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Awareness of Periodic Ocular Screening in Diabetic Patients

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Abstract: ***The evaluation of awareness of DR among samples of diabetic mellitus, in Saveetha Medical College and hospital, Thandalam, Chennai was investigated. Observational study was conducted on Three hundred and thirty cases of diabetic mellitus, those who are attending ophthalmic OPD of Saveetha Medical College and hospital for first time after diagnosed to have diabetes. Diabetic patients who underwent ophthalmic study previously are excluded from the study. Study was conducted from January 2019 to March 2019.All the patients were interviewed and given a questionnaire to answer. The questionnaire included demographic profile of the individuals, type of diabetes, treatment method, and if they knew that diabetes could affect vision, and whether they were aware of the necessity of regular eye checkups. Details on awareness of DR, screening for DR, and last ophthalmological evaluation. Age groups were taken either below 35 years of age or above 50 years. In the study, 13% percentage of individuals were below 35 and 87% above 50. 16% percentage of individuals had a university level education, 27% individuals had primary, 21% had secondary, and 36% individuals were illiterate. 70% percentage of patients knew that diabetes could associate with vision loss, 69% percentage understood the importance of regular eye checkups. 39% percentage were aware of diabetic retinopathy and its treatment. Literacy and socio economic factors are important factors for the awareness of diabetic retinopathy.***

1. Introduction

Diabetes mellitus is a metabolic disease that causes high blood sugar, the hormone insulin moves sugar from the blood into your cells that can be stored or used as energy. In diabetes, the body cannot produce enough insulin or make use of the insulin.
Diabetes mellitus (DM) can result in many complications such as nephropathy, cardiovascular, neurologic and ocular complications, with diabetic retinopathy (DR) being the most common microvascular ocular complication of DM. Diabetic Retinopathy is defined as a disorder of the retinal circulation that compromises the delivery of oxygen and nutrients to the retina, thus being unable to meet its high metabolic demands.

Therefore, defects in retinal circulation may affect normal vision, which is considered a leading cause of vision impairment and blindness worldwide. Many risk factors for DR have been reported among patients with diabetes; these include uncontrolled DM, longer periods of DM and the presence of other systemic diseases such as hypertension. Increasing the level of awareness of DR as an ocular complication of DM among patients with diabetes is considered an important factor for early diagnosis and management of DR, in addition to the prevention of possible visual impairment due to the disease. Variable levels of awareness of DR among patients with diabetes have been reported from different countries around the world

For example, in Australia, it was found that only 37% of the patients with diabetes were aware of the ocular complications of DM, and 65% of patients with diabetes in the USA were aware of DR. There is a lack of studies that assess the awareness levels regarding DR among urban DM sufferers in Indian population. In view of the alarming increase in the incidence of DM in India, present study was conducted to assess the awareness levels of DR in Diabetes mellitus patients.

Aim
To identify the factors that accounts for poor awareness about diabetic retinopathy among patients with diabetes mellitus.

Objective
Observational study to be conducted to all diabetic patients who are attending ophthalmic OPD of Saveetha Medical College and Hospital, first time after diagnosed to have diabetes.

2. Methodology and Research Design

Design: Prospective, observational study
Sample Size: A total of 330 samples were taken for the study.

Data Collection:
All diabetes patients who attended ophthalmic OPD for the first time are included in the study, after appraising them about the contents of the study and obtaining written consent.

The information was collected by the principle investigator, through the questionnaire.

The questionnaire gives details upon the
1) The gender, age, marital status, smoking status, education level, income, type of diabetes, duration of diabetes and treatment.
2) Vision loss, awareness that diabetes could affect vision and even cause blindness
3) Awareness of the Importance of regular eye checks
4) The reason through which they have attended ophthalmic OPD, either on their own or by the reference from a general physician.
5) The disease diabetic retinopathy and its treatment.
6) Other complaints excluding diabetic retinopathy and affecting the eyes
7) Family history of diabetes.

3. Results

The study carried out on diabetic patients who attended ophthalmic OPD of Saveetha Medical College and hospital for the first time after diagnosed to have diabetes mellitus.

