DOI: 10.58490/ctump.2025i9TA.2945

KNOWLEDGE AND PREVENTIVE BEHAVIORS REGARDING CATARACT AMONG ADULTS AGED 40 AND ABOVE

Quach Thanh Sang [1], Cao Thi Huynh Hoa [2], Lam Thanh Hiep [3], Nguyen Ngoc Huyen[4], Nguyen Thi Kieu Lan [4], Nguyen Thi Hong Tuyen [4*]

1. Rach Gia city Medical center, Kien Giang province

2. Can Tho City General Hospital, Can Tho City

3. Toan Y Cosmetic Dentistry Company Limited, Dong Thap province

4. Can Tho University of Medicine and Pharmacy

**Corresponding author: nthtuyen@ctump.edu.vn*

Received: 20/6/2025

Reviewed: 26/5/2025

Accepted: 25/6/2025

ABSTRACT

Background: *Cataract is a very common eye disease among people over 50 years old. Knowledge about cataract is considered an important factor in disease prevention practices, including the use of eye care services.* ***Objective:*** *To describe the prevalence of knowledge and preventive behaviors against cataract, and associated factors, among the community in Rach Gia city, Kien Giang province.* ***Materials and method:*** *A cross-sectional study was conducted with 377 participants aged 40 and above.* ***Results:*** *The study population had an average age of 60.3 years, with the youngest participant being 41 years old and the oldest being 92 years old. More than half, 226 (59.9%), of the participants were female. The rates of good knowledge and prevention behaviors were low, at 29.2% and 29.4% respectively. The top 5 communication channels that people easily accessed were: television, healthcare workers, websites/social media, family and radio. Three factors associated with achieving good knowledge about cataract prevention were: age <60 years, higher educational level, and not a poor ($p<0.05$). Four factors associated with achieving good prevention behaviors were: age <60 years, higher educational level, history of eye disease, and having good knowledge ($p<0.05$).* ***Conclusion:*** *Improving community-based health communication to enhance knowledge and self-management of cataract prevention is recommended.*

Keywords: *Cataract, Adults aged 40 and above, cataract KAP, Rach Gia city.*

I. INTRODUCTION

Cataract is a clouding of the lens that impairs the passage of light, leading to vision impairment and blindness. The most common cause is aging. Other risk factors include trauma, smoking, alcohol use, X-ray exposure, diabetes, and a history of eye disease [1]. While cataracts are a treatable condition, they remain one of the leading causes of preventable vision loss worldwide [2]. In Vietnam, untreated cataracts are the primary cause of avoidable blindness and visual impairment [3]. The overall prevalence of cataracts in Vietnam is 9.34 per 10,000 population [4].

Globally, only 36% of people with refractive error and 17% of people with cataracts receive appropriate interventions. Vision loss imposes a substantial financial burden, with an estimated annual global productivity cost of $411 billion. Vision impairment and blindness can affect people of all ages, but the majority of those affected are over 50 years old [5], [6].

According to the Rach Gia City Medical Center in Kien Giang province, the local population has a low rate of cataract screening, often only seeking care when the condition has progressed. Furthermore, a preliminary survey found that only 5 out of 10 people aged

40 and above had correct knowledge about cataracts, and only 3 out of 10 had proper disease prevention practices. This low awareness and prevention rate underscores the need to develop effective health communication and education strategies to reduce the burden of blindness and vision impairment due to cataracts.

II. MATERIALS AND METHODS

2.1. Materials

Adults aged 40 and above who voluntarily participated in the study in Rach Gia city, Kien Giang province, and had no communication barriers.

2.2. Methods

- **Study design:** A cross-sectional descriptive study, conducted from May to June 2024.
- **Sample size:** Estimated using the formula for estimating sample size for a proportion

$$N = \frac{z^2_{\left(1-\frac{\alpha}{2}\right)} p(1-p)}{d^2}$$

With p = 0.43 (estimated proportion of adults aged 40 and above with good preventive behaviors for cataract, based on a previous study in Ho Chi Minh City, Vietnam [7]), accepting a 5% margin of error, and a desired confidence level of 95%, the total number of participants surveyed was 377.

