventions that strengthen school-based eye health and help reduce preventable vision impairment among schoolchildren.

1.2 Problem statement

Childhood visual impairment is a preventable but persistent cause of disability and poor educational outcomes in Uganda. Evidence shows that school-based eye health programs can improve early detection and referral, but their effectiveness depends on school-level leadership and governance (Chan *et al.*, 2023; International Agency for the Prevention of Blindness (IAPB), 2024). While studies in Uganda report a substantial prevalence of visual impairment among schoolchildren (Akampurira *et al.*, 2022), little is known about the knowledge, attitudes, and practices of school administrators toward integrating eye health into school systems.

This lack of evidence represents a critical gap. Without understanding the perspectives of administrators, who make decisions on resource allocation, program adoption, and partnerships, efforts to integrate eye health into schools may remain fragmented, underfunded, and unsustainable (Harvey *et al.*, 2024; Prakash *et al.*, 2024). Therefore, this study seeks to assess the knowledge, attitudes, and practices of primary and secondary school administrators in Nansana Division, Wakiso District, Uganda, regarding the integration of eye health.

Findings will provide essential evidence to inform policy and strengthen sustainable school eye health programs.

1.3 Justification of the study

The study is aligned with Uganda's Vision 2040 and national health priorities, which emphasize prevention of avoidable blindness and strengthening of school health programs. By assessing school administrators' perspectives, this research will:

Generate baseline data on knowledge, attitudes, and practices to integrate eye health in schools.

Identify gaps that can be addressed through training, resource allocation, and policy support.

Provide evidence to support the Ministry of Health and Ministry of Education in strengthening multi-sectoral collaboration for child eye health.

Contribute to academic knowledge while addressing a practical public health need in Uganda.

1.4 Research questions

1. What is the knowledge level of primary and secondary school administrators about integrating eye health into school health programs?
2. What are the attitudes of primary and secondary school administrators towards integrating eye health into school health programs?
3. What practices are currently being implemented by primary and secondary school administrators regarding school-based eye health?

1.5 Objectives

General objective

To assess the knowledge, attitudes, and practices of primary and secondary school administrators regarding the integration of eye health into school health programs in Nansana Division, Nansana Municipality in Wakiso District, Uganda.

Specific objectives

1. To determine the knowledge of primary and secondary school administrators regarding integration of eye health into school health programs in Nansana Division, Wakiso District.

2. To examine the attitudes of primary and secondary school administrators towards integrating eye health into school health programs in Nansana Division, Wakiso District.
3. To describe the practices of primary and secondary school administrators in implementing eye health promotion, screening, and referral activities in Nansana Division, Wakiso District.

1.6 Scope of the study

This study focused on school administrators (head teachers, deputy head teachers, principals, DOS and Directors) in both government and private primary and secondary schools within Nansana Division, Wakiso District, Uganda. The research assessed administrators' knowledge, attitudes and their practices towards integrating eye health into school health programs. The study did not cover other stakeholders such as teachers, parents, or pupils, although their role is acknowledged in broader school eye health. The findings are therefore limited to the perspectives of school administrators in Nansana Division.

1.7 Conceptual framework

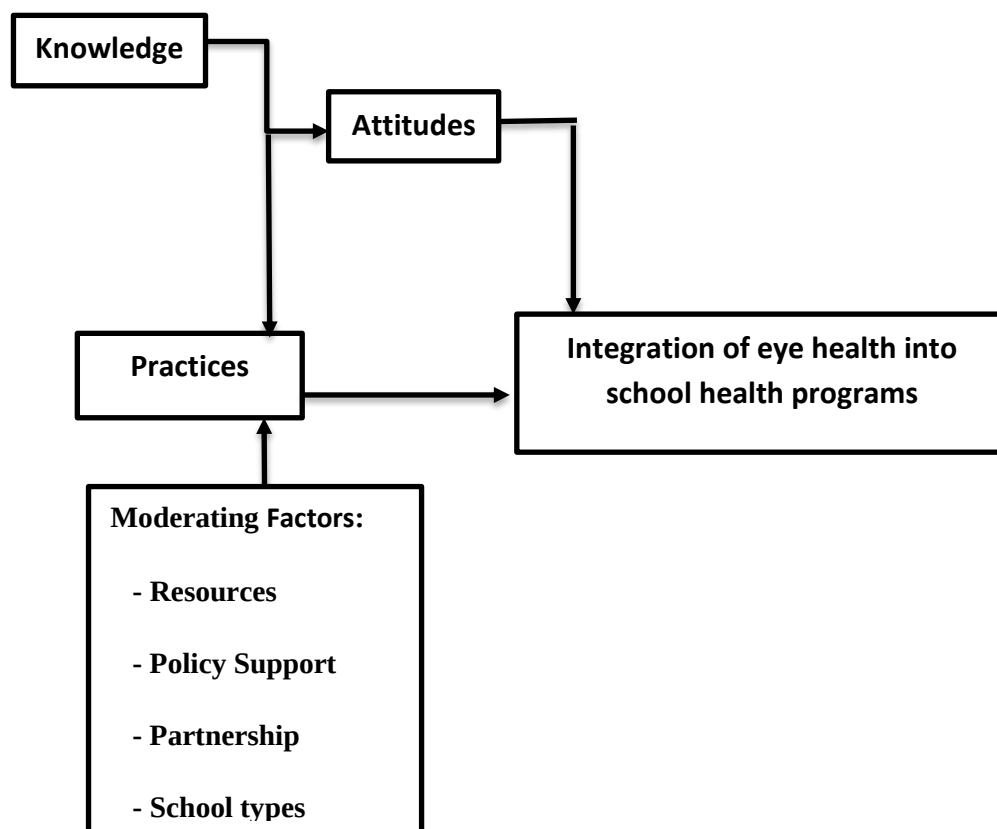


Figure 1: Conceptual framework

This study was guided by the Knowledge, Attitude and Practice (KAP) model, a behavioral framework commonly used in public health research. The model suggests that individuals' knowledge influences their attitudes, which in turn shape their practices.

In this study, school administrators' knowledge of childhood eye conditions and interventions was expected to influence their attitudes toward integrating eye health into school health programs. These attitudes were anticipated to affect their implementation of practices such as screening, referral, and eye health education. Eye health integration was therefore viewed as the outcome of the interaction between knowledge, attitudes, and practices, influenced by moderating factors such as resources, policy support, partnerships, and school type.

The framework was adapted from the Knowledge–Attitude–Practice (KAP) model widely applied in health promotion research (Launiala, 2009).

1.8 Expected Outcomes

Primary Outcomes

These are the main results the study sought to measure directly in line with the general and specific objectives of the research:

1. Level of Knowledge of School Administrators on Eye Health Integration

Proportion of school administrators with adequate knowledge of common childhood eye conditions (e.g., refractive errors, conjunctivitis, vitamin A deficiency, eye injuries).

Awareness of the impact of eye problems on children's learning and academic performance.

Knowledge of available eye health interventions such as screening, referral, and treatment services.

2. Attitudes of School Administrators Towards Integrating Eye Health into School Health Programs

Proportion of administrators who perceive eye health integration as important and necessary.

Willingness of administrators to support and prioritize eye health activities within schools.

Perceived responsibility of schools in supporting children with visual impairments.

3. Practices of School Administrators in School-Based Eye Health

Proportion of schools conducting eye screening activities.

Existence of referral mechanisms for pupils with eye problems.

Implementation of eye health education and awareness activities in schools.

Frequency and consistency of eye health-related practices within school health programs.

These outcomes directly address the KAP (Knowledge, Attitudes, and Practices) framework underpinning the study.

Secondary Outcomes

These outcomes are additional but important findings that support interpretation, policy relevance, and future interventions:

1. Factors Associated with Good or Poor Eye Health Integration

Association between administrators' knowledge levels and their practices.

Influence of attitudes on the likelihood of implementing eye health activities.

Role of school type (private vs government, primary vs secondary) in eye health practices.

2. Identified Barriers to Eye Health Integration in Schools

Resource-related challenges (funding, screening tools, personnel).

Limited training or technical support for school administrators and teachers.

Weak coordination between schools, Ministry of Education, and Ministry of Health.

3. Facilitators and Opportunities for Improving School Eye Health Programs

Availability of supportive policies (e.g., Uganda School Health Policy).

Potential for partnerships with eye health organizations and NGOs.

Training needs and capacity-building opportunities for administrators and teachers.

4. Policy and Programmatic Implications

Evidence to inform strengthening of school-based eye health integration in Nansana Division.

Baseline data to guide district-level and national planning for child eye health programs.

Recommendations for sustainable integration of eye health into existing school health structures.

CHAPTER TWO: LITERATURE REVIEW

2.1 Knowledge of school administrators on eye health

Knowledge is a central determinant of how health programs are implemented. For school administrators, understanding common childhood eye health and available interventions is essential to support early detection and referral.

Globally, at least 2.2 billion people have vision impairment, of whom at least 1 billion could have been prevented or have yet to be addressed (WHO, 2019). Children in Africa and Asia are at greatest risk of acquiring measles, rubella, vitamin A deficiency, and trachoma-the leading infectious cause of blindness-highlighting the importance of school-level knowledge for early detection and management. The WHO (2023) report on Integrated People-Centred Eye Care (IPEC) emphasizes embedding eye health into broader health and education systems, reinforcing the relevance of building knowledge at institutional levels.

In Uganda, a survey conducted in Kampala on the prevalence of refractive errors among lower primary school children found that out of 623 children aged 6-9 years, 73 (11.6%) had significant refractive errors, including astigmatism, hypermetropia, and myopia (Kawuma & Mayeku, 2002).

Recent studies indicate that insufficient knowledge among health personnel is a recurring barrier to eye health service delivery. (Lusobya *et al.*, 2024) found that limited knowledge among healthcare workers hindered screening and management of retinopathy of prematurity (ROP). Similarly, (Ebong *et al.*, 2025) highlighted that knowledge gaps among pharmacy staff led to inappropriate management of ocular conditions. Globally, (Harvey *et al.*, 2024) emphasized that weak knowledge among education and health stakeholders impedes sustainable integration of school eye health programs in low- and middle-income countries.

Integrated school health programs provide an important platform for building administrators' knowledge on child health, including vision care. The (WHO, 2023) highlights that empowering school leaders with health-related knowledge enhances implementation of comprehensive health-promoting schools. In Uganda, the (MoH, 2008) encourages capacity building for administrators and teachers in multiple health areas such as hygiene, nutrition, mental health, and eye health. However, (Ogundo *et al.*, 2023) observed that despite policy frameworks promoting integration, limited awareness among school managers remains a key challenge to implementing effective eye health interventions. Strengthening administrators'

knowledge through integrated training initiatives could therefore improve uptake and sustainability of school-based eye health programs.

Epidemiological projections indicate that the burden of refractive errors, particularly myopia, among children and adolescents is expected to rise substantially. A global meta-analysis estimated an increase of two hundred million cases between 2000 and 2050, especially in urbanizing populations due to increased screen time and reduced outdoor activity (Holden *et al.*, 2016).

(Prakash *et al.*, 2024) study showed that most respondents [92.3% (n = 12)] were aware of the number of children with eye conditions in their respective schools, and 76.9% were aware that early treatment could result in better visual outcomes. However, only 23.1% had any knowledge that children with special needs have an increased risk of developing eye conditions. Sixty-three percent said they identified vision problems by just observing the behavior of the child in classrooms.

A study by (Koome, 2024), were total of 78 health attendants in schools who were enrolled and majority of them (60.5%) were nurses and the top most common eye health complaint was itchy eyes (86.9%) and the most common treatment they gave were steroid eye drops and then referred if no improvement.

2.2 Attitudes towards integrating eye health into schools

Positive attitudes are crucial for program adoption and sustainability. Leadership attitudes strongly influence whether school health initiatives, including eye health, are prioritized at the institutional level (Harvey *et al.*, 2024).

The Uganda Strategic Eye Care Plan envisions a system where children with visual impairments access early childhood and primary education and have equal opportunities for secondary education, vocational training, and employment. The Child Eye Health Program identifies children with eye health issues early, referring them to service providers and supporting them with eye care and assistive devices (Light for the World, 2021-2025).

In Uganda, (Ayesiga *et al.*, 2025) showed that neonatal intensive care staff with limited awareness and indifferent attitudes towards ROP screening contributed to poor uptake of preventive practices. International evidence shows that positive attitudes among managers and policymakers create enabling environments for program success (Prakash *et al.*, 2024).

There is minimal staff capacity for inclusive teaching of students with vision impairments (SVIs), with most lacking awareness of their learning needs due to poor coordination across university units, staff trained in special education and disability studies were exceptions (Sikoyo *et al.*, 2023). These findings highlight the role of training and leadership attitudes in promoting inclusivity.

In Ghana, (Adzaho *et al.*, 2024) noted that administrators with positive attitudes fostered collaboration between teachers, parents, and eye health professionals, leading to increased awareness and uptake of vision correction. Myanmar *et al.* (2021) reported that schools with motivated and health-conscious leaders sustained screening programs even with minimal external support.

