

## Impact of Education on Knowledge Attitude and Practice (KAP) of Glaucoma Patients towards their Disease Management- a Study

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### ABSTRACT

**Introduction:** Glaucoma refers to a group of eye conditions that lead to damage to the optic nerve. This nerve carries visual information from the eye to the brain. In most cases, damage to the optic nerve is due to increased pressure in the eye, also known as intraocular pressure (IOP). It is the second leading cause of blindness. It is a group of diseases that can steal sight without warning or symptoms. Hence it is important to create awareness and to improve knowledge among patients to prevent blindness. **Aim & Objectives:** The aim of this study is to enhance awareness and knowledge towards glaucoma among selected population and also to improve patient compliance and proper drug usage by providing counseling. **Methods:** A randomized, parallel group study was conducted over a period of six months in an eye hospital at Trichy. The protocol was approved by the Institutional Human Ethical Committee. Signed informed consent was also obtained from all patients before study enrollment. A total of seventy one patients were enrolled in this study. By using a suitably designed and validated knowledge, attitude and practice questionnaire the impact of patient counseling was analyzed. **Results:** Our result confirms that men are more likely to have glaucoma than females. After counseling patient knowledge and awareness has been improved. **Conclusion:** The study suggests that patient awareness and knowledge about disease, patient compliance and drug usage pattern has been improved. Patient counseling might be considered as an important element in implementing the disease management program.

**Keywords:** Attitude, education, glaucoma, knowledge, practice

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### INTRODUCTION

Glaucoma affects nearly 66.7 million individual worldwide and it is the one of the leading cause of irreversible blindness [1, 2]. It is estimated that the number of patients with glaucoma increases up to 79.6 million by 2020. Of these 74 % will have open angle glaucoma. From 2010 to 2020, the most detectable change in glaucoma worldwide will be an increase of the incidence of glaucoma in India [3, 4]. Glaucoma is a group of ocular disorder involving optic neuropathy characterized by changes in optic nerve head and loss of visual sensitivity and field [5]. Among the newer agents available to treat glaucoma and ocular hypertension are a

prostaglandin analogue, a carbonic anhydrase inhibitor and a beta blocker [6]. The Intra Ocular Pressure level was reduced significantly with both Bimatoprost/Timolol as well as Dorzolamide/Timolol combination [7].

The risk of going blind from glaucoma in both eyes is 6% [8]. Glaucoma is sometimes called the “*silent blinder*”, because many people are unaware that they have the disease and the loss of visual field often occurs gradually over a long time and may only be recognized when it is already quite advanced [9,10]. Early detection and treatment can slow or even halt the progression of the disease [11]. Patient counseling is a process that improves

patients' cope up ability and make informed decisions regarding their disease and medication [12].

Hence it is important to create awareness about glaucoma to the patients and public to prevent irreversible visual field loss. The present study was done on glaucoma patients to assess the impact of educational intervention on knowledge, attitude and practice.

#### MATERIALS AND METHODS

**Study Design:** This Interventional, 8 week, randomized, open-label, parallel-group study was conducted in an eye care hospital at Trichy. The protocol was approved by the Institutional Human Ethical Committee. Signed informed consent was collected from all patients before study enrollment. The demographic data of the participants like age, gender, associated diseases, social history, and family history of glaucoma were collected in suitably designed patient profile form.

Suitably designed and validated knowledge, attitude and practice (KAP) questionnaire were administered at baseline and the answers were noted. Then the counseling was provided to all patients. Again at the end of the eighth week same questionnaire was administered. The answers were collected from the patients. Finally the improvements of patient knowledge were assessed.

The queries were designed to assess the knowledge, awareness, compliance and drug usage among the selected glaucoma patients.

**Patient selection:** Patients are selected based on the inclusion and exclusion criteria

#### Patient Inclusion Criteria

- Patients with
  1. Chronic open angle glaucoma
  2. Ocular hypertension
  3. Pseudoexfoliative glaucoma
  4. Pigmentary glaucoma
- I.O.P in each eye should be more than  $\geq 22$  mm Hg at 8 am on day 0 (after washout)
- Best corrected visual acuity 20/100 or better in each eye

#### Patient Exclusion Criteria

Patients with

- Age less than 18 years was excluded from this study
- Progressive or functionally significant visual field loss within the past year

#### RESULTS AND DISCUSSION

After scrutiny using inclusion and exclusion criteria seventy one patients were enrolled into the study. The demographic characteristics of the patients were mentioned in (**Table 1**). A total of seventy one patients were enrolled into the study. Our result confirms that men are more likely to have glaucoma than females [13]. Out of the selected 71 patients, 12 patients (16.9 %) had only hypertension, 8 patients (11.24 %) had only diabetes mellitus, 1 patient (1.41 %) had thyroid disorder, 2 patients (2.82 %) had an only myocardial infarction, and 6 patients (8.45 %) had both diabetes mellitus and hypertension (**Table 1**). Our study also confirms earlier finding *i.e.* Diabetes mellitus and hypertension increase the risk of glaucoma [14].

