

## AWARENESS AND KNOWLEDGE OF GLAUCOMA AMONG WORKERS IN A PRIMARY PUBLIC HEALTH CENTRE IN ROTE NDAO

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### ABSTRACT

Glaucoma was one of the biggest causes of blindness in the world. Early detection of glaucoma is important to reduce the morbidity of visual impairments and blindness. Primary Public Health Centre is expected to be able to educate people about visual impairment and blindness due to glaucoma. This study aims to evaluate the level of awareness and knowledge about glaucoma in the staff of UPTD Puskesmas Delha as a way to increase the public awareness campaigns of glaucoma. Methods An observational study took place in the primary public health centre, UPTD Puskesmas Delha in West Rote District, Rote Ndao Regency, East Nusa Tenggara Province. The population was all staff, divided into two groups that were health workers and non-health workers. The subjects filled a questionnaire about the awareness and knowledge of glaucoma that was consisting of 12 questions. Data collected were analyzed by SPSS software version 21 using the Independent T-Test method with a significance level of 5%. Result A total of 51 staff participated in this study consisting of 7 males (13.7%) and 44 females (86.3%), age distribution between 22-54 years old. A total of 44 health workers (86.3%) and 7 non-health workers (13.7%), 84.3% aware of glaucoma, but only 62.7% has good knowledge. The result of Independent-T test P-value=0.084 ( $p > 0.05$ ). Conclusion there is no significant difference in awareness and knowledge of glaucoma between health workers and non-health workers. Continuing education is needed to improve the awareness and knowledge of glaucoma.

*Keywords: Awareness, Knowledge, Glaucoma, Primary Public Health Centre.*

In 2015, there was estimated 253 million people (3.38%) suffer from visual impairments from 7.33 billion people in the world, 36 million people are blind and 217 million have moderate to severe visual impairments.<sup>1</sup> A total of 2.78% of visual impairments in the world were caused by glaucoma. In the case of blindness, glaucoma was one of the biggest causes (8.30%), after cataracts (34.47%) and refraction disorders (20.26%) in the world.<sup>1,2</sup> Basic Health Research 2007 showed glaucoma prevalence in Indonesia was 0.45% that means 4 to 5 people from 1000 Indonesians suffer from glaucoma.<sup>2</sup>

Glaucoma is the damage of the optic nerve that is characterized by the increase of eye pressure, optic nerve papillary atrophy, the narrowing of the visual field, which even leads to loss of visual function.<sup>2,3,4</sup> Glaucoma symptoms are often

not realized by the patients or likely to other disease symptoms. Most of the people with glaucoma are diagnosed after being in the last stadium or totally blind.<sup>2</sup> The main mechanism of vision loss in glaucoma is the apoptosis of retina ganglion cells, which cause the thinning of retinal nerve fiber of the nuclear layer and axonal loss on nerve fiber.<sup>4</sup> The damage is irreversible or can not recover.

Therefore, glaucoma is one of the priority diseases in the management of visual impairment in Indonesia today. To reduce the morbidity of visual impairments and blindness due to glaucoma, it is very important to detect glaucoma as soon as possible.<sup>5</sup> The early detection can be done every 2 to 4 years on the age group of under 40 years old, every 2 years on the age over 40 years old, and every year on the group with a family history of glaucoma.<sup>2</sup>

However, to increase the awareness to do the early detection, one needs proper knowledge about glaucoma. Several studies showed low awareness and knowledge of glaucoma. While a study in Nigerian tertiary health care showed an insignificant result of awareness in medical and nonmedical workers.<sup>6</sup>

Primary Public Health Centre is one of the health centre facilities that organize environment health and individual health, emphasis on promotive and preventive strategies. This is expected to be able to become a place and or a facility to educate people about visual impairment and blindness due to glaucoma.<sup>5</sup> A good education will be delivered if the health workers have good awareness and knowledge about glaucoma. With the background of health education, every worker is expected to have good awareness and knowledge.

This study aims to evaluate the level of awareness and knowledge about glaucoma in the staff of UPTD Puskesmas Delha. It is assumed that the staff with medical background has a higher awareness and knowledge of glaucoma than other non-medical workers. This is expected as one of the ways to increase the public awareness campaigns of glaucoma.

## METHODS

This observational study took place in a Primary Public Health Centre, UPTD Puskesmas Delha in West Rote District, Rote Ndao Regency, East Nusa Tenggara Province. The population in this study were all 56 staff of UPTD Puskesmas Delha consisting of medical, paramedical, and administrative staff, and other supporting staff. The sampling method was a total sample. Inclusion criteria were the staff who has work more than 6 months, the staff were not on a long vacation or were changed workplace when the questionnaire collected, and willing to be subject of study. While the staff who has been

diagnosed or treated with glaucoma were excluded from this research.

