

ASSESSMENT OF AWARENESS OF DIABETIC RETINOPATHY AMONG PATIENTS WITH DIABETES MELLITUS ATTENDING THE CARE DIABETES CENTERPRATHYUSHA THUNLA^{1*}, SHARON VIDYASAGAR², KAVYA N¹, SHAIK SEEMA¹¹Department of Pharmacy Practice, Vaagdevi Institute of Pharmaceutical Sciences, Warangal, Telangana, India. ²Independent Researcher, Hyderabad, Telangana, India. Email: ushapharmd10@gmail.com

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ABSTRACT**Objectives:** The objective of the study is to assess the level of diabetes mellitus patients' awareness about diabetic retinopathy and their action toward getting screening tests and follow-up visits.**Methods:** Diabetes mellitus patients who attended the care diabetes center were administered a questionnaire to assess their awareness of diabetic retinopathy and the need to have a routine screening and follow-up care for disease.**Results:** A total of 300 diabetes patients were included in the study. Of the enrolled patients; 143 (48%) were males and 157 (52%) were females. Patients who believed that diabetes could affect their eyes are of 78%, controlling the blood sugar levels can help preserve vision 53%, and diabetes can lead to blindness 24%. Only 8% people claimed to be familiar with diabetic retinopathy. When asked whether it was important for diabetes patients to have their eye check-up, annually 62% of patients answered yes. However, only 33% of patients get their eyes checked annually. When asked about barriers preventing patients from getting eye screening, lack of knowledge about diabetic retinopathy scored more 44%.**Conclusion:** Although most of the subjects of this study knew that diabetes mellitus can affect the eye and that better control of diabetes mellitus can preserve their vision, only a few people are aware that diabetes can lead to blindness and what diabetic retinopathy is. Moreover, most of the patients reported that the barrier preventing them from getting eye screening is a lack of knowledge about diabetic retinopathy. Due to the lack of knowledge, patients are not having appropriate screening and management of diabetic retinopathy. These findings show the need for increasing the awareness of diabetic retinopathy among diabetic patients and the importance of annual ophthalmic eye screening.**Keywords:** Diabetes mellitus, Awareness, Diabetic retinopathy, Eye screening.© 2023 The Authors. Published by Innovare Academic Sciences Pvt Ltd. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>) DOI: <http://dx.doi.org/10.22159/ajpcr.2023v16i5.46887>. Journal homepage: <https://innovareacademics.in/journals/index.php/ajpcr>**INTRODUCTION**

One of the main factors contributing to the global increase in new cases of blindness is diabetic retinopathy. According to estimates, 191.0 million people worldwide will have diabetic retinopathy by the year 2030, up from 126.6 million in the year 2010 (Fig. 1) [1]. The Global Burden Disease Study estimates that 31.7 million people in India had diabetes mellitus in 2010 and that number is anticipated to rise to 79.4 million by the year 2030 [2]. According to this, diabetes is a major public health concern in our nation [3]. Intensive glycemic control lowers the incidence and progression of microvascular problems in type 1 and type 2 diabetes mellitus, according to the diabetes control and complications trial and the United Kingdom prospective diabetes study [4,5]. A recent study on diabetic patients in Turkey revealed that while the majority of them were aware that diabetes could cause ocular issues, very few of them were aware that regular eye examinations and better disease control were required to prevent these complications [6]. The World Health Organization (WHO) wants to encourage and help countries with low and intermediate incomes in adopting effective strategies for the surveillance, prevention, and management of diabetes and its consequences [7,8]. In addition to observing World Diabetes Day on November 14 to raise awareness of the diabetes epidemic around the world, the WHO actively monitors diabetes and its risk factors [8,9]. In this study, patients were given a questionnaire to fill out to gauge their degree of knowledge about diabetic retinopathy and the significance of screening and glucose management in people with diabetes mellitus.

METHODS**Study design**

Cross-sectional observational study.

Sample size

300.

Study duration

6 months.

Study site

Care Diabetes Center, Hanamkonda, Warangal.

Patient data were collected and maintained confidentially as per the norms of the hospital. Patient informed consent is taken before the study was started.

Inclusion and exclusion criteria*Inclusion criteria*

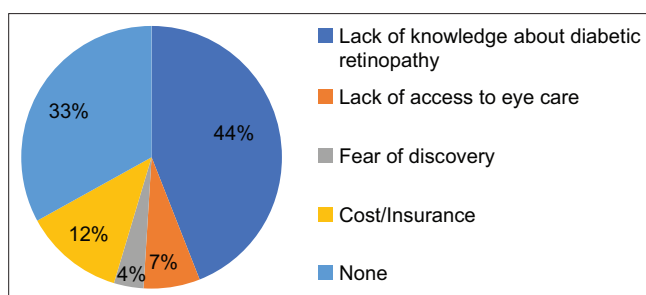
- Patients are of either gender
- Patients with the age of above 18 years
- Patients with both type 1 and type 2 diabetes mellitus are included in this study.

Exclusion criteria

- Health-care professionals/staff with diabetes mellitus
- Diagnosed and/or previously treated in an eye clinic for diabetic retinopathy.

