

Awareness and knowledge of glaucoma among workers in a missionary hospital in Nigeria

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Abstract

Background: Glaucoma is a disease of public health importance, and adequate knowledge and awareness about it play a key role in its effective management. This study aims to determine the level of knowledge and awareness of workers about glaucoma in a mission hospital.

Methodology: This was a cross-sectional study carried out among 455 workers at Bowen University Teaching Hospital Ogbomoso. A standardized questionnaire was used to obtain information and a detailed ocular examination was carried out. Data were analyzed using SPSS software version 23.

Results: Four hundred and fifty-five workers participated in this study. More than half (60.9%) of the participants are aware of glaucoma but only 36.2% have the correct knowledge. More than one-third (36.1%) of the respondents do not know how glaucoma can be managed.

Conclusion: The level of glaucoma knowledge and awareness among workers in this cohort is low. There is a need to educate these hospital workers on glaucoma so as to raise their awareness and level of knowledge. This will help them to be better advocates of quality eye care among the general populace especially in a developing and low-income country like ours.

Sensibilisation et connaissance du glaucome parmi les travailleurs d'un hôpital missionnaire au Nigéria

Résumé

Contexte de l'étude : Le glaucome est une maladie importante en matière de santé publique et une connaissance et une sensibilisation adéquate à son sujet jouent un rôle clé dans sa prise en charge efficace. Cette étude vise à déterminer le niveau de connaissance et de sensibilisation des travailleurs sur le glaucome dans un hôpital de mission.

Méthode de l'étude : Il s'agit d'une étude transversale réalisée auprès de 455 travailleurs de l'hôpital universitaire Bowen d'Ogbomoso. Un questionnaire standardisé a été utilisé pour obtenir des informations et un examen oculaire détaillé a été réalisé. Les données ont été analysées à l'aide du logiciel SPSS version 23.

Résultats de l'étude : Quatre cent cinquante-cinq travailleurs ont participé à cette étude. Plus de la moitié (60,9 %) des participants connaissent le glaucome, mais seulement 36,2 % en ont les connaissances correctes. Plus d'un tiers (36,1 %) des personnes interrogées ne savent pas comment gérer le glaucome.

Conclusion : Le niveau de connaissance et de sensibilisation au glaucome parmi les travailleurs de cette cohorte est faible. Il est nécessaire d'éduquer ces personnels hospitaliers sur le glaucome afin d'augmenter leur sensibilisation et leur niveau de connaissances. Cela les aidera à mieux défendre des soins oculaires de qualité auprès de la population en général, en particulier dans un pays en développement et à faible revenu comme le nôtre.

Mots-clés : Connaissance, glaucome, sensibilisation, travailleur hospitalier

INTRODUCTION

Good vision is a vital aspect of an individual, especially for those in the working population which allows us to connect with our surroundings and help us perform our daily tasks either at home or the workplace (1). The importance of good vision for a hospital worker cannot be overemphasized. Good vision is needed by the worker to be able to carry out patient care effectively without making mistakes (2). The presence of any eye disorder can lead to visual impairment in an individual if not well managed. The majority of causes of visual impairment are avoidable that is, it can either be prevented or treated if identified at the early stage (1,3). Visual impairment in an adult significantly affects the quality of life and can lead to higher rates of unemployment, anxiety and depression (1). Causes of blindness and visual impairment globally especially in Nigeria among adults include refractive error, Cataract, Glaucoma, Diabetic retinopathy, Aphakia, Trachoma, Macular degeneration and so on (1,4). Glaucoma is the leading cause of irreversible blindness globally. It is a progressive optic neuropathy with characteristic optic disc changes and a specific pattern of visual field loss for which raised intraocular pressure is the most important modifiable risk factor (5,6). Open angle glaucoma which is the most common type in Nigeria is usually asymptomatic at the early stage hence it can only be detected through screening at the early stage (7). Open angle glaucoma causes blindness in a lot of people because it was not identified at the early stage. Glaucoma is a treatable cause of visual impairment if identified early enough and treatment instituted promptly (4).

