

Health Workers Awareness and Knowledge of Glaucoma in Tertiary Hospital in Birnin Kebbi, Nigeria

K. F. Monsudi^{1*}, E. S. Saka¹ and A. O. Ayodapo²

¹Department of Ophthalmology, Federal Medical Centre, Birnin Kebbi, Kebbi State, Nigeria.
²Department of Family Medicine, Federal Medical Centre, Birnin Kebbi, Kebbi State, Nigeria.

Authors' contributions

This work was carried out in collaboration between all authors. Author KFM designed, performed statistical analysis, wrote the protocol and the first draft of the manuscript. Author ESS managed analysis and review the manuscript. Author AOA literature searched, designed and went through the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

Background: Glaucoma is an important public health problem. Number one causes of irreversible blindness and second causes of blindness worldwide. Glaucoma progresses slowly with few or no noticeable symptoms in the early stage thus many patients present in advanced stage at first hospital visitation.

Glaucoma-related blindness is only avoidable with early detection and treatment, it is imperative to find asymptomatic individuals in the target population. Public awareness and knowledge of glaucoma play important role in preventing blindness and improve quality of life of glaucoma patients.

Aim: To know the level of awareness and knowledge of glaucoma among health workers in a tertiary hospital in North-western Nigeria.

Methods and Materials: A cross-sectional study conducted during glaucoma week in 2016 among health workers in Federal Medical Birnin Kebbi, Kebbi State using self-administered questionnaires, asking about socio-demographic characteristics, awareness and knowledge of glaucoma.

*Corresponding author: E-mail: kfmshood@yahoo.co.uk, kfmshood@yahoo.com, kfmshood@yahoo.com;

The data was analyzed by SPSS Version 20.

Results: A total of 268 health workers participated. The mean age of respondents was 36 years (SD 7.9). The age range was between 19years-60years. The majority 93(34.7%) were in age group of 34yrs-41yrs There were 151 (56.3%) males with M:F 1.3:1. Most 114 (42.5%) of respondents were nurses, and 204 (76.1%) of the hospital workers had heard about glaucoma. The glaucoma awareness was high among the clinical staff and participants with high the level of education ($p=0.000$). The level of glaucoma knowledge was best in the clinical staff than non-clinical ($p=0.000$). And higher numbers 202 (75.4%) of the workers believed that glaucoma causes irreversible blindness while 156 (58.2%) were aware that glaucoma could be inherited. The hospital seminars/lectures was a major source of information on glaucoma.

Conclusion: The overall level of glaucoma awareness and knowledge were high among clinical health workers with a high level of education. The hospital seminars/lectures was a major source of information on glaucoma.

Keywords: Glaucoma; Kebbi State; health workers; blindness.

1. INTRODUCTION

Glaucoma is a major public health problem and one of the leading causes of blindness worldwide [1,2]. Eight percent of global blindness is due to glaucoma [3]. The Nigeria National Blindness survey reported the prevalence of glaucoma-related blindness at 0.75% second only to cataract [4]. Glaucoma progresses slowly with few, if any, noticeable symptoms in the early stage thus many patients present late for medical attention when the eye condition is already advanced [3].

Glaucoma-related blindness is only avoidable with early detection and treatment, it is imperative to find asymptomatic individuals in the target population [5]. Public awareness and knowledge of glaucoma play important role in preventing blindness and improve quality of life of glaucoma patients.

The level of glaucoma awareness and knowledge vary from developing to developed countries. The level of glaucoma awareness among Caucasians ranged between 22.9% and 93% with a low level of knowledge varying between 2.3%- 35% [6-11]. From Africa, previous studies have reported low levels of awareness and knowledge of glaucoma among Nigerians [12-13] and Ghanaians [14]. It is generally believed that health care personnel's can be effective in promoting the public awareness of eye diseases. However, no study has been conducted on glaucoma awareness among healthcare workers in Kebbi State. Hence need for this study.

2. AIM

The aim of this study is to know the level of awareness and knowledge of glaucoma among

health care workers at a tertiary health institution in Birnin Kebbi Northern-western, Nigeria.

3. MATERIALS AND METHODS

This was a cross-sectional study that was carried out in the month of June 2016 during world glaucoma week on health care workers at the only tertiary health care institution-Federal Medical Centre (FMC), Birnin Kebbi, Kebbi State.

There are two major directorates in the hospital: the clinical directorate comprised of the medical doctors, nurses, optometrist, pharmacist, physiotherapists, and laboratory staff and; the administrative directorate (non-clinical) comprised of administrative, cleaner, account, and audit staff. Participants were selected from clinical and an administrative directorate using simple random sampling technique. A structured questionnaire was used to collect information on socio-demographic, level of awareness and knowledge of glaucoma from the participants.

