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Original Research Article

Awareness and knowledge of Diabetic retinopathy among Diabetic patients in a tertiary care hospital of western Odisha, India

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Abstract

Aim: To evaluate the knowledge and awareness of diabetic retinopathy among diabetic patients.

Materials and Methods: We conducted a cross-sectional study on the occasion of world diabetes day. A pretested semi-structured questionnaire (21 points with 16 questions) was prepared and distributed among the diabetic population visiting the camp. The questionnaire was mainly prepared to assess the knowledge, awareness, and practice of diabetic retinopathy.

Result: 192 diabetic patients attending the camps were included in our study. Male to female ratio of the diabetic population was found to be 3:1. The awareness about the complication of diabetic retinopathy was higher among 51 to 60 years of age group with a p-value of 0.0145. Out of the total study population, 32.4% belonged to the knowledge group with the right attitude. 31.25% had knowledge about diabetes & its complications and 47.9% had a practice of going for a routine eye checkup.

Conclusion: The knowledge of diabetic retinopathy can be improved in a population by increasing the awareness about diabetic retinopathy. Such an awareness campaign on world diabetic day can help in early detection and timely intervention of diabetes. The rates of diabetic retinopathy related blindness can be controlled by increasing awareness about it.

Introduction

Diabetes mellitus (DM) is a metabolic disease where the body cannot regulate the amount of glucose in the blood.[1] In both developed and developing countries, the prevalence of diabetes mellitus (DM) is increasing. By the year 2025, the numbers of patients with DM will double making it a major public health problem.[2-4]

Further DM is a leading cause of blindness worldwide due to its ocular complications.[5] It is estimated that diabetic retinopathy (DR) constitutes 4.8% of the global causes of blindness.[6] In India, the prevalence of blindness due to diabetic retinopathy ranges from 7.3% to 25%.[7-12] The patients with poor glycemic control have a higher risk for DR[13] The duration of DM in a patient is an another important factor in developing DR. It has been observed that more than 77% of patients who survive for over 20 years with diabetes are affected with retinopathy.[14] DR has been included in the disease-control strategy of the VISION 2020 initiative due to its significant impact on the causes of blindness.[15,16] This disease remains usually undetected owing to the silent nature, Hence, early screening remains a mainstay weapon of control. Diabetic retinopathy is the most common microvascular ocular complication of DM. The risk factors for DR includes uncontrolled maintenance of blood sugar, longer duration of DM and the presence of other associated systemic disorders.[17]

The possible visual impairment due to DR can be halted by increasing the level of awareness.[18] This the study was conducted to assess the knowledge and attitude of the diabetic population regarding diabetic retinopathy on the occasion of world diabetic day.

Materials and Methods

This cross-sectional study was conducted at a health campaign on the occasion of World Diabetes Day. A pretested semistructured questionnaire (21point with 16 questions) was prepared and distributed among the diabetic population visiting the camp. Participants were asked to answer questions which included questions about awareness & the knowledge of DR and practice related to it.

The questionnaire consisted of 2 parts. The first part contained the demographic profile, details of diabetes like duration, family history, any ocular complaints. The second part consisted of questions based on knowledge, attitude & practice of diabetes patients regarding the complication of diabetic retinopathy. Statistical analysis was performed using SPSS v 22 software.

The questions which assessed the knowledge of diabetic patients were recorded either as yes, no or don't