2.3 Practices of school administrators in eye health promotion

Practices translate knowledge and attitudes into concrete actions, such as organizing screenings, referrals, and health education activities. Evidence shows that practices are often suboptimal in low-resource contexts.

In a study by (Adzaho *et al.*, 2024), of 60 head teachers surveyed, none had a comprehensive eye health program integrated into their school health activities. While 28% had conducted eye screening at some point, these were not regular initiatives. Only 25% provided some form of eye health education, 32% had ongoing vitamin A supplementation, and 13% had conducted preschool vision screening. Overall, 67% implemented at least one component of a comprehensive eye health program, but interventions were sporadic and donor dependent.

Globally, (Dong *et al.*, 2025) observed that local practices determined the effectiveness of social franchising models for eye care, emphasizing the importance of context-specific implementation. For school administrators, weak practices such as failure to coordinate screenings or establish referral pathways can undermine otherwise well-designed programs.

Teachers' awareness of ocular symptoms such as difficulty reading, poor hand-eye coordination, or difficulty in sports is critical for early detection. Poor practices are often due to perceptions that eye health is non-critical, lack of training, and high workloads (Xulu-Kasaba *et al.*, 2021).

Keeping records of students with eye problems was being done by majority of participants in a study in Nairobi about KAP of school health attendants. However, majority of participants did not participate in eye screening or checkup of students in their schools because of lack of

screening activities in the school. And most of the schools stocked steroid eye drops as their form of treatment (Koome, 2024).

According to the (WHO, 2020), integrated approaches enhance efficiency, reduce duplication of resources, and improve learners' overall health outcomes. Similarly, (Ogundo *et al.*, 2023) noted that integrating eye health within existing school health frameworks in Eastern and Southern Africa improved sustainability and community ownership compared to vertical or stand-alone projects. In Uganda, the (MoH, 2008) recommended mainstreaming eye care into broader school health structures. However, implementation remains limited due to inadequate coordination between the Ministry of Health and Ministry of Education and Sports, insufficient funding, and lack of monitoring frameworks. Strengthening integration of eye health into existing school health programs is therefore crucial for achieving long-term impact and sustainability.

2.4 Summary

The literature demonstrates that knowledge, attitudes, and practices (KAP) strongly influence the integration of eye health into school systems. While most studies focus on healthcare providers, administrators play a key role in decision-making, resource allocation, and institutional leadership.

Evidence highlights gaps in knowledge, mixed attitudes, weak practices, and multiple barriers, particularly in low- and middle-income countries. At the same time, initiatives like NIURE and the Child Eye Health Program in Uganda provide foundations for progress. The growing burden of refractive errors, especially myopia, underscores the urgency of action (Holden *et al.*, 2016).

The WHO (2023) IPEC framework emphasizes embedding eye health into broader health and education systems, reinforcing the importance of school-level integration. However, empirical evidence on school administrators' perspectives in Uganda, particularly in Nansana Division is limited. This study seeks to fill that gap by assessing administrators' knowledge, attitudes and practices generating evidence to inform effective and sustainable school eye health programs.

CHAPTER THREE: METHODOLOGY

3.1 Study area

The study was conducted in Nansana division, Nansana municipality, Wakiso district which is part of Buganda region, Uganda.

3.2 Study design

The design was a descriptive cross-sectional survey with a quantitative method approach to be used.

3.3 Study population

The study targeted both primary and secondary schools' school administrators (Head teachers, deputy head teachers, principals, or equivalent leaders) of Nansana division, Wakiso district.

3.4 Sample size

The total number of schools in Nansana Division is 250, comprising 200 private primary schools, 5 government primary schools, and 45 private secondary schools. There are no government secondary schools in the division. We applied Yamane's formula,

$$n = [N / (1 + N(e^2))]$$

Where, n = Sample size

N = total number of schools

e = margin of error (5%)

$$n = 250 / (1 + 250 * 0.05^2)$$

$$n = 154 \text{ schools}$$

Therefore, the sample size was 154 school administrators drawn proportionally from both private and government primary and secondary schools in Nansana Division.

The proportional distribution was as follows:

School Category	Total Schools	Proportion (%)	Sample Size
Private Primary	200	80%	123
Government Primary	5	2%	3
Private Secondary	45	18%	28
Total	250	100%	154

Table 1: Showing the proportional distribution of primary and secondary schools in Nansana Division

3.5 Sampling techniques

A probability stratified random sampling technique was used to select school administrators from both private and government primary and secondary schools in Nansana division to participate in the study.

3.6 Sampling procedure

A stratified random sampling procedure was used. The schools were divided into three strata based on ownership and level: private primary, government primary, and private secondary schools. Since there are no government secondary schools, that stratum was excluded.

From each stratum, the number of schools to be included in the study was determined proportionally to their representation in the total population. Within each stratum, schools were assigned unique identification numbers, and a simple random sampling technique (using a random number generator) was used to select the specific schools.

After selecting the schools, one administrator per school (head teacher, deputy head teacher, principal DOS or Director) participated in the study. If the head teacher was unavailable, the deputy head teacher, principal, DOS or Director was considered. Replacement were made only in cases of refusal or non-response to ensure the targeted sample size of 154 respondents is reached.

This method ensures that all categories of schools are adequately represented, minimizes selection bias, and enhances the generalizability of the study findings.

3.7 Data collection methods and tools

Data collection was done by using semi structured questionnaires with different sections including socio-demographic characteristics, knowledge, attitudes, and practices in eye health integration.

Data collection tools included pens, notebooks, and smart phones.

3.8 Study procedures

After obtaining ethical approval from the Makerere University School of Health Sciences Research Ethics Committee (MakSHS-REC) and permission from the Wakiso District Education Office, the researchers approached selected schools in Nansana Division. School administrators were informed about the purpose of the study, procedures, potential risks and benefits, confidentiality, and their right to withdraw at any time without penalty. Written informed consent was obtained from all participants prior to data collection.

Data was collected using semi-structured questionnaires administered to one consenting school administrator (head teacher, deputy head teacher, principal, DOS or Director) per selected school. Participation took approximately 20–30 minutes. The questionnaires was pre-tested, and data was collected solely by the researchers to ensure consistency and data quality.

Completed questionnaires were reviewed for completeness at the end of each day. All data was anonymized using unique codes and stored securely in locked cabinets and password-protected electronic files, accessible only to the research team.

3.9 Eligibility criteria

Inclusion criteria

All primary and secondary school administrators in Nansana division provided informed consent to participate in the study.

Exclusion criteria

Any school administrator was unavailable or declined to participate in the study.

3.10 Data processing and analysis

Data was first checked for completeness and consistency immediately after collection. All quantitative data was entered into Microsoft Excel 2019 for cleaning and coding before being exported to IBM Statistical Package for Social Sciences (SPSS) Version 25 for analysis.

Quantitative data analysis: Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize socio-demographic characteristics, knowledge, attitudes, and practices of school administrators. Inferential statistics were applied to determine associations between variables: The Chi-square test was used to assess associations between categorical variables (e.g., school type and level of knowledge or practice). A binary logistic regression analysis was conducted to identify predictors of good knowledge, positive attitudes, and good practices towards eye health integration. Results were presented in tables, charts, and graphs for easy interpretation.

A significance level of $p < 0.05$ was considered statistically significant.

3.11 Quality assurance

To ensure quality of data collected, data collection tools were pre-tested to make sure they are relevant and capture the required data.

Only the researchers collected data to avoid falsification.

3.12 Ethical considerations

Ethical approval was obtained from Makerere University School of Health Sciences Research Ethics Committee and permission was sought from Nansana Municipality Education Officer and individual school heads.

Participation was voluntary with written informed consent from all respondents and confidentiality was assured using codes instead of names, and data was stored securely with access limited to the research team.

Respondents were also free to withdraw at any time without penalty.

3.13 Limitations

Several limitations should be considered when interpreting these findings. First, the study relied on self-reported data, which may be subject to social desirability bias particularly regarding practices, where administrators may have over-reported positive behaviours. Anonymity was preserved to minimise this effect but cannot eliminate it entirely.

Second, the cross-sectional design precludes causal inference. While associations between knowledge, attitudes, and practices have been described and tested, the direction and strength of causal relationships cannot be determined from this data alone. The null correlations

between KAP domains do not exclude the possibility of causal effects too small to detect at this sample size.

Third, the overwhelming dominance of private schools in the sample (98.1%) limits the generalisability of findings to government school contexts, which may operate under different resource and governance constraints. Future studies should deliberately oversample government schools to enable meaningful comparison.

Fourth, the very low prevalence of good practice (5.8%, $n = 9$) substantially limited the statistical power of both the chi-square and logistic regression analyses. Several associations that may be clinically meaningful particularly training and sex did not reach conventional significance thresholds, and should be revisited in larger, adequately powered studies.

Fifth, the study was geographically restricted to Nansana Division, an urbanising peri-urban area. Findings may not be directly transferable to rural or other urban settings in Uganda where the school ecosystem, disease burden, and health system infrastructure differ considerably.

Sixth, the study focused exclusively on school administrators and did not collect data from teachers, parents, or pupils, who are important stakeholders in school eye health. Future research should adopt a multi-stakeholder design to capture the full spectrum of factors influencing eye health integration.

3.14 Dissemination of results

Findings will be shared with the Nansana Municipality Education Officer, Makerere Optometry department, Makerere University School of Health Sciences Research and Ethics Committee (MAKSHS-REC/IRB) and Makerere University Library.

3.15 Community Engagement Approach

This study adopted a community engagement approach that actively involved key stakeholders within the school community to enhance acceptance, participation, and relevance of the research. Engagement focused on school administrators, education authorities, and local health stakeholders to ensure cooperation and ownership of the study process.

Prior to data collection, introductory meetings were held with the Nansana Municipality Education Officer and selected school administrators in Nansana Division to explain the purpose of the study, procedures, and expected benefits. This will help build trust, obtain administrative support, and facilitate access to schools.

During the study, school administrators will be engaged through informed consent discussions and interactive questionnaire administration, allowing participants to freely share their views, experiences, and recommendations regarding eye health integration. Open-ended questions will provide an opportunity for administrators to contribute context-specific insights.

After completion of the study, feedback and dissemination activities will be conducted by sharing summarized findings with participating schools and relevant district stakeholders. This will promote dialogue on identified gaps, encourage local ownership of results, and support evidence-based planning for strengthening school-based eye health programs.

Overall, this approach ensures meaningful participation, strengthens collaboration between education and health sectors, and enhances the practical usefulness of the study findings.

CHAPTER FOUR: RESULTS

4.1 Demographic Characteristics

A total of 154 school administrators from primary and secondary schools in Nansana Division, Wakiso District, participated in the study. The demographic profile includes age, sex, role, years of experience, and school-related characteristics.

4.1.1 Age of Respondents

The largest proportion of administrators belonged to the 40–49 age bracket, accounting for 39.6% (n=61) of the participants. This was followed by the 30–39 age group at 33.1% (n=51). Respondents below 30 years and those 50 years and above represented 15.6% (n=24) and 11.7% (n=18) of the sample, respectively.

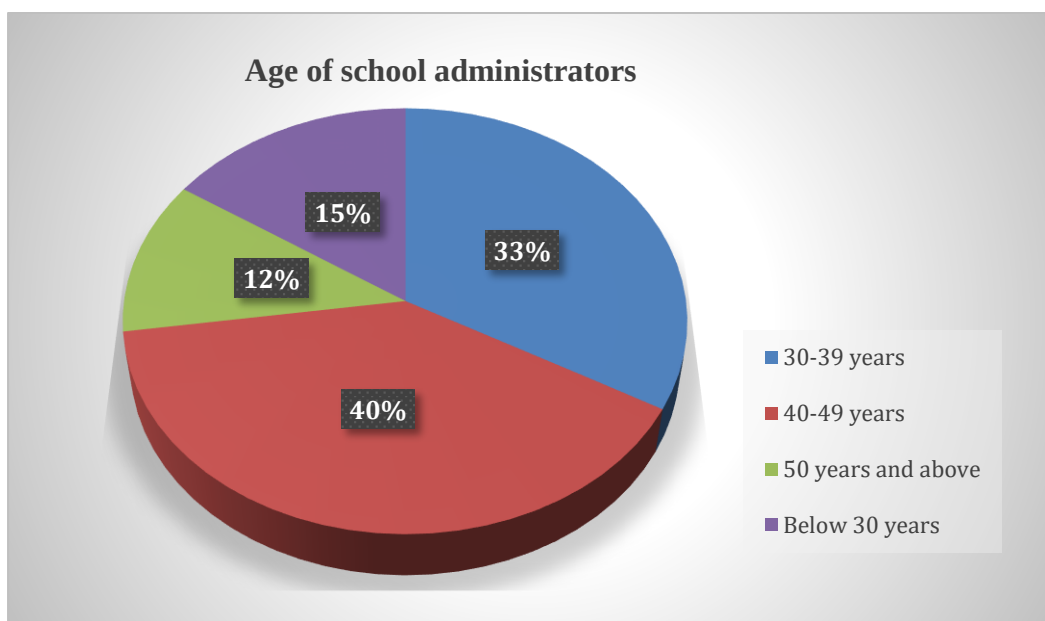


Figure 2: A pie chart showing age distribution of school administrators

4.1.2 Sex of Respondents

There was a slightly higher representation of female administrators compared to males. Out of the 154 respondents, 54.5% (n=84) were female, while 45.5% (n=70) were male.

