

**Socio-demographic factors that predispose people to glaucoma among the patients receiving eye care services in the eye clinic at Jinja Regional Referral Hospital (JRRH).
A cross-sectional study.**

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Abstract

Background

Glaucoma is an ocular disease that leads to irreversible blindness. The study aims to identify the socio-demographic factors that predispose people to glaucoma among the patients receiving eye care services in the eye clinic at JRRH.

Methodology

A cross-sectional quantitative study was conducted because data were collected at one point in time. A non-probability convenience sampling process was used since a specific group of patients with glaucoma was required among patients above 40 years of age receiving eye health services at JRRH.

Results

The majority (70%) of the respondents were married, 20% had separated from spouses, then the widows were 8.33% and 1.67% singles. Based on the places of residence, people who live in villages scored a percentage of 75% and those in town scored a percentage of 25%. Based on the nature of occupation, the self-employed scored the highest percentage of 33.33%, followed by business people with a percentage of 25% then civil servants with a percentage of 18.33% and finally others with a percentage of 23.33%. The uneducated scored the highest percentage of 70%, followed by diploma and certificate holders with the same percentage of 13.33% and finally the degree holders with a percentage of 3.33%.

Conclusion

The significant socio-demographic factors predisposing people to glaucoma are age above 40 years and living in rural areas.

Recommendation

The District Health Services should create awareness among the public regarding the disease.

All health workers should educate all diagnosed patients with glaucoma on the causes, effects, and prevention of glaucoma.

Keywords: *Glaucoma, eye care services, irreversible blindness, socio-demographic factors.*

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Background of the study

Glaucoma is an ocular disease that leads to irreversible blindness. Dr Angella Nakandi Lwanga, a consultant ophthalmologist and glaucoma eye specialist at Mulago National Referral Hospital, said that “*glaucoma is a condition in which pressure is exerted on the eyes, which leads to pain, frontal headache, and blurring of vision*”. Other signs and symptoms of glaucoma include corneal edema (haziness), headache, neovascularization, and ocular pain. Some of the investigations carried out in glaucoma conditions are tonometry, pachymetry, imaging of the disc, visual fields tests, gonioscopy, and the examinations done are funduscopy and anterior chamber examination.

Pediatric glaucoma could cause irreversible blindness and psychological problems to patients and caregivers, with the incidence rates varying across different populations, such as

in Hong Kong, where the annual incidence rate among patients aged <20 years on presentation is 0.92 per 100,000 population, while in the United States, the reported incidence was 2.29 per 100,000 (Shen, 2023). Glaucoma is managed by both medical therapy and surgery. Anti-glaucoma medicines are used in the medical management of glaucoma, for example, beta blockers, carbonic anhydrase inhibitors, hyperosmotic agents, and others. Surgical management involves procedures like trabeculectomy and YAG laser, goniotomy, trabeculotomy, among others. The risk of Glaucoma is said to increase with age and can be expected to be associated with various age-related diseases like macular degeneration, vascular diseases, and obstructive sleep apnea, though this is not a direct link for most age-related diseases (McMonnies, 2017)

The prevalence of primary open-angle glaucoma is six times higher in the black American population compared to

whites. Some findings suggest that African Americans have thinner corneas than those of European descent, a known risk factor for glaucoma (Yvonne Ou, 2021). In Ghana a populations based survey revealed that Levels of education (no education (AOR = 0.041; 95% CI = 0.016–0.11), primary (AOR = 0.057; 95% CI = 0.018–0.179), and middle school (AOR = 0.254; 95% CI = 0.127–0.51)) were associated with low knowledge while all levels of education were inversely associated with awareness with the Perceived risk of glaucoma also influenced by area of residence (rural (AOR = 0.344; 95% CI = 0.21–0.57)), being young (18–24 years (AOR = 4.308; 95% CI = 2.36–7.88)) (Ocansey, 2021). The study aims to identify the socio-demographic factors that predispose people to glaucoma among the patients receiving eye care services in the eye clinic at JRRH.

Methodology

Study Design

A cross-sectional quantitative study was conducted because data were collected at one point in time.

Study Area

The study area was the Eye Clinic of JRRH. The Hospital is located in the Eastern region of the country in Jinja Central Division, Jinja City, near the source of the Nile, which is 80 km east of Kampala, the capital city of Uganda. It was founded in 1962 and has a bed capacity of 600. The hospital serves several clients/patients across the Busoga region, parts of Eastern Uganda, and some districts situated west of the River Nile, including Buikwe and Kayunga districts. Clients are referred from District Hospitals and Health Centre IVs, while others are self-referred. Among the services provided are: comprehensive specialist services, involved in health research and teaching, in addition to daily immunization, HIV testing and counseling, reproductive health services, and safe male circumcision etc.

The hospital has 15 wards, which include surgical female/male, Medical female/ male, T.B., Eye, Urological, Grade A, A Annex, Psychiatric, and Children's ward, Intensive care unit, Post-natal, Special Units, Gynecological, and maternity ward. The study has been chosen due to the increasing cases of glaucoma among patients, and it is easily accessible to the researcher.

