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Information related to factors associated with adherence to the use of corrective glasses among patients with refractive errors in Jinja city. A cross-sectional study.

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ABSTRUCT

Background:

Corrective glasses are essential optical instruments consisting of a frame that holds a pair of lenses to correct refractive errors, including myopia, hyperopia, astigmatism, and presbyopia**.** The study aims to establish information related to factors regarding adherence to the use of corrective glasses among patients with refractive errors in Jinja city.

Methodology:

The study used a cross-sectional study design to collect quantitative data, where 56 respondents were chosen by probability sampling. Data was analysed manually using a scientific calculator, and tabulations were made to establish the relationships between variables. The results were presented in figures, tables, and statements.

Results:

Of a total of 56 respondents, 18(32.2%) were aged between 46-60 ,33(58.9%) were female, 27(48.2%) had tertiary education and 26(46.4%) employed. 18(32.1%) of the respondents had limited information on the benefits of corrective glass adherence, and 43(76.8%) believed they should be worn some of the time.18(32.1%) respondents found glasses uncomfortable to wear and 20(35.7%) believed that glasses would weaken their eye sight. Majority 32.1% had a neutral understanding, 25.0% understood the benefits well, 17.9% understood the benefits very well, 17.9% who had a poor understanding of the benefits, and l7.1% who had no understanding of the benefits of wearing corrective glasses. The majority (57.1%) know how to care for their corrective glasses. 76.8% believed that corrective glasses should only be worn some of the time, compared to (23.2%) who believed that they should be worn all the time

Conclusions:

There is limited patient information on adherence to the use of corrective glasses and the benefits of consistently wearing glasses.

Recommendations:

There's a need for patients to use their glasses as instructed by the health workers, and to make it a habit to wear them consistently in order to avoid further deterioration in vision.

Keywords: *Information related to factors, Adherence, Corrective glasses, Refractive errors, Jinja city.*
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Background to the study

Corrective glasses are essential optical instruments consisting of a frame that holds a pair of lenses to correct refractive errors, including myopia, hyperopia, astigmatism, and presbyopia (Desalegn et al., 2016). The benefits of these visual aids depend on the adherence by the users (Dhirar et al.,2020). Inadequate/irregular use of glasses leads to conditions like amblyopia, disruption to the learning process, disruption of visual function, lower quality of life, frequent headaches, and high chances of bumping and tripping over things (Raimah et al.,2022). Globally, there's a big problem between information and adherence towards corrective glass wear, because a study which was carried out in Malaysia by Reddy et al, 2024 noted that out of 205 participants, (36.3%) were wearing glasses and among them (12.3%0, lacked knowledge about adherence to glass wear, more so, (54.8%) of them wanted to discontinue the use of glasses. An article by Pauline Ongaji in the Business Daily stated that a lack of awareness on how to use spectacles leads to poor use and a later increased rate of uncorrected refractive errors (Ongaji,2021).

In India, Mehnaz et al, 2020) on corrective glass adherence, found out that of 400 respondents, both male and female, the adherence rate was (61%) with non-adherence rate (59%), within the non-adherent group, majority (62.8%) were males and (37.2%) were females, the study also revealed that there was a higher non- adherence rate of (71.3%) in rural areas compared to urban non- adherence rate of (28.7%). This might have been connected to the level of education because (54.9%) of the respondents who were non-adherent were

illiterate. Irtza et al. (2024 in Pakistan on corrective glass adherence stated that among 200 respondents,39 were non-adherent to corrective glass wear, and among these, the majority (89.7%) were females with a higher tendency to non-adherence compared to (10.3%) males. The study aims to establish information related to factors regarding adherence to the use of corrective glasses among patients with refractive errors in Jinja city.

METHODOLOGY

Study design

The study was carried out using a cross-sectional study design because data were collected at one point in time, and this type of study was relatively inexpensive and easy to carry out.