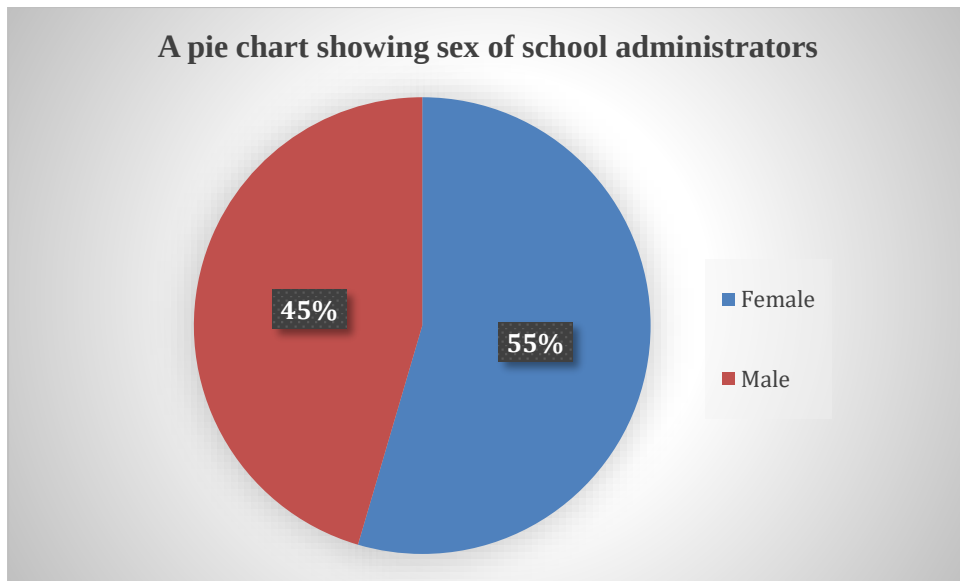


Figure 3: A pie chart showing sex distribution of school administrators

4.1.3 School Level

The majority of the administrators surveyed were from primary schools. Out of the 154 respondents, 81.8% (n=126) were from primary schools, while 18.2% (n=28) were from secondary schools.

School Level	Frequency (n)	Percentage (%)
Primary	126	81.8
Secondary	28	18.2
Total	154	100.0

Table 2: Showing School level of the respondents

4.1.4 School Type (Ownership)

Regarding the ownership of the institutions, the vast majority of the schools were privately owned. Private schools accounted for 98.1% (n=151) of the sample, with 123 of these being primary and 28 being secondary. Government-owned schools represented only 1.9% (n=3) of the total, all of which were primary schools.

School Type	Primary	Secondary	Total (n)	Percentage (%)
Government	3	0	3	1.9
Private	123	28	151	98.1
Total	126	28	154	100.0

Table 3: Showing distribution of school type by level

4.4.5 Position of the School Administrator

In terms of roles held within the schools, Head Teachers formed the largest group of respondents at 44.8% (n=69), followed by Deputy Head Teachers at 24.7% (n=38) and those in other administrative roles (such as Directors of Studies and School Directors) at 20.8% (n=32). Principals made up the remaining 9.7% (n=15) of the participants.

Position	Primary	Secondary	Total (n)	Percentage (%)
Head Teacher	53	16	69	44.8
Deputy Head Teacher	31	7	38	24.7
Others (DOS and Director)	30	2	32	20.8
Principal	12	3	15	9.7
Total	126	28	154	100.0

Table 4: Showing position of the respondents

4.1.6 Years of experience as a school administrator

Regarding professional longevity, 33.1% (n=51) of the administrators had 5–10 years of experience, and an identical percentage (33.1%, n=51) had 11–15 years of experience. Administrators with more than 15 years of experience made up 20.8% (n=32) of the sample, while those with less than 5 years of experience accounted for 13% (n=20).

4.2 Knowledge on eye health

4.2.1 Heard about or had training on Childhood Eye Health

A significant majority of the administrators had never heard about or received any training on childhood eye health representing 81.2% (n=125) of the respondents. Only 18.8% (n=29) reported having heard about or received training, among these, the most frequent sources were

workshops/seminars (n=14) and during formal education (n=12). The other sources were through health partner programs (n=1) and in newspapers or social media (n=5).

4.2.2 Common eye problems in school children

The most recognized conditions were conjunctivitis (red eye) n=143, followed by refractive errors (including short/long sightedness and astigmatism) n=132, eye allergies (n=101), eye injuries (n=44), squint (n=19), trachoma (n=13), cataracts (n=12), vitamin A deficiency (n=2) and lastly only one respondent did not know the most common eye problems affecting children.

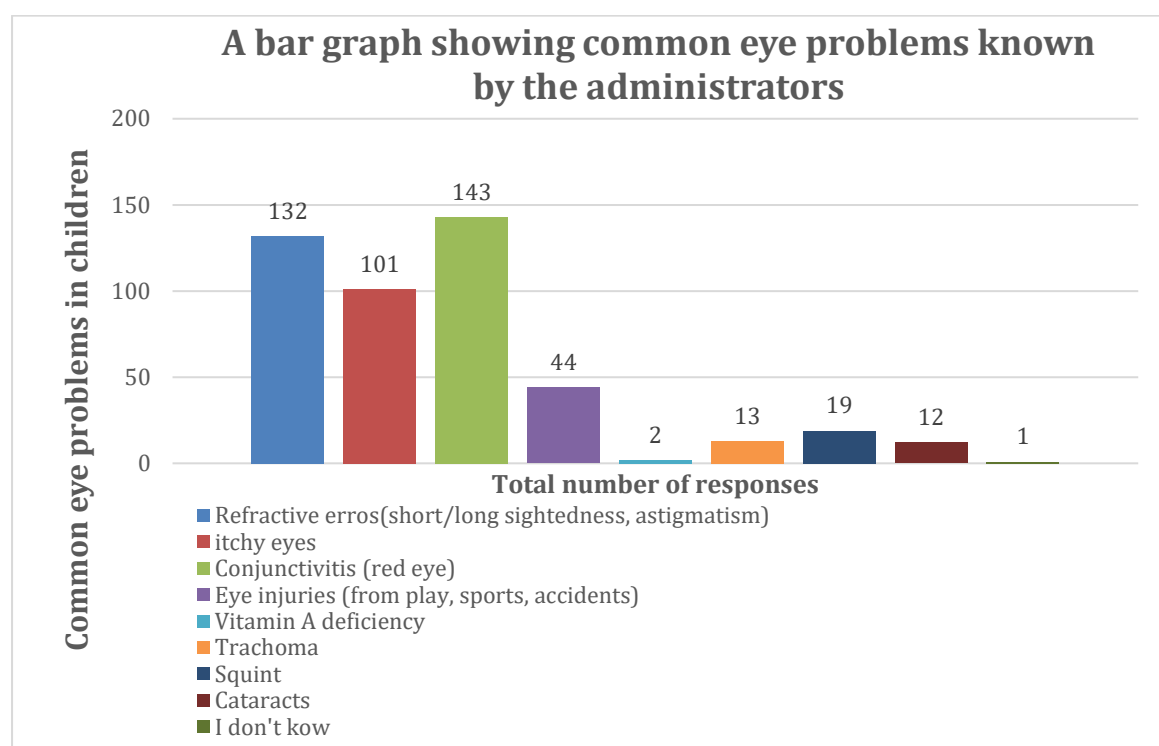


Figure 4: A bar graph showing common eye problems in children known by administrators

4.2.3 Awareness of the number of children with eye conditions in the school

Most of the school administrators 59% (n=91) were aware of the number of children with eye conditions in their schools and only 41% (n=63) were not aware. The mean number of children with eye conditions was approximately 7 per school as reported by the school administrators.

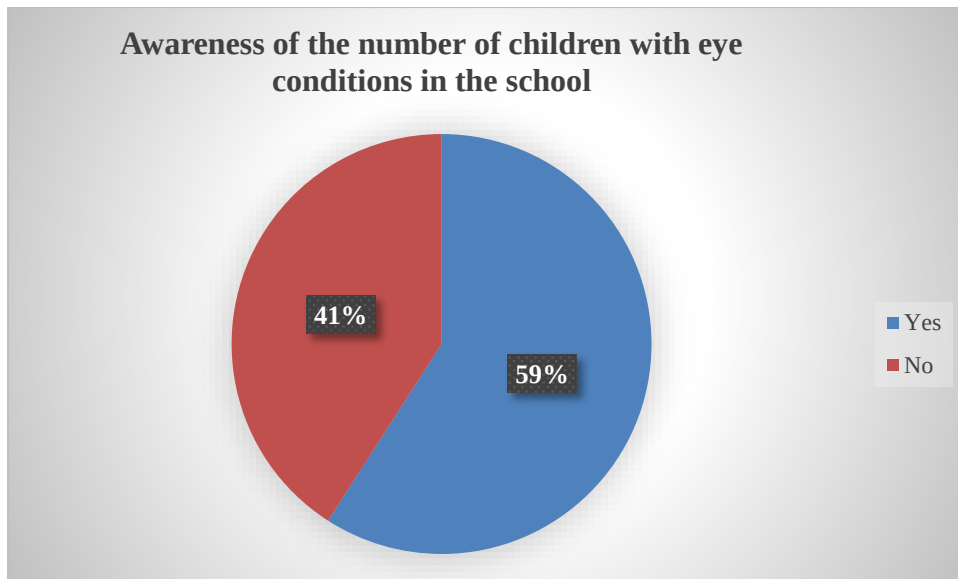


Figure 5: A pie chart showing awareness of the number of children with eye conditions in the school

4.2.4 Impact of eye problems on child's performance.

The highest percentage of school administrators 99% (n=152) agreed that eye problems can affect children's performance with only 1% (n=2) that disagreed.

Most school administrators reported that eye problems affect children's performance by reducing concentration and academic performance 99% (n=151), followed by affecting social interaction and participation in class 66% (n=101), performance in sports 65.8% (n=100) and others ways such absenteeism 5.9% (n=9).

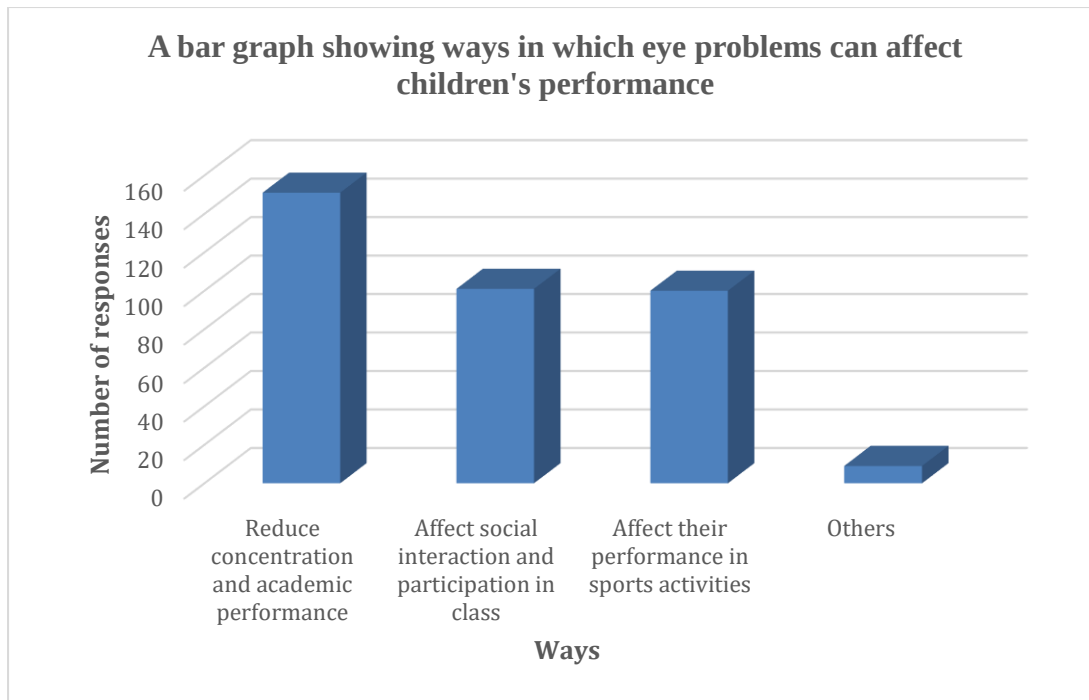


Figure 6: A bar graph showing ways in which eye problems can affect children's performance

4.2.5 Referral sites for treatment

Majority of the schools referred their children with eye problems back home to their parents for further treatment 48% (n=74), followed by general hospital 39.6% (n=61), private clinics

24.7% (n=38), health center 20.1% (n=31) and lastly school sickbay 12.3% (n=19).

