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Original Research Article

Awareness of diabectic retinopathy among diabetics in urban population of Hyderabad, South India

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ABSTRACT

Aim: Diabetes Mellitus (DM) is a significant public health burden in India. Focus on Diabetes and its complications is important to prevent mortality and morbidity due to this disease. Lack of awareness is one of the main barrier for detection of DM and its complications. Diabetic retinopathy (DR) is one of the most common complication of DM which causes of blindness and visual impairment. The purpose of this study was to assess knowledge and attitude of diabetic patients towards eye care and DR in urban south Indian population.

Materials and Methods: Cross-sectional study was done on 537 patients with Type 2 Diabetes Mellitus. All patients underwent complete ocular examination including visual acuity, anterior segment and fundus examination using slit-lamp biomicroscope by attending Ophthalmologist. They were administered questionnaire to test their knowledge and attitude. Their answers were documented. Statistical analysis was done using SPSS software (IBM).

Results: Out of 537 patients (50.9%) patients knew that there was relationship between Diabetes and Retinopathy while (49.1%) patients were not aware of. 60.4% of patients were of the opinion that there was no need of regular screening if vision in both eyes are good and 39.6% of patients were of the opinion that they should undergo a routine ophthalmology screening every year despite of good vision in both the eyes. 69.6% of patients said that good control of DM might prevent DR. The level of knowledge of DR was found to be significantly associated with patients' educational level (p=0.038). Patients with relatively higher educational level were more aware of DR occurring as a consequence of diabetes. Patients with longer duration of Diabetes had more knowledge on DR (p=0.001).

Conclusion: In our study there was an association between educational qualification and knowledge regarding Diabetic retinopathy. (p value=0.04). This stresses on the importance of health education amongst rural and illiterate population.

1. Introduction

Diabetes Mellitus (DM) is a significant public health burden in India. It is estimated that the prevalence of DM in India is 74 million, and the number is estimated to exceed 123 million by 2040.[1] This increasing prevalence of diabetes mellitus (DM) in India and all over the world could be because of increasing longevity, changing lifestyle and dietary habits. Focus on Diabetes and its complications is important to prevent mortality and morbidity due to this disease. Lack of awareness is one of the main barrier for detection of DM and its complications. Diabetic retinopathy (DR) is one of the most common complication of DM which causes of blindness and visual impairment. Almost two-

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third of all Type 2 DM and almost all Type 1 diabetics are expected to develop diabetic retinopathy (DR) over a period of time.[1–3] In a study done by AIOS the prevalence of DR in India was 21.7%.[4] DR contributes to 2.8% and 2.6% of blindness and visual impairment in southern Asia and worldwide, respectively.[5]

Regular screening, early detection and timely treatment of DR contribute significantly toward the reduction of ocular complications among diabetic patients.[6,7] Awareness regarding Diabetic retinopathy amongst population is pivotal as it aids in early detection and timely treatment of the disease. Awareness about DR and other diabetes-related ocular complications ranged between 16.1% and 71.3% among various community-based Indian studies.[8–11]

The purpose of this study was to assess the knowledge and attitude of diabetic patients towards eye care and DR in urban south Indian population.

2. Materials and Methods

This cross-sectional study was conducted between January and March 2022. 537 patients with type 2 diabetes visiting the Ophthalmology outpatient department of a medical college participated in the study. Informed consent was obtained, following which basic demographic data and details regarding the duration of diabetes and treatment history were recorded. Demographic data included Name, Age, Sex, Occupation and Residential address of the patient.

The questionnaire was designed based on the available literature. It comprised of 10 questions. All the questions were close-ended questions.

Questions 1–4 addressed awareness and knowledge about diabetes and DR, questions 5-8 comprised attitude of the patients toward eye care in diabetes, and questions 9 and10 comprised of awareness and knowledge of the patients regarding the treatment of DR. The questionnaire was designed in English then translated into Telugu and Hindi. The questionnaire was administered by an optometrist well versed in English, Telugu and Hindi.

All the patients underwent complete ocular examination including visual acuity, anterior segment and fundus examination using slit-lamp biomicroscope by the attending Ophthalmologist.

Diabetic retinopathy changes, if any were noted. Diabetic retinopathy was graded into Mild, moderate and severe NPDR (Non Proliferative Diabetic Retinopathy) and PDR (Proliferative Diabetic Retinopathy) according to the ETDRS guidelines.[9]

Macula was examined to rule out macular edema and CSME(Clinically significant macular edema).

All the patients were counselled regarding the importance of regular comprehensive eye examinations.

3. Results

Five hundred and twenty two patients diabetic patients attending the ophthalmology out patient department for various ocular problems were included in the study.

Out of them 288 (52.7%) were males and 234 (42.9%) were females. Patients were aged between 40 and 83 years with the mean age being 52.8 years. All individuals were diagnosed with type 2 diabetes mellitus.

Of the study participants 31.5% were homemakers (not working), 17.2% were skilled workers, 12.8% were retired employees and 9.5% were professionals. (Table 1)

Of 522 patients 278 (50.9%) patients knew that there was a relationship between Diabetes and Retinopathy while 268 (49.1%) patients were not aware of.(Table 2)

42.1% of patients were of the opinion that DM can lead to blindness.(Table 3)

37% of patients visited an ophthalmologist every year. (Table 4)

60.4% of patients were of the opinion that there was no need of regular screening if vision in both eyes are good and 39.6% of patients were of the opinion that they should undergo a routine ophthalmology screening every year despite of good vision in both the eyes. (Table 5)

69.6% of patients said that good control of DM might prevent DR. (Table 6)

When the patients were asked if a diabetic can have eye problem at the time of diagnosis of DM 47.3% said yes and 52.7% said no. (Table.7).