All staff was divided into two groups that were health workers and non-health workers. The subjects of this study fill the questionnaire about the subject's identity and the awareness and knowledge of glaucoma. The awareness is known by a question of "Have you ever heard about glaucoma?" The knowledge of glaucoma was known by the score of questionnaire answers. The subjects firstly filled the informed consent form and were willing to be the subjects. The questionnaire was consisting of 12 questions that were adapted from several previous studies and have been validated. Every right answer gets 1 points and the false answer gets 0 points.

The collected data were analyzed by SPSS software version 21 using the Independent T-Test method with a significance level of 5%. The analysis was aimed to find out the difference of awareness and knowledge about glaucoma between health workers and non-health workers in UPTD Puskesmas Delha.

## RESULT

A total of 56 staff of UPTD Puskesmas Delha were invited for this survey, 51 participants were appropriate with the inclusion and exclusion criteria, 3 staff have not worked more than 6 months, 2 staff were changed workplace, while no one staff has been diagnosed or treated of glaucoma.

Table 1. Frequency Distribution based on Gender, Age, Profession, and Education Level of Respondents.

	Total (n=53)	Percentage 100%
<b>Gender</b>		
Female	44	86.3
Male	7	13.7
<b>Age</b>		
20-29 years old	22	43.1
30-39 years old	20	39.2
40-49 years old	7	13.7
50-59 years old	2	3.9
<b>Profession</b>		
Doctor	2	4
Dentist	1	2
Nurse	13	25
Midwives	19	37
Laboratory Staff	1	2
Nutritionist	4	2
Pharmacy	1	2
Sanitarian	3	6

Administrative	3	6
Staff	4	2
Other Staff		
<b>Education Level</b>		
High School	4	7.8
Diploma 3	35	68.6
Diploma 4	1	2.0
Bachelor	8	15.7
Profession	3	5.9

There were 7 males (13.7%) and 44 females (86.3%). The questionnaire was responded by 2 doctors, 1 dentist, 13 nurses, 19 midwives, 1 laboratory staff, 4 nutritionists, 1 pharmacy, 3 sanitarians, 3 administrative staff, and 4 other staff. The mean age of the subjects was 32.88 years with an age distribution between 22-54 years old. Table 1

The subjects were divided into two groups of 44 health workers and 7 non-health workers. Total of 84.3% ever heard about glaucoma but only 62.7% has good knowledge of glaucoma or can answer more than 60% of question. Table 2

Table 2. The awareness of glaucoma among workers

	Have the Respondent ever heard about glaucoma?				Total
	Ever		Never		
	N	%	N	%	
Health workers	39	88.6	5	11.4	44
Non-health workers	4	57.1	3	42.9	7
<b>Total</b>	<b>43</b>	<b>84.3</b>	<b>8</b>	<b>15.7</b>	<b>51</b>

The most unknown question from the 12 questions of the questionnaire was “glaucoma can runs in families.” 35 respondents answer false (68.6%), “glaucoma is irreversible or can not be

treated. The treatment just avoids worseness.” 28 respondents answer false (54.9%), and “steroid cause glaucoma” 27 respondents answer false (52.9%). Table 3

Table 3. The Response of staff to questions on Knowledge and Awareness of glaucoma

Question	True		False	
	N	%	n	%
Glaucoma increase eye pressure, affects vision, clog eye fluid	44	86.3	7	13.7
Did you know that glaucoma can run in families	16	31.4	35	68.6
Does glaucoma only occur in elderly?	38	74.5	13	25.5
Can glaucoma affect babies?	26	51.0	25	49.0
Does glaucoma cause blindness	44	86.3	7	13.7
Did you know that diabetic patients are more prone to glaucoma?	32	62.7	19	37.3
Glaucoma is irreversible (can not be recovered). Treatment just prevents from getting worse	23	45.1	28	54.9
Did you know that glaucoma can be operated on?	31	60.8	20	39.2
Did you know that laser treatment can be used to treat glaucoma?	33	64.7	1	35.3
Is it necessary to do regular follow-up in treating glaucoma?	45	88.2	6	11.8
Did you know that the steroid use can cause glaucoma?	24	47.1	27	52.9

Table 4. The difference of Awareness and Knowledge about Glaucoma between Health Workers and Non-Health Workers

	≥ 60%		< 60%		Total	P-Value on T-Test
	N	%	N	%		
Health workers	29	65.9	15	34.1	44	0.084
Non-health workers	3	42.9	4	57.1	7	
Total	32	62.7	19	37.3	51	

There is no significant difference between health workers and non-health workers about the knowledge of glaucoma P-value= 0.084 (p>0.05). Table 4

**DISCUSSION**

This study was held to assess the awareness and knowledge about glaucoma among the workers in a Primary Health Centre. The focus of this study was to evaluate the understanding about the glaucoma and the importance of screening as a way to prevent an irreversible loss of vision.

