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FACTORS ASSOCIATED WITH DELAYED UPTAKE OF GLASSES AMONG PATIENTS WITH REFRACTIVE ERRORS AT JINJA REGIONAL REFERRAL HOSPITAL. A CROSS-SECTIONAL STUDY.

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Abstract.

Background.

Despite the known benefits of wearing glasses for correcting refractive errors, there is a significant delay in the uptake of glasses among patients at Jinja Referral Hospital. This study determined factors associated with delayed uptake of glasses among patients with refractive errors at Jinja Regional Referral Hospital**.**

Methods.

It was a cross-sectional descriptive study, using quantitative methods was conducted among patients attending Jinja regional referral hospital eye clinic. 100 Respondents were selected by non-probability convenient sampling. Data was analyzed using Excel data base to for quantitative data which was presents in tables and graphs.

Results.

46(46%) of the participants were males, 12(27.78%) were in the age range of 41-50 years, and 41.67% of those participants were diagnosed with visual impairment. 65% of the respondents reported concerns about the social stigma of wearing glasses. The stigma was more pronounced among men (70%), 50% of both men and women felt that wearing glasses affected their appearance particularly younger individuals, 70(70%) of the participants were not aware that glasses can improve vision, 57(57%) were not aware of potential consequences of not correcting refractive errors timely and 52(52%) had not received information about timely correction of refractive errors from health care providers.

Conclusion.

The study established that several key factors, including demographic characteristics, low awareness levels, and social attitudes, significantly contribute to the delay in adopting corrective eyewear. Younger individuals and males were more likely to delay, while limited awareness and social stigma surrounding glasses further exacerbated the issue.

Recommendations.

To improve awareness of the importance of vision correction, the Ministry of Health, in collaboration with Jinja Regional Referral Hospital and community leaders, should launch targeted awareness campaigns within the next six months.

Keywords: *Refractive error patients, Delayed eyeglasses uptake, Jinja Regional Referral Hospital*.
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Background.

Refractive errors are common visual problems worldwide affecting individuals of all ages. Uncorrected refractive errors can significantly impact daily life. Refractive error (RE) is one of the most common eye diseases in children and adolescents and the one of biggest public health problems globally. It has been reported that 42% of visual impairment worldwide is due to Refractive Errors. RE has a profound effect on children, as it not only increases the possibility of pathological eye changes such as myopic macular degeneration and retinal degeneration, which can lead to irreversible blindness but also affects the physical and social well-being of children and adults which may limit the educational opportunities and outcomes. REs occurs when the eye does not focus the light correctly on the retina resulting in blurred vision due to myopia, hyperopia, and astigmatism (ophthalmology, 2016)

Globally, based on the data from the World Health Organization, the prevalence of refractive errors is estimated to be 1.8 billion people worldwide. That's about 25% of the global population. The prevalence varies by region with the highest rates in South Asia (30%-50%) of the population, and the western pacific (30%-40%) of the population. The

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most common refractive errors are myopia, hyperopia, and astigmatism. (WHO, 2019)**.**

In Africa the prevalence of refractive errors is estimated to be 20%-40% of the population, myopia is leading at (10%-30%) with high rates in urban and school-aged children, hyperopia with (10%-20%) and stigmatism (5%-20%) of the total population. (WHO, 2019). The timely uptake of glasses for patients with refractive errors is crucial to maintain good vision and prevent the development of eye diseases. However, some patients may experience a delayed uptake of glasses, leading to vision impairment and the inability to carry out daily activities. This can have a significant impact on the quality of life and productivity.

To address this issue, it is important to investigate the factors that contribute to the delayed uptake and develop strategies to ensure the patient receives their glasses promptly. By increasing access to eye care services and addressing any cultural, or attitudinal barriers, it may be possible to reduce the number of patients. In Uganda, the study on the prevalence of refractive errors found that myopia was the most common type of refractive error affecting 28.6%, and hyperopia was the second affecting 5.4% of the school children in the central region of Uganda, Boys were more likely to have refractive errors and prevalence of refractive errors increased with age. (NHSDP II, 2015). Another study conducted among primary schools found that 11.2% had refractive errors requiring correction (Kyari et al., 2015) In Uganda, limited access to eye care services and low awareness about the importance of timely correction of refractive errors are major challenges. In Jinja Regional Referral Hospital, which serves as a primary health facility in the region, offering eye care services to a diverse population. However, little is known about the delayed uptake of glasses among patients with refractive errors at the hospital. (HMIS).