Study area

The study was carried out in Jinja city, located in the southeastern part of Uganda, along the northern shores of Lake Victoria,300950 ft above sea level, and situated approximately 81km east of the capital city Kampala. The city is made up of three divisions, namely: Walukuba-Masese, Mpumudde-kimaka, and Jinja central. It became a city in July 2020, with a population of 300,000 people; it is inhabited mainly by the Basoga people who speak Lusoga. The major economic activities carried out are agriculture, fishing, and industrialisation. The city has a regional referral hospital where eye services are rendered. Jinja city is suitable for the study due to its diversity in population, which allows a broad understanding of how the different factors affect adherence to corrective glasses.

Study population.

The study was carried out among patients using corrective glasses in Jinja City.

Sample size determination.

The sample size was calculated using Button's (1965) formulae

Sample size =GR/O

Where R -is the number of days available for data collection

G is the number of people interviewed per day

O-total time that was spent on each event

G=4 respondents, R =7 days, 0=30 minutes

Sample size = (4*7)/0.5=56

Therefore, the sample size was 56 respondents

Sampling techniques

The study employed a probability technique using cluster sampling. This technique was chosen because it offered equal chances to all members in a cluster to be chosen, eliminated bias, improved validity, was easy to administer, and provided statistical means to manipulate data.

Sampling procedure

The study divided Jinja city into three administrative units (divisions) to form clusters. Out of each cluster, a simple random sampling method was used to identify the respondents. From each division, specific schools, hospitals and health centers were identified and data was collected from the respondents as follows; the study and her assistant assigned all the respondents unique numbers, the numbers were written on small pieces of paper, folded and placed in a basin and were thoroughly mixed, a blind spotted paper was picked by the study, one at a time until a required number of respondents was achieved.

Data collection method

The study employed questionnaires as the method for data collection.

Data collection tools.

The study used self-administered questionnaires to collect data, which were written in English, constructed depending on the specific objectives of the study, and interpreted into a language the respondent understands for illiterate respondents. Questionnaires were chosen due to their ability to collect large-scale data and promote anonymity of the respondent.

Data collection procedure.

The study started by creating rapport with the respondent, obtaining consent, and assuring them of confidentiality. The questions were read thoroughly and interpreted for the respondents to understand. Responses were made in the language that respondents are comfortable with and written in English by the study and its assistant. At the end, respondents were thanked for their cooperation.

Study variables.

Independent variables.

Information related to factors about the use of corrective glasses was measured through the use of specific questions related to glasses wear.

Dependent variables

The dependent variable is adherence to the use of corrective glasses since it is predicted by other factors in the study and was measured through self-reporting by asking individuals about their frequency of wearing spectacles, and will be represented on a scale such as high adherence, moderate adherence, low adherence, and non-adherence.

Quality control.

Pretesting of research tools

The questionnaires were tested out by the study and her assistant, and any errors made were corrected.

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**Training of research assistants.
The study was assisted by one research assistant who was chosen according to their level of education, communication skills, ability to speak the local languages, and their knowledge of the research topic. They were oriented and trained on the data collection process and also involved in the pre-testing of the research tool.

Giving ample time for data collection.
Data was collected from September 2024 to October 2024.

Clear inclusion and exclusion criteria.
Inclusion criteria
Only patients with refractive errors, using corrective glasses, and who consented to the study were included in the study.

Exclusion criteria
Patients diagnosed with refractive errors but not using glasses, patients who didn't consent to the study, and patients without refractive errors were excluded from the study.

Adherence to standard operating procedures
The study observed the standard operating procedures issued by the Ministry of Health during data collection.

Data analysis and presentation
Data was analysed manually using a scientific calculator, and tabulations were made to establish the relationships between variables. The results were presented in figures, tables, and statements.

Ethical considerations
Introductory letter
An introductory letter by the principal of the Ophthalmic Clinical Officers Training School was issued to the study and taken to the city health officer of Jinja City, who also issued a letter permitting the study to carry out the research.

Informed consent
Written consent was sought from the patients after the explanation of the study topic, and they were assured of their right to consent.

Confidentiality.
Before the process of data collection, the principal researcher and the research assistant first assured the patients that the information to be collected would be kept confidential and only be used for academic purposes in order to promote a better social life for all patients.

