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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 predisposing 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 was collected at one point**.** A non-probability convenient 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 their spouses, then the widows were 8.33%, and (1.67) % singles. Based on the places of residence, people who lived in villages scored a percentage of 75% and those in town scored a percentage of 25% Based on the nature of the 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 field tests, gonioscopy, and the examinations done are fundoscopy 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 si in Hong Kong where the annual incidence rate among patients aged <20 years on presentation is 0.92 per 100,000 populations 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, and 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)

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The prevalence of primary open-angle glaucoma is six times higher in the black American population compared to whites with Some findings suggesting that African Americans have thinner corneas than those of European descent, a known risk factor for glaucoma (Yvonne Ou, 2021). In Ghana, a population-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 the 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 predisposing 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 was 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 6oo. 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 include; comprehensive specialist services, involvement 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's easily accessible by 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 $S=5 \times \frac{6}{0.5}$

$= 60$

The researcher reached out to 60 respondents.

Sampling Technique

A non-probability convenient 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 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 self-introduction, with her introductory letter from OCO training school in JRRH. The letter helped her to get permission from the hospital administration.

Data Collection Tools

An interview of questionnaires 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.

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Data Collection Procedure

An interview-administered questionnaire was used. The researcher fully explained the question to the respondents, interpretation was done for respondents who couldn't read and write. Each filled in questionnaire was checked for accuracy and completeness by 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 where they were identified. This was done by the researcher

Pre-testing of the questionnaire

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

Data Analysis and Presentation

Completed questionnaires was edited for accuracy, 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 was investigated for relevant Information, A computer was used to type the report.

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.

Ethical Considerations

A letter of introduction was provided by the principle ophthalmic clinical officer's school and it was delivered to the hospital director who introduced me to the 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.

Results

Social demographic data of the respondents

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

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

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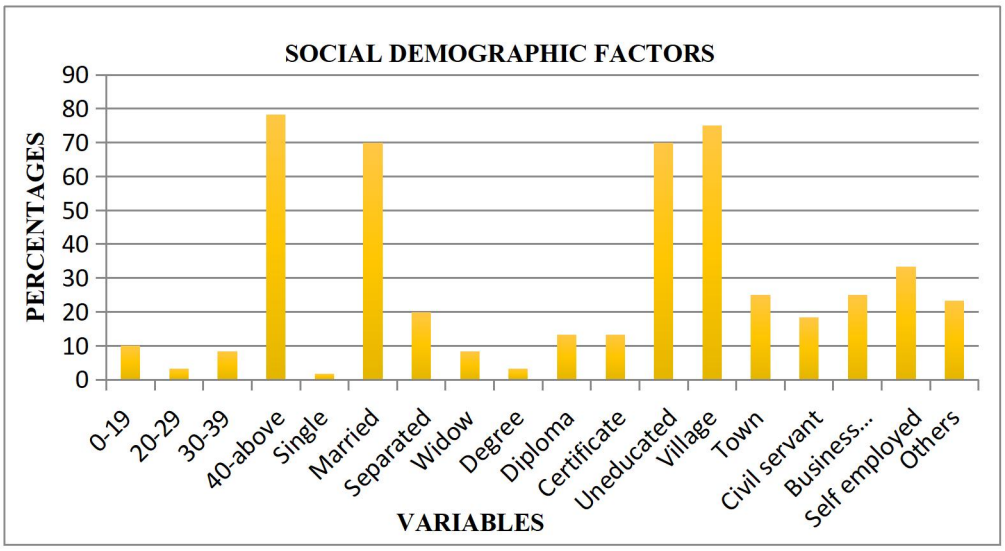
Figure 1: showing the socio-demographic characteristics of the respondents in percentage

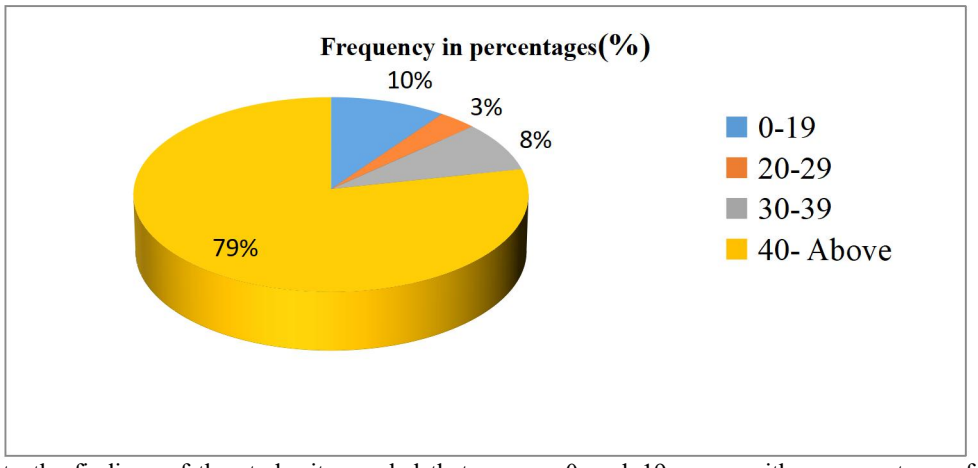


According to the social demographic factors, respondents above the age of 40 years scored the highest percentage of 78% followed by 0 to 19 years with a percentage of 10%, then 30 to 39 years with a percentage of 8.33% and finally 20 to 29 years with a percentage of 3.33%.Regarding marital status, the married scored the highest percentage of 70% followed by the separated with a percentage of 20%, then the widows with a percentage of 833%, 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%

Basing 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 ages 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% `

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

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 a 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 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 as well improve on the facilities used in the management of glaucoma.

Acknowledgement

I would like to give my sincere appreciation to the almighty God for his mercy and grace granted onto me in this period of three years to attain knowledge and skills in the field of Ophthalmology.

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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's Biography

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

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

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