Most of the patients were above 50 years: 287 patients (87%), followed by patients who were below 35 years: 43 patients (13%). (FIGURE 1)

Within the sample, 218 patients (66%) were male, and 112 (34%) were female.

Majority of the patients were married, constituting 303 patients (92%), followed by patients who were not married 19 patients (6%), divorced 8 patients (2%).

A very important factor that accounts for awareness, is education, the higher the literacy rate, the better the awareness. In our scenario, as it is a rural area, the literacy rate is substantially low.

Illiterates are 119 patients (36%), patients who attended primary school: 90 patients (27%), patients who attended secondary school: 69 patients (21%), and patients who had a university degree: 52 patients (16%). (FIGURE 2)

Individuals who suffered from type 2 diabetes were a majority, constituting 274 (83%), and type 1 diabetes were a minority constituting 56 patients (17%).

The duration of diabetes were divided into two categories: Less then 5 years and more than 5 years. Patients suffering with diabetes for more than 5 years were 201 patients (61%), and less than five years were 129 patients (39%

All the subjects were asked certain yes or no questions.

Variable:		N (Number)	% (Percentage)
Worry of Vision Loss	Yes	274	83%
	No	56	17%
DM affects Vision	Yes	231	70%
	No	99	30%
Regular Eye checkups	Yes	228	69%
	No	102	31%
Aware that diabetes causes retinopathy (Figure 3)	Yes	129	39%
	No	201	61%
Came to OPD by themselves	Yes	172	52%
	No	158	48%
Aware that Retinopathy is caused due to increased duration of diabetes.	Yes	43	13%
	No	287	87%

4. Discussion

Diabetes mellitus is the most common endocrine disorder affecting 73 million Indians. Nearly one million Indians due to diabetes every year.

Of the many complications arising in direct relation to diabetes, retinopathy was identified as a major cause but the awareness of it was considerably low.

This can lead to future occurrences as individuals do not know the problems that arise with disregarding regular eye check ups.

In present study 39% were aware about the DR which is a bit higher compared to a Sri Lankan study which enrolled 200 diabetic patients reported that only 31% of the respondents were aware about the DR. Reports from Myanmar (86%)and Nigeria (84.3%)showed higher rates of DR awareness amongst diabetic outpatients. Awareness about DR was about 83.5% in the non- medical faculties of University of Malaya.

In the present study 70% of the respondents were aware that diabetes can affect eyes. This is higher compared to two other studies, one study done among the urban population of Hyderabad to measure the level of awareness regarding DR which showed 27% individuals were aware that diabetes affects the eye and the other study also conducted in India showed the awareness to be 37.1%,but lower compared to 84% as assessed in a population in Kerala.

In present study out of 70% patients who were aware that diabetes can affect eyes, of them only 39% of the patients knew specifically that diabetes causes retinopathy. That means awareness about the complication of diabetes, with respect to only diabetic retinopathy in this scenario is lacking among the study population.

Another study conducted in south India which showed 50.8% of the patients knew the importance of regular eye examination is in agreement with the present study where 69% respondents were ware about the need for regular eye check-up.

Possible Risk to the Participants
No potential risks were involved in this study.

Benefits of the Study
This study will enhance awareness and education among individuals who suffer with diabetes and are experiencing vision disturbances.

Outcome:
Literacy and socioeconomic status play a vital role in diabetes retinopathy awareness. Individuals who had a higher education were aware that vision could be affected by diabetes.
In conclusion, individuals must be brought awareness and educated upon such diseases and their complications.

5. Conclusion

It is very important to spread the awareness regarding DR though various means including television, newspaper, posters in all hospitals and other health centers.

By doing so, we will motivate and encourage the diabetic patients to undergo a timely eye-examination and thus engage individuals in a health seeking behavior. The increased awareness and knowledge will lead to a better understanding of the disease process and also the importance of regular eye examination for the early detection and

treatment and thereby reducing the sight threatening complications of DR.

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Figure 1, 2 and 3: