

Received: 28 July, 2020
Accepted: 05 August, 2020
Published: 06 August, 2020

*Corresponding authors: Abeba T Giorgis, MD, Associate professor of ophthalmology & glaucoma specialist, Ophthalmology, School of medicine, College of Health Sciences, Addis Ababa University, Ethiopia, Tel: + 251-911214688; E-mail: abebatiorgis@yahoo.com

<https://www.peertechz.com>



Research Article

Glaucoma awareness and knowledge among adults in woliso town, South West Ethiopia

Mahlet Tsegaye, Abiye Mulugeta and Abeba T Giorgis*

Associate professor of ophthalmology & glaucoma specialist, Ophthalmology, School of medicine, College of Health Sciences, Addis Ababa University, Ethiopia

determine level of glaucoma awareness and knowledge among adults residing in Woliso, a rural town.

Methods and subjects

A community based cross sectional study among adults aged 18 years and above in Woliso town was conducted from March 10th to April 10th, 2017. Based on the 2007 figures from the national census of Ethiopia, Woliso town had an estimated total population of 37,878 among which 18,880 are men and 18,998 women [12]. The source populations were adults living in Woliso town and the study populations were adults residing in households at the time of the survey.

The sample size was calculated using a 95% confidence interval and allowing tolerable margin of error to be 1.4% and an expected prevalence rate of 2.4% awareness taken from a previous study in southwest Ethiopia [12]. Adding 10% non-response rate and design effect (multiplied by 1.5), the final sample size became 757. To get the calculated participants sample size, three Kebeles, sub-district administrations of the town, were randomly selected as clusters, and for each Kebele 252 participants were allocated. Using area map of the town and a lottery method, the first house was identified for survey for each Kebele, and then, subsequent household dwellers were interviewed until the allocated sample size was met. House to house visit was made by the survey team which consists of the first author and the Kebele's/town health extension workers who were fluent in the tribal languages spoken in the study area. A pretested interviewer administered questionnaire prepared in English and translated to Amharic and Afan Oromo language was used to assess individual's socio-demographic

Introduction

Glaucoma is the leading cause of irreversible blindness worldwide and it is next to cataract as common cause of blindness [1-4]. The global prevalence of glaucoma for population aged 40-80 years is 3.5%. The magnitude of glaucoma is expected to keep increasing with the world population growth and increasing number of ageing people [5]. Ninety percent of affected people in the developing countries and 50% in developed world do not know that they have the disease [6]. In Sub-Saharan Africa glaucoma is more prevalent and has been considered as a major public health issue for the region [7,8]. Up to 50% of glaucoma patients are already blind at least in one eye at presentation in Africa including Ethiopia [7,9].

Individual awareness and knowledge of glaucoma has important role in screening, diagnosis, treatment compliance, and prevention. Eye health education that influences people to participate in regular ophthalmologic care is an important step to detect glaucoma early, thereby preventing blindness. Studies have indicated that patients' knowledge (or lack of knowledge) concerning eye care may play significant role in seeking timely care and treatment [10-12].

In Ethiopia, public glaucoma awareness activities have been done over years. The level of glaucoma awareness could vary as to the type of studied community and possibly period of study time. For instance, the awareness level was 2.4% among rural community coming for cataract screening service in 2009 and 28.4% among ophthalmic patients at tertiary ophthalmic center in 2010 [13,14]. The objective of this study was to



status, awareness and knowledge on glaucoma. One individual from each household who was available and willing to be interviewed during the survey time was involved.

Data was entered into Statistical Package for Social Science (SPSS) version 20 soft-ware for data analysis. Descriptive statistics with mean, frequency and percentage was used to describe and summarized the data. P value less than 0.05 was considered statistically significant.

The study was ethically approved by the research and publication ethics committee of the Department of Ophthalmology, Collage of Health Science, Addis Ababa University.

To conduct the study, permission was requested and obtained from the Woliso town Municipality office and Health Bureau. Informed verbal consent was gained from every participant before proceeding with the interview.

Operational definitions

Awareness was defined if the participant has heard about glaucoma and said it is different from trachoma. Participant was leveled as having Knowledge if he/she mentioned factual information about glaucoma. Knowledge was further classified as good, fair and poor based on the answer given to questions of what is glaucoma?, risk factors: increased Intraocular Pressure (IOP), age above 40, family history of glaucoma and others, and the treatment options. Good knowledge was defined when participant mentioned glaucoma as a blinding eye disease and mention at least one risk factor and one treatment option. Fair knowledge was stated when participant mentioned either of glaucoma as a blinding eye disease, risk factors or treatment options and Poor knowledge was defined if the participant mentioned glaucoma as an eye disease only. Experience of previous studies was used to empirical classify the level of glaucoma knowledge.

Results

A total of 757 adults residing in three Kebeles of Woliso town were interviewed from March 10th - April 10th 2017. The mean age of the participant was 35.3 (SD 14.15), ranging from 18-75 years. Table 1. shows the sociodemographic characteristic of participants in the study. Females were larger in ratio than males, 1.6:1. Majority, 84.8%, were Christian in religion. The proportion of people who can not read and write was low (14.3%, 108/757), while educational level high school and above accounted for 66.9% (506/757). Afan- Oromo and Amharic were the two commonly spoken languages by 92.6 % (701/757) of the participants.

Among the interviewed individuals, 33.6% (254/757) were found to be aware about glaucoma, while the remaining 66.4% (503/757) participants were not aware about the eye disease. The mean age of those participants who were aware and unaware was comparable, 35.47 (SD 13.43) and 35.26 (SD 14.52), respectively.

Table 2. shows the sources of information for the glaucoma awareness. Among the aware individuals, 81.1% (206/254)

got the information from media: TV, Radio or both. Sharing glaucoma information from friends was the other source for 24 aware participants. Contribution of health professionals as a source of information for the participants was only 5.5%. The majority (85%) of the interviewed aware participants admitted that they came across the awareness in the previous 5 years.

Among the aware 254 participants, 252 (99.2%) had knowledge about glaucoma. The level of knowledge was good, fair and poor in 20 (7.9%), 120 (48.2%) and 112 (43.9%) respectively as to the given operational definition. Hundred-fifty (59.1%) of the aware participants did not mention any of the risk factors for glaucoma.

Table 3. depicts the response of aware participants to glaucoma risk factors, blindness and treatment. Elevated intraocular pressure (IOP) as a risk factor for glaucoma was mentioned by 24 (9.4%) of respondents, and on the other hand, poor personal environmental hygiene was considered as a risk by 65 (25.6%). The irreversible nature glaucoma blindness was known by 80 (13.5%), while many of the participants, 119

Table1: Sociodemographic characteristic of participants, Wolliso, South West Ethiopia, (n=757).

Characteristics	Number	Percentage (%)
Sex		
Female	462	61
Male	295	39
Religion		
Christian	642	84.8
Muslim	115	15.2
Literacy		
Non literate	108	14.3
Primary school	143	18.9
High school	320	42.3
Collage	186	24.6
Mother tongue language		
Afan Oromo	354	46.8
Amharic	347	45.8
Guragegna	53	7.0
Other	3	0.4

Table 2: Sources of Information for Glaucoma Awareness, n = 254.

Source	Number of participants	Percentage
Media		
TV	152	60.0
Radio	20	7.9
TV & Radio	34	13.4
Others		
Friends	24	9.5
Health professional	15	5.5
Glaucoma patients	7	2.8
Newspaper and magazine	2	0.8
Glaucoma patients	7	2.8



(46.8%), were not certain. Regarding glaucoma treatment, 23 (12.9%) mentioned eye drops and/or surgical treatment as treatment, while the rest, 221 (87.1%), did not have any information. None mentioned laser therapy as a mode of treatment.

Data analysis has shown males to be more aware than females, and the awareness level to be increased with educational status as shown in Table 4. All of the participants (12, 1.6%) with family history of glaucoma were aware, which showed statistical significance ($p < 0.00$) when compared with the non-aware, 745 (98.4%). Six of 15 participants with diabetes mellitus were aware of glaucoma, which had no statistical significant ($p > 0.05$). The effect of age on the level of awareness was seen to have a non-statistical significant trend.

Table 3: Glaucoma Knowledge of among aware participants, n= 254.

Variables	Number	Percentage
Risk Factor		
Increased IOP	24	9.4
Family History	12	4.7
Medication/Steroids	3	1.2
Poor personal & environmental hygiene	65	25.6
Do not Know	150	59.1
Glaucoma blindness		
Irreversible	80	31.5
Revisable	55	21.7
Uncertain	119	46.8
Treatment		
Eye drops and/or surgery	33	12.9
Do not know	221	87.1

Table 4: Relationship of awareness to sociodemographic characteristics, n=757.

Characteristic	Aware (%)	Not aware (%)	P-value
Sex			
Male	123 (41.7)	172 (57.3)	0.00
Female	130 (28.1)	332 (71.9)	
Literacy Level			
College	102 (55.7)	84 (44.3)	0.00
High school	103 (32.2)	217 (67.8)	
Primary	34 (24.5)	109 (75.5)	
Non literate	13 (12.1)	94 (87.9)	

Discussion

This study found awareness level of 33.6% among adults aged 18 years and above residing in Woliso town, which is higher than the previous studies done at cataract outreach service, 2.4% (8/340) in 2009, at tertiary eye care center, 28.4% (120/422) in 2010, and even higher than a study done in Gish Abay town, 24.4%, 145/594, in 2018, in the country [13-15].

