

ORIGINAL ARTICLES

Current status of pterygium, knowledge, attitude, practice and some related factors among the elderly in 03 communes of Khoai Chau district, Hung Yen Province in 2021

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ABSTRACT

Objective: To investigate the current status of pterygium, the relationship between the disease and risk factors from external circumstances and personal factors.

Methods: This was a cross-sectional study, conducted in 2021 on elderly people in three rural communes of Khoai Chau district, Hung Yen province.

Results: The rate of pterygium in this study was 33.7%, and the prevalence in women was higher than in men. The rates of achieving appropriate knowledge, attitude and practice scores were 25.4%, 87.5% and 29.2%, respectively. People who were regularly exposed to UV rays from the sun had a 2.3 times higher risk of developing pterygium than those with little exposure (OR = 2.3; 95% CI 1.2 – 4.3). People with frequent exposure to bright light sources were 4.5 times more likely to have pterygium than those with little exposure (OR = 4.5; 95% CI 1.7 -11.8).

Conclusion: people, especially the elderly and women need to limit their exposure to risk factors from the outside environment that can cause pterygium by wearing sunglasses and safety glasses. Use artificial tears to clean your eyes regularly. Having periodic eye exams for early detection and timely treatment of pterygium was crucial.

Keywords: pterygium; Knowledge, Attitude, Practice; elderly; Hung Yen.

INTRODUCTION

In the world, pterygium is distributed mainly in the equatorial region +/- 30 degrees with an incidence of about 0.3% to 37.5% depending on population size and geographical conditions (1). The prevalence of pterygium was 3% of the Australian population, 23% of the African-American population, 15% in Tibet, 18% in Inner Mongolia and 30% in Japan (2). Vietnam is located in the sub-equatorial region, with a lot of sunlight and smog. In rural areas, people still burn straw,

firewood, and coal for domestic use, so the risk is high. A study on the population aged 50 and over in 16 provinces and cities in Vietnam (3) shows that the rate of pterygium is very high at 17%. Although pterygium is not fatal, it can lead to blindness, impaired vision, and directly affects work and quality of life. This study was carried out to describe the current status of pterygium, the relationship between pterygium and the risk factors from the external environment and individual factors of the elderly in 3 rural communes of Khoai Chau district, Hung Yen province.



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Submitted: 11 October, 2021

Revised version received: 08 November, 2021

Published: 30 April, 2022

DOI: <https://doi.org/10.38148/JHDS.0602SKPT21-078>

METHODS

Research subjects

The study was carried out on participants aged 60 and over in 03 communes of Binh Minh, Dong Tao and Tan Dan in Khoai Chau district, Hung Yen province. Elderly people were randomly interviewed after attending an eye screening session at a commune health station and having a diagnosis from an ophthalmologist. Those who had had pterygium surgery or were in poor health or were not able to answer questions related to knowledge, attitudes and practices (KAP) were not invited to participate in the interview.

Study design, time, and place

Cross-sectional study design. Data were collected in April 2021 in Binh Minh, Dong Tao and Tan Dan communes of Khoai Chau district, Hung Yen province.

Sample size and sampling method

The sample size was calculated according to the formula:

$$n = Z^2_{(1 - \alpha/2)} \frac{p(1-p)}{d^2}$$

Where: n is the sample size is the confidence coefficient, with a confidence level of 95%, so = 1.96; p is an estimate of the proportion of people aged 60 years and older with pterygium in the community and applied $p = 0,17$ (3); d is the absolute error = 0,05. Applying the formula, we had $n = 216$, selected a 10% backup sample with a sample size of 240 people and the actual collected sample size was 264 people. The entire sample size was used as the KAP study sample.

Sampling method: Randomly selected the first 3 communes according to the screening schedule of Khoai Chau district including

Binh Minh, Dong Tao and Tan Dan. A convenient sample of 264 people (about 80 people in each commune) was selected to describe the prevalence, knowledge, attitudes and practices of disease prevention.

Data collection tool and method

Data on pterygium were obtained directly and at the screening site by Alina Eye Hospital in March 2021. KAP data were collected immediately after screening by using a questionnaire, which was installed on tablets.