- **Sampling method:** Participants were selected using a systematic random sampling technique. The list of residents aged 40 and above was obtained from the population records of the People's Committee of Rach Gia City, Kien Giang Province, which included approximately 91,018 individuals in this age group. The cluster interval was calculated by dividing the total number of residents (91,018) by the required sample size (377), yielding approximately 241. A random starting number, x = 198 (within the range 1 to 421), was then selected. The first individual was the person at position 198 on the list, with subsequent individuals chosen at positions x + k, x + 2k, x + 3k, and so forth until reaching the sample size of 377. If a selected individual declined to participate, the next adjacent person on the list was invited as a replacement.
- **Data collection content and methods:** The interviewed participants were clearly informed about the purpose of the study and agreed to participate. The face-to-face interview consisted of 3 parts:

(1) Demographic information: age, gender, education, occupation, economic status.

(2) Knowledge about cataract prevention, including: symptoms, complications, consequences, and risk factors of the disease. Participants were considered to have adequate knowledge if they correctly answered 50% or more of the questions.

(3) Cataract preventive behaviors, including: modifiable risk factors (exposure to ultraviolet radiation, use of alcohol, avoiding tobacco and tobacco products, and systemic corticosteroids, and poor blood glucose control [8]), screening for the disease, and dietary habits. Participants were considered to have adequate preventive behaviors if they reported practicing at least 50% of the preventive behaviors asked about in the interview.

The interview duration was approximately 20-30 minutes per participant.

- **Error control methods:**

To minimize errors, we adhere to rigorous sampling and exclusion methods during

data collection, ensuring that all participants provide complete and necessary information. The data collectors are well-trained and choose appropriate times to gather information, which helps maintain the accuracy and completeness of the data. After each interview, the data collector verifies the accuracy of the information collected.

Data entry personnel check the frequency of data to validate it. If discrepancies are found, they cross-check the original survey forms to ensure the information is accurate.

- **Statistical analysis**

The data was analyzed using Stata 17.0 software. Descriptive statistics were used to present the general information, knowledge, and preventive behaviors related to cataracts, reported as frequencies and percentages.

Analytical statistics were used to assess the relationships between various factors and the participants' knowledge and preventive behaviors. The results were reported as odds ratios (OR) with 95% confidence intervals, and a p-value <0.05 was considered statistically significant.

- **Research ethics:** The contents of this manuscript have neither been presented nor published elsewhere, in part or entirety, and are also not under consideration by any other journal at this time. Prior to participating in the study, all individuals provided informed consent. Additionally, the study design was ethically approved by the Science and Technology Council of Tra Vinh University (Approval No.126/GCT-HĐĐĐ, April 18, 2024). No conflicts of interest are present, and all authors have thoroughly reviewed and approved the final version of this manuscript.

III. RESULTS

3.1. Knowledge and preventive behaviors regarding cataract

The survey was conducted with 377 accepted participants. The mean age of the participants was 60.3 years. Females accounted for 59.9% of the sample. The largest proportion, 41.1%, had a primary education level. 13% of the participants were from poor households.