Comparing with studies done in other countries, there are higher level of awareness reports of 47 % (94/200) and

60.6% (211/348) from a similar rural community study done in Kwara State, Northern Central Nigeria in 2011 and a study done among people attending eye clinic in Nepal district in 2010, respectively [16,17]. On the other hands there are lower level reports from India: 13.5% (200/1480) from a population based study in Chennai, South India, reported in 2009 and 27% (380/1400) from attendants of ophthalmic outpatient department, Central India, in 2017 [18,19]. All these differences can possibly explained by variation in glaucoma services and awareness activities in the different communities, places and countries.

In this study, media accounted the largest proportion as a source of information for the aware participants, 81.1% (206/254). Television was the commonest source of information for 60% (152/254) of the people, and it was also the commonest source, accounting for 29.2% (35/120), in tertiary hospital study in 2010 in the country [14]. This is related to the awareness activities that have been performed over the previous 9 years using mainly the mass media by the Glaucoma group of the Ophthalmological Society of Ethiopia (OSE). The studies from Nigeria and India have also reported mass media to be the main source of information, 53.3% and 29%, respectively [16,19]. The contribution of health professionals as source of information was 5.5% in this study and 6.6% in the previous hospital based study [14], which are low as compared to 22.3% and 20.0% from that of Nigeria and Central India [16,19]. Health professionals are the ones delivering the information using the mass media, other means and providing health education at eye clinics, but the low level in the country requires attention.

In this study females were largely (71.7%) unaware (Table 4) and the reasons could be limited access to media and time limitation due to social and domestic burden, but it requires further study to get evidence and come up with solutions. Educational status had association with the level of awareness in this study ($P = 0.00$) and the ones done in 2010 and 2018 ($P < 0.05$) in the country and with that of studies from Nepal ($P < 0.001$) and India ($P < 0.001$) (14,15,17,18).

The level of knowledge was good in only 7.9% (20/254) and fair in 48.2% (120/254). The low level of good knowledge is comparable with that of reports from Chennai (8.7%) and Nigerian (5.5%) [16,18]. The presence of low level knowledge among our study community could be explained by either not paying attention to glaucoma or scarcity of reading materials in a form of poster, flayer, magazine, and newspaper with glaucoma information. Poor personal and environmental hygiene was mentioned as a risk for glaucoma by 65 (25.6%) of the aware participants, which is likely related to the education and interventions of SAFE strategy of trachoma elimination program the study area and many parts of the country.

In conclusion, the study determined the level of glaucoma awareness and knowledge, mass media to be the major source of information, males to be more aware than females and the higher the educational level, the greater the awareness level in the community during the study time. As glaucoma awareness and knowledge about the disease have major role for early



case detection and prevention of blindness from the disease, eye care professionals should work on raising awareness and improving knowledge among communities and the public by enlarge.

Acknowledgement

We would like to acknowledge all the study participants. We also want to express our heartfelt appreciation to the health extension Workers who were tirelessly working as a team through the study period.