Understanding these factors is crucial for developing targeted interventions to improve the timely correction of refractive errors and reduce the burden of uncorrected vision problems. Refractive errors are common causes of visual impairment and can lead to decreased productivity, safety risks, and negative effects on quality of life. Awareness and access to eye care services, as well as affordability and cultural attitudes towards glasses, can lead to glasses. Policies and initiatives to improve access to eye care services, such as providing free glasses to low-income patients or increasing awareness of patients. The findings of this study are expected to provide valuable insights for policymakers, healthcare providers, and public health officials to enhance eye care services and promote eye health in the region. Several factors including demographic characteristics awareness and attitude, contribute to the delayed uptake of glasses among patients with refractive errors. Addressing these factors through targeted interventions, such as educational campaigns and community outreach programs, can help improve eye care-seeking behavior and promote timely correction of refractive errors. By understanding and addressing these factors, healthcare providers can enhance eye care services and outcomes for patients at Jinja Regional Referral Hospital. This study determined factors associated with delayed uptake of glasses among patients with refractive errors at

Jinja Regional Referral Hospital**.**

Methodology.

Study design

The study used a descriptive cross-sectional study design, applying both qualitative and quantitative methods to assess the factors associated with delayed uptake of glasses in patients with refractive errors at Jinja Regional Referral Hospital. Quantitative methods Tables, pie charts, and bar charts were used at a later stage.

Study Area

The study area was the eye clinic of Jinja Regional Referral Hospital, which is located in Jinja's central division in Jinja city.

Study population.

The population comprised all patients attending eye care services at the Jinja Regional Referral Hospital outpatient eye clinic during the period of study.

Sample size determination.

The sample size was calculated using Cochran's formula

n= (z2pq)/d2

Where:

n= sample size

z= is the standard normal deviation estimated at 1.96 (adopted from z distribution table at 95% confidence interval.

P=is the proportion of respondents with refractive errors (target population). Since p is known with certainty, we therefore estimate it at 7%= 0.07, which is the maximum value

Q= 1-p (1-0.07) =0.93(the probability of selecting respondents without refractive errors

d=0.05, the maximum error

n=100 respondents will be considered for the study

3.5. Sampling technique

The study used a non-probability consecutive sampling process, and all the clinicians at the JRRH eye clinic will be sensitized about the delayed uptake of glasses in patients with refractive errors study.

Sampling procedure.

Patients were registered at the reception, their age and sex were documented regardless of presenting ocular complaints. Whenever a patient could be identified with a

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refractive error during the study, he/she would be directed to the investigator for assessment.

Inclusion criteria

This study included all patients who presented with refractive errors at the JRRH outpatient eye clinic.
All patients above twelve years of age consented to participate in the study.

Exclusion criteria

Patients without refractive errors were not consented and didn't participate in the study.
All patients below twelve years didn't participate in the study.

Data collection methods

Interviews were used as the method of data collection using an interview guide with well-structured questions.

Data collection tools

Data was collected using an interviewer-administered questionnaire. This sought demographic and clinical data of each patient who presented with refractive errors. It also sought information that led to the delayed uptake of glasses and attitude towards wearing glasses.

Data collection procedure.

Rapport was first created with the respondents and reassurance of confidentiality. The question was read and interpreted for the respondents to understand. Responses were given in the local language and written in English by the researcher, and at the end, the respondents were thanked for their cooperation.

Study variable.

Independent variable: Occupational factors, age, education level, sex, and tribe Social demographic factors leading to delayed uptake of glasses.

Dependent variable:

Delayed uptake of glass among patients with refractive errors at Jinja Regional Referral Hospital.

Quality control.

A pre-test of the study tools and pilot testing were done to identify the correct errors.

Pre-testing the questionnaire

This aimed at evaluating validity and reliability of the questionnaire. The data tool was therefore be revised to suit realities through reconstructing questions and eliminating the grammar errors and useless questions.

Data processing, analysis, and presentation.

Data collected was processed both qualitatively and quantitively by tallying and using non-programmable scientific calculators and presented using tables, figures, and statements.

Results.

Social-demographic data.