Study Population

The study populations were all patients receiving eye health care services in the eye clinic at JRRH and diagnosed with glaucoma.

Sample size Determination

Using Button's (1965) formulae to calculate the sample size, 60 respondents were selected and interviewed during the study.

S=GR/O

Where S=Sample Size

G=Number of people interviewed per day

R=Maximum number of days for data collection

O=Maximum time the interviewer spends on each respondent

There S=5 x

= 60

The researcher reached out to 60 respondents.

Sampling Technique

A non-probability convenience sampling process was used since a specific group of patients with glaucoma was required among patients above 40 years of age receiving eye health services at JRRH.

Sampling Procedure

All eye health workers were sensitized about glaucoma. Then the researcher was given a chance to access the patients for data collection.

Inclusion Criteria

Only patients with glaucoma who received health services at JRRH consented to the study and were included.

Exclusion Criteria

All patients above the age of 40 who consented to the study were included.

Data Collection Methods

A qualitative survey method was used. The process of data collection began with the researcher having a self-introduction, with her introductory letter from the OCO training school in JRRH. The letter helped her to get permission from the hospital administration.

Data Collection Tools

An interview questionnaire was used. The questionnaires were written in English and constructed along the specific objectives of the study. It consisted of both closed-ended and Open-ended questions.

Data Collection Procedure

An interview-administered questionnaire was used. The researcher fully explained the question to the respondents, and an interpretation was provided for respondents who couldn't read or write. Each filled-in questionnaire was checked for accuracy and completeness by the researcher.

Piloting the Study

The researcher trained the assistants on how to apply data collection tools correctly.

The study tools were pre-tested on 5 to 10 patients to identify and correct any errors that were identified. This was done by the researcher.

Quality Control

The report was presented to the supervisor for approval. The researcher trained the assistants on how to apply data collection tools correctly. The study tools were pre-tested, and pilot testing was done to identify and correct errors. This was done by the researcher.

Pre-testing of the questionnaire

This was aimed at evaluating the validity and reliability of the questionnaire. The data tool was therefore revised to suit realities through the reconstruction of questions and the elimination of grammatical errors and useless questions.

Results

Social demographic data of the respondents.

Data Analysis and Presentation

Completed questionnaires were edited for accuracy and consistency using Microsoft Excel and Microsoft Word. The data collected was presented in tables and figures using frequencies and percentages, and some pie charts. The quantitative data were investigated for relevant information. A computer was used to type the report.

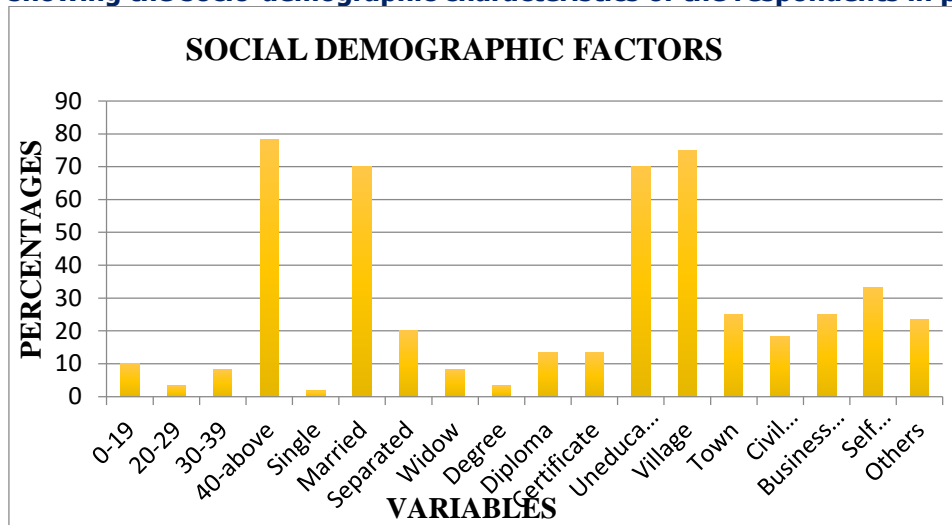
Ethical Considerations

A letter of introduction was provided by the principal ophthalmic clinical officer’s school, and it was delivered to the hospital director, who introduced me to the person in charge of the eye clinic and ward. She introduced the researcher to the respondents to get their consent. The respondents were assured of absolute confidentiality.

