

Knowledge, attitude, and practice (KAP) toward glaucoma of people over 40 years in Hue city

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Abstract

Introduction: Glaucoma is the second leading cause of blindness. 90% of patients do not know they have glaucoma in developing countries. One barrier preventing patients from accessing medical services for glaucoma is the limited knowledge, attitude, and practice about this disease. This requires further studies on knowledge, attitude, and practice about glaucoma, which serve as a basis solutions to improve service access. **Objectives:** 1) To describe the knowledge, attitude, the practice of glaucoma in persons over 40 years old in Hue city. 2) To find out some factors related to the knowledge, attitude, practice about glaucoma. **Methods:** A descriptive cross-sectional method was conducted on 2,025 people over 40 years old in 27 wards of Hue city. **Results:** Good knowledge is accounted for 2.5%, positive attitude is accounted for 3.7%, a good practice is accounted for 2.5%. There was an association with statistical significance ($p < 0.05$) between glaucoma practice and the following factors: occupation, education level, knowledge, and attitude about glaucoma. **Conclusion:** Most participants have poor knowledge, attitudes, and practices about glaucoma. Glaucoma practice is statistically significantly associated with occupation, education, knowledge, and attitude about glaucoma.

Keywords: glaucoma, people over 40 years old, knowledge, attitude, practice.

1. INTRODUCTION

Glaucoma is the second leading cause of blindness which is less common than cataracts in developing countries or diabetic retinopathy in developed countries. The functional and physical damage caused by glaucoma is irreversible. The Rapid Assessment of Preventable Blindness survey shows that Vietnam currently has about 24,800 blind people due to glaucoma [1]. Although blindness from glaucoma is preventable, it is worth notice that most glaucoma patients are undiagnosed. In developed countries, 50% of patients do not know glaucoma. This rate rises to over 90% in developing countries [2].

One barrier preventing patients from accessing medical services for glaucoma is limited knowledge, attitudes, and practices about the disease. Many studies show that there is a strong relationship between knowledge, the practice of glaucoma, and access to health services: Samuel's study indicated that 20.1% of people with good knowledge of glaucoma had a history of glaucoma screening while only 8.4% of those with no good knowledge of glaucoma were screened for glaucoma [3]. This requires further studies on knowledge, attitude and practice about glaucoma, which serve as solutions to improve service access. For these reasons, we performed the research: Knowledge,

attitude, and practice about glaucoma of people over 40 years old in Hue city.

Objective: 1) To describe the knowledge, attitude, the practice of glaucoma in persons over 40 years old in Hue city. 2) To identify some factors related to the knowledge, attitude, the practice of glaucoma.

2. PARTICIPANTS AND METHODS

2.1. Participants, study place and time

2.1.1. Participants

- People over 40 years old residents in Hue city

Sample selection criteria:

People over 40 years old were randomly selected according to the sample design process and determined sample selection.

- People consented to participate in the study.

Exclusion criteria:

- People who were not healthy or too old to participate in the interview

2.1.2. Place and time

- The study was conducted in 27 wards in Hue city

- Time: from January 2017 to July 2017

2.2. Study method

2.2.1. Study design

A descriptive cross-sectional method was applied.

2.2.2. Sample size and sampling method

$$\text{Sample size : } n = \frac{Z_{1-\alpha/2}^2 \frac{p(1-p)}{e^2}}{k}$$

- $Z_{1-\alpha/2}$: standard normal Z-value for significance level $\alpha = 0,05$ which is 1,96.

- p : percentage of people with good knowledge about glaucoma in the population over 40 : 5.3 % ($p = 0,053$) [4]. e : margin of error; $e = 1\%$; coefficient design $k = 1$.

The sample counted 1.928 people. We interviewed 2.025 people.

Sampling method: stratified sampling method.

Hue city has 27 wards; we randomly selected in each ward based on the list of individuals over 40 years old by systematic random method, according to the table of natural numbers based on sample distance k . The formula calculates the sample distance k : $k = N/n$. N : study population (number of people > 40 years old of the study ward), n : the number of people are studied in 1 ward. Choose the first random number which is less than k . The following number is equal to the previous number + k .

2.2.3. Variables measurement

People over 40 years old were randomly selected and invited to the health center to be interviewed. Collected data included the following content: characteristics of research subjects, knowledge, attitude, and practice about glaucoma.