Variables	Categories	Frequency (n=100)	Percentage (%)
Sex	Male	46	46
	Female	54	54
Age	10-30	48	48
	31-40	31	31
	41-60	21	21
Tribe	Basoga	63	63
	Baganda	24	24
	Banyoro	9	9
	Others Banyankole	4	4
Education level	Not educated	33	33
	Primary	23	23
	Secondary	24	24
	Tertiary	20	20
Occupation	Students	67	67
	Peasant	14	14
	Civil servants	19	19

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Marital status	Single	67	67
	Married	29	29
	Divorced	2	2
	Widow/widower	4	4

Table 1: showing social demographic data, from the table above, the sample space included 46(46%) males and 54(54%) females. Of the sample space, 4 were in the age range of 18 years and 29 years, 6 were in the age range of 30-40 years, 12 were in the age range of 41-50 years, 20 were in the age range of 51-60 years and 30 were aged 60 years and above representing 5.55%, 8.33%, 16.67%, 27.78%, and 41.67% respectively of those participants diagnosed with visual impairment. By tribe, 63 (63%) of the participants diagnosed with refractive errors were Busoga, 24(24%) were Baganda, and 9 (9%) were Bunyoro. 4(4%) were from other tribes of Uganda.

By educational level, 33(33%) of the participants with refractive errors were illiterate, 23 (23%) of the participants with refractive errors attained primary education, 24 (24%) of the participants with refractive errors attained secondary education, 20(20%) of the participants with refractive errors had reached tertiary level of education.

Of those participants with refractive errors, 19(19%) were civil servants, 67(67%) were students, 14(14%) were peasants

Lastly, by marital status, 67(67%) of the participants with refractive errors were single, 29 (29%) were married, 2(2%) were divorced, 4(4%) were widows or widowers while none of the participants with refractive errors belonged to other status of marriage.

Figure 1 shows age distributions for patients with refractive errors at Jinja regional referral hospital.

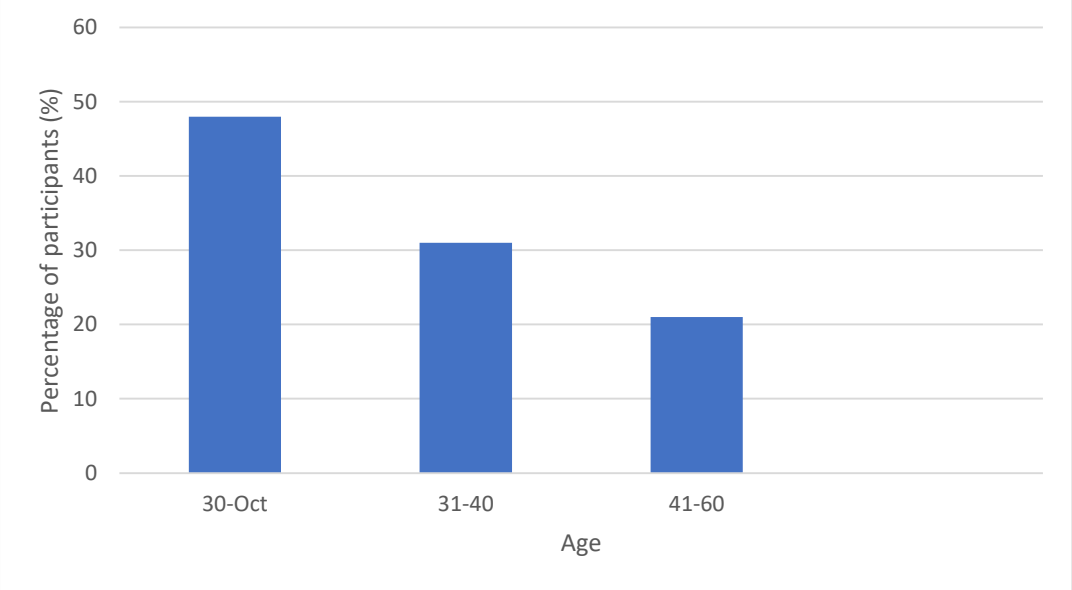

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Figure 2 shows education levels.

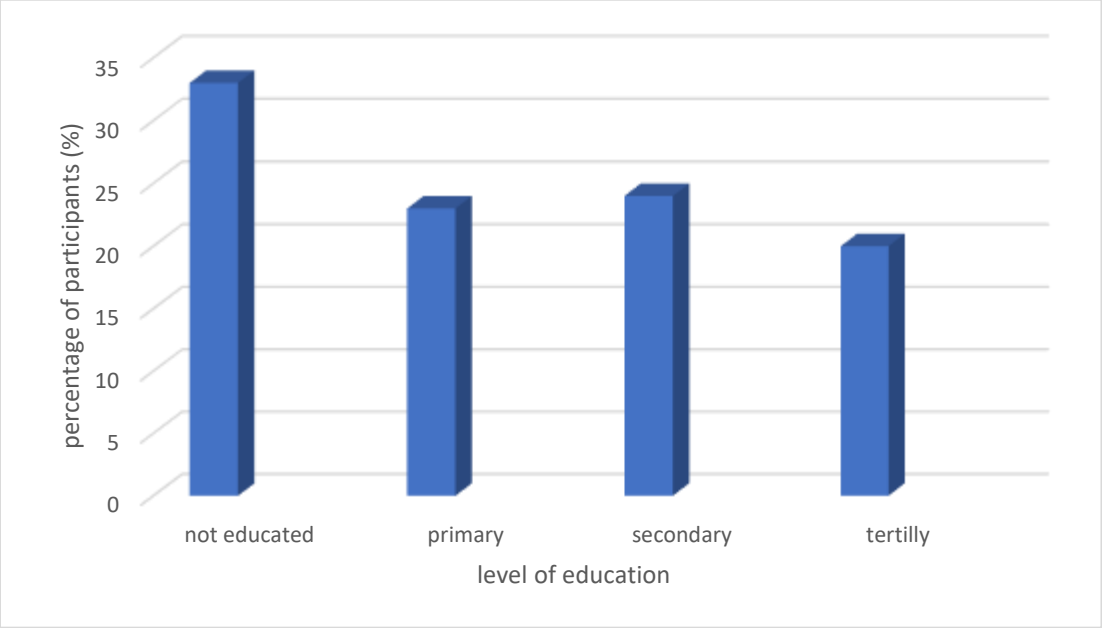
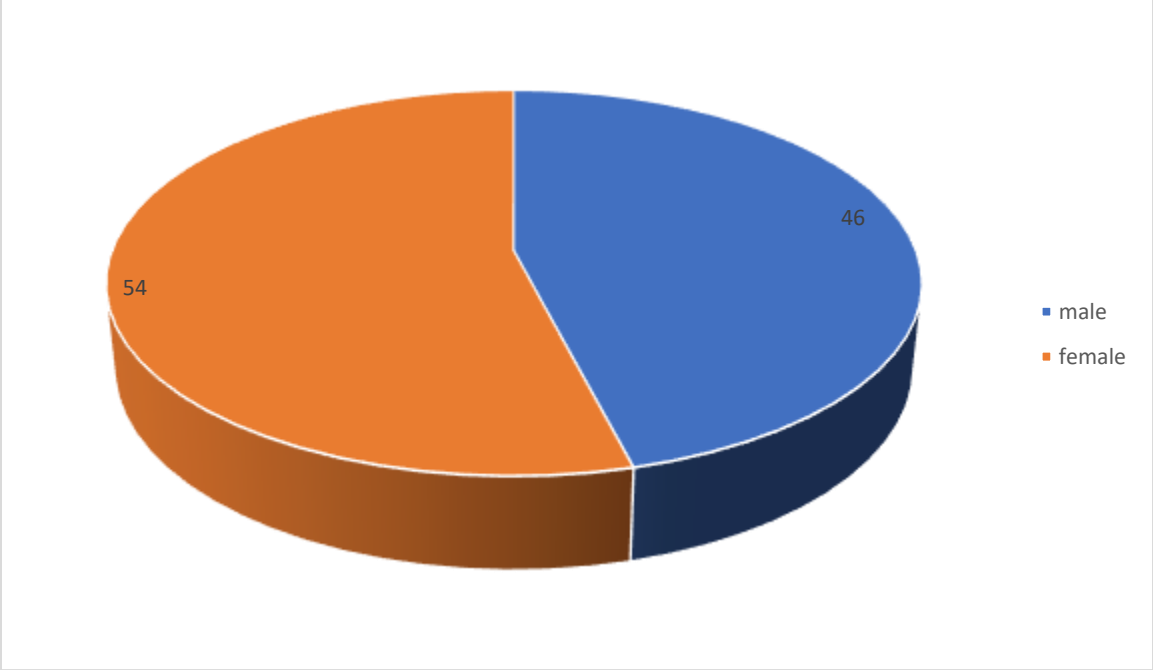


Figure 3 shows the sex for participants with refractive errors at Jinja regional referral hospital.



