Awareness and Practice Regarding Diabetic Retinopathy Among Diabetic Patients Attending Bir Hospital

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ABSTRACT

Introduction: Diabetic Retinopathy is one of the major causes of Irreversible blindness. Until too late for treatment patient does not develop any symptoms for Diabetic retinopathy. Timely screening, diagnosis and treatment are must to prevent the burden of eye morbidity due to diabetic retinopathy.

Methods: This was a Hospital-Based descriptive quantitative cross-sectional study. It was conducted among 113 study participants from December 15,2024 to June 15,2025. This study followed non-random purposive sampling. Patient with a prior history of intervention for diabetic retinopathy were excluded from this study. IRC approval and well-informed written consent was obtained before data collection. All the collected data were entered in MS- excel sheet. Data collected were later exported to SPSS for analysis.

Results: A total of 113 patients were included for this study. The mean age of was 56.1 ± 4.7 years. The median duration since diabetes diagnosis of was 6 years. In the study, 74.3% of participants were aware that diabetes could affect vision and that regular eye exams were necessary. Diabetic retinopathy was found in 36.3 % of participants.

Conclusion: To increase the awareness about diabetic retinopathy in diabetic patient is must so as to decrease the burden of irreversible blindness due to diabetes. There is need to develop an awareness program on diabetic retinopathy among diabetic patients.

Keywords: Awareness; Diabetic retinopathy; Eye hospital; Nepal; Vision

INTRODUCTION

Type II Diabetes Mellitus is a major global public health problem affecting both developed and developing countries. According to WHO estimates, the number of cases in developed countries is projected to rise by 46%, from 55 million in 2000 to 83 million in 2030, while in developing countries it is expected to increase from 30 million to 80 million during the same period.[1]

Diabetic retinopathy is one of the primary causes of visual impairment in developing nations and so as in Nepal. Those diabetic individuals visiting to eye health center are found to have undetected and advanced diabetic retinopathy. If diabetic retinopathy is early detected visual impairment could be prevented or reverse which has been the major cause of blindness.[2] Diabetic retinopathy among individuals with diabetes is linked with the duration of diabetes in patient.[3] Some other factors, including BMI and serum lipids have shown varying results.[4] WHO estimates that there are 39 million blind people in the world, and another 246 million are visually impaired.[5] The aim of this study is to find the prevalence of diabetes retinopathy among patients with diabetes and assess awareness along with practice of diabetes retinopathy.

METHODS

This was a hospital-based descriptive quantitative cross-sectional study. It was conducted among study participants

at Bir Hospital, one of the Tertiary Hospital of Nepal which is located in Kathmandu (province 3), which is the oldest Government Hospital in the country. This study was conducted from 15 December 15 2024 to 15 June 15 2025. Approximately 35.0 -43.0 % patients visit Ophthalmology department for Diabetic Retinopathy screening. This study followed non-random purposive sampling technique who had visited to the Outpatient department of Ophthalmology Department.

IRC approval was obtained from IRC NAMS, Bir hospital. Well informed written consent was obtained before data collection Patient with a prior history of intervention for diabetic retinopathy were excluded from this study. Total of 113 participants were included in this study. Data collection was performed using face to face interview. All the collected data were entered in MS- excel sheet. Data collected were later exported to SPSS for analysis. Patients diagnosed with Diabetes attending Bir Hospital Ophthalmology Outpatient Department above 18 years from all seven province of Nepal were included in study. Patient with prior ocular intervention such as laser therapy and surgical intervention for diabetic retinopathy and patient with psychiatric mediation were excluded from this study.

RESULTS

In this study total one hundred and thirteen study participants with diabetes were enrolled. Majority of study participants were female, seventy-one i.e. 62.8% and male participants were forty-two i.e. 37.2 %. The age ranged from 18 years to 92 years and the Mean age was found to be 56.1±4.7 years. Mean year of duration of diabetes diagnosis was 6 years. Among them Eighty-one patients i.e.71.7 % of individuals were from within the Kathmandu valley and Thirty-two patients i.e. 27.3% were from outside Kathmandu valley. Similarly, forty-four patients i.e.38.9% of them had positive family history of diabetes and sixty-nine i.e. 61.1% had negative family history of diabetes. Among them Seventy-five patients i.e. 66.7% were literate and thirty-eight patients i.e.33.3% were illiterate (Table 1)

In the study sixty-eight patients i.e. 58.4% of participants had hypertension and forty-five patients i.e. 41.6% gave negative history of hypertension. Similarly, Prior Fundus examination was found in sixty-six patients i.e. 58.2% and forty-seven patients i.e. 41.6% didn't have fundus examination in the past. Among the participants, diabetic Retinopathy was found in Forty-one patients i.e.36.3 % and seventy-two patients i.e. 63.3 had no signs suggestive of diabetic retinopathy on fundus examination.