Awareness of glaucoma means whether or not an individual has heard of the disease or has any form of correct understanding of the disease while the knowledge aspect deals with the level of understanding of the disease. The questionnaires were self-administered. The questions used for the survey were validated by first testing them on 20 non glaucoma patients presenting to the eye clinic of the specialist hospital (Sir Yahaya Memorial hospital) Birnin Kebbi. On the basis of the results of the pre-test, the questions were modified appropriately.

A simple random sampling by balloting was used in selecting participants from each arm of the directorate.

Exclusion criteria are staff from the eye clinic in the Federal Medical Centre so as to prevent bias since (most eye clinic staff would have known about glaucoma) and non-consented hospital workers.

All the data were entered and analyzed with SPSS 20 statistical software (SPSS Inc., Chicago, IL, USA). Statistical significant test for categorical variables was analyzed with Pearson's chi-square test.

A *P* value of less than 0.05 was considered statistically significant.

Ethical clearance for the study was obtained from Research and Ethical Committee of Federal Medical Centre, Birnin Kebbi and also informed consent from individual participant workers.

4. RESULTS

Out of 350 health workers approached for the study 268 agreed and returned the questionnaires giving a response rate of 77%. The mean age of respondents was 36 years (± 7.9). The age range was between 19years-60years. The majority 93(34.7%) were in age group of 34yrs-41yrs (Table 1). Males were 151 (56.3%) with M: F 1.3:1 (Table 1). Most 114 (42.5%) of respondents were nurses (Table 1). Majority 234(87.4%) of the respondents attended tertiary education. The majority of the participants 176 (66.4%) practiced Islam. Most 204 (76.1%) of the hospital workers had heard about glaucoma. Majority 173 (64.6%) of participants were clinical staff (Fig. 1 number of clinical and non-clinical participants). The glaucoma awareness was more among the clinical staff and participants with high the level of education ($p=0.000$). The level of glaucoma knowledge was better in the clinical staff than non-clinical ($p=0.000$). And higher numbers 202 (75.4%) of the workers believed that glaucoma causes irreversible blindness while 156 (58.2%) were aware that glaucoma could be inherited.

4.1 Risks Factor for Glaucoma

Majority of the participants had knowledge that age 196 (73.1%), ocular trauma 181(67.5%) and intraocular infection 181(67.5%) were important risk factors for glaucoma (Table 2).

4.2 Glaucoma Treatment

Most 229 (85.4%) of the participants had knowledge that glaucoma without treatment can

lead to blindness and 224 (91%) also aware that early diagnosis by screening can prevent glaucoma blindness.

Table 1. Socio-demographic characteristics of the participants

Characteristics	Frequency	%
Age group (year)		
18yrs-25yrs	22	8.2
26yrs-33yrs	92	33.3
34yrs-41yrs	93	34.7
42yrs-49yrs	46	17.2
50yrs+	15	5.6
Gender		
Male	151	56.3
Female	117	43.7
Religion		
Islam	178	66.4
Christian	89	33.2
Traditional	1	0.4
Occupation		
Nurse	114	42.5
Doctor	16	6.0
laboratory scientist	9	3.4
Cleaner	33	12.3
Pharmacist	13	4.9
Physiotherapist	7	2.6
laboratory attendant	3	1.1
Optometrist	5	1.9
Administrative staff	61	22.8
medical record	3	1.1
Radiologist	3	1.1
Dental technician	1	0.4
Education		
Primary	1	0.4
Secondary	33	12.3
Tertiary	234	87.3

Less than half of the participants 126 (47%) knew that combination of drug was the main treatment of glaucoma (Fig. 2. participants respond to the treatment of glaucoma).

Most of the health workers 212 (79.1%) were aware that regular eye check is an important measure in the prevented of glaucoma blindness (Table 3: In response to question on how blindness from glaucoma can be prevented). Few of the participants 105 (39.2%) understand that glaucoma is a disease that damage the optic nerve from increase in intraocular pressure (Table 4: participants respond to what do you understanding by glaucoma). About half of the participants 162 knew that glaucoma affects all ages (Table 5). While 2/3 of the participants believed that poor vision was the main symptom

of glaucoma (Table 6: participants respond to symptoms of glaucoma). Only 6(2.2%) participants knew that laser is used to treat glaucoma.

Major sources of information about glaucoma by the participants were hospital seminars/lectures 43% (115) and healthcare personnel 20% (54). Fig. 3 sources of information about glaucoma.