The Nigeria National Blindness and Visual impairment Survey reported illiteracy as one of the factors associated with blindness and visual impairment hence it recommended education to targeted women and persons living in the rural areas (4). Several community based studies had noted that there is low level of awareness and knowledge of glaucoma in the cohort studied and then recommended the need for education among the populace about glaucoma and screening (8,9,10). Better awareness and knowledge about glaucoma had been associated with good compliance with medication hence preventing visual loss from glaucoma (11,10). In view of the influence that good level of awareness and knowledge of glaucoma has on increase uptake of screening for eye conditions that can lead to visual impairment

and blindness. In the community, hospital workers are expected to be advocates, educating them on the importance of regular eye screening and other good health care practices. Hence this study aimed to determine the awareness and knowledge of glaucoma among mission hospital workers in a sub-urban region of southwest Nigeria. This will guide the eye-care team in instituting targeted interventions that will increase compliance among glaucoma patients and ultimately prevent glaucoma from progressing to cause visual impairment and blindness among this population.

MATERIALS AND METHODS

Study area

The study was conducted in the Eye clinic of Bowen University Teaching Hospital Ogbomoso, Oyo state which is located in the southwestern part of Nigeria. Ogbomoso town is made up of 5 local government areas (LGAs) which include Ogbomoso North, Ogbomoso South, Surulere, Ogo-Oluwa and Oriire LGA (12). The estimated population of the town given by the 2006 national census was 299,535.

The inhabitants are mainly of the Yoruba ethnic group as other tribes also reside in the town. The people are mainly farmers. This Bowen University Teaching Hospital is a tertiary health center which receives patients from Ogbomoso and its environs including some other southwestern cities. This hospital became a teaching hospital about 12 years ago after being in existence for over 100 years as a mission hospital (Baptist Medical Centre) hence there is trust and confidence in the services rendered in the hospital by the host community. The hospital community is made up of wards, theatres, clinics, staff of the primary and secondary schools established by the hospital, drivers, administrative staff, nursing, hostel staff and the guest house staff. The estimated staff strength of the hospital is about 750. The study was carried out in the eye clinic which has 2 consultant ophthalmologists and other eye care support staff. The eye clinic was used as the base because it is easily accessible by everyone in the hospital and it is equipped to carry out comprehensive eye examination on individuals.

Equipments/Instruments used for the Study

1. Snellens chart
2. Pinholes
3. Occluders
4. Pen torch (Mag lite)
5. 1.5V Batteries

6. Keeler Direct Ophthalmoscope
7. Slit Lamp Biomicroscope with Goldmann's applanation tonometer
8. +78D lens
9. Fluorescein strips
10. 2 mirror (Ocular) Goniolens
11. Coupling fluid (visco elastic)
12. Dilating drops- 1% tropicamide (Alcon-Convreur, Belgium) and 2.5% phenylephrine by Appasamy ocular devices Ltd, India
13. Topical anaesthetic drop- Tetracaine eyedrop
14. Sterile Cotton wool
15. Sterile water
16. Methylated spirit
17. Stationeries e.g. pen, plain paper, pencil, eraser

Study Design

This is a cross-sectional hospital based study carried out at Bowen University Teaching Hospital Ogbomosho during the year 2023 World Glaucoma Week activities in the month of March.

Sampling Technique- A purposive and total sampling technique was used. Those who could not meet with their schedule of screening on the day allocated to them because of duties were allowed to participate at the next available day during the study period.

Inclusion Criteria: All consenting member of staff were included.

Exclusion Criteria: All those who were not willing to participate were excluded.

Training of Research Assistants

A proforma was designed in form of a semi-structured questionnaire. The questionnaires were validated. The clinic nursing assistants and the optician interns were trained on how to guide the participants in the administration of the questionnaires on the first day. They were trained on how to help explain the meaning of the questions to the study participants and made sure all questions were responded to so as to prevent missing data.

Pre-survey activities

The research team sought and obtained permission from the hospital management. The hospital staff were sensitized about glaucoma and encouraged to present to the eye clinic for ocular screening. Each department in the hospital was allocated to different days (Monday-Friday) according to their population to present to the eye clinic for ocular screening. The questionnaires

were piloted in the clinic with ten patients. Necessary amendments were then made to avoid ambiguity.

Survey Procedure

The study participants were attended to as they presented to the eye clinic. The intern optician administered the questionnaire to them and guide them as they filled it. The semi-structured questionnaire consisted of 2 parts. Section A was made up of the socio demographic characteristics while Section B was made up of the questions on awareness and knowledge of glaucoma, ocular complaints, past ocular and drug history, and previous operations. Participants are classified as having good knowledge of Glaucoma when they answered the questions on Knowledge of Glaucoma correctly.

The staff were categorized into departments per day according to the population in each department. The procedure was carried out over a period of one week.