Regarding the frequency of eyecheck up in diabetics 61.5% patients were of the opinion that eye checkup was needed only when vision is affected. 19.4% were of the opinion that eye checkup was needed every 2 years and 11.7% were of the opinion that eye checkup was needed every 6 months. 7.4% patients had no idea.

Regarding screening of eyes for the first time in diabetics 15% of the patients knew that they have to get their eyes screened after getting diagnosed as a diabetic. 66.7% patients opined that they should get the screening done only when there are symptoms or when the vision is affected. 7.3% opined that screening can be done 5 years after the diagnosis of DM. 11% patients had no idea.

64.8% patients said that DR is a treatable condition while 35.2% patients said that it is not treatable. (Table 8).

66.3% patients said that going to an optometrist for an eyecheck up is enough while33.7% patients said that visiting an ophthalmologist is a must. (Table 9).

There was no statistical significance (p=0.98) between age and knowledge of diabetic retinopathy.

There is also no statistical significance (p=0.65) between gender and knowledge of diabetic retinopathy.

Remarkably, the level of knowledge of DR was found to be significantly associated with patients' educational level (p=0.038). Patients with a relatively higher educational level (secondary education, graduates and post-graduates) were

more aware of DR occurring as a consequence of diabetes.

Patients with longer duration of Diabetes had more knowledge on DR (p=0.001).

Table 1: Showing occupations of the study participants

Occupation	Percentage
Home maker	31.5%
Skilled workers	17.2%
Retired employees	12.8%
Professionals	9.5%

Table 2: Do you think there is a relationship between retinopathy and DM?

Response	Number of patients	% of patients
Yes	278	50.9%
No	268	49.1%

Table 3: Do you think diabetes mellitus may lead to blindness?

Response	Number of patients	% of patients
Yes	230	42.1%
No	316	57.9%

Table 4: Have your eyes been checked by a doctor last year?

Response	Number of patients	% of patients
Yes	202	37%
No	344	63%

Table 5: No need for the regular screen for DR if both eyes are good

Response	Number of patients	% of patients
No	216	39.6%
Yes	330	60.4%

Table 6: Do you think a good control of Diabetes might prevent DR?

Response	Number of patients	% of patients
Yes	380	69.6%
No	166	30.4%

Table 7: Can a diabetic patient have eye problems at the same time of Diabetes diagnosis?

Response	Number of patients	% of patients
Yes	258	47.3%
No	288	52.7%

Table 8: Do you think retinopathy is a treatable condition?

Response	Number of patients	% of patients
Yes	254	64.8%
No	192	35.2%

Table 9: Do you think seeing optometrist or visiting an optical shop is enough or should we visit an Ophthalmologist?

Reply	Number of patients	% of patients
Ophthalmologist	362	66.3%
Optometrist	184	33.7%

4. Discussion

The lack of awareness about DR could result in a major health burden on the society that could interfere with the prevention of possible visual impairment and timely intervention.

In our present study 50.9% patients knew that Diabetes can cause Retinopathy. This is higher compared to three other studies, one study done among the urban population of North Karnataka to know the awareness of Diabetic Retinopathy showed 45% individuals were aware of diabetic retinopathy.[12] This is very much low compared to 84% as assessed in a population in Kerala.[13]

In this study 60.4% study population thought that they should visit an ophthalmologist only when their blood sugar was poorly controlled. While only 39.6% study population were aware that they should get their eyes examined in spite of good blood sugar control. This was lower compared to a study conducted in Kerala, south India which showed 50.8% of the patients knew the importance of regular eye examination.[13] 86% of the individuals came to the ophthalmologist after a doctor's referral whilst only 14% came on their own accord, which emphasizes the important role-played by the primary care physicians in increasing the awareness of diabetic retinopathy. Another study conducted in Ireland revealed that physicians' advice was a significant factor among diabetic patients to visit an ophthalmologist to receive screening for diabetic retinopathy.[14] In our study 68.9% respondents had no knowledge regarding the frequency and importance of regular eye check-ups for diabetic retinopathy which is very much lower compared to an earlier study conducted in India in which 90% individuals were aware of the importance of the regular follow ups with an ophthalmologist. A study done in the UK concluded that information about diabetic retinopathy from the treating physicians, nurses was the main source of information which was preferred by the diabetic patients.[15] These studies suggest that information regarding diabetic retinopathy can be propagated by health education by trained health care professionals and health campaigns promoted in mass media. In our study there was an association between educational qualification and knowledge regarding Diabetic retinopathy.(p value=0.04).

This stresses on the importance of health education amongst rural and illiterate population. There was no statistical significance between gender and knowledge of Diabetic Retinopathy. In our study, patients with increasing duration of diabetes had more knowledge on DR when compared to recently diagnosed Diabetics.(p value=0.001).

5. Conclusion

This study shows surprisingly low lack of awareness about DR among patients. It also highlights the immediate need to augment awareness and knowledge of diabetic eye diseases among the population in order to reduce the burden of visual impairment caused by diabetic retinopathy. All the Physicians should reiterate the importance of periodic eye screening to all the Diabetic patients. Primary health care workers at village levels will be the most important resource to spread the awareness on diabetic eye diseases amongst rural population. Awareness can also be created by means of distributing pamphlets, posters in hospitals, and television displays on ocular complications due to diabetes. By Massive diabetes education programmes the burden of blindness due to DR can be minimised in both urban and rural India.

6. Source of Funding

None.

7. Conflict of Interest

None.

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