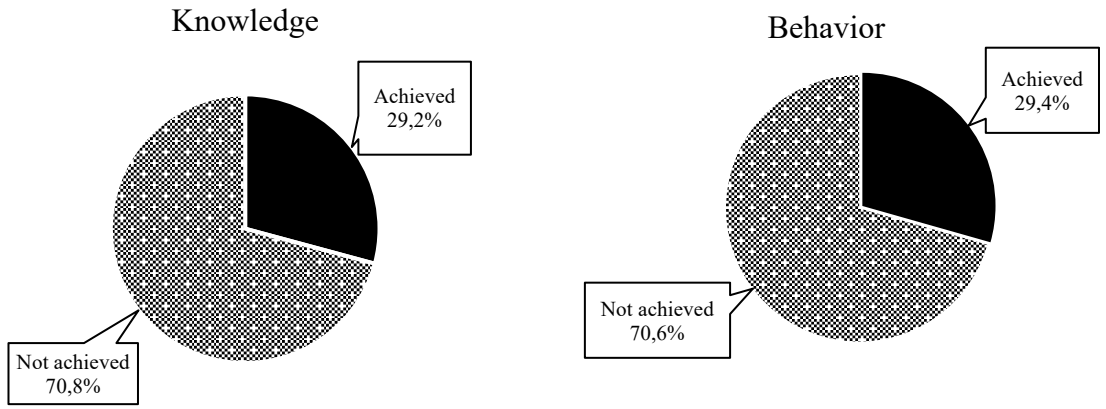

Figure 1. Knowledge and preventive behaviors regarding cataract

The percentage of participants with achieved knowledge and achieved preventive behaviors regarding cataract was 29.2% and 29.4% respectively (Figure 1).

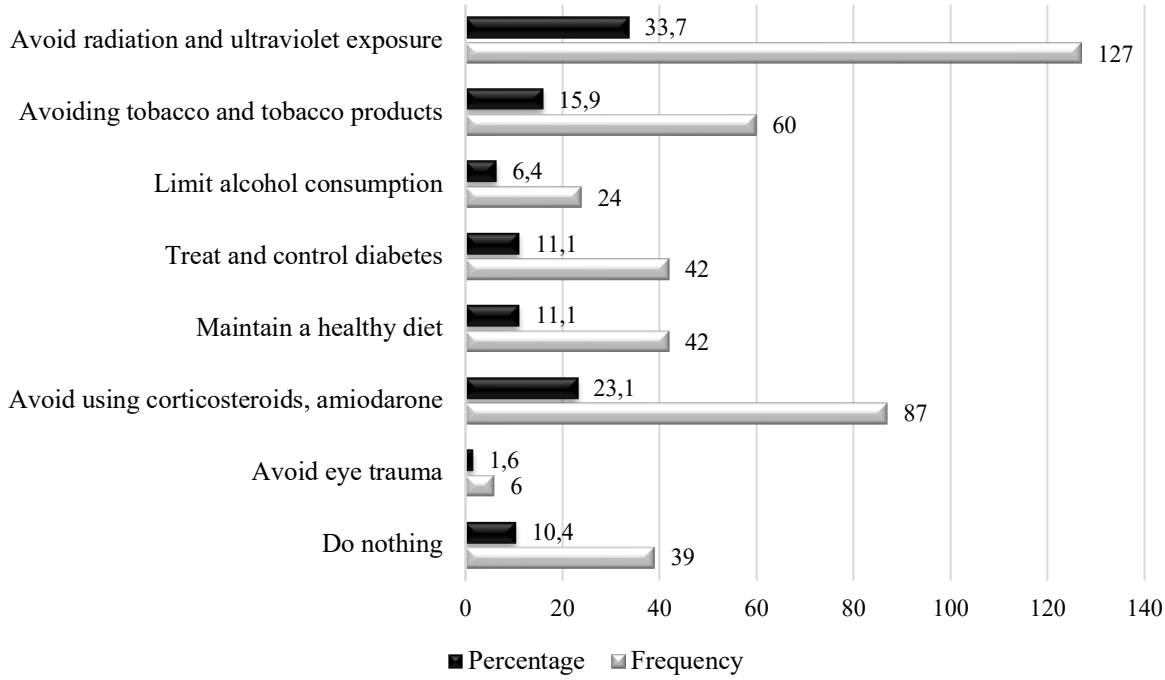

Figure 2. Preventive behaviors against modifiable risk factors for cataracts

Regarding preventive behaviors against modifiable risk factors for cataracts, the highest number is 127 people who reported avoiding radiation and ultraviolet rays. This is followed by 87 responses indicating avoidance of corticosteroids and amiodarone medications, and 60 responses for avoiding tobacco and tobacco products. The remaining factors ranged from 6 to 42 responses. Additionally, 39 people did not implement any beneficial behaviors to protect their eyes (Figure 2).