RESULTS
Demographic data of the respondents
Table 1 shows demographic data of patients

Variables		Frequency(f)n=56	Percentage (%)
Age	18-25	11	19.6
	26-35	10	17.9
	36-45	12	21.4
	46-60	18	32.2
	Above 60	05	8.9
Gender	Male	23	41.1
	Female	33	58.9
Education level	None	05	8.9
	Primary school	08	14.3
	Secondary school	16	28.6
	Tertiary institution	27	48.2
Employment status	Employed	26	46.4
	Unemployed	09	16.1
	Student	16	28.6
	Retired	05	8.9
	Others	00	0.0

Table 1 states that in relation to age, the majority of the respondents (32.2%) were aged 46-60, followed by 36-45 at (21.4%),18-25 at (19.6%),26-35 at (17.9%) and lastly above 60 with (8.9%) Regarding gender, the majority of the respondents were females (58.9%) compared to males who were (41.1%). Concerning education level, most

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respondents were registered to have done tertiary education at (48.2%), followed by secondary school at (28.6%), then primary school at (14.3%), and lastly no education at (8.9%). In relation to employment status, the highest number of respondents (46.4%) were employed, followed by 28.6% who were students,16.1 who were unemployed, and 8.9% who were retired.

Figure 1 shows the sex distribution in relation to patients who use corrective glasses in Jinja City.

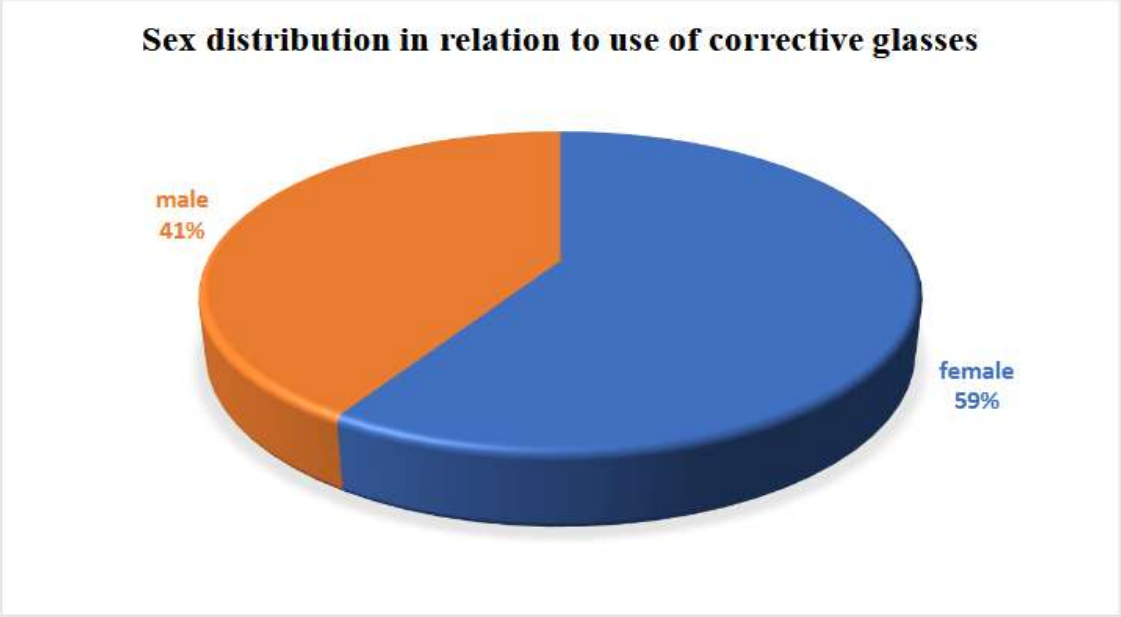

Figure 1 states that the majority of the respondents were females (59%) and males (41%)

Information related to factors associated with the use of corrective glasses

Table 2 shows the patients' understanding of the benefits of wearing corrective glasses.