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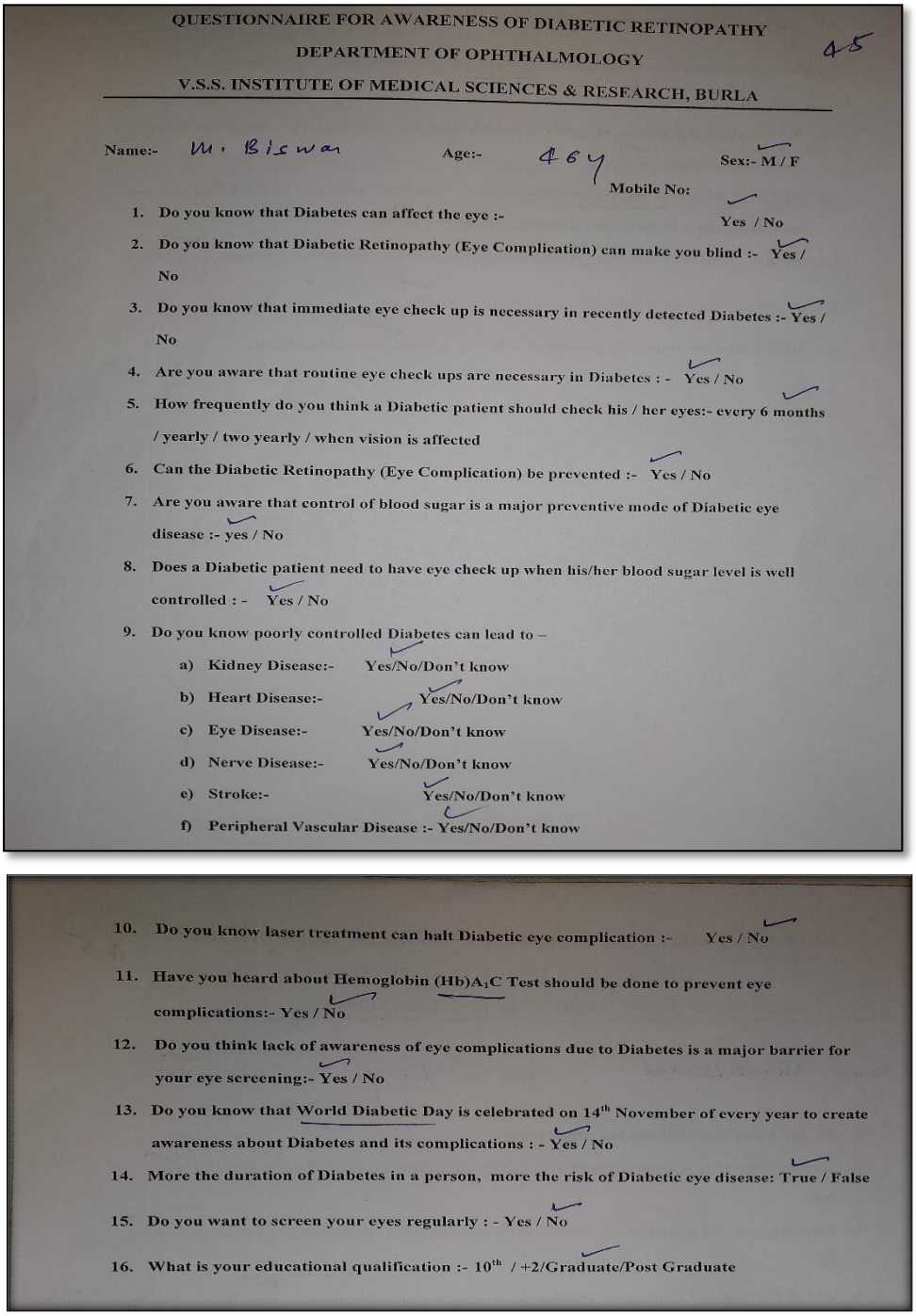
know. Based on the response given by the patients, they were grouped as knowledge group (those who have given a positive response) & non-knowledge group (those who have given a negative response). The association of knowledge of diabetic retinopathy with attitude & practices was evaluated using the chi-square test. A p-value of <0.05 was taken to be statistically significant.

The patients with type -2 DM with age more than 40 years were included in our study. The patients with type 1 DM and age less than 40 years were excluded. Informed consent was obtained from all individual patients who were included in the study.



QUESTIONNAIRE FOR AWARENESS OF DIABETIC RETINOPATHY

DEPARTMENT OF OPHTHALMOLOGY

V.S.S. INSTITUTE OF MEDICAL SCIENCES & RESEARCH, BURLA

45

Name:- M. Biswas Age:- 46y Sex:- M / F

Mobile No:

