

# Development of Knowledge about the Management of Glaucoma in Residents of the Jatibonico Municipality

Flavia Zirio Llano <sup>1</sup>, Gabriela Nayelis Abreu Concepción <sup>2</sup>, Adrian González Méndez <sup>3\*</sup>

<sup>1</sup>Third year student of Clinical Bioanalysis. Clinical Laboratory Assistant Student. Faculty of Medical Sciences of Sancti Spiritus.

<sup>2</sup>Fifth year student of Clinical Bioanalysis. Hematology student assistant. Faculty of Medical Sciences of Sancti Spiritus.

<sup>3</sup>Graduate in Health Technology, Physical Therapy and Rehabilitation profile. Assistant Professor. Associate Researcher. University of Medical Sciences of Sancti Spiritus.

**\*Corresponding Author:** Adrian González Méndez, Graduate in Health Technology, Physical Therapy and Rehabilitation profile. Assistant Professor. Associate Researcher. University of Medical Sciences of Sancti Spiritus.

**Received date:** April 11, 2024; **Accepted date:** April 25, 2024; **Published date:** May 06, 2024

**Citation:** Flavia Z. Llano, Gabriela NA. Concepción, Adrian G. Méndez, (2024), Development of Knowledge about the Management of Glaucoma in Residents of the Jatibonico Municipality, *J. General Medicine and Clinical Practice*, 7(8); DOI:10.31579/2639-4162/175

**Copyright:** © 2024, Adrian González Méndez, 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.

## Abstract

**Introduction:** Glaucoma is a disease in which there is an increase in internal pressure in the eye, considerable enough to cause vision loss. This disease is one of the main ophthalmological problems that health systems face. It is estimated that the global prevalence in people between 40 and 80 years old is 3.5%, and it has been estimated that in 2040 111.8 million people will have glaucoma.

**Objective:** Design educational activities to develop knowledge about the management of Glaucoma in residents of a health area of the Jatibonico municipality belonging to the province of Sancti Spiritus.

**Method:** A prospective, longitudinal pre-experiment was carried out in residents of a town belonging to Medical Office 24 of Polyclinic 2 in the municipality of Jatibonico in the province of Sancti Spiritus in the period between January and March 2024.

**Results:** Within The characteristic of the residents was the group between 21 and 39 years of age (65.90%) and the female sex (68.18%). In the knowledge related to the Glaucoma disease before the intervention, 50% knew that it was the same, a result that changed after the intervention reaching 95.45%.

**Conclusions:** Finally, the intervention was effective, since the level of knowledge about Glaucoma in the studied population of the Medical Office 24 increased.

**Kew Words:** educational activities; glaucoma; hypertensive eye disease

## Introduction

Glaucoma is a disease in which there is an increase in pressure inside the eye, considerable enough to cause vision loss. [1].

This disease is one of the main ophthalmological problems that health systems face. Worldwide, glaucoma is the second cause of blindness in general and the first cause of irreversible blindness. It has been projected that by 2020 there will be 80 million people with glaucoma and by 2040 this figure will rise to 112 million cases. [2].

It is estimated that the global prevalence in people between 40 and 80 years old is 3.5%, and it has been estimated that in 2040 111.8 million people will have glaucoma. Glaucoma is a typically asymptomatic disease in the early stages, so it is not uncommon for a late diagnosis to occur with advanced glaucomatous damage already present. [3].

According to estimates by the World Health Organization, there are approximately 79.6 million blind people on the planet due to this disease; A figure that will increase by 1 to 2 million each year.[4]. Among the risk factors related to glaucoma are age, with an incidence of 1.5% in the general population and a progressive increase in people over 40 years of age, as well

as skin color, since people with different skin white people have a 4 times greater risk of suffering from it.[5]. In the geographical context of the Americas, it is estimated that approximately two million people suffer from glaucoma in the United States, Mexico and Argentina. In addition, it represents the second cause of legal blindness.[1]. Age represents the most important non-treatable factor for the development of glaucoma, because it begins in middle-aged individuals with a slow but inexorable progression; Early diagnosis is key to modulate the progression of the disease and avoid future blindness. From the age of 40, the prevalence increases exponentially until the age of 80 in all regions and ethnic groups. The American Academy of Ophthalmology reports that the global prevalence of open-angle glaucoma was 150 million people in 2019 and by 2025 the figure is expected to increase to about 300 million.[5]. Among the main causes of blindness among Cubans, glaucoma occupies first place (39.4%) and its economic and social impact is enormous, which is why today it represents a medical problem prioritized on a national scale.[1].