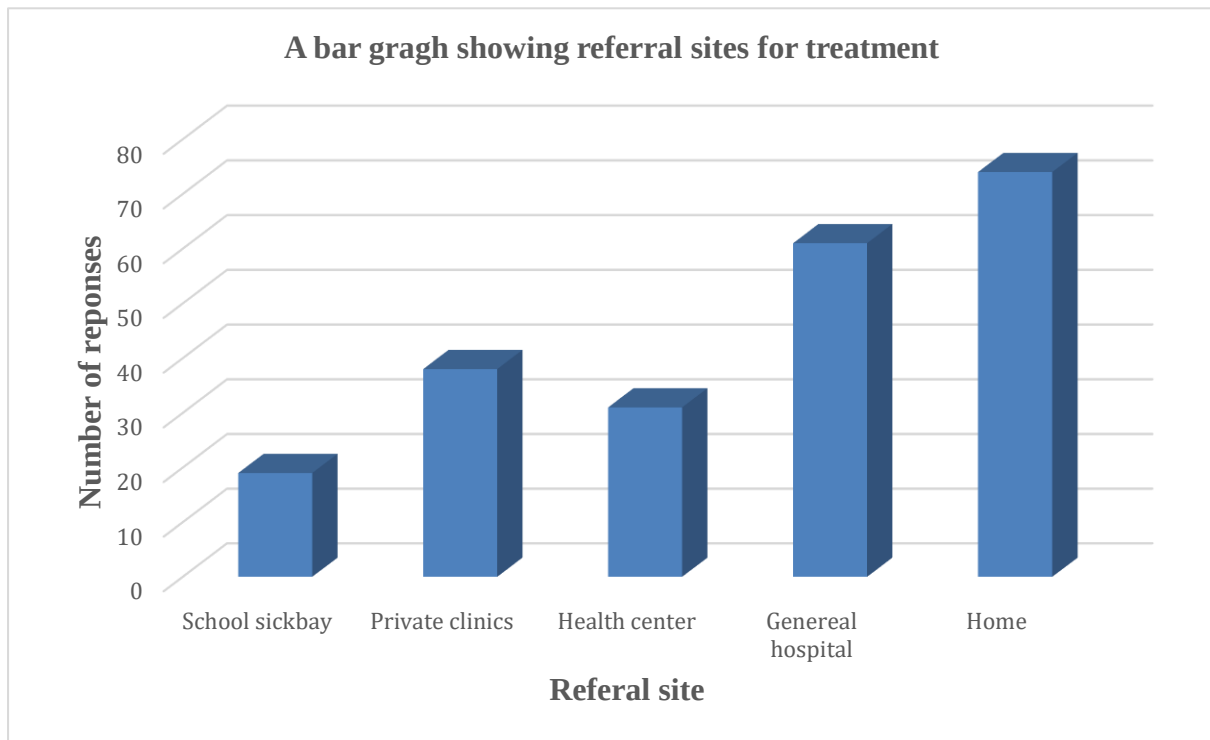


Figure 7: A bar graph showing referral sites for treatment

4.3 Attitudes towards Eye Health Integration

4.3.1 Opinions on integrating eye health activities in schools

The overwhelming majority of school administrators expressed a positive attitude towards integrating eye health activities in schools. Where 91.6% (n=141) strongly agreed and 5.2% (n=8) agreed that schools should integrate eye health activities such as screening, referral, and eye health education, giving a combined positive response of 96.8% (n=149).

Only a small minority were non-supportive, with 1.3% (n=2) disagreeing, 1.3% (n=2) remaining neutral, and 0.6% (n=1) strongly disagreeing.

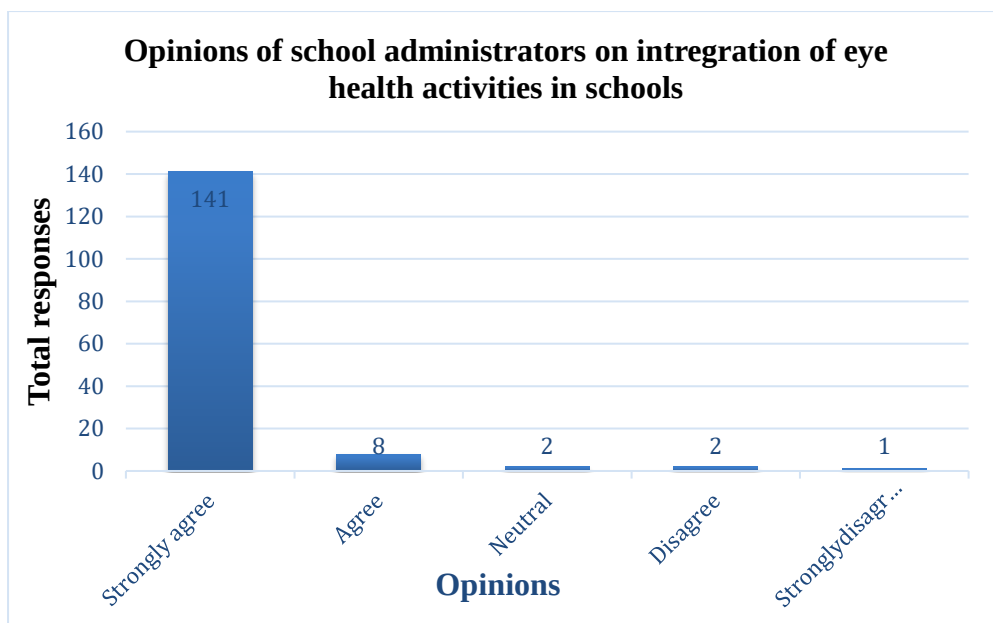


Figure 8: A bar graph showing opinions of school administrators on integration of eye health activities in schools

4.3.2 Eye health being part of Routine school health programs

Regarding whether eye health should form part of a routine school health program, 96.8% (n=149) of respondents answered yes, while only 3.2% (n=5) did not support its inclusion for reasons such as their school being a community school and parents might think it is a source of income, eye problems not being common in their school and lack of trust in health workers.

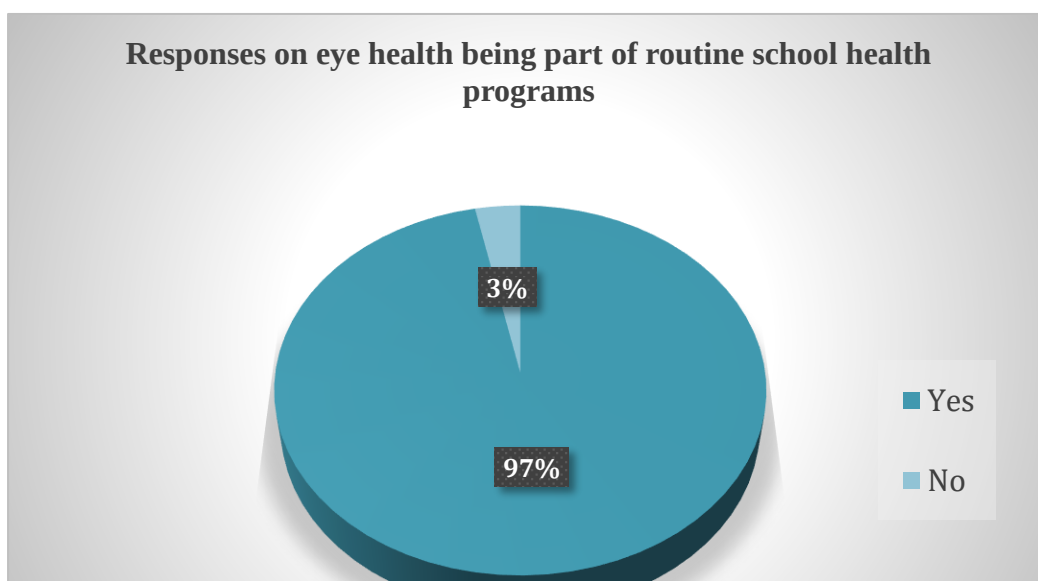


Figure 9: A pie chart showing responses on eye health being part of routine school health programs

4.3.3 If it's the school's responsibility to support children with vision problems

When asked about the degree of school responsibility for supporting children with vision problems, the largest proportion of administrators, 68% (n=105) believed the school bears partial responsibility, while 10% (n=15) felt the school was fully responsible and 22% (n=34) did not consider it the school's responsibility at all. Among those who recognised a school responsibility, the most common suggested approaches were allowing affected children to sit at the front of the class (n=56, 46.5%), followed by active screening and referral (n=39, 32.6%), and provision of glasses and medical treatment (n=25, 20.9%).

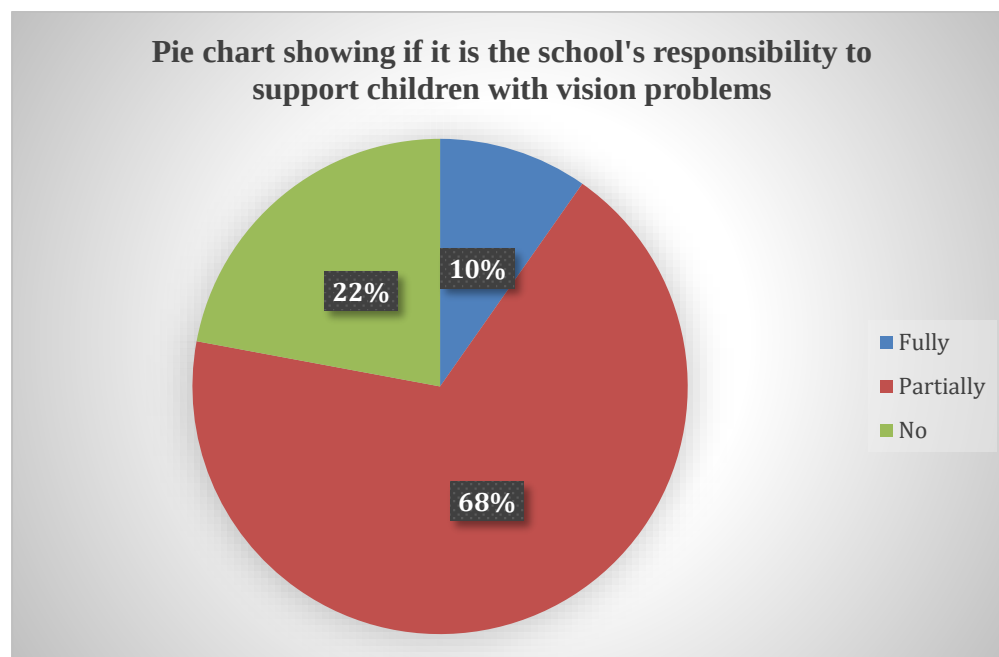


Figure 10: A pie chart showing if it is the school's responsibility to support children with vision problems

4.4 Practices of school administrators

This section documented the current actions and strategies implemented by school administrators regarding eye health promotion, including the organization of eye screening activities, teacher encouragement of parents to seek care, provision of eye health education to learners, and identification of support needed to better integrate eye health into school programs.

4.4.1 Schools that have ever had or organized eye screening activities for students

A large majority of schools, 90% (n=139), had never organised any form of eye screening for their students, with only 10% (n=15) reporting that such eye screening activity had ever taken

place. Among the 15 schools that had ever conducted eye screening, 60.0% (n=9) reported it had occurred only once in many years, 33.3% (n=5) conducted it once a year, and 6.7% (n=1) described the frequency as occasional.

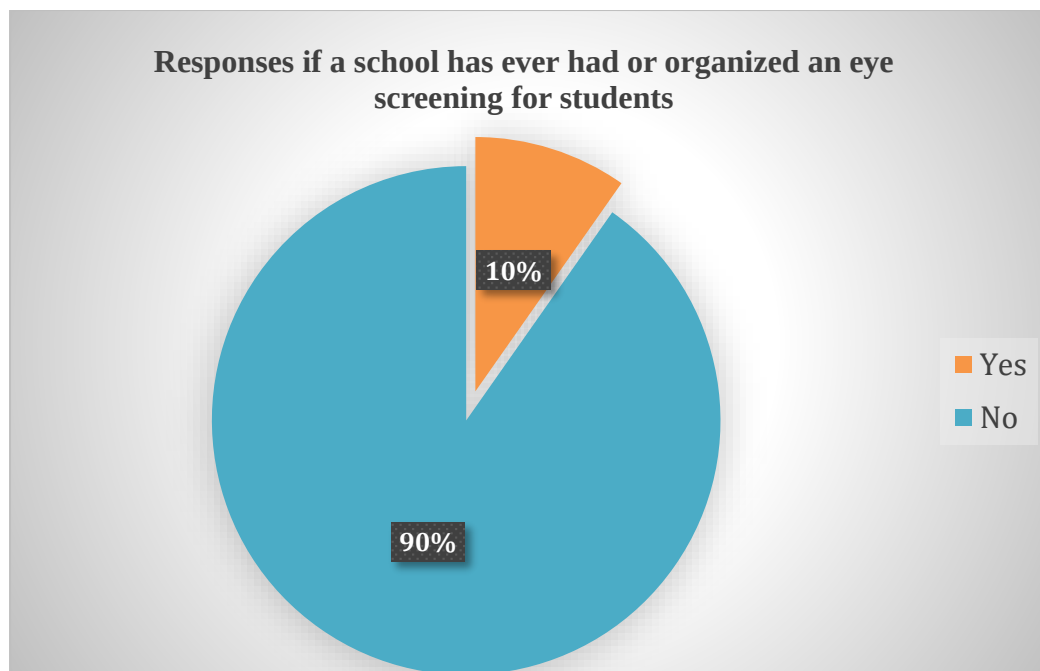


Figure 11: A pie chart showing responses if a school has ever had or organized an eye screening for students

4.4.2 Encouragement by teachers to parents to seek care for children with suspected eye problems

In contrast, teacher encouragement of parents to seek eye care was notably high. The majority of schools, 87.0% (n=134), reported that teachers always encourage parents to seek care for children with suspected eye problems, while 10.4% (n=16) said this happened sometimes and only 2.6% (n=4) said it never occurred.

