

# Knowledge of Health Staff About Primary Open-Angle Glaucoma (POAG) in Gagnoa

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**Abstract:** Primary open-angle glaucoma (POAG) is an anterior optic neuropathy, of chronic and progressive course, characterized by papillary and campimetric alterations. It is the second leading cause of blindness worldwide. Its insidious evolution, without clinical manifestation perceived by the patient, is inexorably towards irreversible blindness. Early diagnosis and management are crucial to prevent this fatal outcome. All health personnel should be a relay of awareness and communication on priority and especially potentially blinding diseases such as glaucoma. This chronic pathology has an impact both on the individual and on society as a whole, as it affects young adults in professional activity. Thus it acts on the productivity of the latter who constitute the working population of a nation. From these facts arise the interest of a good knowledge of the warning signs by a greater number of medical personnel in order to quickly direct patients to specialists for adequate care. The aim of this study was to assess the degree of knowledge of the disease and to determine its epidemiological and clinical characteristics among the health personnel working at the Gagnoa General Hospital. At the end of the study, the lack of knowledge of glaucomatous pathology by medical staff was highlighted. Community awareness, systematic screening of subjects from quarantine, ongoing training of medical staff on glaucomatous disease that will help reduce the prevalence of glaucomatous blindness.

**Keywords:** Glaucoma, Knowledge, Health Personnel

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## 1. Introduction

Primary open-angle glaucoma (POAG) is an anterior optic neuropathy, of chronic and progressive course, characterized by alterations of the optic fibers and campimetry [1]. It is the second leading cause of blindness worldwide, after age-related macular degeneration (AMD) in industrialized countries and cataracts in developing countries [2]. The incidence of POAG increases with age and is common in people over 40 years of age [3]. It poses a real public health problem in our regions of black Africa [4]. Its insidious evolution, without clinical manifestation perceived by the

patient, inexorably leads to irreversible blindness. Early diagnosis and medical management are decisive in preventing this fatal outcome [4]. The medical care of this condition imposes good therapeutic compliance [5], the only guarantee of the stability of intraocular pressure. The intraocular pressure, the elevation of which is the main risk factor for glaucoma, remains the essential sign on which the practitioner can act [6].

Much work has been done on the knowledge of health personnel on glaucoma in sub-Saharan Africa, and has revealed an insufficient knowledge rate [7-8]. This is hardly reassuring because all health personnel should be a relay of

awareness and communication on priority diseases and especially potentially blinding such as glaucoma [9]. This study aims to assess the level of knowledge about the disease and to determine its epidemiological characteristics among the health personnel working at the General Hospital of Gagnoa.

## 2. Material and Methods

This was a cross-sectional, prospective study which took place over a period of 4 months from August 1 to November 1, 2015. It took place at the General Hospital of Gagnoa, a city located in the West of Côte d'Ivoire at about 266 kilometers from the country's capital. Were included in the study, all health agents not involved in the eye care of the said facility. Depending on their availability, these agents had to complete a questionnaire in the form of multiple choice questions (MCQ). The questions asked concerned the socio-professional profile of the nursing staff, their level of knowledge of glaucoma and awareness. After obtaining a free verbal consent from the staff, it was completed during a twenty to thirty minute on-site interview in our presence to avoid bias. A percentage was assigned to each answer based on the number of people who answered the question asked. Data were collected and analyzed using epi-info software version 3.5.4

## 3. Results

During the study, 139 health workers were interviewed for a participation rate of 93.91%. The average age was 36 with extremes of 20 and 53. The male gender represented 51.8% of the workforce, for a sex ratio of 1.07. Nurses came first with 33.81% (Table 1). The majority of agents, about 66.90%, asserted that they could define the GPAO. Of these, 4.3% were able to give the exact definition of POAG. The majority of health workers (61.2%) said they were aware of the risk factors for POAG. The GPAO evolved in a chronic mode according to 48.20% of the respondents. The familial character was only known by 24.5% of the agents (Table 3). The age group of onset of POAG was around 35-70 years for 61.87% of respondents (Table 3). Regarding the prevention of glaucoma, the majority of staff (65.8%) said that it was necessary to raise awareness and inform about the manifestations of POAG against 34.2% who favored consultations and early detection instead. All health workers said it was important to get screened for glaucoma at Gagnoa General Hospital. The main suggestions for the prevention of POAG were awareness and information in 72.66% of cases (Table 4).

## 4. Discussion

The diagnosis of primary open-angle glaucoma is most often late and the progression in the absence of treatment inexorably leads to blindness [4]. The medical staff should have a certain level of knowledge on certain frequent ophthalmological conditions in our tropics and potentially

