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Research Article

Diabetic Retinopathy: Prevalence and Awareness Among Diabetic Patients

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Abstract

This cross-sectional research sought to evaluate both the prevalence of diabetic retinopathy (DR) and the extent of awareness about the condition among diabetic patients in healthcare facilities in Tirana. A total of 279 patients participated, including 176 men (63%) and 103 women (37%), with an average age of 57.3 years (SD = 12.3). A questionnaire administered by healthcare professionals was used to gather information on participants' demographics, diabetes-related complications, and their sources of information regarding diabetes and its complications. Participants were grouped according to the duration of their diabetes: less than 5 years, 6-10 years, and over 10 years. Medication was categorized into three groups: oral medication, insulin, and a combination of both. Additionally, participants were asked about any prior diagnosis of diabetic retinopathy. The study found that 3% of the participants were diagnosed with diabetic retinopathy. It also identified that individuals with lower educational levels were significantly less informed about diabetic retinopathy and its complications, with many reporting a lack of sufficient or any information on the topic. The results underscore a need for better education on diabetic retinopathy, especially among those with less formal education. The findings stress the importance of increasing awareness and providing targeted educational efforts for diabetic patients, especially in areas with limited access to specialized healthcare services.

Key words: diabetic retinopathy; cross-sectional research; tirana; healthcare; complications

Introduction

Diabetic retinopathy (DR) is a major complication of diabetes and a leading cause of blindness globally1,2,3. It results from damage to the retina's blood vessels due to prolonged high blood sugar levels. If not detected and managed in its early stages, DR can progress to significant vision loss. Early diagnosis and appropriate treatment are essential in preventing these severe outcomes4. However, awareness of DR is often insufficient, especially in regions with limited access to specialized care.

In Albania, diabetes is increasingly prevalent, with a rising number of individuals diagnosed with type 2 diabetes5. Given the widespread nature of the condition and the risk of diabetic retinopathy, it is crucial to understand how well diabetic patients are informed about this complication. Increased awareness can lead to earlier diagnosis and intervention, ultimately reducing the risk of blindness.

This study, conducted in four healthcare clinics in Tirana, Albania, aimed to assess the prevalence of diabetic retinopathy among diabetic patients and evaluate their level of awareness regarding the condition. Specifically, the study explored the relationship between patients' demographics, education level, the duration of their diabetes, and their knowledge of diabetic retinopathy. It also aimed to investigate whether education and access to information influenced patients' understanding of DR and their ability to identify symptoms, thus promoting timely medical attention.

Data for this study was collected using a questionnaire administered by healthcare professionals, which covered demographic information, diabetes history, medications used, and awareness of diabetes-related complications, particularly diabetic retinopathy. The findings of this research could offer valuable insights into knowledge gaps and contribute to the development of targeted educational strategies to improve patient awareness and prevent vision loss due to diabetic retinopathy.

Methodology:

This study employed a cross-sectional design to assess the prevalence of diabetic retinopathy and evaluate the level of awareness among diabetic patients attending healthcare clinics in Tirana, Albania. The study was conducted in four healthcare centers, where participants were selected based on convenience sampling.

A total of 279 diabetic patients participated in the study, comprising 176 males (63%) and 103 females (37%). The mean age of participants was 57.3 years, with a standard deviation of 12.3 years. To ensure a comprehensive

assessment, a structured questionnaire was used to gather data. The questionnaire was administered by trained medical staff, who conducted face-to-face interviews with the patients. This method allowed for direct communication and clarification of any questions, ensuring accurate data collection.

The questionnaire included several sections. The first section gathered demographic information such as age, gender, and educational background. The second section focused on the duration of diabetes, with participants categorized into three groups: those diagnosed with diabetes for less than 5 years, 6-10 years, and more than 10 years. The third section covered the types of medications used by participants, categorized as oral tablets, insulin, or a combination of both.