Awareness regarding the importance of glasses

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Table 2 Showing awareness levels

Variables	Frequency (n=100)		Percentage (%)
Those who were aware that glasses can improve vision	Yes	30	30
	No	70	70
Those who knew the potential consequences of not correcting refractive errors	Yes	43	43
	No	57	57
Those had received information about the timely correction of refractive errors from health care providers.	Yes	48	48
	No	52	52

Table 2: shows that 30(30%) of the participants were aware that glasses can improve vision and 70(70%) of the participants were not aware that glasses could improve vision

43(43%) of the participants knew the potential consequences of not correcting refractive errors, and 57(57%) were not aware of the potential consequences of not correcting refractive errors timely.

48(48%) of the participants had received information about the timely correction of refractive errors from healthcare providers. And 52(52%) had not received information about the timely correction of refractive errors from healthcare providers.

Table 3: Showing attitude and perception of wearing glasses

	Frequency (n=100)		Percentage (%)
Social stigma and acceptance	Men	70	70
	Women	30	30
Cosmetic concerns	Men	50	50
	Women	50	50
Willingness to wear glasses	Men	60	60
	Women	40	40

Table 3 shows that a significant 65% of the respondents reported concerns about the social stigma of wearing glasses. The stigma was more pronounced among men (70%) compared to women 30% Out of the 100 respondents that participated in the study, 50% of both men and women felt that wearing glasses affected their appearance, particularly younger individuals. Despite the stigma, 60% of men and 40% of women respondents expressed a willingness to wear glasses if it improved vision, especially for work or academics.

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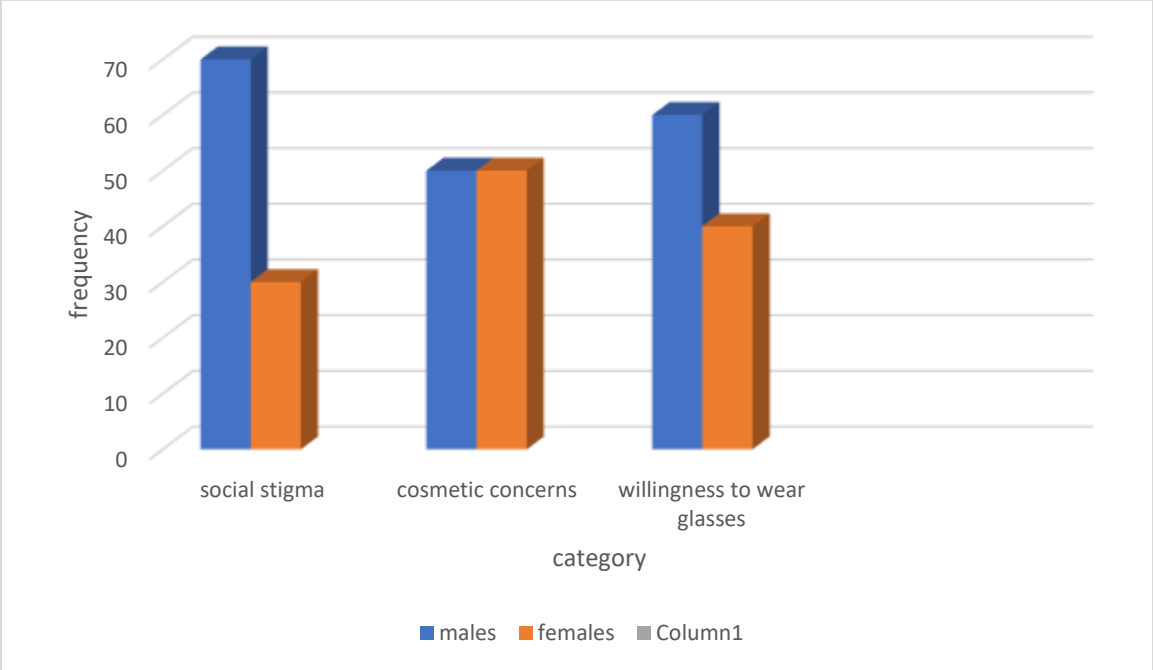
Figure 4 shows the Attitude and perception of wearing glasses among patients with refractive errors at Jinja Regional Referral Hospital.



Discussion of results.

Demographic Factors.

The objective of the study was to identify demographic factors associated with the delayed uptake of glasses among patients with refractive errors at Jinja Regional Referral Hospital. Data analysis and interpretation revealed that demographic factors, such as age, gender, education level, and occupation, significantly influenced the delayed uptake of glasses. Specifically, younger individuals, particularly students, exhibited higher rates of delay, possibly due to a lack of awareness or financial constraints. Males were found to have more concerns about the social stigma related to wearing glasses, whereas individuals with higher education levels showed better uptake. These findings indicate that demographic factors play a crucial role in influencing decisions related to vision correction.