**Table 1: Demographic Characteristics of Patients n=71**

Characteristics	Percentage of patients
<b>Gender</b>	
Male	54.9
Female	45.1
<b>Family History of Glaucoma</b>	
Yes	30.9
No	69.1
<b>Diagnosis of study</b>	
POAG	64.7
OHT	28.16
Pseudoexfoliative Glaucoma	7
<b>Medical history</b>	

Hypertension	16.9
Diabetes mellitus	11.21
Thyroid disorder	1.41
Myocardial infarction	2.82
Diabetes mellitus/Hypertension	8.45
<b>Social History</b>	
Smoker and Alcoholics	39.4

The study population was divided into groups in accordance to the treatment with

five different groups of drug as shown in (Table 2).

**Table 2: Treatment aspects of study population (Patients n=71)**

Treatment aspects	Percentage of patients
Timolol alone	27.0
Dorzolamide alone	25.3
Bimatoprost alone	27.2
Combination of Bimatoprost and Timolol	12.5
Combination of Dorzolamide and Timolol	8.0

Lack of knowledge about glaucoma can lead to blindness. Early detection and long term treatment are the keys to preventing the loss of vision. On the counseling importance of regular treatment was discussed. On patient counseling the faith in their treatment was also enhanced significantly as shown in (Table 3). To assess the patient knowledge regarding practice aspect queries were asked to the patients. After counseling the patients had the clearest idea about proper usage of eye drops. The majority of the patients thought that putting two drops would be more beneficial than one drop. In counseling we recommended to use the prescribed number of drops for the patients. This practice was also improved on counseling (Table 3). Before

counseling 42% of the patients used to clean the dropper tip with hand after applying the drug. The hazard of this was explained to the patients during counseling and most of the patients changed their practice. After the counseling majority of the patients (98%) followed the practice of closing of the eyes after applying eye drops. After counseling the patients understood that, how to put eye drops if more than two medications are prescribed to them. The answers given by the patients both before and after counseling were analyzed to assess the improvement of knowledge after counseling. After counseling patient awareness and knowledge about disease, patient compliance and drug usage pattern was improved (Table 3).

**Table 3: Comparison of pre and post data from KAP questionnaire (Patients n=71)**

Questions	Percentage of patients correctly answered	
	Before counseling	After counseling
<b>Knowledge</b>		
Do you know about glaucoma?	60.56	100.00
What is I.O.P?		
What are the consequences of glaucoma if it's left untreated?	28.16	63.38
Do you check the expiry date while purchasing the medication?	21.12	100.00
	21.12	81.16
<b>Attitude</b>		
Do you follow the treatment regularly?	39.43	81.69
Do you have faith in your treatment that the drugs would		

cure the diseases?	63.38	100.00
<b>Practice</b>		
Do you know how to use eye drops?	29.57	98.00
Putting two drops would be more beneficial than one drop?		
Do you clean the dropper tip with hand after applying?	27.34	78.73
After applying the eye drop do you close your eye for one minute	42.11	84.64
How do you put two eye drops if they are prescribed to you?	60.54	98.00
	34.09	95.77

The KAP questionnaire was developed to assess the perception of patients about their disease (symptoms, cause, prognosis and complication), knowledge, compliance and drug usage pattern of the glaucoma patients. The KAP of the patients improved after patient counseling. After patient counseling the patient knowledge, compliance and drug usage pattern was improved. Patient counseling also motivated the patients to quit smoking and practice healthy lifestyles. The consequences of glaucoma were known to only 21.12 % patients. But after counseling it was improved up to 100%. After counseling 81.60 % of patients understood that, how to check the expiry date of medications, but remaining 20% were illiterate. Attitude is very important to achieve the therapeutic goal. In counseling, the attitudes of the patients regarding their treatment were also improved. Patient counseling improves the proper usage of drugs and cleared wrong myths like putting two drops would be more beneficial than one drop.

The further complication of eye disorder can be prevented by educating the people for routine eye care examination [15].

#### CONCLUSION

This study clearly indicates that due to the patient counseling, the patient's knowledge about glaucoma, awareness about drug usage pattern and patient compliance were also improved. Patient counseling might be considered as an important element in implementing the disease management program

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