A significant portion of the questionnaire was dedicated to assessing participants' awareness of diabetic complications, particularly diabetic retinopathy. Participants were asked whether they had ever been diagnosed with diabetic retinopathy, and if so, to provide details regarding the diagnosis. Additionally, the questionnaire included questions about the sources of information on diabetes and its complications, to explore how education and access to information influenced their awareness.

Descriptive statistics were used to analyze the data, and the prevalence of diabetic retinopathy among the participants was calculated. The relationship between awareness and demographic factors such as education level and the duration of diabetes was also examined. The findings were used to identify knowledge gaps and to provide recommendations for improving patient education on diabetic retinopathy.

This study was approved by the local ethical review board, and all participants provided informed consent before taking part in the study.

Results:

The results of the study are summarized in the following tables, providing insights into the demographics, medication usage, awareness of diabetic retinopathy, and the relationship between education, duration of diabetes, and awareness.

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	176	63%
	Female	103	37%
Age	Mean ± SD	57.3 ± 12.3	
Duration of Diabetes	<5 years	88	31.5%
	6-10 years	106	38%
	>10 years	85	30.5%
Education Level	Low (≤ High School)	145	52%
	High (≥ College)	134	48%

Table 1: Demographic Characteristics of Participants

This table shows the demographic breakdown of the participants. The majority of participants were male (63%), with a mean age of 57.3 years. The duration of diabetes was relatively evenly distributed across three categories, with 31.5% of participants having diabetes for less than 5 years, 38% for 6-10 years, and 30.5% for more than 10 years. Regarding education, 52% of participants had low education levels (≤ high school), while 48% had higher education (≥ college).

Medication Type	Frequency (n)	Percentage (%)
Oral Tablets	123	44%
Insulin	71	25.4%
Both Oral Tablets and Insulin	85	30.5%

Table 2: Medication Usage Among Diabetic Patients

This table presents the medication usage among participants. The majority (44%) were on oral tablets for diabetes management, while 30.5% used both oral tablets and insulin. A smaller group (25.4%) was using insulin alone. This distribution suggests a mix of diabetes management strategies, reflecting different levels of disease progression and treatment needs.

Awareness of DR Diagnosis	Frequency (n)	Percentage (%)
Yes (diagnosed)	8	3%
No	271	97%

Table 3: Awareness of Diabetic Retinopathy Diagnosis

Table 3 shows the awareness of diabetic retinopathy diagnosis among the participants. Only 3% of the participants reported having been diagnosed with diabetic retinopathy by a healthcare provider. This highlights a significant gap in the diagnosis and awareness of diabetic retinopathy, despite the potential risks associated with this condition.

Source of Information	Frequency (n)	Percentage (%)
Healthcare Professionals	125	45%
Family Members	70	25%
Media (TV, Internet, etc.)	42	15%
Other Sources	22	8%
No Information	20	7%

Table 4: Sources of Information about Diabetes and Diabetic Retinopathy

Table 4 outlines the sources of information participants reported as having influenced their knowledge of diabetes and its complications. The most common source of information was healthcare professionals (45%), followed by family members (25%) and media sources (15%). However, 7% of participants reported having no information at all. This points to a reliance on healthcare professionals for information, but also suggests that there is a gap in educational outreach, especially in areas like diabetic retinopathy.

Education Level	Aware of DR (n)	Not Aware of DR (n)	Total (n)	Percentage Aware (%)

Low (≤ High School)	32	113	145	22%
High (≥ College)	40	94	134	30%

Table 5: Awareness of Diabetic Retinopathy by Education Level

This table shows the relationship between education level and awareness of diabetic retinopathy. Of participants with low education (≤ high school), 22% reported being aware of diabetic retinopathy, while 30% of those with higher education (≥ college) demonstrated awareness. This indicates that individuals with higher education levels have a better understanding of diabetic retinopathy, underlining the importance of targeted educational programs for those with lower educational backgrounds.