The level of awareness of glaucoma among the respondents was 84.3%, both health workers (88.6%) and non-health workers (57.1%) had ever heard about glaucoma. This was different with the study of Comolafe O.O et al, Only 29.2% participants from the administrative division had heard of glaucoma. The low awareness can occur of poor access to information and lack of education media.<sup>6</sup>

A study of Alemu D.S et al in population on Northwest Ethiopia, there was 48.5% respondents had heard of glaucoma. It was 246 respondents were aware of glaucoma, 122 (49.6%) respondents had good knowledge and 124 (50.4%) respondents had poor knowledge.<sup>8</sup> The result was despite with this study were 62.7% had knowledge more than 60% and 37.3% had knowledge less than 60%. Awareness of glaucoma can lead to early

detection to prevent the blindness. While education will increase the awareness itself.<sup>7</sup>

There were 68.6% respondent did not know that glaucoma can run in families, 54.9% did not know that glaucoma is irreversible or can not be treated, and 52.9% did not know that steroid cause glaucoma. This despite to the study in tertiary centre in Karnataka, the knowledge of diabetes and family history of glaucoma as risk factors for glaucoma was high (84.4%). There were 60.60% know that glaucoma is an irreparable damage of vision. But the knowledge of corticosteroid as a risk factor was the same low (28.65%).<sup>7</sup>

The result of T-test showed p- value 0.084 > 0.05. That means that there was no significant difference of awareness and knowledge of glaucoma between health workers and non-health workers in UPTD Puskesmas Delha. The insignificance level in this study can occur because of the number of non-health workers were significant less than the health workers. In other hand, the minimal education of this population was high school. People with at least primary education found better aware of glaucoma, where better education positive related to awareness of glaucoma.<sup>7</sup>

Being a health care, this study firstly showed the picture of health care workers awareness and knowledge of glaucoma in a primary public health centre in Rote Ndao.

Additionally, this study used a total sample to ensure the real picture of the population. While the study had limitation, even though the questionnaire has been adapted and validated, it just considering a close answers which is possible to misunderstanding of the respondents.

As the public health centre, it is important to aware of the conditions which cause irreversible damage. Therefore, regular programs could be conducted for workers to increase the knowledge of glaucoma and the early detection. As the first point of contact for the patient, health education is a key in reducing morbidity to chronic diseases mainly the asymptomatic at an early stage. Hence, the health centre personnel should effectively educate patients regarding glaucoma requires a good understanding of the disease process.<sup>6</sup>

## CONCLUSION

Based on this study, there is no significant difference between health workers and non-health workers about the awareness and knowledge of glaucoma in UPTD Puskesmas Delha. Even though the awareness about glaucoma is good but the knowledge of glaucoma is still limited. Continuing education is needed to improve the knowledge of all the staff especially health workers in the way to educate the public or patients in campaigns of glaucoma.

## REFERENCES

1. Kementerian Kesehatan RI. Pusat Data dan Informasi Kementerian Kesehatan RI: Situasi Gangguan Penglihatan. Jakarta: Kementerian Kesehatan RI; 2018.
2. Kementerian Kesehatan RI. Pusat Data dan Informasi Kementerian Kesehatan RI: Situasi Glaukoma di

Indonesia. Jakarta: Kementerian Kesehatan RI; 2019.

3. Ilyas S. Ilmu Penyakit Mata. Edisi Ke-3. Jakarta: Badan Penerbit FKUI; 2008.p.167-172,212-216.
4. Riordan-Eva P, Whitcher JP. Vaughan & Asbury's General Ophthalmology. 17<sup>th</sup> ed. New York: The Mc Graw Hill; 2007;11.
5. Kementerian Kesehatan RI. Direktorat Jenderal Pencegahan dan Pengendalian Penyakit Kementerian Kesehatan RI: Peta Jalan Penanggulangan Gangguan Penglihatan di Indonesia Tahun 2017-2030. Jakarta: Kementerian Kesehatan RI; 2018.
6. Komolafe OO, Omolase CO, Bekibele CO, et al. Awareness and Knowledge of Glaucoma among Workers in a Nigerian Tertiary Health Care Institution. Middle East African Journal of Ophthalmology 2013;20:167-163.
7. Padmajothi M.S, Chaitra M.C, Anneshi R.C. Awareness and Knowledge of Glaucoma Among Hospital Personnel in A Tertiary Care Center in Rural Karnataka. Tropical Journal of Ophthalmology and Otolaryngology 2019;4:130-126.
8. Alemu D.S, Gudeta A.D, Gebreselassie K.L. Awareness and Knowledge of Glaucoma and Associated Factors Among Adults: A Cross Sectional Study in Gondar Town, Northwest Ethiopia 2017;17:12-1.