Today, glaucoma continues to be a devastating disease, classified among the main causes of low vision and visual loss, despite scientific advances in

medical and surgical treatment. In this regard, 39.4% of the cases of blindness in Cuba are attributed to this disease.[4].

Intraocular pressure (IOP) is considered the only potentially modifiable causal factor for the purpose of preventing blindness due to glaucoma. The multicenter clinical trial, Collaborative Normal Tension Glaucoma Study (CNTGS), demonstrated the effectiveness of IOP reduction in preventing the progression of glaucomatous damage, while Ocular Hypertension Treatment Study (OHTS) showed the benefit of reducing IOP to prevent the conversion of ocular hypertensive patients to glaucomatous patients.[6].

For the aforementioned reasons, the objectives are: to design educational activities to develop knowledge about the management of Glaucoma in residents of a health area of the Jatibonico municipality belonging to the province of Sancti Spiritus.

**Method**

A longitudinal, prospective pre-experiment was carried out in residents of a town belonging to Medical Office 24 of Polyclinic 2 in the municipality of Jatibonico in the province of Sancti Spiritus in the period between January and March 2024. Structured by four stages, where in the first stage, bibliographic searches were carried out in databases (Annex 1) such as Google Scholar, Scielo, Medline among others, to find out everything related to the research topic. In the second stage, it was decided to carry out a pre-test on the subjects' knowledge and the results of the diagnosis were analyzed. In the third stage, a group of educational activities was designed in relation to the cognitive difficulties regarding Glaucoma in the subjects and was evaluated by a group of experts. In the fourth stage, the educational activities were applied to the subjects and the development of the knowledge acquired was assessed through a post-test. The universe was made up of all

the residents of Medical Office 24. The sample was made up of 44 residents in need of developing their knowledge related to Glaucoma because they suffer from it or have family members who suffer from it. The sampling technique used was non-probabilistic consecutively, with the aim of having a greater representation of this group of people related to the disease. The variables were analyzed: age (by age group), gender (female and male), knowledge about Glaucoma disease, knowledge about the diagnosis, knowledge about the treatment and risk factors (before and after the intervention). To diagnose the initial level of knowledge of the population (adequate or inadequate) about Glaucoma, a survey prepared by the authors of the research and validated by the Delphi method <sup>(7)</sup> of expert survey was applied. The intervention was designed taking into account the learning needs of the population, detected in the diagnosis stage. The selected patients were grouped into 3 teams, 2 of them with 15 residents and one with 14. In the structuring, the Cuban cultural context was considered and there were 12 weekly sessions. The teaching process was carried out through conferences, film debates and workshops, lasting approximately one hour per session. At the beginning of each activity, what was taught in the previous meeting was measured through brainstorming and oral questions. The ethical aspects of the study were analyzed and approved by the Ethics Committee and the Scientific Council of the Faculty of Medical Sciences of Sancti Spiritus. Informed consent (Annex 2) from each of the patients was obtained in writing, it explained the objectives of the study and established the voluntariness of participating in it and abandoning it at any time they wished.

**Results**

Within the characteristic of the residents, the group between 21 and 39 years of age (65.90%) and the female sex (68.18%) prevailed (Table 1).

age group	No.	%
less than 20 years	2	4.54
From 21 to 39 years	29	65.90
From 40 to 59 years	eleven	25
60 years and more	2	4.54
Total	44	100
<b>Gender</b>		
	No.	%
Female	30	68.18
Male	14	31.81
Total	44	100

Source: survey of residents

**Table 1.** Distribution of subjects in the study according to age and sex

In the knowledge related to the Glaucoma disease before the intervention, 50% knew that it was the same, a result that changed after the intervention reaching 95.45% (Table 2).