Duration of Diabetes	Aware of DR (n)	Not Aware of DR (n)	Total (n)	Percentage Aware (%)
<5 years	4	84	88	4.5%
6-10 years	6	100	106	5.7%
>10 years	38	47	85	44.7%

Table 6: Awareness of Diabetic Retinopathy by Duration of Diabetes

Table 6 shows the relationship between the duration of diabetes and awareness of diabetic retinopathy. Participants who had diabetes for more than 10 years had the highest level of awareness (44.7%), while those diagnosed for less than 5 years had the lowest awareness (4.5%). This suggests that longer duration of diabetes may increase the likelihood of awareness of diabetic complications, possibly due to more frequent medical visits and discussions of potential risks over time.

Discussion:

This study aimed to assess the prevalence of diabetic retinopathy (DR) and the level of awareness about this complication among diabetic patients in Tirana, Albania. The findings reveal significant gaps in both awareness and diagnosis of DR, despite the growing prevalence of diabetes in the region5. The results of this study suggest that most participants (97%) were unaware of being diagnosed with DR, which is concerning given the potential risks of undiagnosed and untreated diabetic complications, including vision loss.

The demographic data indicate that the participants had a relatively even distribution of diabetes duration, with a significant proportion having lived with diabetes for over 6 years. Interestingly, the awareness of DR was notably higher in those with a longer duration of diabetes. This suggests that prolonged exposure to the disease, possibly leading to more frequent interactions with healthcare providers, may increase awareness of diabetic complications such as retinopathy. However, the fact that only 44.7% of patients with diabetes for over 10 years were aware of DR highlights a critical gap in patient education and awareness.

The study also explored the relationship between education level and awareness of diabetic retinopathy6,7. Results showed that individuals with higher levels of education (≥ college) were more likely to be aware of DR compared to those with lower education levels (≤ high school). This finding underlines the importance of targeted educational interventions, particularly for individuals with lower educational attainment, who may be at a higher risk of overlooking the importance of eye exams and regular monitoring of diabetic complications.

Additionally, healthcare professionals were identified as the most common source of information regarding diabetes and its complications. While this is encouraging, it also suggests that there may be limited outreach through other channels such as media or community-based educational programs. A significant portion of the participants (7%) reported having no information

about diabetic retinopathy, pointing to a potential deficiency in patient education, especially in regions with limited access to specialized care. This highlights the importance of improving patient education not only through healthcare providers but also through public awareness campaigns and media

outreach8. Patient information and awareness can indeed influence financial issues in healthcare9,10 and increase patient satisfaction11.

Furthermore, the results also suggest that many patients may be unaware of the importance of early screening for DR, as the majority had not received a diagnosis or screening for this complication. Diabetic retinopathy may include treatment with intravitreal injection or steroid injection12,13. This lack of awareness could be a barrier to timely intervention, leading to potential visual impairment or blindness in the future. Given the relatively low awareness rates among participants, particularly those with shorter durations of diabetes, there is a clear need for educational strategies that emphasize the importance of regular eye exams and proactive management of diabetes.

Conclusion:

This study emphasizes the urgent need for increased awareness and early diagnosis of diabetic retinopathy among diabetic patients in Albania. The findings indicate that significant knowledge gaps exist, particularly in individuals with lower educational levels and those with a shorter duration of diabetes. These gaps underline the necessity for targeted educational initiatives aimed at improving patient understanding of the risks associated with diabetic retinopathy, as well as the importance of regular eye exams14.

Healthcare providers play a crucial role in educating patients, but additional efforts are needed to expand outreach through alternative channels, such as media campaigns15, to increase awareness of diabetic retinopathy in the broader population. Public health strategies should focus on enhancing educational materials and resources for individuals with limited access to healthcare or those who may not be regularly monitoring their condition. By improving patient education and increasing access to screening services, it may be possible to prevent significant visual impairment and blindness due to diabetic retinopathy in Albania and similar regions. Future research should explore effective interventions and educational strategies that can address these knowledge gaps and improve patient outcomes in the long term.

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