Ethical Consideration

Ethical approval was obtained from the ethical and health research committee of Bowen University Teaching Hospital Ogbomosho, Oyo-State with approval number: BUTH/REC-715. The study was carried out in line with the tenets of Helsinki Declaration.

Data Management

Data was entered into and analyzed using IBM SPSS Version 23. Descriptive statistics such as frequency tables, mean, pie and bar chart were used. A p-value of < 0.05 was considered to be statistically significant.

RESULT

Four hundred and fifty-five (455) workers participated in this study. Mean age of the respondents was 41.8 ± 11.2 years. Majority (50.1%) of the respondents were middle-aged (40-59 years). More of the respondents (62.6%) were female as shown in Table 1. Gender distribution of the awareness of Glaucoma in this study showed that the female gender (63.2%) was slightly more aware about Glaucoma than the male gender (57.1%) as shown in Table 2.

Ocular complaint, history and awareness of Glaucoma

Majority (57.8%) of the respondents had eye complaints, while 42.2% had no eye complaints. The commonest eye complaint among the respondents was difficulty in reading

small prints with a proportion of 25.7%, followed by blurring of distant vision (10.1%), only 7.9% of the respondents also complained about eye aches while 7.3% complained about itching/gritty sensation and only 1.5% complained about redness of the eye as shown in Table 3.

More than half of the respondents (60.9%) were aware of an eye disease called glaucoma as shown in Figure 1. The majority (80.7%) of the respondent has no family history of glaucoma. More than half (58.8%) of the respondents do not wear glasses as compared to 41.5% who wear glasses. A high proportion (98.0%) of the respondent has never had any previous history of eye surgery as shown in Table 3.

Level of knowledge about Glaucoma.

Good level of knowledge of glaucoma was found in 54.7% of the participants while less than one third (29.2%) of the study participants do not have any knowledge of glaucoma. Some (10.1%) of the participants thought glaucoma was an eye infection and a few (4%) thought blindness from glaucoma is reversible as shown in figure 2.

Knowledge on modalities of managing Glaucoma.

Thirty six percent (36.1%) of the study participants do not have any knowledge about the modalities of managing glaucoma, 32.1% mentioned that it can be treated by a surgical procedure while 2% stated that glaucoma cannot be treated as shown figure 3.

DISCUSSION

Glaucoma especially open-angle glaucoma is largely an asymptomatic disease in the early stage and high level of awareness and good knowledge about the disease will help compliance and its effective management (14,11,15-18).

The mean age of the participant in this study was similar to a study done in southeastern part of Nigeria where the mean age was 44.8 years (19). A study done among hospital workers in southwestern Nigeria reported mean age of 35.83 years which was slightly lower than seen in this study (20). This age actually reflects the average age of the working population in Nigeria. An overwhelming majority of the participants were Yoruba by tribe and Christianity by religion which reflected the demographics of the region the study was conducted and the study center

being a Christian owned institution respectively. The positive family history of glaucoma found in this study was similar to 6.8% found in a study done by Isawumi *et al* (15) in Ede South LGA, southwest Nigeria. However, higher proportion of positive family history of Glaucoma were found in studies done by Sarimiye *et al* (18.1%) (14), Maharana *et al* (21%) (21) and Adekoya *et al* (26.4%) (22) These variations may be due to differences in the cohort of participants recruited for each study, use of different questionnaire, and different methods of obtaining the information (23).

Awareness of Glaucoma (60.8%) in this study was similar to the findings by Nkizor-Akaraiwe (24) *et al* (65.5%) and Sarimiye (14) *et al* (61.7%). This might be because all these studies were carried out in the month of March during the world glaucoma week activities and there was increased public awareness about glaucoma through the social media during these periods. However, this high level of awareness about glaucoma did not translate to correct knowledge of Glaucoma as discovered in these studies. Knowledge of Glaucoma reduced from 60.8% to 54.7% in this study, likewise it reduced from 65.5% to 36.8% in the study done by Nkizor-Akaraiwe *et al* in southeastern Nigeria (24). Similar finding of high level of awareness of glaucoma with low level of knowledge about glaucoma was also reported in a study done in Ibadan, southwest Nigeria (20). This might be because the knowledge acquired from social media about a disease condition is not usually sufficient for an individual to obtain adequate knowledge about the disease and there will always be the need for additional information on the disease condition. A study done by Isawumi *et al* (15) found the level of awareness about Glaucoma to be 15.8% which is much lower compared to all the above mentioned studies. This might likely be because this study was done in a rural community where access to print, electronic and social medial was limited hence the populace has lower level of knowledge about Glaucoma.