This is probably because younger individuals may prioritize appearance over corrective measures, and males may feel more susceptible to social perceptions regarding eyewear. These findings align with previous research, which suggests that social and demographic factors can act as barriers to health-related behavior changes, such as the adoption of corrective eyewear (Wang H et al, 2022).

Awareness of the Importance of Correcting Refractive Errors.

The study found that awareness levels regarding the importance of refractive error correction were low, with only 30% of participants understanding the benefits of wearing glasses for vision improvement. This suggests a lack of knowledge about the importance of vision correction and the potential health consequences of untreated refractive errors. These findings imply that awareness is a key determinant in the timely uptake of glasses. This could be due to limited public health education focused on eye health, especially in rural or low-resource settings. These findings are consistent with prior studies, which report that limited awareness often correlates with reduced healthcare-seeking behavior (Holden et al., 2016).

Attitude and Perception Towards Wearing Glasses

Social stigma and cosmetic concerns were identified as factors contributing to delayed uptake, particularly among younger male participants. About 70% of males expressed concerns over stigma, and approximately half of the respondents had cosmetic concerns about wearing glasses. Despite these concerns, many were still open to wearing glasses if it would improve their performance in work or studies. This suggests that while there is resistance, there is

also a potential for change if these barriers are addressed. This may stem from societal perceptions that view glasses as a sign of weakness or unattractiveness. The findings are in agreement with previous research that highlights the role of social and cultural perceptions in shaping attitudes toward medical devices and treatments (Saif H. Alrasheed et al., 2018).

Conclusions.

The study established that several key factors, including demographic characteristics, low awareness levels, and social attitudes, significantly contribute to the delay in adopting corrective eyewear. Younger individuals and males were more likely to delay, while limited awareness and social stigma surrounding glasses further exacerbated the issue.

Given these findings, the study concludes that addressing these barriers is crucial to improving the timely uptake of glasses among patients. By enhancing awareness, reducing stigma, and making eyewear more accessible and acceptable, healthcare providers can better support individuals with refractive errors in achieving optimal visual health. This aligns with the study's purpose of identifying obstacles to effective vision correction and providing evidence-based recommendations to overcome them.

Recommendations.

To improve awareness of the importance of vision correction, the Ministry of Health, in collaboration with Jinja Regional Referral Hospital and community leaders, should launch targeted awareness campaigns within the next six months.

Financial barriers should also be addressed by offering subsidies or financial assistance for eyewear, particularly for students and low-income individuals. This program could involve partnerships with eyewear providers and a voucher system, beginning within the next fiscal year and reviewing after six months for effectiveness.

Lastly, routine eye screenings should be implemented in schools and workplaces, allowing for early identification and intervention for individuals with refractive errors. This could be done through mobile eye screening units, with referrals provided immediately for those needing glasses. Initiating this within the next year and scheduling screenings annually would ensure continuous support for vision health in the community.

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List of abbreviations.

WHO:	World Health Organization.
JRRH:	Jinja Regional Referral Hospital
VA:	Visual Acuity
RE:	Refractive Errors
CL	Confidence Interval

Source of funding.

There is no source of funding.

Conflict of interest.

No conflict of interest was declared.

Availability of data.

Data used in this study is available upon request from the corresponding author.

Authors contribution

AA designed the study, conducted data collection, cleaned and analyzed data, and drafted the manuscript AK supervised all stages of the study from conceptualization of the topic to manuscript writing.

Ethical approval.

A letter of introduction was provided by the principal of ophthalmic clinical officer training school, and was delivered to director of Jinja Regional Referral Hospital who will the introduce the researcher to the in-charges of the eye clinic. He/ She will introduce the researcher to the respondents.

Informed consent

Consent was sought from the patient after the explanations of the topic of study. The patients were assured of their right to consent. The study participants were assured that the information to be collected and kept confidential and would only be for academic purposes and planning to promote better life and low data will be burnt into ashes.

Authors biography

Anicent Asiimwe is a student with a diploma in Clinical Ophthalmology at Ophthalmic Clinical Officers Training School Jinja.

Adonia Kyakulaga is a research supervisor at Ophthalmic Clinical Officers Training School Jinja.

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