Table 2. Glaucoma awareness questions respond of the participants

Questions	Respond	number of responds (n=268)	%
Have you ever hear about glaucoma	Yes	204	76.1
	No	64	23.9
	I do not know	0	0
Do you know that glaucoma causes irreversible blindness	Yes	202	75.4
	No	66	24.6
	I do not know	0	0
Glaucoma can be inherited	Yes	156	58.2
	No	40	14.9
	I do not know	72	26.9
Age is a glaucoma risk factor	Yes	196	73.1
	No	72	26.9
	I do not know	0	0
Drug such as steroid is a risk factor for glaucoma	Yes	149	55.6
	No	119	44.4
	I do not know	0	0
Trauma is risk factor for glaucoma	Yes	181	67.5
	No	87	32.5
	I do not know	0	0
DM is a risk factor for glaucoma	Yes	180	67.2
	No	88	32.8
	I do not know	0	0
Hypertensive is a risk factor for glaucoma	Yes	174	64.9
	No	94	35.1
	I do not know	0	0
Intraocular infection is a risk factor for glaucoma	Yes	181	67.5
	No	87	32.5
	I do not know	0	0
Refractive error is a risk factor for glaucoma	Yes	66	24.6
	No	202	75.4
	I do not know	0	0
Do you know that with treatment glaucoma patient can still go blind	Yes	127	47.4
	No	141	52.6
	I do not know	0	0
Do you know that without treatment glaucoma patient can go blind	Yes	229	85.4
	No	39	14.6
	I do not know	0	0
Do you know that early diagnosis by screening can prevent glaucoma blindness	Yes	244	91
	No	24	9
	I do not know	0	0

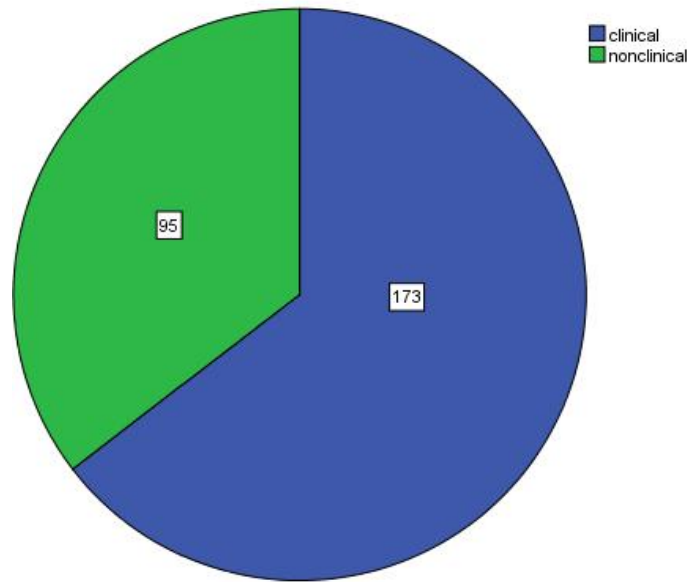


Fig. 1. Numbers of clinical and non clinical participants

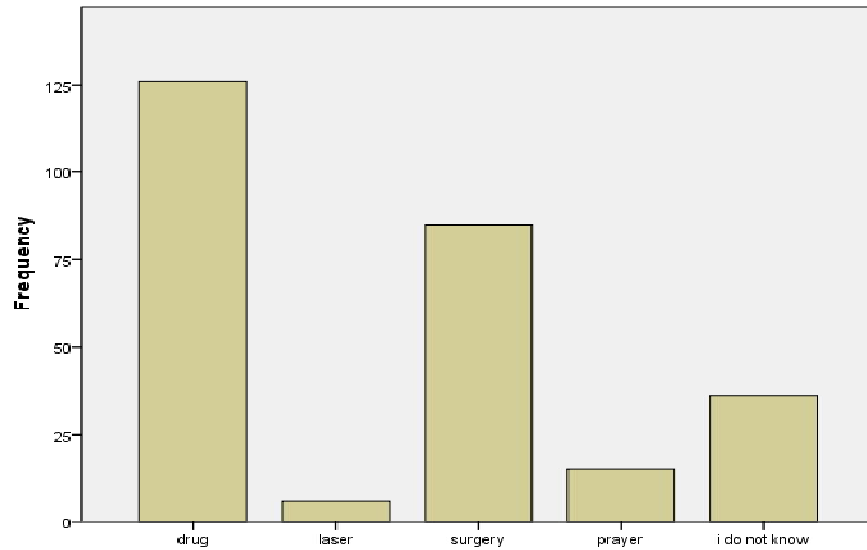


Fig. 2. Treatment offered for glaucoma includes

5. DISCUSSION

Glaucoma awareness in the developing countries was reported to be poor by previous studies [3, 15,16,17,18] compared to developed countries [11,19,20].

