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Diabetic Retinopathy And Related Knowledge Attitude And Practices Among Patients Of Diabetes Mellitus: A Cross Sectional Study.

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ABSTRACT

This cross-sectional study, conducted at a tertiary healthcare center over a two-year period, aimed to investigate the demographic profile, knowledge, attitudes, and practices (KAP) related to diabetes mellitus (DM) and diabetic retinopathy (DR) among patients aged 30 years and above. A total of 322 participants were included based on specific inclusion and exclusion criteria. Demographic characteristics, educational status, and diabetes management modalities were assessed. Knowledge, attitudes, and practices were evaluated concerning DM and DR. Awareness levels regarding ocular effects were explored, and statistical analyses were employed to establish correlations. The predominant age group was 41-50 years (40.1%), with a mean age at presentation of 47.3 ± 8.4 years. Males constituted 57.5% of the cohort. Most patients were treated with oral hypoglycemic agents (77.6%). Glycemic control significantly correlated with the presence of retinopathy ($p < 0.0001$). Knowledge, attitudes, and practices related to DM and DR varied, with a significant gap identified in awareness of DR and its ocular effects. This study underscores the importance of targeted interventions to enhance patient education, promote positive attitudes, and improve practices, particularly in the context of diabetic retinopathy. Bridging the knowledge gap and fostering proactive healthcare engagement are essential for preventing vision loss in individuals with diabetes.

Keywords: Diabetes Mellitus, Diabetic Retinopathy, Knowledge Attitudes Practices, Tertiary Healthcare, Patient Education.

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INTRODUCTION

Diabetic retinopathy (DR) associated with complication of diabetes mellitus, representing a major cause of visual impairment and blindness globally [1]. As a microvascular complication, DR results from prolonged exposure to elevated blood glucose levels, adversely affecting the delicate blood vessels of the retina. The increasing prevalence of diabetes mellitus worldwide underscores the urgency of understanding the nexus between diabetic patients, their knowledge about DR, and the subsequent adoption of preventive and management practices [2, 3].

Our cross-sectional study aims to unravel the current landscape of knowledge, attitudes, and practices concerning diabetic retinopathy among individuals with diabetes mellitus. By exploring these dimensions, we can glean insights into the awareness levels surrounding DR, the prevailing attitudes towards routine eye care, and the adherence to recommended preventive measures and treatment regimens [4-8]. Such comprehension is pivotal for crafting targeted interventions, enhancing public health education, and fortifying healthcare systems against the rising tide of diabetic retinopathy, ultimately contributing to the preservation of vision and the overall well-being of individuals grappling with diabetes mellitus [9-10].

METHODOLOGY

Ethical clearance was obtained prior to the commencement of the study. The study, conducted over a span of two years from November 2020 to November 2022, focused on a cross-sectional examination of patients with diabetes mellitus at a tertiary healthcare center. The study setting provided an ideal platform for a comprehensive assessment of diabetic retinopathy (DR) and associated knowledge, attitudes, and practices among a diverse patient population.

The sample size comprised all patients aged 30 years and above, meeting the inclusion criteria, and visiting the tertiary health care center for examination between January 2021 and June 2022. Inclusion criteria encompassed patients of either gender diagnosed with diabetes mellitus, identified through criteria such as Random Blood Sugar Level (BSL) > 200mg/dl, Fasting BSL > 126 mg/dL, or 2-hour Post Prandial BSL > 200mg/dL after a 75g glucose load. Exclusion criteria eliminated pregnant and lactating women, individuals with media opacity obscuring the view of the fundus, those with critical illnesses, and individuals who did not provide written informed consent.