The level of awareness about Glaucoma in this study was similar among both genders and this was similar to the findings of a hospital based study in Central India where awareness of glaucoma was also similar among both gender in the study (21). Studies had reported that gender has no relationship with the level of awareness or knowledge about glaucoma (23,25,26). The finding of 36.1% of the study participants not having any knowledge about the modalities of

managing glaucoma is similar to the finding of Isawumi *et al* (15) in which 48.8% of their study participants do not have any knowledge about glaucoma treatment modalities. This finding reiterates the need to increase health education about glaucoma among hospital workers so that they can be good advocate on glaucoma and the need for ocular screening to the community.

CONCLUSION

In conclusion, awareness and knowledge of glaucoma among the participants is low. There is therefore the need to increase these by educating and instituting interventions aimed at improving the awareness and good knowledge of Glaucoma among the hospital workers in order to make them better advocates for ocular screening in the community. These will eventually improve compliance with medications among those diagnosed with glaucoma.

We recommend that health education targeted at improving the awareness and knowledge of Glaucoma among the staff be instituted. Health insurance coverage should be expanded and strengthened to include complete glaucoma screening services. this will serve as preventive strategies to staff to access it.

Contribution of authors: Conceptualization of the research, drafting of Proposal and write-up of results by Isawumi M.A. Execution of the research was carried out by Isawumi M.A. and Aina A.S. The discussion was written by Aina A.S. and the final editing was done by Isawumi M.A. and Aina A.S.

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Table 1: Sociodemographic Characteristics.

Variables	Sub-variables	Frequency	Percentage
Age	20-39 (Young Adult)	195	42.9
	Mean (41.8±11.2)		
	40-59 Middle Aged	228	50.1
	> 60 Elderly	32	7.0
Sex	Male	170	37.4
	Female	285	62.6
Religion	Christian	449	98.7
	Muslim	4	0.9
	Others	2	0.4
Educational Level	Primary	19	4.2
	Secondary	72	15.8
	ND/HND	154	33.8
	University	148	32.5
	Postgraduate	62	13.6
Cadre	Junior	249	54.7
	Senior	206	45.3
Tribe	Yoruba	437	96.0
	Igbo	9	2.0
	Hausa	1	0.2
	Others	8	1.8

Table 2. Gender distribution of the awareness of Glaucoma

Sex	Yes	No	Total	% Awareness
Male	97	73	170	57.1%
Female	180	105	285	63.2%
Total	273	178	455	60%

Table 3: Ocular complaint and history

Variables	Sub-variables	Frequency	Percentage (%)
Presence of an eye Complaint	Yes	263	57.8
	No	192	42.2
If yes, which of these	Not applicable	192	42.2
	Blurring of distant vision	46	10.1
	Eye aches	36	7.9
	Cannot read small prints	117	25.7
	Itching/gritty sensation	33	7.3
	Redness	7	1.5
	Others (watery, dryness etc)	24	5.3
	Are You Aware of An Eye Disease Called Glaucoma	Yes	277
	No	178	39.1
Any Family History of Glaucoma	Yes	31	6.8
	No	367	80.7
	I don't know	57	12.5
Are You a Known Glaucoma Patient	Yes	5	1.1
	No	410	90.1
Are You Using Eye Drop	I don't know	40	8.8
	Yes	37	8.1
Who prescribed it	No	418	91.9
	Not applicable	425	93.4
	Ophthalmologist/doctor	17	3.7
Do You Wear Glasses	Not prescribed	13	2.9
	Yes	189	41.5
Any previous history of eye surgery	No	266	58.5
	Yes	9	2.0
if yes, which type	No	446	98.0
	I don't know/I am not sure	101	22.2
	Cataract	2	.4
	Pterygium	2	.4
	Others	9	2.0
	Not applicable	341	74.9

Awareness of Glaucoma

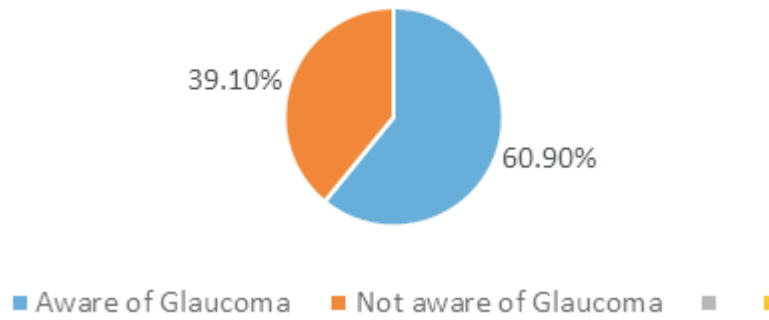


Figure 1. Level of awareness of Glaucoma.