3.2. Factors associated with knowledge and preventive behaviors regarding cataract

Table 1. Factors associated with knowledge of cataract prevention

Value		Knowledge		OR 95% CI	p
		Achieved, n (%)	Not, n (%)		
Sex	Male	37 (24.5)	114 (75.5)	1	0.104
	Female	73 (32.2)	153 (67.7)	1.5 (0.92-2.3)	
Age group, years	40 - 59	61 (35.3)	112 (64.7)	1	0.017
	60 and above	49 (24.0)	155 (76.0)	0.58 (0.37-0.91)	
Education level	Primary, Secondary school	38 (20.5)	147 (79.5)	1	< 0.001
	High school	72 (37.5)	120 (62.5)	2.3 (1.5 – 3.7)	
Eye disease history	No	74 (31.4)	162 (68.6)	1	0.229
	Yes	36 (25.3)	105 (74.5)	0.75 (0.47 – 1.2)	
Economic status	Poor	6 (12.2)	43 (87.8)	1	0.005
	Non-poor	104 (31.7)	224 (68.3)	3.3 (1.4 – 8.1)	

n: frequencies, (%): row %, OR: odd ratio, CI: confidence interval

According to the statistics, individuals aged 60 and above had a 42% lower rate of achieving overall knowledge compared to those aged 40-59 years (OR = 0.58; 95% CI: 0.37-0.91; p = 0.017). Those with a high school education or higher had a 2.3 times higher

rate of achieving knowledge compared to those with a lower education level (OR = 2.3; 95% CI: 1.5 - 3.7; p < 0.001). Besides, retired individuals and those with other occupations had a 4.2 times higher rate of achieving knowledge compared to those in business/trade occupations (OR = 4.2; 95% CI: 1.7 - 10.1; p = 0.001). Non-poor individuals had a 3.3 times higher rate of achieving knowledge compared to those from poor households (OR = 3.3; 95% CI: 1.4 - 8.1; p = 0.005). Individuals are classified as belonging to poor or near-poor households if they possess a poverty or near-poor certificate issued by the local People's Committee, as determined through interviews. Gender and a history of eye disease were not associated with the rate of achieving knowledge (p > 0.05) (Table 1).

Table 2. Factors associated with preventive behaviors regarding cataract

Value		Preventive behaviors		OR 95% CI	p-value
		Achieved, n (%)	Not, n (%)		
Sex	Male	47 (31.1)	104 (68,9)	1	0.558
	Female	64 (28.3)	162 (71.7)	0.87 (0.56 – 1.4)	
Age group, years	40 - 59	76 (43.9)	97 (56.1)	1	< 0.001
	60 and above	35 (17.2)	169 (82.8)	0.26 (0.17 – 0.42)	
Education level	Under	35 (18.9)	150 (81.1)	1	< 0.001
	High school	76 (39.6)	116 (60.4)	2.8 (1.8 – 4.5)	
Eye disease history	No	87 (36.9)	149 (63.1)	1	< 0.001
	Yes	24 (17.0)	117 (83.0)	0.35 (0.21 – 0.59)	
Economic status	Poor	12 (24.5)	37 (75.5)	1	0.415
	Non-poor	99 (30.2)	229 (69.8)	1.3 (0.67 – 2.7)	
Knowledge	Not achieved	67 (25.1)	200 (74.1)	1	0.006
	Achieved	44 (40.0)	66 (60.0)	2.0 (1.2 – 3.2)	

n: frequencies, (%): row %, OR: odd ratio, CI: confidence interval.

Factors associated with cataract prevention behaviors were also identified among individuals over 40 years of age. Individuals aged 60 and above had a 74% lower rate of achieving preventive behaviors compared to those aged 40-59 years (OR = 0.26; 95% CI: 0.17 - 0.42; p < 0.001). Those with a high school education or higher had a 2.8 times higher rate of achieving preventive behaviors compared to those with a lower education level (OR = 2.8; 95% CI: 1.8 - 4.5; p < 0.001). According to the statistics, retired individuals and those with other occupations had a 2.2 times higher rate of achieving preventive behaviors compared to those in business/trade occupations (OR = 2.2; 95% CI: 1.3 - 3.8; p = 0.006). Those with a history of eye disease had a 65% lower rate of achieving preventive behaviors compared to those without a history (OR = 0.35; 95% CI: 0.21 - 0.59; p < 0.001). Individuals with achieved knowledge had a 2 times higher rate of achieving preventive behaviors compared to those without achieved knowledge (OR = 2.0; 95% CI: 1.2 - 3.2; p = 0.004). Additionally, gender and economic status were not associated with the rate of achieving preventive behaviors among the participants (p > 0.05) (Table 2).

IV. DISCUSSION

The general characteristics of the subjects in this study are consistent with the epidemiological features of the disease and are similar to other studies conducted in Vietnam [9], [10], and worldwide [8]. With an aging population in the future, the scale of patients with cataracts and the number of blindness cases due to cataracts will continue to expand [11]. Therefore, the healthcare sector should organize various health education programs focused

on regular eye examinations in the community. Elderly individuals often face difficulties in accessing healthcare services [12] or lack knowledge when using medications [13] in general and eye medications in particular. They tend to use certain anti-inflammatory eye drops containing corticosteroids for an extended period without being aware of this.

This study found that the overall rate of cataract prevention knowledge was quite low, with only 29.2% of the study participants having good knowledge about cataracts. This finding is lower compared to studies conducted in China (70.9%) [14] and Iran (74%) [15]. However, it is higher than studies in South India (18%) [16]. These differences may be explained by the varying cutoff points used to measure the overall knowledge score, as well as differences in the target populations and research contexts.

Older adults had a lower rate of achieving good knowledge and prevention behaviors compared to younger individuals, which is similar to the findings of the study by Anteneh Fikrie in southern Ethiopia [15], but contrary to the study by Kang Du on adults aged 50 and above in rural western China [17]. On the other hand, the study results showed that a prior history of eye disease was not related to better understanding of prevention. This contrasts with a study conducted in Gondar town [18]. This may suggest that individuals who had received prior eye examinations did not receive comprehensive information or may have forgotten the guidance provided by healthcare professionals, clinic postings, or other patients.

Participants with an educational level of high school or above had better knowledge and prevention behaviors compared to those with lower education levels. This finding is consistent with studies conducted in Canada [19], Gondar town [18], and Yirgalem town [15]. This may be because individuals with higher education tend to read and explore more, and can also better comprehend information related to cataracts.

Older people face barriers in accessing information [12], with their main source being formal channels like healthcare workers. However, this information is not consistently maintained, so they tend to forget over time. Measures are needed to better support older adults in accessing information about cataracts.

V. CONCLUSION

The rates of good knowledge and prevention behaviors were low (29.2% and 29.4%, respectively). Factors associated with achieving good knowledge about cataract prevention were: age <60 years, higher educational level, and not being from a poor household. Factors associated with achieving good prevention behaviors were: age <60 years, higher educational level, history of eye disease, and having good knowledge ($p<0.05$). To improve cataract prevention behavior for individuals over 40, targeted educational programs should be implemented to raise awareness about risks and prevention, especially for those with a history of eye disease. Additionally, enhancing access to eye care services for poorer households is essential.

REFERENCES

1. Vietnam Ministry of Health. Decision No. 7328/QD-BYT promulgating quality standard guidelines on cataract diagnosis and treatment. 2018.
2. Mencucci R, Stefanini S, Favuzza E, Cennamo M, De Vitto C, Mossello E. Beyond vision:Cataract and health status in old age, a narrative review. *Frontiers in medicine*. 2023. 10, 1110383. doi:10.3389/fmed.2023.1110383
3. IAPB. Vietnam: Cataract blindness still a major health problem.