The questionnaires have been developed based on the questionnaires of Obiekwe which have been adapted the content.

Methods of assessing knowledge, attitude, and practice:

- **Knowledge:** There were nine questions about knowledge with two options of knowing or not knowing, including three multiple-choice questions.

The maximum total score was 20.

Getting 17 points (75%) or more was considered to have good knowledge about glaucoma. If the score was less than 17 points, it was considered as having poor knowledge about glaucoma.

- **Attitude:** There were nine attitude statements; each statement had five answer options: strongly disagree, disagree, no idea, agree, strongly agree. Interviewees answered by choosing 1 of 5 options, each statement was scored following a 5-point Likert scale corresponding to each answer option. Correct statement (positive) was given a score last from 1 to 5 points (calculated from left to right). An incorrect statement (negative) provided a score from 5 to 1 point (calculated from left to right). The maximum score was 45 points (9 questions with 5 points).

Getting a total score of 34 points or more (75%) was considered a positive attitude about glaucoma. A total score of 33 points or less was regarded as a negative attitude about glaucoma.

- **Practice:** There were eight questions about the practice. Good practice gave 1 to 2 points depending on the level of importance; Incorrect practice gave 0 points.

A score of 7 (75%) or more was considered good glaucoma practice. A score of fewer than 7 points or less was considered bad glaucoma practice. For the respondents that have never had an eye exam was also considered bad practice.

2.3. Data Analysis

The chi-square test was performed to assess the relationships between the various socio-demographic variables as independent variables, and glaucoma KAP as dependent variables. Multivariate logistic regression was utilised to determine the predictors of KAP. Significance was set at $p \leq 0.05$ for all tests. IBM SPSS software Version 21.0 was used.

3. RESULT

3.1. General characteristics of research subjects

Table 1. General characteristics of research subjects

Characteristic		n	Percentage (%)
Gender	Male	706	34.9
	Female	1319	65.1
Age	41 – 50	262	12.9
	51 – 60	575	28.4
	61 – 70	660	32.6
	> 70	529	26.1
	Mean: 63.3 ± 10.9		

Occupation	Officials, pensioners	415	20.5
	Workers	74	3.7
	Sellers	365	18.0
	Housewives	330	16.3
	Other jobs	841	41.5
Education level	Illiteracy	143	7.1
	Primary school	586	28.9
	Junior high school	540	26.7
	High school	563	27.8
	University	186	9.2
	Postgraduate	7	0.3
Health Insurance	Yes	1905	94.1
	No	120	5.9

Females accounted for the majority: 65.1%. The majority age belonged to the 61-70 age group, accounting for 32.6%. Occupation: 20.5% are officials, pensioners, 41.5% from other professions. The education level was mainly at primary school, junior high school, and high school (28.9%, 26.7% and 27.8% respectively). The majority of participants had health insurance, accounting for 94.1%.

3.2. Knowledge about glaucoma

Table 2. Content of knowledge toward glaucoma

Content of knowledge		n	Percentage (%)
Know about glaucoma		508	25.1
Glaucoma may or may not have symptoms		51	2.5
Describe symptoms	Eye pain	280	13.8
	Red eye	191	9.4
	Headache	226	11.2
	Low vision	277	13.7
	Narrow view	92	4.5
	Dispersion halo	86	4.2
	Fear of light, tears	129	6.4
	Nausea, vomiting	60	3.0
Glaucoma is often associated with intraocular pressure		49	2.4
Visual loss in glaucoma is irreversible		47	2.3
Describe the risk factors	Diabetes	152	7.5
	Hypertension	123	6.1
	History of using corticoid	49	2.4
	Family history of glaucoma	65	3.2
	Over 40 years old	114	5.6
	Eye trauma, eye surgery	67	3.3
Know that glaucoma can cause Blindness		392	19.4
Know that glaucoma Is Treatable		347	17.1

Know that glaucoma is treatable with some methods	Medication	172	8.5
	Laser	58	2.9
	Surgery	222	11.0

There were 25.1% of people who know about glaucoma. Among the symptoms of glaucoma, studied subjects were more aware of some symptoms such as eye pain: 13.8%, blurred vision: 13.7%. Regarding risk factors, only 7.5% and 6.1% of participants knew about the risk factors of diabetes and hypertension, respectively. Among the participants, 2.4% knew that glaucoma is often related to intraocular pressure, 2.3% knew that visual loss in glaucoma is irreversible, while 17.1% of interviewees knew that glaucoma can be treated, only 11.0% knew about surgical method, that of laser method was 2.9%.

3.3. Attitude about glaucoma

Table 3. Attitude about glaucoma

Content of attitude	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly disagree (%)
Glaucoma is a dangerous disease	0.4	4.1	38.7	54.3	2.5
There is a need to measure intraocular pressure for people over 40	0.3	2.6	50.4	45.5	1.2
There is no need to screen glaucoma for people who have family history of glaucoma	1.5	35.2	43.3	19.7	0.3
There is no need to have eye exam if there are not abnormal signs	1.1	34.3	47.9	15.6	1.2
Treatment is only for severe glaucoma stage	2.0	51.8	25.1	10.5	0.7
Patients need to adhere to the follow-up examination when having glaucoma	0.1	2.6	30.9	63.6	2.9
Glaucoma patients can buy drugs to treat by themselves	3.6	42.3	42.4	11.4	0.3
The disease needs to be monitored even though there are no painful symptoms	0.7	14.5	60.0	23.9	1.0
Glaucoma patients who already have surgery do not need to follow-up	2.7	56.4	32.8	7.4	0.6

There were 54.3% of people who agreed that glaucoma is a dangerous eye disease, 50.4% of participants had no opinion about having to measure intraocular pressure for people over 40 years old. 35.2% of people disagreed with the statement that there is no need to screen glaucoma if there is a family history of glaucoma. 47.9% of people had no opinion about the need for periodic eye exams. 63.6% of people agreed that glaucoma patients need to follow up. 56.4% of people disagreed with the idea that the patients who have been operated on need not follow up.

3.4. Practice about glaucoma

Table 4. Practice about glaucoma

Content of practice	n	Percentage (%)
Learn about glaucoma	567	27.9
The last time you had an eye exam was within 1 year	607	30.0
Choosing to visit a medical facility when having eye diseases	1211	59.8
Using eye drops at the right position	1175	5.8
Using eye drops at the correct dose	1270	62.7
Applying eye drops exactly as indicated	403	19.9
Punctually follow-up	1476	72.9
Accept surgery if consulted	1251	61.8

There were 27.9% of people who learned about glaucoma, 30.0% of participants had their last eye exam within 1 year. Just over half of the surveyed subjects chose to go to a health facility when having eye disease, accounting for 59.8%. The percentage of people who knew the correct position of dropping eye drop was quite low with 5.8%; Although 72.9% of participants would return to see the doctor on time, just 61.8% would accept surgery if it were the only treatment.

3.5. Knowledge, attitude, and practice about glaucoma

Table 5. Knowledge, attitude and practice toward glaucoma

Evaluation		n	Percentage (%)
Knowledge	Good	50	2.5
	Poor	1975	97.5
Attitude	Positive	74	3.7
	Negative	1951	96.3
Practice	Good	50	2.5
	Poor	1975	97.5
N		2025	100.0

The assessment of knowledge, attitude and practice about glaucoma showed that the percentage of people who had good knowledge and good practice were very low with only 2.5%. The rate of negative attitude accounted for 96.3%.

3.6. The association between knowledge about glaucoma and related factors

Table 6. The association between knowledge about glaucoma and related factors

Factors		Knowledge		Poor		p
		n	%	n	%	
Gender	Male	24	3.4	682	96.6	<0.05
	Female	26	2.0	1293	98.0	
Age	41 – 50	3	1.1	259	98.9	>0.05
	51 - 60	16	2.8	558	97.2	
	61 - 70	20	3.0	640	97.0	
	> 70	11	2.1	518	97.9	
Occupation	Officials, pensioners	28	6.7	387	93.3	<0.05
	Workers	2	2.7	72	97.3	
	Sellers	1	0.3	364	99.7	
	Housewives	5	1.5	325	98.5	
	Other jobs	14	1.7	827	98.3	
Education level	Illiteracy	1	0.7	142	99.3	<0.05
	Primary school	4	0.7	582	99.3	
	Junior high school	2	0.4	538	99.6	
	High school	13	2.3	550	97.7	
	University	29	15.6	157	84.4	
	Postgraduate	1	14.3	6	85.7	
Family history of glaucoma	Family members have glaucoma	4	10.5	34	89.5	<0.05
	There is no family member has glaucoma	46	2.3	1941	97.7	
N		50	2.5	1975	97.5	

There was a statistically significant association between knowledge about glaucoma and gender, job, education and family history of glaucoma ($p < 0.05$)

3.7. The association between attitude about glaucoma and factors

Table 7. The association between attitude about glaucoma and factors

Factors		Attitude		Positive		Negative		p
		n	%	n	%	n	%	
Gender	Male	33	1.6	673	33.2			>0.05
	Female	41	2.0	1278	63.1			
Age	41 – 50	5	0.2	257	12.7			>0.05
	51 - 60	30	1.5	544	26.9			
	61 - 70	23	1.1	637	31.5			
	> 70	16	0.8	513	25.5			
Occupation	Officials, pensioners	38	1.9	377	18.4			-
	Workers	0	0.0	74	3.7			
	Sellers	3	0.1	362	17.9			
	Housewives	8	0.4	322	15.9			
	Other jobs	25	1.5	816	40.3			
Education level	Illiteracy	4	0.2	139	4.9			<0.05
	Primary school	4	0.2	582	28.7			
	Junior high school	5	0.2	535	26.4			
	High school	28	1.4	535	26.4			
	University	31	1.5	155	7.7			
	Postgraduate	2	0.1	5	0.2			
Family history of glaucoma	Family members have glaucoma	66	3.3	30	1.5			<0.05
	There is no family member has glaucoma	8	0.4	1921	94.9			
Knowledge about glaucoma	Good	42	21	8	0.4			<0.05
	Poor	32	1.6	1943	9.6			

There was a statistically significant association between attitude about glaucoma with education level, family history of glaucoma and knowledge about glaucoma ($p < 0.05$).

3.8. The association between practice about glaucoma and factors

Table 8. The association between practice about glaucoma and factors

Factors		Practice		Good		Poor		p
		n	%	n	%	n	%	
Gender	Male	18	2.5	688	97.5			>0.05
	Female	32	2.4	1287	97.6			
Age	41 – 50	4	1.5	258	98.5			>0.05
	51 - 60	14	2.4	560	97.6			
	61 - 70	23	3.5	637	96.5			
	> 70	9	1.7	522	98.3			

Job	Officials, pensioners	26	6.3	389	93.7	<0.05
	Workers	1	1.4	73	98.6	
	Sellers	2	0.5	363	99.5	
	Housewives	4	1.2	326	98.8	
	Other jobs	17	2.0	824	98.0	
Education level	Illiteracy	1	0.7	142	99.3	<0.05
	Primary school	6	1.0	580	99.0	
	Junior high school	4	0.7	536	99.3	
	High school	12	2.1	551	97.9	
	University	26	14.0	160	86.0	
	Postgraduate	1	14.3	6	85.7	
Family history of glaucoma	Family members has glaucoma	3	7.9	35	92.1	>0.05
	There is no family member has glaucoma	47	2.4	1940	97.6	
Knowledge about glaucoma	Good	18	0.9	1957	99.1	<0.05
	Poor	32	64.0	18	36.0	
Attitude toward glaucoma	Positive	21	1.1	1930	98.9	<0.05
	Negative	29	39.2	45	60.8	
N		50	2.5	1975	97.5	

There was a statistically significant association between practice about glaucoma and some factors such as job, education level, knowledge, and attitude toward glaucoma ($p < 0.05$).

4. DISCUSSION

We found that the rate of people knowing about glaucoma was relatively low: only 25.1% of the interviewees knew about glaucoma. Some participants even confused glaucoma with trachoma. Among the symptoms of glaucoma, surveyed subjects knew more about some symptoms such as “eye pain”: 13.8%, “blurred vision”: 13.7%, other symptoms of glaucoma were rarely known of, such as “narrow vision”: 4.5%, “halo dispersion”: 4.2%. Although glaucoma often has high intraocular pressure, only 2.4% were aware of this symptom. Regarding risk factors, only 7.5% and 65% of participants knew that glaucoma risk factors were diabetes and hypertension, respectively. Although corticosteroid use is also one of the main risk factors of glaucoma, only 2.4% of surveyed subjects knew this.

The inevitable consequence of untreated glaucoma is blindness, in the earlier stages, glaucoma causes low vision, and this condition is irreversible. Notably, there were only 2.3% knew that vision loss in glaucoma can not be reversed.

17.1% of participants thought that glaucoma can be treated, but there were only 11.0% knew that glaucoma can be treated by surgical methods, little knew about laser method (2.9%). Concerning the overall assessment of knowledge about glaucoma, 97.5% of surveyed subjects did not have good knowledge about glaucoma. Only 2.5% had good knowledge about the disease.

Other studies also showed similar results; for example Athyamangalam's study showed that only 8.7% of people had good knowledge about glaucoma, 4.0% had a fair knowledge, and 4.2% had poor knowledge. Factors associated with knowledge about glaucoma were education level, female gender, religion and family history of glaucoma [6]. Bizuneh reported in his study that 32.3% heard of glaucoma, 24.4% answered that they knew about glaucoma. There was an association between knowledge about glaucoma and education level [7]. Domestic research such as Ha Trung Kien's study on glaucoma patients in Thai Binh for 3 years showed that: the percentage of patients who did not know anything about their

disease was quite high (92%) [8].

Assessment of attitudes about glaucoma showed that nearly 50% of the people did not know that glaucoma is a dangerous eye disease, only 54.3% of people agreed with the idea that glaucoma is a dangerous eye disease. Glaucoma usually occurs in people over 40 years old and intraocular pressure measurement is considered an essential method to detect glaucoma. It is noticeable that in our study, there were 50.4% of people had no opinion on the need to measure intraocular pressure for people over 40. Even in the situation of having a family history of glaucoma, there were 43.3% of people have no opinion about the need for screening if there was a family history of glaucoma. Although the mean age group in our study was over 60, which was necessary to have periodic eye exams, up to 47.9% of people had no opinion about the need for periodic eye exams

Regarding attitude, we found that: 96.3% of people had a negative attitude about glaucoma. The factors associated with an attitude about glaucoma were age, job, education, and knowledge about glaucoma. The rate of positive attitude was lower than some other studies such as Ogbonnaya's study, which showed that 61.2% of subjects had a positive attitude about glaucoma screening, 38.8% of people thought that this was unnecessary [9]. In general, the results of our attitude assessment were similar to those of domestic authors like the study of Dao Thi Lam Huong: the rate of positive attitudes of people did not exceed 10% [10].

When evaluating the practice, we found that up to 97.5% of people did not have good practice related to glaucoma. Specifically, 30.0% of participants had an eye exam within a year. When suffering from eye diseases, many people often self-medicated, applied traditional methods, or even received no treatment. Concerning the treatment content, only 62.7% of people chose the right dose of drops. In the case of

their disease requiring surgery, amount of people still found ways to delay; only 61.8% of people agreed to have surgery if they were consulted. This result was similar to the study of Ichhpujani Paurul: if were diagnosed with glaucoma, 77.3% answered that they should go for a regular check-up and follow-up; however, only 42% of people had an eye exam within a year [11].

In our study, the rate of positive attitude was not significantly higher than good knowledge and good practice (3.7% versus 2.5%). This result was similar to some abroad studies, which indicated that although people had a good attitude and knew the importance of screening, they still did not have a good practice. According to Ogbonnaya, although 62.1% had a positive attitude about glaucoma, only 5% of them had a glaucoma screening [9]; or according to Parveen Rewri, 3% of the subjects thought that screening can prevent glaucoma. Still, only 1.3% of surveyed participants were screened within the previous one year [12]. A domestic study by Pham Thi Thu Ha on glaucoma treatment at the Central Eye Hospital showed that the main cause of disease progression after treatment was not going to the clinic (79.9%) [13]. In our study, there was an association between age, occupation, education level, family history of glaucoma, knowledge, attitude, and practice about glaucoma.

5. CONCLUSION

- Most participants did not have good knowledge, positive attitude, and good practice about glaucoma
- + The rate of good knowledge was 2.5%.
- + The rate of positive attitude was 3.7%.
- + The rate of good practice was 2.5%
- There was a statistically significant association between practice about glaucoma and the factors of job, education level, knowledge and attitude about glaucoma ($p < 0.05$).

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