Patient understanding	Frequency(f)n=56	Percentage (%)
Very well	10	17.9
Well	14	25.0
Neutral (somewhat)	18	32.1
Poorly	10	17.9
Not at all	4	7.1
	Total	**100**

Table 2 states that the majority 32.1% had a neutral understanding, followed by 25.0% who understood the benefits well, followed by 17.9% who understood the benefits very well, the 17.9% who had a poor understanding of the benefits, and lastly 7.1% who had no understanding of the benefits of wearing corrective glasses

Table 3 shows patients' knowledge of how to care for their corrective glasses.

Corrective glass care	Frequency(f)n=56	Percentage (%)
Yes	32	57.1
No	24	48.9
	Total	**100**

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Table 3 states that the majority (57.1%) know how to care for their corrective glasses compared to (48.9%) who didn't know how to take care of their corrective glasses

Figure 2 shows the distribution of patient frequency on corrective glasses wear

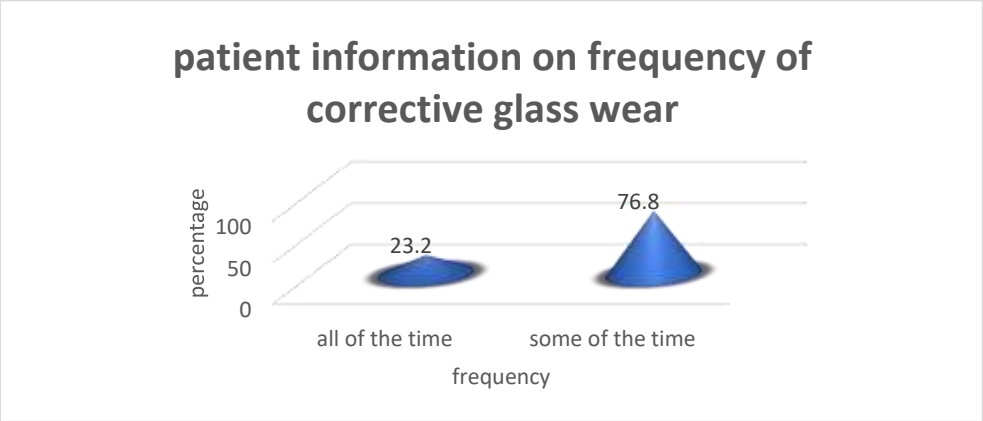

Figure 2 shows that the majority of the patients (76.8%) believed that corrective glasses should only be worn some of the time, compared to (23.2%) who believed that they should be worn all the time.

Discussion

The objective of the study was to find out the information related to factors associated with adherence to the use of corrective glasses among patients with refractive errors in Jinja City. The study findings revealed that most respondents (32.1%) had limited knowledge on the benefits of adhering to corrective glasses, additionally a significant number of respondents (76.8%) reported that glasses should only be worn some of the time, these findings indicate that there's insufficient patient information on adherence towards corrective glass wear, this is probably because of low patient education on the benefits of adhering to corrective glasses by the health workers, these findings are consistent with those of Khan et al(2020) whose research in South Africa observed that majority(95%) of the respondents lacked knowledge on corrective glass adherence with many patients believing that corrective glasses should only be worn some of the time.

Conclusions

The study established that there is limited patient information on adherence to the use of corrective glasses, with the majority (32.1%) having limited knowledge of the benefits of consistently wearing glasses.

Study limitations.

The study faced financial limitations in looking for data on the internet, drafting questionnaires, printing, typing, and transport costs.

The study also faced limitations in obtaining data from patients who wouldn't want to give in their information, or due to a language barrier.

Recommendations

There's a need for patients to use their glasses as instructed by the health workers, and to make it a habit to wear them consistently in order to avoid further deterioration in vision. Patients are also recommended to address any discomfort experienced with the wear of glasses by seeing an eye care professional.

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Conflict of interest

The author did not declare any conflict of interest.

Data availability

Data is available upon request.

Author contribution

Patricia Aturinda Mutesi collected data and drafted the manuscript of the study.
Jalia Nanangwe supervised the study.
Michael Kabasa supervised the study.
Isaac Obol Okot supervised the study.

Author biography

Patricia Aturinda Mutesi is a student of diploma in clinical ophthalmology at Ophthalmic Clinical Officers' Training School, Jinja.
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