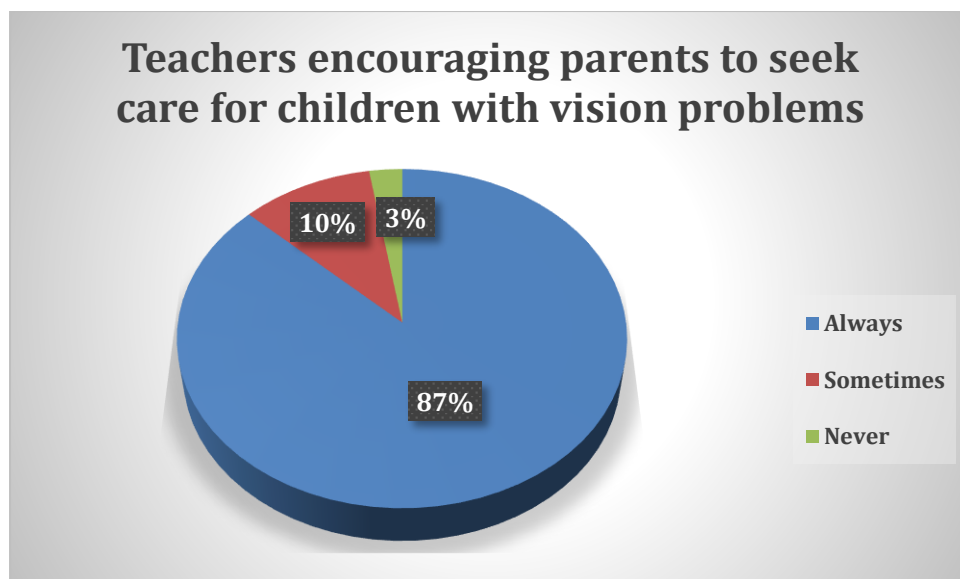


Figure 12: A pie chart showing teachers encouraging parents to seek care for children with vision problems

4.4.3 School providing eye health education to learners

Similarly, 71.4% (n=110) of schools reported providing some form of eye health education to learners, compared to 28.6% (n=44) that did not.

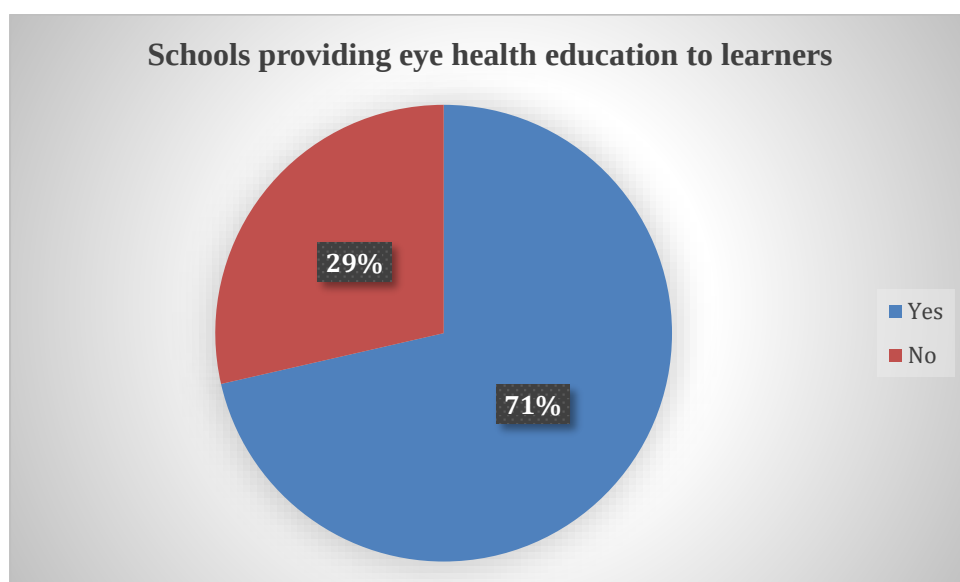


Figure 13: A pie chart showing schools providing eye health education to learners

4.4.4 Support to help schools better integrate eye health

Regarding the support needed to better integrate eye health, staff training was the most cited need at 62.3% (n=96), followed by partnerships with eye health organisations at 56.5% (n=87), support from the Ministry of Health at 33.1% (n=51), more funding and resources at 24.0% (n=37), and stronger referral systems at 20.8% (n=32), and others 2.6% (n=4) gave suggestions like involving stakeholders, sensitizing parents, align eye health in the curriculum and sensitization from health departments.

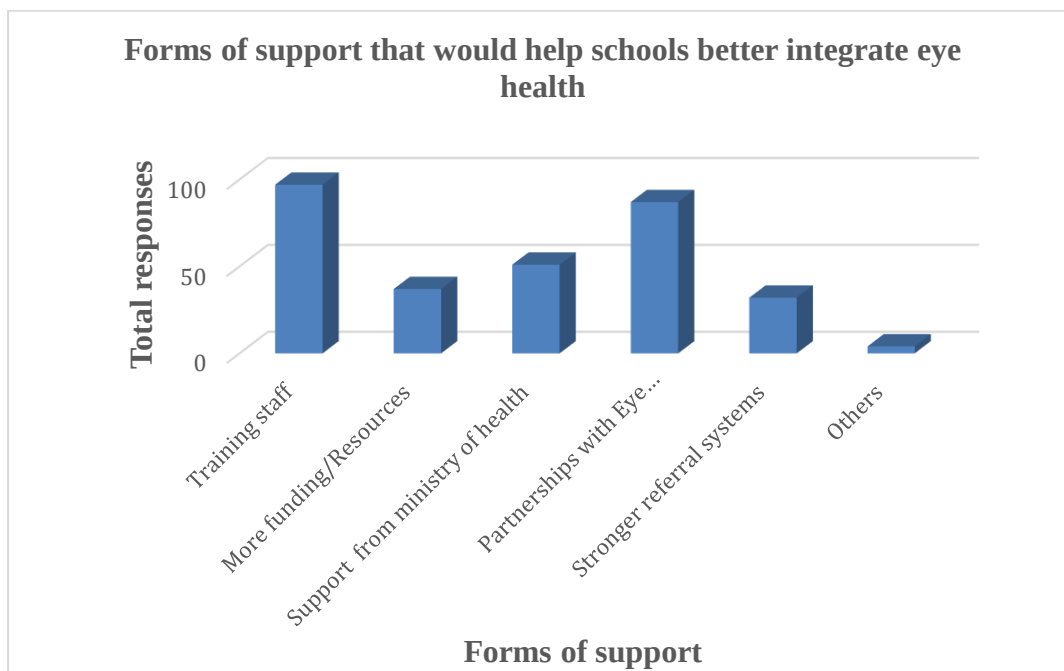


Figure 14: A bar graph showing Forms of support that would help schools better integrate eye health

4.5 Inferential Statistics

Following the descriptive analysis, inferential statistics were performed to examine associations between socio-demographic and structural variables and the three KAP domains, and to identify independent predictors of good practice. Analyses conducted include computation of composite KAP scores, Chi-square tests (with Fisher's exact test where expected cell counts fell below 5), Spearman's rank-order correlation, and binary logistic regression. A significance threshold of $p < 0.05$ was applied throughout. All analyses were carried out using SPSS Version 25.

4.5.1 Composite KAP Scores

Composite scores were computed for each of the three domains. Knowledge was scored out of eight items (one mark per correctly identified childhood eye condition), converted to a percentage, and categorised as: Good ($\geq 70\%$), Moderate (50–69%), or Poor ($< 50\%$). Attitude was scored on a composite of three items (maximum 9 points) reflecting integration support, perceived school responsibility, and support for routine inclusion, and converted to a percentage: Positive ($\geq 70\%$), Neutral (50–69%), or Negative ($< 50\%$). Practice was scored on three binary practice items (eye screening, teacher encouragement, and eye health education), yielding a percentage score categorised as Good ($\geq 70\%$) or Poor ($< 70\%$).

Table 4.5 presents the mean, standard deviation, and overall category for each KAP domain.

KAP Domain	Mean (%)	SD	Min	Max	Overall Category
Knowledge score (0–100%)	38.2	13.4	0.0	87.5	Poor ($< 50\%$)
Attitude score (0–100%)	82.5	15.2	22.2	100.0	Positive ($\geq 70\%$)
Practice score (0–100%)	55.8	22.2	0.0	100.0	Poor ($< 70\%$)

Table 5: Descriptive statistics of composite KAP domain scores ($N = 154$)

The mean knowledge score was 38.2% (SD = 13.4%), falling in the Poor category. The mean attitude score was 82.5% (SD = 15.2%), indicating overall Positive attitudes. The mean practice score was 55.8% (SD = 22.2%), categorised as Poor. Tables 4.6–4.8 present the frequency distribution of administrators within each category.

Knowledge Category	Frequency (n)	Percentage (%)
Good ($\geq 70\%$)	3	1.9%
Moderate (50–69%)	39	25.3%
Poor ($< 50\%$)	112	72.7%
Total	154	100.0%

Table 6: Distribution of respondents by knowledge category ($N = 154$)

Attitude Category	Frequency (n)	Percentage (%)
Positive ($\geq 70\%$)	118	76.6%
Neutral (50–69%)	31	20.1%
Negative ($< 50\%$)	5	3.2%
Total	154	100.0%

Table 7: Distribution of respondents by attitude category (N = 154)

Practice Category	Frequency (n)	Percentage (%)
Good ($\geq 70\%$)	9	5.8%
Poor ($< 70\%$)	145	94.2%
Total	154	100.0%

Table 8: Distribution of respondents by practice category (N = 154)

The results reveal a pronounced KAP paradox: while 76.6% of administrators held positive attitudes toward eye health integration, only 5.8% demonstrated good practices, and 72.7% had poor knowledge of childhood eye conditions.

4.5.2 Chi-Square Tests of Association

Chi-square tests (or Fisher's exact test where applicable) were conducted to assess associations between categorical demographic and structural variables and the three KAP categories. Table 4.9 presents a summary of all tests performed.

Variable	Comparison	Statistic	df	p-value	Sig.
Sex	vs Knowledge (adequate/poor)	$\chi^2=1.219$	1	0.270	ns
School Level	vs Knowledge (adequate/poor)	$\chi^2=0.000$	1	1.000	ns
Training Status	vs Knowledge (adequate/poor)	$\chi^2=1.615$	1	0.204	ns
Experience (yrs)	vs Knowledge (adequate/poor)	$\chi^2=2.376$	2	0.305	ns
Sex	vs Practice (good/poor)	Fisher	–	0.186	ns
School Level	vs Practice (good/poor)	Fisher	–	0.669	ns
Training Status	vs Practice (good/poor)	Fisher	–	0.067	ns
Knowledge Category	vs Practice (good/poor)	Fisher	–	0.257	ns
Attitude Category	vs Practice (good/poor)	$\chi^2=0.333$	2	0.847	ns
Sex	vs Attitude (positive/non-pos)	$\chi^2=7.939$	1	0.005	**
School Level	vs Attitude (positive/non-pos)	$\chi^2=3.779$	1	0.052	ns
Training Status	vs Attitude (positive/non-pos)	$\chi^2=0.181$	1	0.671	ns

Table 9: Summary of chi-square and Fisher's exact test results for KAP associations ($N = 154$). Sig.: $p < 0.01$; $p < 0.05$; ns = not significant ($p \geq 0.05$); † $p < 0.10$.

The only statistically significant association identified was between sex and attitude category ($\chi^2 = 7.939$, $df = 1$, $p = 0.005$). Male administrators were significantly more likely to hold positive attitudes toward eye health integration compared to female administrators. Tables 4.10 and 4.11 present the detailed cross-tabulations for the two most noteworthy associations.

Sex	Non-positive Attitude n (%)	Positive Attitude n (%)	Total n (%)
Female	27 (32.1%)	57 (67.9%)	84 (100%)
Male	8 (11.4%)	61 (87.1%)	70 (100%)
Total	35 (22.7%)	118 (76.6%)	154 (100%)

Table 10: Cross-tabulation of sex and attitude category ($\chi^2 = 7.939$, $df = 1$, $p = 0.005$)

As shown in Table 4.10, 87.1% of male administrators held positive attitudes compared to 67.9% of female administrators, a statistically significant difference ($p = 0.005$).

Training Status	Good Practice n (%)	Poor Practice n (%)	Total n (%)
Trained (Yes)	4 (13.8%)	25 (86.2%)	29 (100%)
Not trained (No)	5 (4.0%)	119 (96.0%)	124 (100%)
Total	9 (5.8%)	145 (94.2%)	154 (100%)

Table 11: Cross-tabulation of training status and practice category (Fisher's exact test, $p = 0.067$)

Although the association between training status and good practice did not reach conventional statistical significance ($p = 0.067$), the observed difference was clinically notable: 13.8% of trained administrators demonstrated good practice compared to only 4.0% of untrained administrators. Given the small cell counts ($n = 9$ with good practice), this marginal finding warrants attention in future adequately powered studies.

Training Status	Adequate Knowledge n (%)	Poor Knowledge n (%)	Total n (%)
Trained (Yes)	11 (37.9%)	18 (62.1%)	29 (100%)
Not trained (No)	30 (23.8%)	94 (74.6%)	124 (100%)
Total	41 (26.6%)	112 (72.7%)	154 (100%)

Table 12: Cross-tabulation of training status and knowledge category ($\chi^2 = 1.615$, $df = 1$, $p = 0.204$)

No statistically significant associations were found between knowledge adequacy and any of the demographic variables tested, including sex ($p = 0.270$), school level ($p = 1.000$), school type ($p = 1.000$), training status ($p = 0.204$), or years of experience ($p = 0.305$).

4.5.3 Spearman's Rank-Order Correlations between KAP scores

Spearman's rank-order correlation coefficients were computed to examine pairwise relationships between continuous KAP scores (Table 4.13). This non-parametric test was selected given the ordinal nature of the composite scores and non-normal distribution of the knowledge variable.

Variable	Knowledge Score	Attitude Score	Practice Score
Knowledge score	–	0.025 (p=0.763)	-0.046 (p=0.568)
Attitude score		–	0.026 (p=0.752)
Practice score			–

Table 13: Spearman's rank-order correlation matrix for KAP domain scores (N = 154).

Values reported as rho (p-value).

No statistically significant correlations were observed between any of the three KAP domains. The correlation between knowledge and attitude scores was negligible ($\rho = 0.025$, $p = 0.763$), as was the association between knowledge and practice ($\rho = -0.046$, $p = 0.568$) and between attitude and practice ($\rho = 0.026$, $p = 0.752$). These findings indicate that in the current sample, higher knowledge scores did not correspond to more positive attitudes or better practices, and positive attitudes were not associated with stronger practice scores.

4.5.4 Binary Logistic Regression: Predictors of Good Practice

Binary logistic regression was conducted to identify independent predictors of good eye health practice (coded 1 = good practice, 0 = poor practice) among school administrators. The following predictor variables were entered simultaneously in the model: sex (female = 1), school level (secondary = 1), training status (trained = 1), attitude category (positive = 1), and knowledge score (continuous, standardised to mean = 0, SD = 1). Table 4.14 presents the model output expressed as odds ratios (OR) with 95% confidence intervals (CI) and associated p-values.

Predictor Variable	OR	95% CI	p-value	Sig.
Female sex (ref: male)	4.29	0.79 – 23.46	0.093	†
Secondary school (ref: primary)	1.35	0.24 – 7.76	0.734	ns
Had training (ref: no training)	4.12	0.98 – 17.23	0.053	†
Positive attitude (ref: non-pos)	1.76	0.29 – 10.68	0.538	ns
Knowledge score (per 1 SD)	1.45	0.74 – 2.84	0.277	ns

Table 14: Binary logistic regression model, a predictors of good eye health practice (N = 154). OR = odds ratio; CI = confidence interval. $p < 0.05$; † $p < 0.10$ (marginal); ns = not significant.

None of the predictor variables independently reached statistical significance at the $p < 0.05$ level in the multivariable model, likely reflecting the very low prevalence of good practice in the sample ($n = 9$; 5.8%), which limits statistical power for logistic regression. Nonetheless, two findings are noteworthy. First, having received training was associated with a fourfold increase in the odds of good practice (OR = 4.12, 95% CI: 0.98–17.23, $p = 0.053$), a marginally significant finding. Second, female sex was associated with over four times higher odds of good practice compared to male administrators (OR = 4.29, 95% CI: 0.79–23.46, $p = 0.093$), though this was not statistically significant. These effect sizes, while imprecisely estimated due to low outcome prevalence, are consistent with the bivariate analyses and suggest that training may be the most modifiable predictor of improved practice.

4.5.5 Summary of Inferential Findings

The inferential analyses produced five principal findings. First, a large majority of administrators (72.7%) had poor knowledge of childhood eye health, while 76.6% held positive attitudes and 94.2% demonstrated poor practice — confirming a significant KAP paradox. Second, the only statistically significant bivariate association was between sex and attitude, with male administrators more likely to express positive attitudes ($p = 0.005$). Third, no significant correlations were found between knowledge, attitude, and practice scores, suggesting these three domains are operating largely independently in this sample. Fourth, training showed a marginally significant association with better practice in both bivariate (Fisher's $p = 0.067$) and multivariable (OR = 4.12, $p = 0.053$) analyses, indicating it may be an important modifiable factor. Fifth, the extremely low prevalence of good practice (5.8%) limited statistical power across all inferential tests, and findings should be interpreted with appropriate caution. Future research with larger samples is warranted to confirm these associations.

CHAPTER FIVE: DISCUSSION

5.1 Introduction

This chapter discusses and interprets the findings of the study on knowledge, attitudes, and practices (KAP) of primary and secondary school administrators regarding eye health integration in Nansana Division, Wakiso District, Uganda. The discussion is organized around the three main study objectives and is contextualized within existing literature from Uganda and comparable low- and middle-income country (LMIC) settings. The chapter also examines the demographic and structural factors associated with the findings, interprets the inferential statistical analyses, highlights key implications for policy and practice, and acknowledges the study's limitations.

A total of 154 school administrators participated in this descriptive cross-sectional study. The sample was predominantly drawn from private primary schools (80%), which accurately reflects the composition of the school ecosystem in Nansana Division. The demographic profile with the majority of respondents aged 30-49 years, a nearly equal sex distribution, and most having 5-15 years of administrative experience suggests a relatively experienced and potentially receptive cohort of school leaders.

5.2 Socio-Demographic and structural factors associated with KAP

The study sample was dominated by administrators from private schools (98.1%), which mirrors the structure of the education sector in Nansana Division. The near-absence of government schools in the sample with only 3 out of 154 limits direct comparative analysis between ownership types, but it does raise important policy questions. Government schools, which tend to serve more economically vulnerable populations, may face different resource and governance constraints than private schools, potentially placing their students at greater risk of unaddressed visual impairment.

The distribution of experience levels with two-thirds of respondents having 5-15 years in administration suggests a cohort that should have sufficient institutional grounding to implement health programs. The finding that this experience has not translated into stronger eye health practices reinforces the conclusion that the primary barriers are structural and resource-based rather than attitudinal or experiential.

Primary school administrators constituted 81.8% of the sample. The early primary school years represent a critical window for vision screening, given that uncorrected refractive errors during this period can impede literacy development and lead to lasting educational disadvantage

(International Agency for the Prevention of Blindness (IAPB), 2024). The concentration of the study in primary schools therefore heightens the significance of the low screening rates found, as this is the level where early detection would have the greatest developmental impact.

5.3 Knowledge of school administrators on eye health integration

5.3.1 Overall level of knowledge and composite scores

The composite knowledge score revealed a concerning deficit: the mean score was 38.2% (SD = 13.4%), categorized as Poor (<50%), and 72.7% of administrators fell within the Poor knowledge category (Table 4.6). Only 1.9% achieved Good knowledge ($\geq 70\%$), while 25.3% were in the Moderate range (50–69%). These findings collectively confirm that, at the population level, school administrators in Nansana Division do not possess adequate foundational knowledge to independently guide systematic eye health integration.

The findings revealed a paradox in administrators' knowledge: while many could identify common childhood eye conditions from observational experience, the vast majority had never received formal training on childhood eye health, 81.2% had never heard about or received training. This aligns with findings from (Harvey *et al.*, 2024), who observed that weak knowledge among education stakeholders is a persistent impediment to sustainable school eye health integration in LMICs.

Despite this training gap, common conditions were broadly recognized. Conjunctivitis was identified by 92.9% of respondents, refractive errors by 85.7%, and eye allergies by 65.6%. This suggests administrators possess experiential or observational knowledge derived from day-to-day work with children, even without structured training. However, less common but clinically significant conditions like vitamin A deficiency (1.3%), trachoma (8.4%), and cataracts (7.8%) were poorly recognized. This is concerning given that trachoma remains endemic in several parts of Uganda and vitamin A deficiency constitutes a preventable cause of childhood blindness (WHO, 2023). These findings are consistent with (Prakash *et al.*, 2024), who found that while most school managers in India were aware that early treatment improved visual outcomes, only 23.1% knew that children with special needs face elevated risks of eye conditions.

5.3.2 Inferential findings: Knowledge associations

Chi-square analyses revealed that no statistically significant associations existed between knowledge adequacy and any of the demographic variables examined, including sex ($\chi^2 =$

1.219, $p = 0.270$), school level ($p = 1.000$), training status ($\chi^2 = 1.615$, $p = 0.204$), or years of experience ($\chi^2 = 2.376$, $p = 0.305$). Although trained administrators showed a higher proportion of adequate knowledge (37.9%) compared to untrained ones (23.8%), this difference was not statistically significant, likely due to the low absolute number of trained administrators ($n = 29$) and the near-universal poor knowledge baseline.

Similarly, Spearman's rank-order correlations confirmed that knowledge scores did not significantly correlate with attitude scores ($\rho = 0.025$, $p = 0.763$) or practice scores ($\rho = -0.046$, $p = 0.568$). These null findings indicate that higher levels of knowledge were not associated with more positive attitudes or better practices in this sample, a finding that challenges a core assumption of the KAP model, which predicts that knowledge translates into attitude change and ultimately into practice. This decoupling has been observed in other KAP studies in health promotion contexts and suggests that knowledge alone is insufficient to drive behaviour change without complementary structural and motivational supports (Launiala, 2009).

5.3.3 Awareness of eye problems in schools

Approximately 59% of administrators reported awareness of the number of children with eye conditions in their schools, with a mean of approximately seven affected children per school. While this proportion reflects moderate surveillance awareness, the corollary that 41% of administrators had no such knowledge underscores a substantial gap in passive monitoring. This absence of routine tracking inhibits early referral and intervention, particularly in resource-limited settings where active screening is already uncommon (Koome, 2024). In a related study of school health attendants in Nairobi, Kenya, (Koome, 2024) found that record-keeping of students with eye problems was practiced by the majority of participants; the comparatively lower awareness in the current study may reflect the absence of a designated school health officer in most Nansana schools.

5.3.4 Referral practices and knowledge of services

When asked about referral pathways, 48% of administrators reported sending children home to parents as the primary response, followed by referral to general hospitals (39.6%) and private clinics (24.7%). The reliance on home referral suggests limited integration of eye care into the formal health system and the absence of institutionalised referral protocols within schools. This echoes findings by (Akampurira *et al.*, 2022) in Kampala, who noted that most schools lacked structured referral documentation, and reflects the broader concern raised by the *Ministry of*

Health (2023) that eye health in Uganda continues to function as isolated outreach activity rather than as a systematically embedded component of school health programs.

5.4 Attitudes of school administrators towards eye health integration

5.4.1 Composite attitude scores and overall findings

The mean attitude score was 82.5% (SD = 15.2%), categorized as Positive ($\geq 70\%$), and 76.6% of administrators fell within the Positive attitude category (Table 4.7). Only 3.2% held Negative attitudes. These results indicate that the sample as a whole is strongly predisposed toward supporting eye health integration, which represents a critical enabling condition for programmatic action.

Specifically, 96.8% of respondents agreed or strongly agreed that schools should integrate eye health activities, including screening, referral, and eye health education, and an identical proportion affirmed that eye health should form part of routine school health programs. These proportions are notably higher than those reported in some comparable studies and indicate that attitudinal barriers often cited as major obstacles to program uptake in LMICs may be less prominent in the Nansana Division context. This is consistent with (Adzaho *et al.*, 2024) in Ghana, who found that administrators with positive attitudes fostered greater collaboration between teachers, parents, and eye health professionals, and with (Prakash *et al.*, 2024), who observed that positive attitudes among special school managers in India were associated with higher engagement in eye health activities.

5.4.2 Inferential findings: Sex and Attitude

The only statistically significant bivariate association identified across all chi-square analyses was between sex and attitude category ($\chi^2 = 7.939$, $df = 1$, $p = 0.005$). Male administrators were significantly more likely to hold positive attitudes toward eye health integration than female administrators: 87.1% of males held positive attitudes compared to 67.9% of females (Table 4.10). This finding is noteworthy and merits careful interpretation.

The gender difference in attitudes may reflect differential exposure to health-related decision-making forums, variations in professional networks, or sociocultural factors that shape how male and female administrators engage with institutional health responsibilities. It does not imply that female administrators are opposed to eye health integration since the majority (67.9%) still held positive attitudes but it does suggest that targeted engagement strategies may be beneficial when designing programs in contexts where female administrators predominate.

Future research should explore the mechanisms underlying this association to inform gender-responsive program design.