1. Do you know that Diabetes can affect the eye :- Yes / No
2. Do you know that Diabetic Retinopathy (Eye Complication) can make you blind :- Yes / No
3. Do you know that immediate eye check up is necessary in recently detected Diabetes :- Yes / No
4. Are you aware that routine eye check ups are necessary in Diabetes : - Yes / No
5. How frequently do you think a Diabetic patient should check his / her eyes:- every 6 months / yearly / two yearly / when vision is affected
6. Can the Diabetic Retinopathy (Eye Complication) be prevented :- Yes / No
7. Are you aware that control of blood sugar is a major preventive mode of Diabetic eye disease :- yes / No
8. Does a Diabetic patient need to have eye check up when his/her blood sugar level is well controlled : - Yes / No
9. Do you know poorly controlled Diabetes can lead to –
   a) Kidney Disease:- Yes/No/Don't know
   b) Heart Disease:- Yes/No/Don't know
   c) Eye Disease:- Yes/No/Don't know
   d) Nerve Disease:- Yes/No/Don't know
   e) Stroke:- Yes/No/Don't know
   f) Peripheral Vascular Disease :- Yes/No/Don't know
10. Do you know laser treatment can halt Diabetic eye complication :- Yes / No
11. Have you heard about Hemoglobin (Hb)A_1C Test should be done to prevent eye complications:- Yes / No
12. Do you think lack of awareness of eye complications due to Diabetes is a major barrier for your eye screening:- Yes / No
13. Do you know that World Diabetic Day is celebrated on 14th November of every year to create awareness about Diabetes and its complications : - Yes / No
14. More the duration of Diabetes in a person, more the risk of Diabetic eye disease: True / False
15. Do you want to screen your eyes regularly : - Yes / No
16. What is your educational qualification :- 10th / +2/Graduate/Post Graduate

Fig. 1: Questionnaire on awareness of diabetic retinopathy

Results

192 diabetic patients participated in the present study. The number of males and females being 144(75%) and 48(25%) respectively. The average age of patients was found to be 55.5yrs and 43.75% belonged to the age group of 51-60yrs. [Table 1] So far educational background is concerned, 49.4% had completed their graduation. The duration of DM was less than 10 years in 148 patients (77.1%). Age and educational status of patients affected the awareness status of diabetic retinopathy in our study. The association of age and educational qualification with the awareness of diabetic retinopathy was depicted in table 2 and table 3.

Table 1: Demographic Profile

Age(years)	41-50	44(22.92%)
	51-60	84(43.75%)
	61-70	52(27.08%)
	71-80	12(0.06%)
Gender	Male	144(75%)
	Female	48(25%)
Educational Status	10^{th}	71(36.9%)
	Graduate	95(49.4%)
	Postgraduate	26(13.5%)
Duration of Diabetes	Less than 10 years	148(77.1%)
	10-20 years	32(16.6%)
	More than 20 years	12(6.25%)

Table 2: Age based awareness about diabetic retinopathy

Age	Knowledge group	Non-knowledge Group	Total	p-value
41-50	8	36	44	
51-60	24	60	84	
61-70	28	24	52	0.0145
71-80	0	12	12	
Total	60	132	192	

Table 3: Knowledge based on educational status

Educational status	Knowledge group	Non-knowledge group	Percentage (total)
10^{th}	18(25%)	53(75%)	36.9%
Graduate	71(74.7%)	24(25.3%)	49.4%
Post-graduate	20(90.9%)	2(9.09%)	11.4%

The knowledge, attitude, and practice of diabetic retinopathy in our study group were depicted in table 4. 68.75% had knowledge that diabetes can lead to microangiopathic complications and affect the eye. 54.1% knew that diabetes can make them blind if not treated properly. Necessity about immediate eye checkup was dismissed by most of the participants with only 31.25% giving emphasis to that. Routine eye checkup was considered to be important by 16.6% of patients. Longer the duration of diabetes higher the risk of ocular complications was known to 56.25% of the study population.

Table 4: Association of awareness about diabetic retinopathy

	Yes	No	P Value
Know that diabetes can affect the Eye	132	60	0.501
know that diabetic retinopathy can make you blind	104	88	0.422
know that immediate eye check-up is necessary for recently detected diabetes	60 (1) Male-60 Female-0	132(1) Male-84 Female-48	0.0145(1) 0.005(2)
Awareness about routine eye checkup in diabetes	32 Male-8 Female-24	160 Male-136 Female-24	0.045(1) 0.002(2)KN
risk of diabetic eye disease increases with duration	108	84	0.418