Our study employed various instruments for data collection, including Snellen's chart, slit lamp, applanation tonometer, dilating drops (Tropicamide 0.8% and Phenylephrine 5%), indirect ophthalmoscope, and 20D/78D lens. Patients underwent a meticulous screening process that involved a detailed history, encompassing type and duration of diabetes, nature and duration of treatment received, systemic comorbidities such as hypertension and coronary artery disease, along with their respective treatments. Additionally, patient compliance, glycaemic control, and any history of previous ophthalmic surgery, laser procedures, or other medical treatments were recorded.

In this study, most common age group presented was 41-50 years (40.1%) followed by 51-60 years (36.3%). 64 (19.9%) belonged to age group of 31-40 years. The least common age group presented was 61-70 years (3.7 %).

The mean age at presentation was 47.3 ±8.4 years.

Males constituted 185 (57.5%) of the total cases while females constituted 137 (42.5%).

Maximum number of patients i.e. 87 (27%) had completed high school education followed by 80 patients (24.8%) who had no formal education. 79 patients (24.5%) had completed their college. 57 patients (17.7%) completed their primary school and only 19 patients (5.9%) had their degree completed. In this study, most of the patients (77.6%) were treated with oral hypoglycaemic agents for diabetes. Around 22.4% of the patients were treated with both oral hypoglycaemic agents & insulin injections

Majority of patients with good control of diabetes i.e., 194 out of 206 had no retinopathy while 62 patients out of 116 with poor control of diabetes had retinopathy with p value of <0.0001 which is

very significant.

Knowledge Attitude Practices – Diabetes Mellitus

Knowledge – Diabetes Mellitus

Out of 322 patients, 141 (43.8%) had good knowledge about diabetes while rest 56.2% had poor knowledge.

Table 1: Knowledge – Diabetes Mellitus

| Knowledge | Number | Percentage |
|-----------|--------|------------|
| Good | 141 | 43.8 |
| Poor | 181 | 56.2 |

Attitude - diabetes mellitus

Out of 322 patients, 114 (35.4%) had positive attitude towards DM while rest of the 64.6% had negative attitude.

Table 2: Attitude - Diabetes Mellitus

| Attitude | Number | Percentage |
|----------|--------|------------|
| Positive | 114 | 35.4 |
| Negative | 208 | 64.6 |

Practices - Diabetes Mellitus

Out of 322 patients, 146 (45.3%) had good practice patterns regarding DM while rest of the 54.7% had poor practice patterns.

Table 3: Practices - Diabetes Mellitus

| Practices | Number | Percentage |
|-----------|--------|------------|
| Good | 146 | 45.3 |
| Poor | 176 | 54.7 |

Awareness – DM & DR

In our study, out of 322 patients, 209 (64.9%) patients were aware of Diabetes and its ocular effects while only 55 (17.1%) were aware of diabetic retinopathy and its ocular effects.

Table 4: Awareness – DM & DR

| Awareness | Number | Percentage |
|-----------|--------|------------|
| DM | 209 | 64.9 |
| DR | 55 | 17.1 |

Knowledge – Diabetic Retinopathy

Out of 322 patients, only 11 (3.4%) patients had good knowledge regarding DR while rest 96.6% had poor knowledge.

Table 5: Knowledge - DR

| Knowledge | Number | Percentage |
|-----------|--------|------------|
| Good | 11 | 3.4 |
| Poor | 311 | 96.6 |

Attitude - DR

In our study, out of 322 patients, only 30 (9.3%) patients had positive attitude towards DR while rest of the patients (90.7%) had negative attitude towards DR.

Table 6: Attitude - DR

| Attitude | Number | Percentage |
|----------|--------|------------|
| Positive | 30 | 9.3 |
| Negative | 292 | 90.7 |

Practices - DR

In our study, only 28.9% patients had good practice patterns towards DR while rest 71.1% had poor practice patterns.