Notably, binary logistic regression found that female sex was associated with over four times higher odds of demonstrating good practice compared to male administrators (OR = 4.29, 95% CI: 0.79-23.46, $p = 0.093$), though this was not statistically significant. This apparent paradox where male administrators have more positive attitudes yet female administrators trend toward better practices may suggest that female administrators, despite expressing somewhat less enthusiastic support, are more likely to translate their institutional responsibilities into concrete actions. This finding warrants further investigation in adequately powered studies.

5.4.3 Perceived responsibility of schools

Despite the high overall support for integration, attitudes toward institutional responsibility were more nuanced. Only 10% of administrators believed the school bears full responsibility for supporting children with vision problems, while 68% considered responsibility to be shared, and 22% did not consider eye health to be a school responsibility at all. This partial attribution of responsibility may reflect the lack of clear guidance in Uganda's educational frameworks about the specific roles of schools in health program implementation. The Uganda School Health Policy (MoH, 2008) prescribes annual vision screening as a minimum standard, yet implementation is inconsistent and role clarity among administrators appears incomplete. This aligns with (Ogundo *et al.*, 2023), who noted that weak inter-sectoral coordination between education and health ministries in Eastern and Southern Africa results in blurred lines of responsibility, leading to fragmented program delivery. Among those recognising some school responsibility, the most commonly cited approach was allowing affected children to sit at the front of the class (46.5%) a palliative measure rather than a programmatic solution.

5.5 Practices of School Administrators in Eye Health Promotion

5.5.1 Composite Practice Scores and Overall Findings

The mean practice score was 55.8% (SD = 22.2%), categorised as Poor (<70%), and 94.2% of administrators fell within the Poor practice category (Table 4.8). Only 5.8% ($n = 9$) demonstrated Good practice. This finding represents perhaps the most alarming outcome of the study and underscores a critical implementation failure: despite nearly universal positive attitudes, the overwhelming majority of schools are not implementing even basic eye health activities. This constitutes a textbook KAP paradox, a well-documented phenomenon in public

health research where favorable knowledge and attitudes fail to convert into appropriate health practices (Launiala, 2009).

5.5.2 Organized eye screening activities

The most striking individual finding was that 90% of schools had never organized any form of eye screening for their students. Among the 10% that had ever conducted screening, 60% reported it had occurred only once over many years, an entirely irregular frequency for meaningful early detection. This gap is particularly alarming given Uganda's disease burden: (Akampurira *et al.*, 2022) documented a 15.5% prevalence of visual impairment among secondary school students in Kampala, with refractive errors as the predominant cause. Without systematic screening, most of these cases would remain undetected during critical developmental years.

In Ghana, (Adzaho *et al.*, 2024) similarly found that none of the 60 head teachers surveyed had a comprehensive eye health program in their schools, and only 28% had ever conducted any form of eye screening. The current study's figure of 10% is even lower, suggesting that the situation in Nansana Division is among the more acute in the region. These findings collectively highlight the urgent need for externally supported, structured screening programs to compensate for the absence of school-led initiatives.

5.5.3 Inferential Findings: Predictors of Good Practice

Binary logistic regression was conducted to identify independent predictors of good practice. None of the predictor variables like sex, school level, training status, attitude category, and knowledge score reached statistical significance at $p < 0.05$ in the multivariable model, most plausibly because the very low prevalence of good practice in the sample ($n = 9$; 5.8%) substantially limited statistical power for logistic regression analysis.

Nonetheless, two findings are particularly noteworthy. First, having received prior training was associated with a fourfold increase in the odds of good practice (OR = 4.12, 95% CI: 0.98–17.23, $p = 0.053$), a marginally significant result consistent with the bivariate finding that 13.8% of trained administrators demonstrated good practice compared to only 4.0% of untrained administrators (Fisher's exact test, $p = 0.067$). While neither result crosses the conventional threshold for significance, the consistency and effect size across both analyses provides a credible signal that training is the most modifiable predictor of improved eye health practice among school administrators.

Second, chi-square analyses confirmed that no statistically significant associations were observed between practice category and sex ($p = 0.186$), school level ($p = 0.669$), knowledge category ($p = 0.257$), or attitude category ($\chi^2 = 0.333$, $p = 0.847$). The absence of an association between positive attitudes and good practice is particularly notable: it empirically confirms the attitude-practice gap and indicates that attitudinal readiness, while necessary, is insufficient to produce practice change without structural enablers.

5.5.4 Teacher Encouragement of Parental Help-Seeking

In contrast to the very low screening rates, teacher encouragement of parents to seek eye care was notably high: 87% of schools reported that teachers always encourage parents to seek care when eye problems are suspected, and only 2.6% reported this never occurred. This positive practice may represent an informal compensatory mechanism through which schools engage with child eye health in the absence of formal screening infrastructure. However, this approach is passive and reactive, dependent on observable symptoms and teacher vigilance rather than structured identification protocols. As noted by (Xulu-Kasaba *et al.*, 2021), teachers in low-resource settings often identify vision problems through behavioral observation rather than clinical screening, a method that is susceptible to missed cases, particularly among children who have adapted to their visual limitations or whose conditions are asymptomatic.

5.5.5 Eye Health Education

A majority of schools (71.4%) reported providing some form of eye health education to learners, representing a higher uptake than formal screening activities. This may reflect the relative ease of incorporating health messaging into existing assemblies or classroom sessions without requiring specialized equipment or personnel. However, the quality, content, and frequency of such education were not assessed in the current study, and it is likely that sessions are informal and inconsistent rather than structured curriculum activities. (Koome, 2024) similarly observed in Nairobi that while some schools provided health talks, these were sporadic and lacked standardized content. Structured, curriculum-integrated eye health education particularly targeting refractive errors, conjunctivitis, and hygiene is recommended by the (International Agency for the Prevention of Blindness (IAPB), 2024) as a foundational component of comprehensive school eye health programs.

5.5.6 Support Needs for Better Eye Health Integration

When asked what support would best enable better eye health integration, administrators most frequently cited staff training (62.3%), followed by partnerships with eye health organizations

(56.5%), support from the Ministry of Health (33.1%), funding and resources (24.0%), and stronger referral systems (20.8%). The primacy of staff training as a stated need is consistent with the finding that 81.2% of respondents had never received formal eye health training, and reinforces the critical importance of capacity building as an entry point for systemic change — consistent with the recommendation of (Harvey *et al.*, 2024), who identified training of school health workers as a priority in LMICs. The high demand for organizational partnerships reflects administrators' recognition of the limits of school-level action and aligns with Uganda's Strategic Plan for Eye Health 2020–2025 and the Child Eye Health Program championed by Light for the World (2021–2025), which explicitly emphasize multi-sectoral partnerships as cornerstones of sustainable programming.

5.6 The Knowledge-Attitude-Practice Gap: Structural Explanations

A central finding of this study is the pronounced gap between administrators' attitudes and their actual practices, a gap confirmed and quantified by the inferential analyses. The Spearman correlation between attitude and practice scores was negligible ($\rho = 0.026$, $p = 0.752$), and the chi-square test of attitude category against practice category was non-significant ($p = 0.847$). These results empirically confirm that positive attitudes are not driving practice in this sample, and that the two constructs are functioning independently.

Similarly, the absence of a significant knowledge-attitude correlation ($\rho = 0.025$, $p = 0.763$) and knowledge-practice correlation ($\rho = -0.046$, $p = 0.568$) challenges the foundational logic of the KAP model, which posits a sequential relationship between these domains. While this model has been widely critiqued in the health promotion literature for oversimplifying behavior change processes (Launiala, 2009), the current data provide empirical rather than theoretical grounds for questioning its applicability in this setting.

The structural explanation for the KAP paradox is compelling. The absence of dedicated eye health budgets, the lack of trained personnel, and inadequate referral infrastructure in Nansana's schools create practical barriers that positive attitudes alone cannot overcome. The near-universal demand for external support like training, partnerships, government backing further suggests that administrators view themselves as willing but constrained actors in a system that has not yet equipped them to act on their intentions. This interpretation is supported by the WHO's Integrated People-Centred Eye Care (IPEC) framework (WHO, 2023), which argues that embedding eye health into broader health and education systems, rather than relying on vertical or isolated programs, is essential for sustainability. Uganda's School Health Policy

(MoH, 2008), while providing a mandate for vision screening, has not been accompanied by the infrastructure, funding, or monitoring mechanisms needed to translate policy into practice.

5.7 Policy and Programmatic Implications

The findings of this study have several important implications for policy and programming in Uganda and comparable LMIC contexts.

First, the high level of attitudinal support with 76.6% of administrators holding positive attitudes represents a critical enabling condition that program designers should leverage. Interventions do not need to overcome widespread resistance; rather, they should focus on converting existing goodwill into concrete action by providing the tools, training, and systems that administrators have explicitly identified as necessary.

Second, the near-total absence of organized eye screening (90% of schools never screened) demands urgent and coordinated attention. The Ministry of Health and the Ministry of Education and Sports should collaborate to establish a standardized, low-cost school vision screening protocol administrable by trained teachers or health workers. Models from comparable settings such as the integrated school eye health delivery model evaluated in Zanzibar by (Chan *et al.*, 2023) demonstrate that such programs can be both effective and scalable when embedded within existing school health structures.

Third, the training gap is substantial. The marginally significant association between training and good practice (OR = 4.12, $p = 0.053$) provides evidence that investment in training is likely to yield measurable improvements in practice rates. Professional development programs for administrators and teachers should incorporate modules on childhood eye health, including recognition of common conditions, referral pathways, and the pedagogical implications of visual impairment. Such training could be delivered through in-service teacher education frameworks already operationalized by the Ministry of Education and Sports.

Fourth, the heavy reliance on home referral as the primary management pathway signals a need for the development of clear, school-level referral systems linked to accessible eye care providers. Partnerships with NGOs, eye health clinics, and community-based organizations, desired by 56.5% of administrators, could facilitate the establishment of these pathways, particularly for private schools that may lack direct connections to the public health system.

Fifth, the finding that 41% of administrators are unaware of how many children in their schools have eye problems highlights the absence of routine data collection systems. The Ministry of

Education and Sports should promote the integration of eye health indicators into existing school health registers, enabling passive surveillance and evidence-based resource allocation.

Sixth, the significant gender difference in attitudes ($p = 0.005$), combined with the trend suggesting female administrators may be more likely to demonstrate good practice ($OR = 4.29$), calls for gender-disaggregated program monitoring and further investigation of gender-responsive approaches to school health governance.

5.8 Conclusion

This study provides important baseline evidence on the knowledge, attitudes, and practices of school administrators in Nansana Division regarding eye health integration. The inferential analyses have added critical quantitative depth to the descriptive findings: confirming a statistically significant association between sex and attitude, revealing a marginal but clinically plausible link between training and good practice, and most importantly demonstrating empirically that knowledge, attitude, and practice are operating as largely independent constructs in this population.

The key composite findings bear emphasis: a mean knowledge score of 38.2% (Poor); a mean attitude score of 82.5% (Positive); and a mean practice score of 55.8% (Poor), with 94.2% of administrators categorized as poor practitioners. This KAP paradox, strongly positive attitudes coexisting with deeply inadequate practices and knowledge, is the defining feature of the study and its most consequential finding for policy.

The evidence points clearly to a system in which administrators are willing but not enabled. Structural enablers particularly formal training, clear policy mandates, organised and funded screening protocols, and functional inter-sectoral referral systems must be systematically put in place if Uganda is to realise the promise of its School Health Policy and make meaningful progress toward reducing preventable childhood visual impairment.

The high attitudinal readiness documented in this study means that the foundation for change is present. What is now required is coordinated investment and institutional will from the Ministry of Health, the Ministry of Education and Sports, and their development partners to transform this potential into sustainable, evidence-based school eye health action for the children of Nansana Division and beyond.

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APPENDIX I: INFORMED CONSENT FORM

INFORMED CONSENT FORM FOR RESEARCH PARTICIPANTS AGED 18 YEARS AND ABOVE

Title of the proposed study:

Knowledge, attitudes and practices of primary and secondary school administrators on eye health integration in Nansana Division, Wakiso district, Uganda.

Investigators:

Maganda Titus, Bachelor of Optometry, Makerere University, 0756129398

Adongo Jane, Bachelor of Optometry, Makerere University, 0708383618

Study sponsor:

This research project is to be sponsored by Maganda Titus and Adongo Jane who are students of Makerere University and are research investigators.

Background and rationale for the study:

Childhood visual impairment is a preventable cause of disability and poor educational outcomes in Uganda. Evidence shows that school-based eye health programmes can improve early detection and referral. However, the role of school administrators in integrating such programmes has not been fully explored. This study aims to assess their knowledge, attitudes, practices, and barriers to better inform sustainable interventions.

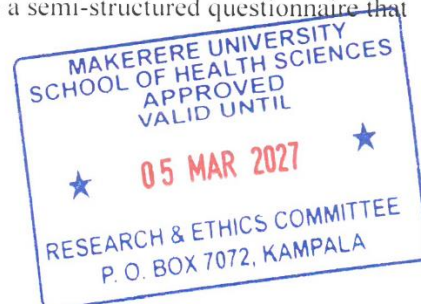
Purpose:

You have been asked to participate because you are a school administrator in Nansana Division. Your views are important in understanding how schools can integrate eye health into school health programmes.