4. Tariq MA, Uddin QS, Ahmed B, Sheikh S, Ali U, Mohiuddin A. Prevalence of Pediatric Cataract in Asia: A Systematic Review and Meta-Analysis. *Journal of current ophthalmology*. 2022. 34(2),148-159. doi:10.4103/joco.joco_339_21
5. GBD 2019 Blindness and Vision Impairment Collaborators. Causes of blindness and vision impairment in 2020 and trends over 30 years, and prevalence of avoidable blindness in relation to VISION 2020: the Right to Sight: an analysis for the Global Burden of Disease Study. *Lancet Glob Health*. 2021. 9(2), e144-e160. doi:10.1016/s2214-109x(20)30489-7
6. Burton MJ, Ramke J, Marques AP, *et al*. The Lancet Global Health Commission on Global Eye Health: vision beyond 2020. *Lancet Glob Health*. 2021. 9(4), e489-e551. doi:10.1016/s2214-109x(20)30488-5.
7. Hoang Van Duc. Knowledge, practices, and some factors related to cataract prevention practices among people over 50 years old in Ward 11, Go Vap District, Ho Chi Minh City in 2022. Hanoi University of Public Health. 2022.
8. Ang MJ, Afshari NA. Cataract and systemic disease: A review. *Clinical & experimental ophthalmology*. 2021. 49(2),118-127. doi:10.1111/ceo.13892
9. Nguyen TT, Le CV, Ho TB. Quality of life and related factors of cataract patients at District 8 hospital in Ho Chi Minh City. *Vietnam Medical Journal*. 2022. 512(2).
10. Yen NTT. Survey on the results of cataract treatment with phaco surgery, with intraocular lens placement at Tra Vinh University Hospital. *Tra Vinh University journal of science*. 2023. 13(5).
11. Pesudovs K, Lansingh V, Kempen J, *et al*. Global estimates on the number of people blind or visually impaired by cataract: A meta-analysis from 2000 to 2020. 2023.
12. Money A, Hall A, Harris D, Eost-Telling C, McDermott J, Todd C. Barriers to and Facilitators of Older People's Engagement With Web-Based Services: Qualitative Study of Adults Aged >75 Years. *JMIR aging*. 2024. 7, e46522. doi:10.2196/46522.
13. Tran V, Dorofeeva V, Loskutova E, *et al*. Elderly consumers' satisfaction with the quality of community pharmacy services in Ho Chi Minh City, Vietnam: a Q-methodology study. *Pharmacia*. 2020. 67, 303-309. doi:10.3897/pharmacia.67.e56511
14. Qiu C, Feng X, Zeng J, Luo H, Lai Z. Discharge teaching, readiness for discharge, and post-discharge outcomes in cataract patients treated with day surgery: A cross-sectional study. *Indian journal of ophthalmology*. 2019. 67(5), 612-617. doi:10.4103/ijo.IJO_1116_18.
15. Fikrie A, Mariam YG, Amaje E, Bekele H. Knowledge about cataract and associated factors among adults in Yirgalem town, Sidama National Regional State, southern Ethiopia, 2020: a community based cross sectional study design. *BMC ophthalmology*. 2021. 21(1), 79. doi:10.1186/s12886-021-01844-3.
16. Dandona R, Dandona L, John RK, McCarty CA, Rao GN. Awareness of eye diseases in an urban population in southern India. *Bulletin of the World Health Organization*. 2001. 79(2), 96-102.
17. Du K, Guan H, Zhang Y, Ding Y, Wang D. Knowledge of cataracts and eye care utilization among adults aged 50 and above in rural Western China. *Frontiers in public health*. 2022. 10, 1034314. doi:10.3389/fpubh.2022.1034314.
18. Alimaw YA, Hussen MS, Tefera TK, Yibekal BT. Knowledge about cataract and associated factors among adults in Gondar town, northwest Ethiopia. *PloS one*. 2019. 14(4), e0215809. doi:10.1371/journal.pone.0215809.
19. Noertjojo K, Maberley D, Bassett K, Courtright P. Awareness of eye diseases and risk factors: identifying needs for health education and promotion in Canada. *Canadian journal of ophthalmology Journal canadien d'ophtalmologie*. 2006. 41(5),617-23. doi:10.1016/s0008-4182(06)80035-9.