Table 1: Questions assessing patients' knowledge in regard to the association between diabetes mellitus and vision

Questions for assessing patients knowledge	n=300	Percentage
Do you believe that diabetes can affect your eyes		
Yes	233	78
No	67	22
Do you believe that controlling your blood sugar can help preserve your vision?		
Yes	159	53
No	141	47
Do you believe that diabetes can lead to blindness?		
Yes	72	24
No	228	76

**Fig. 1: Barriers preventing diabetic patients from getting eye screening**

Data analysis

Data were collected from the questionnaires and represented as percentages.

RESULTS

A total of 300 diabetes mellitus patients are offered the opportunity to participate in the study. Of that 143 (48%) are males and 157 (52%) are females.

The age groups are divided into three parts: 18–50 years old (n=174; 87 males and 87 females), 51–60 years old (n=83; 33 males and 50 females), and above 60 years old (n=43; 23 males and 20 females).

The education level of patients is divided into six categories as well, illiterate n=95, primary education n=49, secondary education n=65, senior secondary education n=50, under graduation n=37, and post-graduation n=4.

The duration of diabetes among the patients is <5 years =105 (35%), 5–10 years =142 (47%), and more than 10 years =53 (18%). A questionnaire is used for assessing patients' knowledge regarding the association between diabetes mellitus and vision given in table 1.

These are results of assessing patients' knowledge regarding diabetes and vision. Patients who believed that diabetes could affect their eyes, n=233 (78%), controlling their blood sugar levels can help preserve their vision n=159 (53%) and diabetes can lead to blindness, n=72 (24%).

However, regarding the patient's awareness of diabetic retinopathy, only 23 (8%) people claimed to be familiar with diabetic retinopathy, and 277 (92%) people claimed that they do not know about diabetic retinopathy. Of those 23 patients who claimed knowledge of diabetic retinopathy, the various methods of how they become familiar with diabetic retinopathy are as follows: Media n=10 (44%), Doctor n=12 (52%), and others n=1 (4%).

When asked whether it is important for diabetic patients to have their eyes checked annually, 186 (62%) answered yes and 114 (38%)

answered no. However, only 99 (33%) patients get their eyes checked annually. When asked about barriers preventing patients from getting eye screening, the results are lack of knowledge about diabetic retinopathy n=132 (44%), fear of discovery n=11 (4%), lack of access to eye care n=21 (7%), cost/insurance n=37 (12%), and none n=99 (33%). On a scale of 1–10, the patients are asked how happy they are with their knowledge about diabetes and diabetic retinopathy, 208 (69%) are on a scale of <6 and 92 (31%) are on the scale of 6–10 in regard to their knowledge about diabetes and diabetic retinopathy.

DISCUSSION

This study attempted to obtain evidence on the knowledge of diabetic retinopathy and its related factors in a diabetic population attending a Care Diabetes Center, Hanamkonda, Warangal. Nearly 78% of diabetic patients believed that diabetes can affect the eye. This finding was corroborated by a similar study conducted in Goa, India (78.8%), Jeddah, Saudi Arabia (82.6%), and Jordan (98.3%). The disparity is probably attributed to the difference in study settings, sample size, and inclusion criteria.

The prevalence of diabetic retinopathy in some regional countries UAE, the prevalence of diabetic retinopathy was 54.2% in the year of 2007; in Kuwait, it was 40.0% in the year of 2007; in Egypt, it was 20.5% in the year of 2010 [10]. All of the above studies showed that the prevalence of diabetes has increased globally, and so, the cases of diabetic retinopathy have increased as well. Our study showed that most of the diabetic patients were aware that diabetes could affect their eyes (78%) and that controlling blood sugar levels can help preserve vision (53%). However, less number of patients were aware that diabetes could lead to blindness (24%). About 8% patients claimed to be familiar with or aware of diabetic retinopathy.

When asked patients about the importance of diabetics to have their eyes checked, annually 62% are answered yes and 38% are answered no among 300 patients with diabetes. However, only 33% of patients get their eyes checked annually. Similarly, in a study which has done in Myanmar by Muecke *et al.*, they found that although 90.4% of the diabetic patients in their study believed that they should have eye examinations regularly, only 57% of patients check their eyes annually [11]. Likewise, a study which has done in Japan by Funatsu *et al.* showed that although more than 98% of the patients were aware of diabetes associated with eye disease, only 69.5% underwent annual eye examinations [12].

When asked about barriers preventing them from getting eye screening, 44% of patients answered due to the lack of knowledge about diabetic retinopathy which scored the highest percentage which is similar to the study done in Jordan in which the lack of knowledge about diabetic retinopathy scored the highest 33.9% [6].

However, among 300 people, only 23 (8%) of them were familiar with and aware of diabetic retinopathy, which was shown to be <50.4% in the study conducted in Jordan [6].

CONCLUSION

Our study's findings show that even though the majority of diabetic patients receiving care at care diabetes center are aware of the value of yearly eye examinations, only half of them actually receive eye screenings on a yearly basis. We also discovered that the biggest obstacle to receiving eye screenings was the patients' lack of understanding of diabetic retinopathy.

This study highlights the necessity of raising diabetic patients' knowledge of diabetic retinopathy and the value of yearly eye examinations.

AUTHOR CONTRIBUTION

The author has actively participated in the research and formulation of the manuscript.

CONFLICTS OF INTERESTS

No conflicts of interest.

AUTHOR FUNDING

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