In our study, 76.1% were aware of glaucoma which is less than what was reported in Ife [18] and Owo [3]. However, the awareness

percentages in this study were similar to what was reported by Osaguona and Edema [21] from University of Benin Teaching Hospital – Benin City Nigeria in 2014. Furthermore, the level of awareness in our study was better than 60.4% reported by Askira et al. [22] among Tertiary Health Care Workers in Maiduguri, Nigeria. The reason for the different may be because of different in study designed.

Table 3. How can blindness from glaucoma be prevented

	Frequency	%
Regular eye check	212	79.1
Regular exercise	4	1.5
I do not know	52	19.4
Total	268	100

Table 4. Participants responds to what do you understanding by glaucoma?

	Frequency	%
Raise in intraocular pressure	84	31.3
Disease that damage the optic nerve from increase in intraocular pressure	105	39.2
Disease that damage the retinal	26	9.7
Intraocular infection/inflammation	10	3.7
I do not know	43	16
Total	268	100

The glaucoma awareness was high among the clinical staff similar to what was reported by Osaguona and Edema [21]. This may be because of eye diseases was among the curriculum of clinical health workers in Nigeria. The level of glaucoma awareness was more in

the participants with high the level of education this agreed with many previous studies [3,11,20,21,22,23]

Table 5. Participants responds to glaucoma affect what group of people

	Frequency	%
Adult	36	13.4
Children	2	.7
All age	137	51.1
Elderly	57	21.3
I do not know	36	13.4
Total	268	100

In our study 75.4% were aware that glaucoma could cause irreversible blindness and 91% participants knew glaucoma screening is an important way of preventing glaucoma blindness. This result was higher than Saudi [24] and Nigeria studies [22]. However, only 6% of our participants knew that laser is used to treat glaucoma. This may be because of non-availability of laser treatment at our hospital.

The major sources of information about glaucoma in our study were hospital seminars/lectures. This was a contrast to studies from Southwest Ethiopia [16], Nigeria [22], Germany [25] and India [26]. The difference may be because of quarterly hospital ophthalmology seminar/presentation for the last 5years.

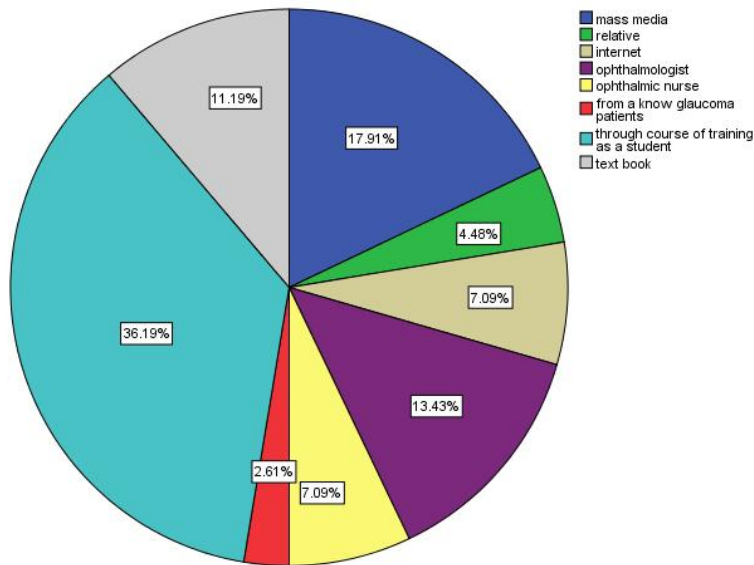


Fig. 3. Sources of information about glaucoma

Table 6. Participants responds to symptoms of glaucoma

	Frequency	%
Poor vision	162	60.4
Ocular pain	44	16.4
Redness of the eye	31	11.6
eye discharge	9	3.4
increase in eyeball in children	10	3.7
I do not know	12	4.5
Total	268	100

The glaucoma awareness source information from relative/family in our study was only 5% this was better than 3.5% that was reported by Askira et al. [22] among health workers in Maiduguri however, it was less than 26% reported by Onabulo and Bodunde [13] in 2014. This may be because of reluctant to disclosed health issue/problem with relative/family member in Nigeria.

In this study, mass media was responsible for 25% sources of information about glaucoma. This was similar to 29.7% reported by Askira et al. [22] but better than 3.3% reported by Onabolu and Bodunde [13]. However, lower than the awareness study from southern India [26]. This lower sources of mass media information on glaucoma in Nigeria may be because of missing of health promotion programme in the mass media by the health workers during the working hours.

6. CONCLUSION

The overall level of glaucoma awareness and knowledge were high among clinical health workers with a high level of education. The hospital seminars/lectures was a major source of information on glaucoma.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard, written approval of Ethics committee has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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