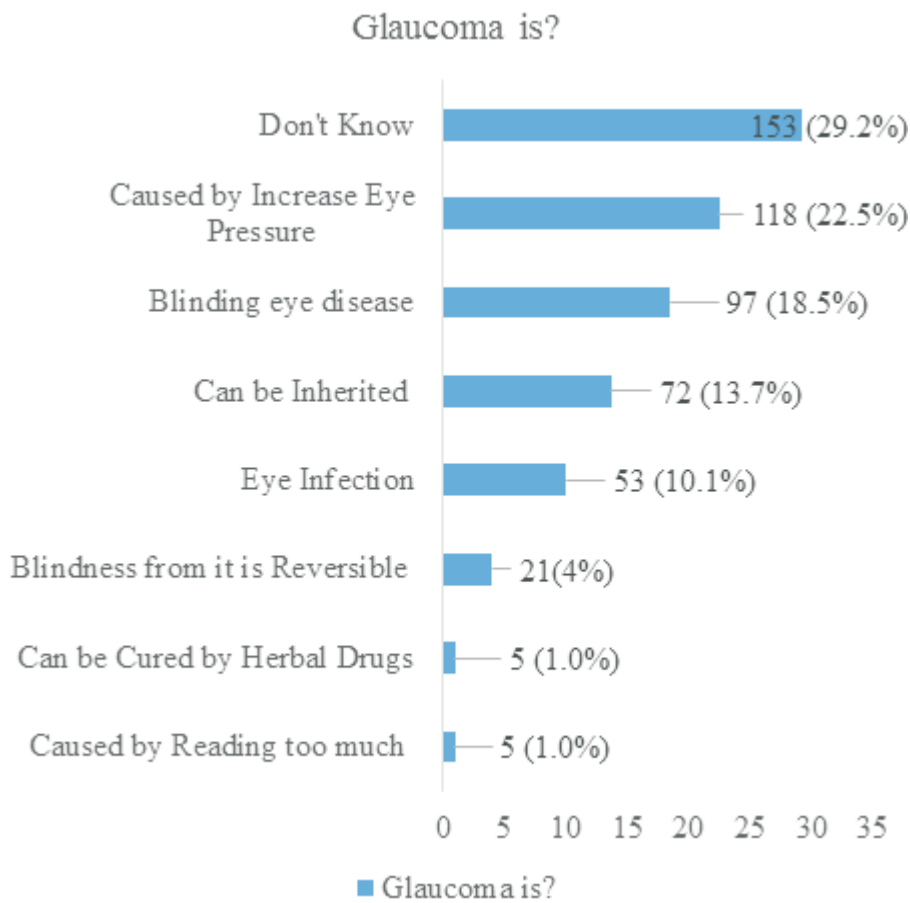


Figure 2. Knowledge of Glaucoma among participants.

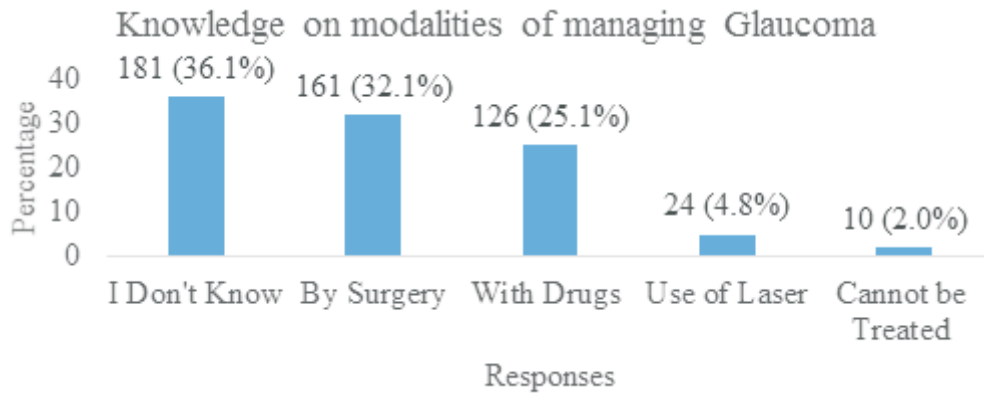


Figure 3. Knowledge on modalities of managing Glaucoma.