Procedures:

If you agree to participate, you will be asked to complete a semi-structured questionnaire that will take about 20–30 minutes.

NOTE: Do not sign this consent form if it does not have an IRB approval stamp or if the date has lapsed



The study will involve approximately 154 school administrators from both government and private primary and secondary schools in Nansana Division, Wakiso District.

Risks/Discomforts:

There are no major risks associated with participating. However, you may feel slightly uncomfortable answering some questions. You are free to skip any question you do not wish to answer.

Benefits of the research study:

- You may not receive direct personal benefits.
- However, your participation will help generate evidence that may improve school-based eye health programmes and support better learning outcomes for children.
- The wider community and policymakers will benefit from improved integration of eye health services in schools through this study and how to support these programmes.

Compensation for participation in the study:

There will be no monetary compensation for participation in this study. Participation is voluntary, and no financial incentives will be provided.

Questions about the study:

If you have any questions, you may contact:

Maganda Titus (Principal Investigator) – Tel: 0756129398, magandatitus14@gmail.com

Questions about participants' rights:

If you have questions about your rights as a participant, you may contact:

Dr. Kalidi Rajab, Ag. Chairperson, MakSHS-REC, Tel: +256 776798978 / +256 0200903786.

Uganda National Council for Science and Technology (UNCST), Tel: +256 041 4705500



NOTE: Do not sign this consent form if it does not have an IRB approval stamp or if the date has lapsed

Dissemination of results

Findings will be shared with school administrators, the Wakiso District Education Office, Makerere Optometry department and Makerere University School of Health Sciences Research and Ethics Committee (MAKSHS-REC/IRB). Results may also be published in academic journals, but your identity will never be revealed.

Statement of voluntariness:

Your participation is voluntary. You may choose to withdraw at any time without penalty or loss of benefits.

Ethical approval of the research study

This research study has been reviewed and approved by Makerere University School of Health Sciences Research and Ethics Committee /IRB) which is an accredited Ugandan based Research and Ethics Committee/IRB.

Confidentiality:

The information that will be collected will be kept anonymous and confidential in accordance with the international and local ethical standards governing research involving humans as research participants. My identity will be concealed, and my name will not appear anywhere on the coded forms with the information. The study team will be the only one with the authority to access the collected data. However, the School of Health Sciences Research and Ethics Committee and the Uganda National Council for Science and Technology (UNSCT) may have access to private information that identifies the research participants by name where applicable. The filled questionnaire or any other filled data collection form will be kept under strict lock and key, and information on computers will be kept confidential with password protection, respectively. For any further questions, I may contact the Chairperson of the School of Health Sciences Research and Ethics Committee (MakSHSREC) on (+256) +256 776798978 / (+256) 0200903786 or Uganda National Council of Sciences and Technology on Tel: (+256)-041-4705500).

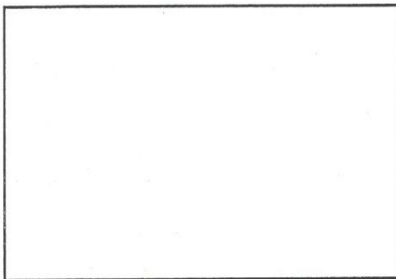


STATEMENT OF CONSENT

..... has described to me what is going to be done. the risks, the benefits involved and my rights regarding this study. I have been informed about the study in which I am voluntarily agreeing to take part. In the use of this information, my identity will be concealed. I am aware that I may withdraw at any time. I understand that by signing this form, I do not waive any of my legal rights but merely indicate that I have been informed about the research study in which I am voluntarily agreeing to participate. A copy of this form will be provided for me.

Name of research participant.....Age.....

Signature/thumb print



Date (DD/MM/YY).....

Name of Researcher.....Signature.....Date.....

NOTE: Do not sign this consent form if it does not have an IRB approval stamp or if the date has lapsed



APPENDIX II: QUESTIONNAIRE

Section A: Socio-Demographic Information

1. Age
 - A. Below 30 years
 - B. 30–39 years
 - C. 40–49 years
 - D. 50 years and above
2. Sex
 - A. Male
 - B. Female
3. What is your position/role?
 - A. Head Teacher
 - B. Deputy Head Teacher
 - C. Principal
 - D. Others (specify) _____
4. School type/ownership?
 - A. Government
 - B. Private
 - C. Others (specify) _____
5. School level?
 - A. Primary
 - B. Secondary
6. Years of experience as a school administrator:
 - A. Less than 5 years
 - B. 5–10 years
 - C. 11–15 years
 - D. More than 15 years



Section B: Knowledge of Eye Health

1. Have you ever heard about or received any training on childhood eye health?
 - A. Yes

- B. No
2. If yes, where did you hear about childhood eye health?
- A. During formal education
 - B. Through workshops/seminars
 - C. Through health partner programs (e.g. NGOs, Ministry of Health)
 - D. In newspapers, radios, and TVs
 - E. Others (specify) _____
3. What common eye problems in school children do you know about? (tick all that apply)
- A. Refractive errors (short/long sightedness, astigmatism)
 - B. Itchy eyes
 - C. Conjunctivitis (red eye)
 - D. Eye injuries (From play, sports, accidents)
 - E. Vitamin A deficiency/related eye conditions
 - F. Trachoma
 - G. Squint (crossed eyes)
 - H. Cataracts
 - I. I don't know.
4. Are you aware of the number of children with eye conditions in your school/class?
- A. Yes
 - B. No
5. How many children do you think, have eye problems or wear spectacles in your school?
- A. Approximately
 - B. Not sure
6. Do you think eye problems can affect children's learning performance?
- A. Yes
 - B. No
7. If yes, in what ways? (tick all that are applicable)
- A. They reduce concentration and academic performance.
 - B. They affect social interaction and participation in class.
 - C. Affect their performance in sports activities.



- D. Excessive squinting and rubbing of eyes.
 - E. Other (specify) _____
8. Where do children with eye problems referred for treatment?
- A. School sickbay
 - B. Private clinics
 - C. Health Centre
 - D. General hospital
 - E. Home

Section C: Attitudes towards Eye Health Integration

1. Do you believe schools should integrate eye health activities (screening, referral, eye health education)?
 - A. Strongly Agree
 - B. Agree
 - C. Neutral
 - D. Disagree
 - E. Strongly Disagree
2. Do you think eye health should be part of routine school health programs?
 - A. Yes
 - B. No
3. In your opinion, is it the responsibility of schools to support children with vision problems?
 - A. Yes
 - B. No
 - C. Not sure

Section D: Practices of School Administrators

1. Has your school ever organized eye screening for pupils/students?
 - A. Yes
 - B. No
2. If yes, how often are such screenings conducted?



- A. Once a year
 - B. Once in two years
 - C. Occasionally
 - D. Never
3. Does your school have a formal referral system for pupils/students identified with eye problems?
- A. Yes
 - B. No
4. Do teachers in your school encourage parents to seek care for children with suspected eye problems?
- A. Always
 - B. Sometimes
 - C. Never
5. Does your school provide any eye health education to learners?
- A. Yes
 - B. No
6. Does your school have a formal referral system for pupils/students identified with eye problems?
- A. Yes
 - B. No
7. What support would help your school better integrate eye health?
- A. Training of staff
 - B. More funding/resources
 - C. Stronger referral systems
 - D. Support from Ministry of Education
 - E. Support from Ministry of Health
 - F. Partnerships with eye health organizations
 - G. Other (specify) _____



8. Has your school collaborated with any eye health professionals or organizations in the past 12 months (e.g., Ministry of Health, NGOs, eye clinics)?

A. Yes

B. No

9. If yes, specify: _____

Section F: Open-Ended Questions

1. What recommendations do you suggest for improving children's eye health in schools?

2. In your view, what role should the Ministry of Education or Ministry of Health play in supporting school-based eye health?



APPENDIX III: WORK PLAN

ACTIVITY	TIME PERIOD					
	Aug 2025	Sept 2025	Oct 2025	Dec 2025- Jan 2026	Feb-April 2026	April-June 2026
Identifying research gaps and study title	■■■■					
Proposal writing	■■■■	■■■■				
Submission of proposal to optometry department		■■■■	■■■■			
Submission and presentation of proposal to IRB				■■■■		
Data collection					■■■■	
Report writing					■■■■	■■■■
Handing in report						■■■■

Table 15: Showing the work plan

APPENDIX IV: BUDGET

ITEM	COST (UGX)
Institutional Review Board (IRB) fee	50,000
Stationary	20,000
Airtime	20,000
Internet	80,000
Printing and photocopying	50,000
Transport	200,000
Accommodation and meals	500,000
Miscellaneous	100,000
TOTAL	1,020,000

Table 16: *Showing the budget*

APPENDIX V: PICTORIAL



Figure 15: Maganda Titus collecting data from a school administrator

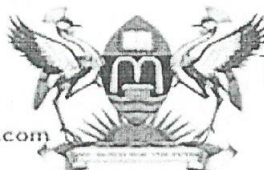


Figure 16: Adongo Jane after collecting data from a church school in Nansana Division

APPENDIX VI: IRB APPROVAL LETTER

MAKERERE

P.O. Box 7072 Kampala, Uganda
E-mail: healthsciences.irb@gmail.com
deanshs@chs.mak.ac.ug



UNIVERSITY

Tel: 256 0200903786
Tel: 256 414 531533
Fax: 256 414 531533

COLLEGE OF HEALTH SCIENCES
SCHOOL OF HEALTH SCIENCES
OFFICE OF THE DEAN

05/03/2026

To: TITUS MAGANDA
MAKEREREUNIVERSITY

Review Type: Initial Review



Re: MAKSHSREC-2025-734: KNOWLEDGE, ATTITUDES AND PRACTICES OF SCHOOL ADMINISTRATORS ON EYE HEALTH INTERGRATION IN NANSANA DIVISION, WAKISO DISTRICT, UGANDA

I am pleased to inform you that at the 200th convened meeting on 27/01/2026, the Makerere University School of Health Sciences REC meeting voted to approve the above referenced application. Approval of the research is for the period of 05/03/2026 to 05/03/2027.

As Principal Investigator of the research, you are responsible for fulfilling the following requirements of approval:

1. All co-investigators must be kept informed of the status of the research.
2. Changes, amendments, and addenda to the protocol or the consent form must be submitted to the REC for re-review and approval **prior** to the activation of the changes.
3. Reports of unanticipated problems involving risks to participants or any new information which could change the risk benefit: ratio must be submitted to the REC.
4. Only approved consent forms are to be used in the enrollment of participants. All consent forms signed by participants and/or witnesses should be retained on file. The REC may conduct audits of all study records, and consent documentation may be part of such audits.
5. Continuing review application must be submitted to the REC **eight weeks** prior to the expiration date of **05/03/2027** in order to continue the study beyond the approved period. Failure to submit a continuing review application in a timely fashion may result in suspension or termination of the study.
6. The REC application number assigned to the research should be cited in any correspondence with the REC of record.
7. You are required to register the research protocol with the Uganda National Council for Science and Technology (UNCST) for final clearance to undertake the study in Uganda.

The following is the list of all documents approved in this application by Makerere University School of Health Sciences REC:

No.	Document Title	Language	Version Number	Version Date

1	Protocol		6	2026-03-01
2	Main Consent forms	English	V1	2025-12-27
3	Data collection tools	English	V1	2025-12-27

Yours sincerely,



Kalidi Rajab

For: Makerere University School of Health Sciences REC



APPENDIX VII: APPROVAL LETTER FROM MUNICIPALITY

Makerere

P.O. Box 7072 Kampala, Uganda
Website: www.makerere.ac.ug



University

Tel: +256 393 175 039
Email: optometry@chs.mak.ac.ug

College of Health Sciences School of Health Sciences Department of Allied Health Sciences



17th April 2026

To

The Head of Primary and Secondary Schools,
Nansana Division, Kampala.

Dear Sir/ Madam,

RE: Maganda Titus 22/U/22596 and Adongo Jane 22/U/5640.

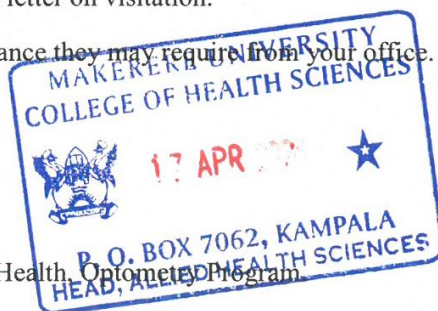
The above named are final year students in BSc. Optometry and Vision Sciences at Makerere University under the College of Health Sciences, Allied Health Science department. They are visiting your office to seek permission to conduct their research. **"Knowledge, Attitudes and Practices of Primary and Secondary Schools Administrators on eye health integration in Nansana Division, Wakiso district."** They have been cleared by the university ethical board (IRB), they will provide the ethical clearance letter on visitation.

Kindly offer them any assistance they may require from your office.

Yours Sincerely,

Dr. Naomi Nsubuga

Chair of Department Allied Health Optometry Program



The bearer of this letter have been cleared by the Municipal Education department to conduct their research with your school. Please accord them the necessary assistance.
MEC.