Table 7: Practices - DR

| Practices | Number | Percentage |
|-----------|--------|------------|
| Good | 93 | 28.9 |
| Poor | 229 | 71.1 |

DISCUSSION

Our results highlight on the demographic profile of patients with diabetes mellitus (DM) and their awareness, knowledge, attitudes, and practices related to both diabetes and diabetic retinopathy (DR). The mean age at presentation, 47.3 ± 8.4 years, suggests a cohort primarily in their late 40s, with the most common age group being 41-50 years (40.1%). This observation aligns with the well-established trend of diabetes prevalence increasing with age, emphasizing the need for targeted interventions in middle-aged populations. The male predominance (57.5%) is notable, indicating a gender-specific distribution that warrants further exploration.

Educational status reveals that a significant portion of the cohort had completed high school (27%), while 24.8% had no formal education. This disparity emphasizes the importance of tailoring health education strategies to diverse educational backgrounds to ensure widespread understanding and awareness. Additionally, the majority of patients (77.6%) were treated with oral hypoglycemic agents, reflecting the prevalent reliance on pharmaceutical management. The correlation between glycemic control and the presence of retinopathy is striking, with a substantial proportion of patients with poor control exhibiting retinopathy ($p < 0.0001$). This underscores the critical role of glycemic control in preventing diabetic complications.

Turning to knowledge, attitudes, and practices (KAP) related to DM, a substantial proportion demonstrated poor knowledge (56.2%), negative attitudes (64.6%), and poor practices (54.7%). These findings underscore the imperative to enhance patient education and support systems, focusing not only on medical management but also on fostering positive attitudes and encouraging healthy practices. The observed discrepancy between knowledge and practice suggests a potential gap between theoretical understanding and practical implementation, highlighting the need for targeted interventions that bridge this divide.

When assessing awareness of DM and DR, it is encouraging that 64.9% of patients were aware of diabetes and its ocular effects. However, the awareness of diabetic retinopathy was significantly lower, with only 17.1% recognizing its ocular effects. This highlights a critical area for improvement in public health campaigns and patient education initiatives, emphasizing the ocular consequences of diabetes. The vast majority of patients exhibited poor knowledge, negative attitudes, and poor practices regarding diabetic retinopathy, indicating a considerable gap in understanding and engagement specifically related to this sight-threatening complication.

The study's limitations should be acknowledged, such as the single-center design and potential selection bias inherent in a tertiary healthcare setting. The retrospective nature of data collection may introduce recall bias, impacting the accuracy of reported information. Additionally, the study does not delve into the reasons behind certain attitudes and practices, necessitating further qualitative exploration [8].

In light of these findings, multifaceted interventions are warranted to address the identified gaps in knowledge, attitudes, and practices. Targeted educational programs should be developed, considering the diverse educational backgrounds of the patient population. These initiatives should emphasize the ocular complications of diabetes, with a particular focus on the risk and preventive measures for diabetic retinopathy. Integrating such programs into routine diabetes care can enhance patient understanding and foster a proactive attitude toward eye health [9, 10].

Collaboration between healthcare providers and public health agencies is crucial in implementing and sustaining these interventions. A comprehensive approach should encompass regular health check-ups, routine eye screenings, and continuous monitoring of glycemic control. Implementing these measures within the healthcare system can facilitate early detection of diabetic retinopathy, enabling timely intervention to prevent further vision deterioration [11].

Furthermore, understanding the socio-cultural context influencing patient attitudes and practices is pivotal. Qualitative studies exploring the cultural nuances, socioeconomic factors, and healthcare-seeking behaviors can inform tailored interventions that resonate with the unique needs of the population [12].

CONCLUSION

In conclusion, this study provides valuable insights into the demographics and KAP of patients with diabetes mellitus, highlighting critical areas for targeted interventions. Bridging the gap in knowledge, fostering positive attitudes, and promoting healthy practices, especially concerning diabetic retinopathy, are paramount for preventing vision loss and improving the overall well-being of individuals with diabetes. The findings underscore the importance of a comprehensive and patient-centered approach to diabetes care, integrating both medical and educational components to address the multifaceted challenges associated with this chronic condition.

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