Knowledge level	Before the intervention		After the intervention	
	No.	%	No.	%
Appropriate	22	fifty	42	95.45
Inappropriate	22	fifty	2	4.54
Total	44	100	44	100

Source: survey of residents

**Table 2.** Patients according to knowledge about Glaucoma disease (before and after the intervention)

When analyzing the knowledge that individuals had about the diagnosis of the disease before the intervention, 20.45% responded adequate, this indicator after the intervention was improved (84.09%) (Table 3).

Knowledge level	Before the intervention		After the intervention	
	No.	%	No.	%
Appropriate	9	20.45	37	84.09
Inappropriate	35	79.54	7	15.90
Total	44	100	44	100

Source: survey of residents

**Table 3.** Patients according to knowledge about the diagnosis of the disease. (before and after the intervention)

Regarding knowledge about the treatment of the disease, 11.36% responded adequately before the intervention; once it was completed, this indicator highlighted the high level achieved in the subjects (97.72%) (Table 4).

Knowledge level	Before the intervention		After the intervention	
	No.	%	No.	%
Appropriate	5	11.36	43	97.72
Inappropriate	39	88.63	1	2.27
Total	44	100	44	100

Source: survey of residents

**Table 4.** Patients according to knowledge about the treatment applied to the disease. (before and after the intervention)

It is shown in the knowledge about the symptomatology of the disease before the intervention in the appropriate indicator was 25%, and after the intervention 100% of the subjects responded favorably. In relation to the risk

factors in the adequate indicator, only 15.90% responded adequately and once the intervention was completed in this same indicator, the subjects responded satisfactorily to 86.36% (Table 5).

Knowledge level	Before the intervention		After the intervention	
	No.	%	No.	%
Appropriate	eleven	25	44	100
Inappropriate	33	75	0	0
Total	44	100	44	100

  

Knowledge level	Before the intervention		After the intervention	
	No.	%	No.	%
Appropriate	7	15.90	38	86.36
Inappropriate	37	84.09	6	13.63
Total	44	100	44	100

Source: survey of residents

**Table 5.** Patients according to knowledge about the symptoms of the disease and risk factors (before and after the intervention).

**Discussion**

The level of knowledge about a disease can be considered as an indirect measure of risk perception, if it is considered that the more knowledge one has about a disease, the more information one will have about how to avoid its consequences.[8]. In the research there was a predominance of people between the ages of 21 and 39 and of the female sex. This result is due to the fact that in the office where the study was carried out, the female sex and this age group constitute the most representative. All indicators of knowledge about Glaucoma were elevated with the intervention of educational activities. Results not so similar to this research were published by: Camera et al.,[9]. surveyed 374 non-glaucomatous patients using the instrument validated in Spanish on glaucoma knowledge, of which 61.5% were rated with a low level of knowledge, 14.4% with a medium level of knowledge, and 24. 1% of respondents with a high level. It was concluded that the level of knowledge in the studied population was low, so improving this level of knowledge could help in the early detection of the disease. Ordóñez,[10]. conducted a questionnaire with 50 patients with 11 questions in the glaucoma clinics of two institutions; 68% of the patients correctly answered a sufficient number of questions to be considered to have adequate knowledge of their disease. Regarding the questions corresponding to knowledge of risk factors,

74% knew them. In reference to treatment, 70% were prescribed a topical hypotensive agent. Lopez et al.,[11]. proposed a professional improvement strategy aimed at ophthalmologists in primary health services for Glaucoma care in the province of Matanzas. The diagnosis of the current state of professional improvement of ophthalmologists in primary health services in Glaucoma care, evidenced the need to design a professional improvement strategy, which was a contribution to the solution of the health problem that represents this disease. Roque et al.,[12]. determined the factors associated with the level of knowledge about primary open-angle glaucoma in a national reference center in Peru. The subjects studied were predominantly female (51.5%), with an average age 67.6 ± 13.1 years. The level of primary and university education (p = 0.012 and p = 0.026) were factors associated with knowledge, concluding that marital status and level of education were socioeconomic factors associated with the level of knowledge.