blinding such as POAG, cataracts, diabetic retinopathy. This is a view to sensitizing and informing patients in order to be screened by the ophthalmologist. The participation rate for this study was 93.91%. It is comparable to that of the literature of Balo in Togo [10], Iwase in Japan [11] and Buhrmann in Tanzania [12] who respectively found participation rates of 75.8%, 78.10% and 90%. These high rates are due to the fact that the various studies took place over long periods of time, giving the majority of hospital staff the opportunity to participate in the survey. The sex ratio was in favor of men at 1.07. Same observation made by Amedomé in Togo [13] and Khawaja in Pakistan [14] who found sex ratios of 1.04 and 1.7 respectively. This indicates the high presence of the male gender in public administration in our developing countries. Regarding the definition of POAG, 66.90% of participants said they could give it. This rate is lower than that of Amedomé [13] which was 98.2%. Some participants had the media as their main source of information, while others said they had heard about it during their medical training. Among those who said they could define it, only 4.3% of the staff could give the exact definition. Yehouessi and al [1] found a 21% awareness rate of the disease, which is higher than that found in our series. We can affirm that the medical personnel of our study have a vague knowledge of this glaucomatous pathology. Some people reduced POAG to ocular hypertension which is just one risk factor. Despite the low awareness rate of this disease, the majority (78.80%) of health workers were aware of the ultimate complication of glaucoma. The perception of the severity of glaucomatous disease appears to be very strong, especially as staff consider it to be serious and may lead to blindness. The age range of onset of POAG was around 35-70 years according to more than half of health personnel and this agrees with the literature because according to Leblanc and al. [3] POAG is common in adults between 35 and 70 years old and affects 1 to 2% of the population over 40 years old. The increased incidence of glaucomatous disease with age was known by more than half of the staff (67.6%). 48.20% of health workers knew that the evolution of POAG was chronic and insidious. Concerning the risk factors, they were known by the majority of the staff, about 61.2%. According to the latter, advanced age was the main factor. However, the essential risk factor for POAG reported in the literature, which is the increase in intraocular pressure, was unknown by the respondents. Monsudi [15] noted in his study that in addition to age, participants mentioned eye trauma (67.5%) as a risk factor. In fact, post-traumatic glaucoma accounts for 4.2% of all glaucomas and 23% of secondary glaucomas [16]. The POAG is a family condition, 24.5% of the health personnel questioned had knowledge of this aspect. The importance of inheritance of glaucomatous optic neuropathy was also observed by Merle in his study in Martinique [17]. Our results are lower than those of Monsudi [15] in Nigeria and Amedomé [13] in Togo who noted a greater knowledge of their investigations on the notion of consanguinity of glaucoma at respective frequencies of (58.2%), (69.2%). During this study we observed that the main clinical signs, such as the decline in visual acuity and ocular hypertension were known by the

majority of the subjects questioned (74.80%). According to the latter the glaucomatous pathology would result always by a set of functional complaints constituting the warning signs. However, the appearance of functional signs, in this case the loss of visual acuity, during this condition testifies to a more increased destruction of the optic nerve fibers [8]. Regarding the treatment of POAG, 15.10% of health workers said it was medical compared to 55.39% who said it was surgical. Balo [10] on the other hand found a rate of 91% for medical treatment against 4.4% for surgical treatment. This low level of knowledge of the medical treatment of POAG by the staff of the Gagnoa general hospital calls out to us about the urgency of awareness campaigns on glaucomatous disease. All staff unanimously (100%) said it was important to prevent complications from glaucoma at the Gagnoa's General Hospital. Many means of prevention have been listed, namely mass consultation, early detection, awareness of glaucomatous

disease. These are important suggestions that would help reduce blindness due to POAG.

## 5. Conclusion

At the end of our study on the level of knowledge of POAG by the medical and paramedical staff of Gagnoa's General Hospital, it appears that the staff has a vague knowledge of glaucomatous pathology. This lack of knowledge associated with the severity of the functional prognosis requires an improvement in the strategies put in place within the framework of the national program to fight against blindness. This strategy should focus on community awareness, systematic screening of people from the age of 40 and continuing education of medical staff on glaucomatous disease. All of these methods will help reduce the prevalence of blindness due to glaucoma.

## Appendix

*Table 1. Distribution of respondents according to Profession.*

Profession	Numbers (n)	Percentage (%)
Doctor	22	15,82
Pharmacist	2	1,4
Nurse	47	33,81
Midwife	18	12,94
Physiotherapist	1	0,7
Nursery nurse	2	1,4
Caregiver	12	8,63
Pharmacy Assistant	2	1,4
Cashier	1	0,7
Administrative staff	14	10,07
Hygiene officers	18	12,94
Total	139	100,0

*Table 2. Questions and answers from participants on glaucoma.*

Questions	Answers	Numbers (n)	Percentage (%)
1- Can you define glaucoma as a whole?	Yes	93	66,9
	No	46	33,1
2- POAG 1st cause of blindness in the world?	Yes	37	26,6
	No	31	22,3
	I don't know	71	51,1
3-POAG evolves in a mode:	Acute	26	18,8
	Chronicle	67	48,2
	I don't know	46	33,1
4- Incidence of POAG increases with age	Yes	94	67,6
	No	7	5
	I don't know	38	27,3
5- Do you know some risk factors for POAG?	Yes	85	61,2
	No	54	31,8
6- Do you know some clinical signs of POAG?	Yes	104	74,8
	No	35	25,1
	Yes	36	54,7
7- Can glaucoma be cured?	No	22	15,8
	I don't know	41	29,5
	Yes	21	15,1
8- Is the treatment of POAG only medical?	No	82	58,0
	I don't know	36	25,8
	Yes	34	24,5
9-Primary Open Angle Glaucoma is a disease that has a family character	No	50	36,0
	I don't know	55	39,6
	Yes	139	100
10-Do you think that screening is appropriate in this hospital?	Yes	139	100
	No	0	0

**Table 3.** Distribution of the age groups of onset of POAG according to the respondents.

Age group of onset of POAG	Numbers (n)	Percentage (%)
0-5	4	2,9
5-15	3	2,2
15-30	3	2,2
35-70	86	6,9
Superior to 70	43	30,9
Total	139	100

**Table 4.** Distribution of the age groups of onset of POAG according to the respondents.

Suggestions listed	Frequence	Percentage (%)
Consultation + awareness	3	2,1
Screening	24	17,27
Screening + awareness	2	1,44
awareness+ information	101	72,66
No suggestion	9	6,47
Total	139	100

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