Table 1. Characteristics of the Study Participants

	Frequency	Percentage
Gender		
Male	42	37.2
Female	71	62.8
Age	56.1 ± 4.7 yrs	
Duration of Diabetes	6 yrs	
Residency		
Outside Kathmandu Valley	32	27.3
Within Kathmandu Valley	81	71.7
Family History of Diabetes		
Positive	44	38.9
Negative	69	61.1
Literacy		
Literate	75	66.7
Illiterate	38	33.3

Among them Sixteen patients i.e. 14.2 % had Nephropathy and Ninety-seven patients i.e.85.8% were free of nephropathy as shown in. Table 2

Table 2. Health status of participants, n =113

	Frequency	Percentage
Hypertension		
Positive	68	58.4
Negative	45	41.6
Fundus		
Yes	66	58.4
No	47	41.6
Diabetic Retinopathy		
Yes	41	36.3
No	72	63.7
Nephropathy		
Yes	16	14.2
No	97	85.8

In the study, eighty-four patients i.e. 74.3% of participants were Aware regarding diabetes, and twenty-nine patients i.e. 25.7% were still unaware of diabetic retinopathy its effect on vision and that regular eye exams were necessary (Table3).

Table 3. Awareness regarding Diabetes retinopathy,

	Frequency	Percentage
Awareness		
Yes	84	74.3

DISCUSSION

In this study, almost three fourth (74.3%) of study participants had sound knowledge regarding diabetes and its effect in vision. The study revealed that more than one third of the participants (36.3%) had diabetic retinopathy.

In this study almost two third of the participant (62.8%) were female. Mean age of participants was found to be 56.1 ± 4.7 years. While, Median duration of diabetes diagnosis was found to be 6 years. Almost three fourth (71.7%) of individuals were from outside the valley. Similarly, two third of individuals (61.1%) had positive family history of diabetes. It was found one third (33.3%) of individuals were illiterate. The study revealed that more than half individuals (58.4%) had hypertension. Similarly, prior fundus examination was also found in more than half individuals (58.2%). Nephropathy was found nearly in 14.0% while Diabetic Retinopathy was found in more than one third of the participants (36.3%). A study conducted in India revealed that 28.8% of study participants were awareness about Diabetic Retinopathy was found among an urban general population.[3] Similarly A systematic analysis conducted in Pakistan had identified that Prevalence of Diabetic Retinopathy was found to be 28.78%.[6] A study conducted in Sri Lanka stated that 31.0% of the study population had a good knowledge of diabetic retinopathy while 69.00% had poor knowledge.[7]

Another study conducted in Suburban population of a South Indian state reported that 25.4% study participants with Diabetes mellitus, with 40.70% of them good knowledge about Diabetes mellitus. Similarly, 53.8% had a positive attitude and 57.6% had good practice patterns. Although half of them followed general diabetic care, only 9.6% had undergone screening for retinopathy.[8] A cross-sectional study conducted in North India found that 79.0% of patients were aware that Diabetes could affect the eyes and 69.5% knew that Diabetes Retinopathy could lead to blindness. In the same study regarding prevention and treatment 58.1% of them were aware that good glycemic control prevents DR and 52.6% knew that DR can be treated.[9]

A study conducted in Nepal identified that Diabetes was found in 9.0% subjects with mean age of 69.[6] years among whom 18.5% of whom were newly diagnosed. The prevalence of Diabetes Retinopathy was found to be 23.8% among the persons with diabetes. The prevalence of Diabetes Retinopathy among newly diagnosed subjects with diabetes was 6.5% .The prevalence of vision-threatening DR was 9.5% and was higher in males.[10] Nearly half of the cases (46.6 %) were not aware of diabetic retinopathy and dilated fundus evaluation was done for the first time in 44.4 %. DR was found in 38.26 % of the cases and was diagnosed in 13.0 % of the new cases. Almost four-fifths (78.00 %) of the diabetics had had the disease for a duration of 16 to 20 years.[11] Similarly, another study conducted in far western province of Nepal found out that 2.8 % of study population had diabetes, and 35.7% of them were newly identified cases. Of the known diabetics, 61.4% never had an eye examination, and only 27.7% of cases had their eye checked for Diabetes Retinopathy in the last year. Fundus examination showed 13.2 %of the diabetic patients was found to have some form of diabetic retinopathy and 6.2% had diabetic maculopathy. Only 0.8% of the cases were categorized as sight-threatening Diabetes Retinopathy but a greater number of diabetes patients had severe visual impairment or blindness (3.9%) as compared to non-diabetic patients (1.8%).[12]

Another hospital-based study of Nepal found that the awareness on DR was found to be fair which was slightly more than the study done in Ethiopia 47.0 %,[13] might be because being a tertiary care center most of the patients are referred from the physician making them aware of Diabetic Retinopathy. Similar study conducted in a Eye hospital at Lahan showed the awareness of DR was 29.0% which was less than our study.[14] In this study conducted in Eye hospital in Eastern Nepal female participants were more (62.8%) which is similar to a study done at, 77.0% had diabetes under control which is similar to a study conducted in Sagarmatha Chaudhary eye hospital, Lahan.[14] A on-interventional case series study conducted among the inpatient diabetic cases referred for ophthalmic consultation found that nearly half of case (46.6%) were not aware of diabetic retinopathy, the awareness level being less than the result of our study might be because most of the patients whom we screened were referred from the physician making them aware of diabetic retinopathy. Diabetic retinopathy was found in (38.2%) of cases which is comparable to our results.[15]

CONCLUSION

This study concludes that awareness regarding Diabetes retinopathy in patients diagnosed as Diabetes is to be increased. Since Endocrinologists/Physicians are the ones who deal with the diabetic patients mostly for the treatment of their Blood sugar and general well-being they are the ones who can raise awareness to their

patients. Awareness program to general public can be raised via various community-based awareness raising program.

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