Data processing and analysis

Data from the tablet is uploaded directly to the server, then exported to an Excel file for cleaning and analyzed using STATA 14.2 software. Use the Chi-squared test with 95% confidence intervals to analyze the relationship.

Ethics in research

The study was conducted after the official Decision No. 76/2021/YTCC-HD3 of the Chairman of the Ethics Committee – Hanoi University of Public Health.

RESULTS

General information about research subjects

In total 264 people participated in this study, of which 78.8% were female, 12.9% were illiterate, 84.9% had a high school education or less, and only 2.3% had a high school diploma, college and university degrees and above. Farmers accounted for 83.7%, the rests were civil servants and other occupations such as construction, trading, and freelance workers.

Information on the reality of pterygium, in people aged 60 and over

Table 1. The situation of pterygium in the 3 studied communes

	Had pterygium	
	Frequency (n)	Percentage (%)
Studied communes		
All 3 communes	89	33.7
Dong Tao commune	33	30.6
Tan Dan commune	38	42.7
Binh Minh commune	18	26.9
Gender		
Male	10	17.9
Female	79	38.0
Occupation		
Farmer	74	33.5
Civil servants	4	23.5
Others	11	52.6
Academic level		
Illiteracy	16	47.1
Primary School, Middle School, High School	71	31.7
Colleges, university or higher	2	33.3

There were 89 people with pterygium out of 264 study participants, accounting for 33.7%. Females had a higher incidence of pterygium than males. Farmers had a higher rate of

pterygium than officials. The illiterate group has a higher incidence than the literate group.

Knowledge, attitude and practice of pterygium prevention

Table 2. Knowledge, attitude and practice of pterygium and disease prevention

Knowledge	Frequency (n)	Percentage (%)
Ever heard of pterygium	118	44.7
Know that pterygium is a non-communicable disease	153	57.9
Know that pterygium is not hereditary	152	57.6
Can name the main symptoms of pterygium	13	4.7
Name at least 4/6 risk factors	95	36.0
Know the necessity of wearing safety glasses, UV protection glasses	61	23.1

Knowledge	Frequency (n)	Percentage (%)
Knowing pterygium can cause blindness	65	24.6
Knowing that taking medicine can't cure pterygium	99	37.5
Knowing that eye drops can not cure the disease	103	39.0
Know that surgery is the only, most effective method to completely treat pterygium	73	27.7
Good knowledge	93	35.2

The knowledge of the study participants was generally not good, only 44.7% of the respondents had heard of pterygium. 42.1% of people believed that pterygium is contagious, and 42.4% thought that pterygium was hereditary. Only 4.9% of respondents

mentioned the main symptoms of pterygium and 24.6% said that pterygium can cause blindness.

Some factors related to the situation of pterygium

Table 3. Some factors related to the situation of pterygium and risk factors

Risk factors		Pterygium				OR	95%CI
		Yes		No			
		n	%	n	%		
Exposure to sun-light	Regularly	73	38.4	117	61.6	2.3	1.2-4.3
	Not regularly	16	21.6	58	78.4		
Exposure to wood-stove smoke, coal smoke...	Regularly	54	38.3	87	61.7	1.3	0.8 – 2.2
	Not regularly	35	28.5	88	71.5		
Exposure to dust	Regularly	63	39.8	95	60.1	1.6	0.9- 1.6
	Not regularly	26	24.5	80	75.5		
Exposure to strong light (welding, metal turning, furnace, etc.)	Regularly	14	66.7	7	33.3	4.5	1.7 -11.8
	Not regularly	75	30.8	168	69.2		
Dry eyes	Regularly	35	42.1	48	57.9	1.7	1 – 3.0
	Not regularly	54	29.9	127	70.1		

The odds of having pterygium among people who are regularly exposed to sunlight was 2.3 times higher than the odds of having pterygium among those who are not regularly exposed (OR = 2.3; 95% CI: 1.2 - 4.3).

The odds of having pterygium in the group regularly exposed to bright light was 4.5 times higher than the odds of having the disease in the group that was not regularly exposed (OR = 4.5; 95% CI: 1.7 -11.8).

Table 4. The relationship between pterygium and personal factors

Characteristics		Pterygium				OR	95% CI
		Yes		No			
		n	%	n	%		
Education	Illiterate	16	47.1	18	52.9	1	
	Primary-high school	71	31.7	153	68.3	0.5	0.3 – 1.1
	College, undergraduate and higher	2	33.3	4	66.7	0.6	0.1 – 3.6
Gender	Male	10	17.8	46	82.1	2.8	1.3 – 6.0
	Female	79	37.9	129	62.2		
Occupation	Farmers	74	33.5	147	66.5	1	
	Civil servants	4	23.5	13	76.5	0.6	0.2 – 2.0
	Other professions	11	42.3	15	57.7	1.5	0.6 – 3.3
Knowledge	Adequate knowledge	15	22.4	52	77.6	0.5	0.3-0.9
	Inadequate knowledge	74	37.6	123	62.4	1	
Attitude	Positive attitude	70	30.3	161	69.7	0.3	0.1-0.7
	Negative attitude	19	57.6	14	42.4	1	
Practice	Good practice	14	18.2	63	81.8	0.33	0.2-0.6
	Inadequate practice	75	40.1	112	59.9	1	
Wear safety glasses, goggles, sun-glasses	Regularly	24	25.3	71	74.7	0.54	0.3 – 1.0
	Irregularly	65	38.5	104	61.0	1	
Eye hygiene	Regularly	49	28.7	122	71.3	0.53	0.3-0.9
	Irregularly	40	43.0	53	57.0	1	

Females were 2.8 times more likely to have pterygium than men of the same age (OR = 2.8; 95% CI: 1.3 – 6.0). The group with good knowledge was only 47% more likely to have the disease compared to that in the group with poor knowledge (OR = 0.5; 95% CI 0.3 – 1.0). The odds of pterygium in the group with a good attitude score was only 32% of the odds of pterygium in the group with a bad attitude score (OR = 0.3; 95% CI 0.1 - 0.7). Those with good practice had a 33% risk of having pterygium compared to those with poor practice (OR=0.3; 95% CI: 0.2-0.6). The odd of pterygium in the group wearing

goggles was only 54% compared with the odd of the disease in the group with little or not wearing goggles/ safety glasses (OR = 0.54; 95% CI: 0.3 – 0.95).

DISCUSSION

The situation of pterygium among the elderly in the study

The rate of pterygium in the study was 33.7%, nearly twice as high as the research results of Do Nhu Than et al. 17% (3), because this study was conducted on a population

of 60 years and older and was the highest risk group. This result was similar to the results recorded from previous studies in the world, in which the rate of up to 37.5% was recorded in some places (1) (4) (5) (6). Women had a higher incidence than men, and this result was similar to the previous study by Do Nhu Than et al. (3) and other studies conducted in different countries (7) (8) (9) (10). This difference may come from the fact that the northern countryside is still heavily influenced by Confucianism since ancient times, women are often in charge of more outdoor farm work, and women are often the ones who cook and prepare meals for their families, therefore being exposed to kitchen smoke, charcoal smoke... so the risk is also higher than that of men (11).

Knowledge, attitude and practice of prevention of pterygium among the elderly

The general knowledge of the research subjects related to pterygium was still limited, only 25.4% of the elderly had correct knowledge. This result is quite similar to the results of other studies around the world, for example, a study in Australia showed that only 5% of study participants knew or heard of age-related eye diseases (including pterygium) and only 2% had correct knowledge (12) (13) (14). The attitude of the study participants was very good, 87.5% got the appropriate attitude score. This can be explained through the general mentality of Vietnamese people that "If you have a disease, you should seek all possible opportunities for cures", that is, when you have a disease, you will seek treatment. Economically, the per capita income of Khoai Chau district in 2020 was 79 million VND/person/year, so people were also more ready for treatment. The results of the above study are similar to some other studies around the world, for example, the general attitude towards seeking eye treatment was positive, with 82% of the respondents agreeing to seek

treatment for eye disease if being sick (12). The study in Bangladesh also showed that attitudes towards the treatment of eye disease were very positive with 90% of people in favour of the treatment of eye disease (15).

The practice was generally not good, with 61.4% of respondents saying that they did not often use safety glasses when working or sunglasses when it was sunny. 33.7% rarely go to eye care, 43.2% never go to an ophthalmologist and 69.7% have never had an eye exam within the past one year. Poor practices may be due to the influence of poor knowledge related to pterygium, which has been confirmed in research on knowledge, attitudes, and self-care practices for age-related eye diseases in Australia, whereby people with good knowledge often have a good attitude about seeking treatment for eye disease, as well as actively seeking eye examinations (13).

Some factors related to the situation of pterygium

People who are regularly exposed to sunlight were 2.3 times more likely to have pterygium than those who were not regularly exposed. In the 3 communes of Dong Tao, Tan Dan and Binh Minh, in addition to rice and cash crops, there is a profession of growing fruit trees and ornamental plants (grapefruit, bananas, guava, oranges, tangerines...) with the requirement to take care of all kinds of plants. In this case, farmers' eyes often look upward and the frequency of eyes directly exposed to strong light from the sun is more, this may be one reason why the rate of pterygium in this study was quite high (5, 6, 16, 17). Among the respondents with frequent exposure to dust, 39.8% had pterygium, among the respondents with little exposure, 24.5% had pterygium, the OR between these two groups was 1.6, however, this association was not statistically significant (OR = 1.6; 95% CI: 0.9- 1.6). This

result was not consistent with previously published research in the world that claimed that pterygium was affected by environmental factors such as exposure to dust (18) (16) (19) (20). However, we think that in the rural areas of the 3 communes of Binh Minh, Dong Tao and Tan Dan with many trees, many ponds, rivers and a good transportation system when there were no dirt roads, the research participants were frequently exposed to dust at low levels and were only subjective judgments.

Education: this study did not show the relationship between education and the incidence of pterygium, possibly because the study subjects were elderly in rural areas, most of whom participated in literacy classes. This result was not consistent with other studies around the world. A study with Chesapeake Bay residents, who had 8+ years of education was found to be beneficial, protecting them from pterygium (OR = 0.4; 95% CI: 0.3-0.6) (16). In the eye study of Barbados, it was found that the higher the education level, the lower the probability of having pterygium (≤ 12 years) (OR = 1.4; 95% CI: 1.0-2.0) (5). A study in Iran also concluded that the prevalence of pterygium was highest among those who were illiterate and lower among those with higher education (21).

Knowledge: in the group of subjects with poor knowledge, 37.6% had pterygium, 1.7 times higher than the group with good knowledge. With good knowledge, the risk of having pterygium is reduced, maybe because these people are more knowledgeable, so they know how to protect and take better care of their eyes. This result is similar to the results of research in Australia showing the association between knowledge, attitude and practice (13). Accordingly, people with good knowledge often have a good attitude about seeking treatment for eye diseases, as well as actively going for eye exams. **Attitude:** The

risk of pterygium in the group with a good attitude was only 32% of the risk in the group with a poor attitude (OR = 0.32; 95% CI: 0.1 - 0.68). This can be explained that people with a good attitude are often more active and proactive in the care and protection, and in seeking treatments for eye diseases. **Practice:** Those with a good practice score had only 33% of the risk of having pterygium compared to those with a bad practice score (OR=0.33 CI95% 0.17-0.64). Our study results are similar to the research results of Sanjay Kumar Singh showing that good practices such as wearing safety glasses and sunglasses reduce the risk of pterygium (22).

CONCLUSION

The rate of pterygium in the study was quite high, up to 33.7%, of which females had a higher rate of pterygium than males. The study participants' knowledge and practice about pterygium were still not good, and the general attitude about the treatment of pterygium was very good. Exposure to environmental risk factors such as UV, strong light... increased the risk of pterygium. Knowledge, attitude, and good practice were protective factors, helping to reduce the risk of pterygium.

Recommendations: People, especially the elderly and women need to protect their eyes by wearing sunglasses/protective glasses when exposed to environmental hazards, using artificial tears and cleaning their eyes regularly to prevent pterygium. It is important to regularly visit a doctor for early detection and timely treatment of pterygium. The authorities need to provide health care education information to the people, including information about pterygium, its causes, signs, recognition, treatment and prevention. Provincial eye hospitals can combine with district health centres, and commune health stations to organize periodical screening once

a year for eye diseases for people, especially the elderly and women.

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