References

- Allingham RR, Damji KF, Freedman S, Moroi SE, Rhee D (2011) Introduction: An overview of glaucoma. In: Shields Textbook of Glaucoma. 6th ed. Philadelphia, Lippincott Williams & Wilkins 239-270.
- Resnikoff S (2004) Glaucoma is second leading cause of blindness globally. Bull World Health Organ 82: 887-888. [Link: https://bit.ly/3gBA8a0](https://bit.ly/3gBA8a0)
- Egbert RP (2002) Glaucoma in West Africa: a neglected problem. Br J Ophthalmol 86: 131-132. [Link: https://bit.ly/2DBq0PT](https://bit.ly/2DBq0PT)
- Rupert RA, Bourne RA, Hugh R, Taylor RH, Flaxman RS, et al. (2020) Number of People Blind or Visually Impaired by Glaucoma Worldwide and in World Regions 1990 – 2010: A Meta-Analysis. [Link: https://bit.ly/31miGzz](https://bit.ly/31miGzz)
- Tham Y, Li X, Wong T, Quigley H, Aung T, et al. (2014) Global prevalence of Glaucoma burden through 2040: A systematic review and Meta- Analysis. Ophtha 121: 2081-2090. [Link: https://bit.ly/2XtWpio](https://bit.ly/2XtWpio)
- World Glaucoma Week. 50% of affected people in the developed world and 90% in developing countries do not know they have Glaucoma [cited 10 January 2013]; [Link: https://bit.ly/2ENn2bn](https://bit.ly/2ENn2bn)
- Cook C (2009) Glaucoma in Africa: Size of the problem and possible solutions. J Glaucoma 18: 124-128. [Link: https://bit.ly/39VwCo6](https://bit.ly/39VwCo6)
- Fatima Kyari F, Abdull MM, Bastawrous A, Gilbert EC, Faal H (2013) Epidemiology of Glaucoma in Sub-Saharan Africa: Prevalence, Incidence and Risk Factors. Middle East Afr J Ophthalmol 20: 111-125. [Link: https://bit.ly/2PogkKX](https://bit.ly/2PogkKX)
- Giorgis AT, Mulugeta A, Aga A, Deyassa N (2012) The spectrum of glaucoma presentation at Menelik II Hospital, Addis Ababa. Ethiop Med J 50: 259-264. [Link: https://bit.ly/2DlKD2F](https://bit.ly/2DlKD2F)
- Durowade K, Babatunde O, Bolarinwa O (2014) Knowledge and risk factors for glaucoma among adults in a rural community of Kwara State, Northern Central Nigeria. TAF preventive medicine bulletin 13: 375-380. [Link: https://bit.ly/2PpEEw9](https://bit.ly/2PpEEw9)
- Lau J, Lee V, Fan D, Lau M, Michon J (2002) Knowledge about cataract, glaucoma, and age related macular degeneration in the Hong Kong Chinese population. Br J Ophthalmol 86: 1080-1084. [Link: https://bit.ly/3fyA8pE](https://bit.ly/3fyA8pE)
- Krishnaiah S, Kovai V, Srinivas M, Shamanna RB, Rao NG, et al. (2005) Awareness of glaucoma in the rural population of southern India. Indian J Ophthalmol 53: 205-208. [Link: https://bit.ly/3fsLrzB](https://bit.ly/3fsLrzB)
- Tenkir A, Solomon B, Deribew A (2010) Glaucoma awareness among people attending ophthalmic outreach services in south western Ethiopia. BMC Ophthalmol 10 -17. [Link: https://bit.ly/3fuhmzY](https://bit.ly/3fuhmzY)
- Degineh H, Giorgis A (2013) Glaucoma Awareness among Ophthalmic Patients at Menelik II Hospital, Addis Ababa, Ethiopia. Ethiop. J Health Dev 27: 230-234. [Link: https://bit.ly/2EU8ln9](https://bit.ly/2EU8ln9)
- Bizuneh YZ, Tsega A, Admassu F (2020) Awareness of glaucoma and associated factors among adults in Gish Abay town, Northwest Ethiopia. Clinical Optometry 12: 37- 43. [Link: https://bit.ly/2DcpAj9](https://bit.ly/2DcpAj9)
- Durowade K, Babatunde O, Bolarinwa O (2014) Knowledge and risk factors for glaucoma among adults in a rural community of Kwara State, Northern Central Nigeria. TAF Pre Med Bull 13: 375-380. [Link: https://bit.ly/39ZwYtP](https://bit.ly/39ZwYtP)
- Gyawali R, Sarkar N (2014) Glaucoma awareness in a hospital presenting population in eastern Nepal. J Glaucoma 23: 594-598. [Link: https://bit.ly/2PrWq1S](https://bit.ly/2PrWq1S)
- Sathyamangalam R, Paul P, George R, Baskaran M, Hemamalini A, et al. (2009) Determinants of glaucoma awareness and knowledge in urban Chennai. Indian J Ophthalmol 57: 355-360. [Link: https://bit.ly/31j6QWZ](https://bit.ly/31j6QWZ)
- Maharana PK, Rai GR, Pattebahadur R, Shipra S, Ashish C, et al. (2017) Awareness and Knowledge of Glaucoma in Central India: A Hospital-Based Study. Asia-Pac J Ophthalmol 6: 243-249. [Link: https://bit.ly/30udjze](https://bit.ly/30udjze)

Discover a bigger Impact and Visibility of your article publication with Peertechz Publications

Highlights

- ❖ Signatory publisher of ORCID
- ❖ Signatory Publisher of DORA (San Francisco Declaration on Research Assessment)
- ❖ Articles archived in worlds' renowned service providers such as Portico, CNKI, AGRIS, TDNet, Base (Bielefeld University Library), CrossRef, Scilit, J-Gate etc.
- ❖ Journals indexed in ICMJE, SHERPA/ROMEO, Google Scholar etc.
- ❖ OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting)
- ❖ Dedicated Editorial Board for every journal
- ❖ Accurate and rapid peer-review process
- ❖ Increased citations of published articles through promotions
- ❖ Reduced timeline for article publication

Submit your articles and experience a new surge in publication services (<https://www.peertechz.com/submit>).

Peertechz journals wishes everlasting success in your every endeavours.

Copyright: © 2020 Tsegaye M, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Citation: Tsegaye M, Mulugeta A, Giorgis AT (2020) Glaucoma awareness and knowledge among adults in woliso town, South West Ethiopia. J Clin Res Ophthalmol. 7(2): 087-090. DOI: <https://dx.doi.org/10.17352/2455-1414.000078>