Table 1: shows demographic characteristics of the respondents (n=60)

FACTORS	VARIABLES	FREQUENCY (n=60)	PERCENTAGES (%)
AGE	0-19	6	10
	20-29	2	3.33
	30-39	5	8.33
	40-above	47	78.33
MARITAL STATUS	Single	1	1.67
	Married	42	70
	Separated	12	20
	Widow	5	8.33
EDUCATION LEVEL	Degree	2	3.33
	Diploma	8	13.33
	Certificate	8	13.33
	Uneducated	42	70
RESIDENCE	Village	45	75
	Town	15	25
OCCUPATION	Civil servant	11	18.33
	Business person	15	25
	Self employed	20	33.33
	Others	14	23.33

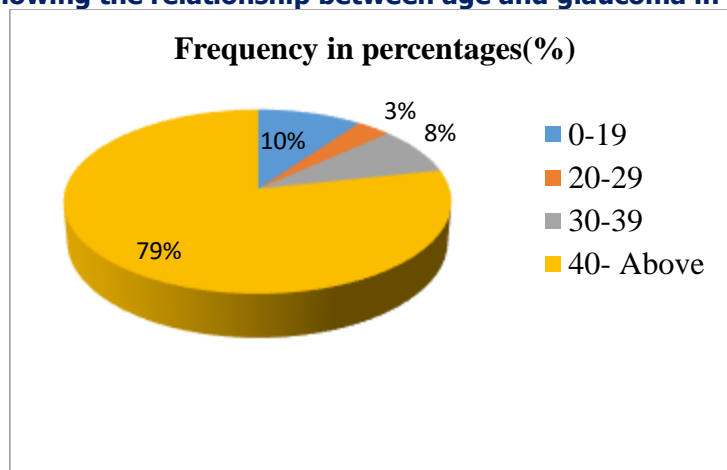
Figure 1: showing the socio-demographic characteristics of the respondents in percentage



According to the social demographic factors, respondents above the age of 40 years scored the highest percentage of 78% followed by 0 to 19 years with a percentage of 10%, then 30 to 39 years with a percentage of 8.33% and finally 20 to 29 years with a percentage of 3.33%. Regarding marital status, the married scored the highest percentage of 70% followed by the separated with a percentage of 20%, then the widows with a percentage of 8.33% and finally the singles with a percentage of 1.67%. Concerning education level, the uneducated scored the highest percentage of 70%, followed by diploma and

certificate holders with the same percentage of 13.33% and finally the degree holders with a percentage of 3.33%. Based on the places of residence, people who live in villages scored a percentage of 75% and those in town scored a percentage of 25%. Based on the nature of occupation, the self-employed scored the highest percentage of 33.33%, followed by business people with a percentage of 25% then civil servants with a percentage of 18.33% and finally others with a percentage of 23.33%.

Figure 2: showing the relationship between age and glaucoma in percentages.



According to the findings of the study, it revealed that the highest number of patients who were at risk of suffering from glaucoma were 40 years and above with a percentage of 79%, followed by patients between the age 0 and 19 years with a percentage of 10% then patients between the age of

30 and 39 years with a percentage of 8% and finally those between the age of 20 and 29 with a percentage of 3%`

Discussion

Factors associated with the prevalence of glaucoma.

Age: the study revealed that the most prevailing factor associated with glaucoma was age, and to the highest extent, the age above 40 years among the socio-demographic factors, with a percentage of 78.33%. This is because with age, the trabecular meshwork cells work less efficiently, which results in the buildup of aqueous humor within the anterior chamber of the eye. This is similar to the research by the National Library of Medicine (2018), which revealed that the prevalence of glaucoma was 0.9% in 40-44 years and increased to 3.55% in the 60-64 years; the odds of glaucoma increased with aging.

Place of Residence: The study revealed that most of the people affected were in rural areas because of ignorance and lack of access to comprehensive eye health services, unlike those in urban areas, who had proper access to standard eye health care services. Most of the patients who presented at Jinja regional referral hospital were referred from rural areas for further management of glaucoma. This is similar to a study by Vital P. Costa, MD (2016) in Brazil, which revealed that only 20% of 180 million Brazilians have access to paid/private health care, and the remaining 80% especially those in rural areas, depend on the public health system to be assisted but unfortunately the public health system is not managing to detect glaucoma.

Conclusion

The significant socio-demographic factors predisposing people to glaucoma are age above 40 years and living in rural areas.

Recommendation

The District Health Services should create awareness among the public regarding the disease.

Jinja Hospital organization should organize continuing medical education about glaucoma, its management, and should also improve the facilities used in the management of glaucoma.

The Ministry of Health should equip all hospitals and health centers with the necessary equipment to enable eye health workers to diagnose glaucoma.

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List of Abbreviations

WHO	World Health Organization
OCO	Ophthalmic Clinical Officer
JRRH	Jinja Region Referral Hospital
POAG	Primary Open Angle Glaucoma
PACG	Primary Angle Congestive Glaucoma

Source of funding

There was no source of funding.

Conflict of interest

There was no conflict of interest declared.

Author Biography

Matama Sumaya, a student training for a Diploma in Clinical Ophthalmology at Ophthalmic Clinical Officers' Training School.

Ndhikuno Norman is a tutor at the Ophthalmic Clinical Officers' Training School.

Ajwika Samuel is a Principal at Ophthalmic Clinical Officers' Training School.

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