Table 5

	Knowledge of diabetic retinopathy	Knowledge based on educational status	Knowledge group with right attitude	Practice of going for eye checkup
Our Study	31.25:68.75%(Y: N)	More with higher education	32.4%	47.9%
Geethadevi et al	39.19:60.8%(Y: N)	More with Higher Education	85.46%	42.51%
Hussain et al	55.6:44.4%(Y: N)	More with good literacy status	75.3%	57.6%
Raghu V et al	83:17%(Y: N)	More with higher education	-	-

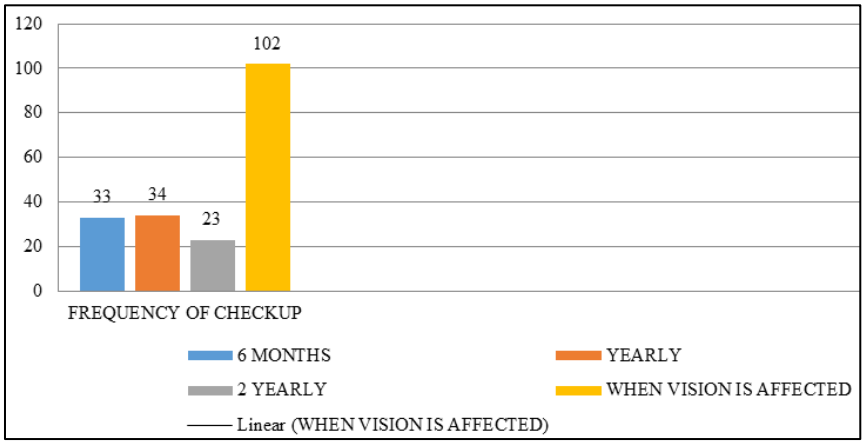


Fig. 2: Awareness of frequency of eye check in DR

53.12% of diabetic patients considered that routine eye checkup is necessary only when vision is affected.17.1% were aware that 6 monthly routine eye checkup is necessary for diabetes [Fig. 2]. 32.29% were aware that even when blood sugar parameters were controlled, eye checkup should be done routinely. Systemic complications in poorly controlled diabetes were not known to most of the participants. 69% thought that lack of awareness was one of the key factors for the poor knowledge about manifestations of diabetes. 85.9% had knowledge of laser treatment as a modality to prevent diabetic eye complications.

Discussion

The lack of awareness about diabetic retinopathy in diabetic patients is considered as a major cause of diabetic blindness in our community. The main objective of this study was to ascertain the awareness level and the practice patterns adopted by diabetic patients in the community.

Our study revealed that 31.25% of the study population had knowledge about diabetic retinopathy, which was comparable to a study by Geethadevi et al.[19] Knowledge about diabetic retinopathy was more among people with higher educational status. This highlights that educational status is an important factor for the knowledge & awareness of diabetic retinopathy.

Our study was compared with other similar studies in a tabulated form (table 5)

Out of the knowledge group, only 32.4% had the right attitude towards the practice of healthy lifestyle & the need for a regular routine eye checkup. Level of awareness was higher among those who had diabetes for a longer duration. 47.9% had the practice of going out for regular eye checkup, which was comparable to studies done by Hussain et al & Raghu et al.[20,21] The cause given by patients for not getting an early diabetic retinopathy screening was mainly a lack of information about diabetic eye complications.

Namperumalsamy *et al*.[22] observed that fundoscopy was done by 6.8% of the patients with a history of diabetes mellitus in their project. Out of this, only one fourth screened diabetic retinopathy patients returned for regular examination in the hospitals. This highlights the fact that apart from good knowledge and attitude, motivation for evaluation & follow up also plays a significant role.

Out of 192 patients, 72(37.5%) knew that diabetic eye complication can be prevented. 93(48.5%) patients were aware that control of blood sugar is a major preventive mode of diabetic eye disease. Only 20(10.4%) had an idea about laser treatment in diabetic eye disease

It is a very well known fact that diabetic retinopathy complications become more severe with prolonged duration of diabetes. So it is imperative to spread the awareness on diabetic retinopathy screening to diabetic patients. Early screening for diabetic retinopathy should be adopted by the practitioners at the early stages of diabetes mellitus. Furthermore, well-planned strategies need to follow for public health awareness campaigns.

Conclusion

Increasing knowledge about diabetic retinopathy through awareness campaigns can improve attitude & practice. Early detection & timely intervention can help in preventing sight-threatening complications.

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