**Conclusions**

Finally, the intervention was effective, since the level of knowledge about Glaucoma in the studied population of Medical Office 24 increased.

## Conflicts of interest

The authors declare that there are no conflicts of interest.

## Financing

The authors of this work did not receive funding to carry out this article.

## References

- Gavilan-Hernandez TC, Hernandez-Arteaga M, Bony -Diaz N, Perez-Alejo JL. (2020). Acupuncture evaluation in the control of intraocular pressure in chronic simple glaucoma. *Cuban Journal of Natural and Traditional Medicine*; 3(1): e1
- Munayco -Guillén F, Noriega-Cerdan JF, Cámara-Reyes RR, Niño-García R, Mezones-Holguin E. (2020). Knowledge about primary open-angle glaucoma: design and validation of a questionnaire in Spanish-speaking patients from Peru. *Archives of the Spanish Society of Ophthalmology*; 95(2): 57-63.
- Díez-Álvarez L, Beltrán- Agullo L, Loscos J, Pazos M, Ponte-Zúñiga B, Pinazo-Durán MD. (2023). Advanced glaucoma. Clinical practice guide. *Archives of the Spanish Society of Ophthalmology*; 98(1): 18-39.
- González-Orza Y, Silva- Chil TY, Quiala-Alayo L, Reynoso-Bravo M, Quintana- Lahens Y. (2023). Epidemiological and clinical characteristics of patients with chronic simple glaucoma. *MEDISAN*; 27(4): e4503.
- Montes- Fong HS, Rodríguez-Rivero A, Martínez-Sierra JC, Montes-Ramírez LM. (2023). Clinical and epidemiological characterization of primary open angle glaucoma in a health area. *Mediciego* ; 29(1): e3266.
- Díaz-Águila Y, Obret -Mendive I, Chaviano-León G, Fumero -González FY, Domínguez- Randulfe M. (2020). Glaucoma and systemic diseases of vascular involvement. *Rev Cubana Oftalmol*; 33(4): e951.
- García-Valdés M, Suárez-Marín M. (2013). The Delphi method for consulting experts in scientific research. *Rev Cuba Public Health*; 39(2): 253-267.
- Shiferaw D, Desalegn A, Legesse K. (2017). Awareness and knowledge of glaucoma and associated factors among adults: a cross-sectional study in Gondar Town, Northwest Ethiopia. *BMC Ophthalmology*; 5(15):1287-1289
- Chamber-Reyes RR, Uría-Lopez E, Lengua- Yonz P, Munayco -Guillén F. (2020). Knowledge level about Glaucoma in non-glaucomatous patients of the ophthalmology service of Hospital Essalud “Augusto Hernández Mendoza” of Ica-Peru, September-December *Rev Med Panacea*; 9(3) 159-164.
- Ordóñez-Lozano MÁ. (2020). Determination of the knowledge of their disease in patients with glaucoma [Final Master Thesis] University of Valladolid. *Santa Cruz Square-Spain*.
- López- Lantigua N, Alvarez -Mesa Y, Darias -Rendón G. (2022). Ophthalmologist Professional Improvement Strategy for Glaucoma Care in Primary Health Services. *Cuba Health*.
- Roque-Choque EC, Noriega-Cerdán J, Sánchez-Espinoza J, Alvarado-Villacorta R. (2022). Factors associated with the level of knowledge about primary open-angle glaucoma in a national reference center in Peru. *Rev. mes. ophthalmol*; 96(5): 213-219.



This work is licensed under Creative Commons Attribution 4.0 License

To Submit Your Article Click Here: [Submit Manuscript](#)

DOI:10.31579/2639-4162/175

### Ready to submit your research? Choose Auctores and benefit from:

- fast, convenient online submission
- rigorous peer review by experienced research in your field
- rapid publication on acceptance
- authors retain copyrights
- unique DOI for all articles
- immediate, unrestricted online access

At Auctores, research is always in progress.

Learn more <https://www.auctoresonline.org/journals/general-medicine-and-clinical-practice>