Dissertation

at

Eye-Q Super Speciality Eye Hospital

on

Awareness and Assessment of Diabetic Retinopathy in Diabetic Patients in Eye-Q Super Speciality Eye Hospital.

by

Name: **Dr.Versha Yadav**

Enroll No. **PG/21/127**

Under the guidance of

Dr. Sumesh Kumar

PGDM (Hospital & Health Management)
2021-23

International Institute of Health Management Research New Delhi

Internship Training
at

Eye-Q Super Speciality Eye Hospital

On

Awareness and Assessment of Diabetic Retinopathy in Diabetic Patients in Eye-Q Super Speciality Eye Hospital.

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The certificate is awarded to

Name: Dr. Versha Yadav

in recognition of having successfully completed his/her internship in the department of

Title: Asst. Manager - Operations

and has successfully completed her Project on

Awareness and Assessment of Diabetic Retinopathy in Diabetic Patients in Eye-Q Super Speciality Eye Hospital.

Date: 30th April,2023

Organization: Eye-Q VISION PVT LTD.

He comes across as a committed, sincere & diligent person who hasa strong drive & zeal for learning.

We wish him all the best for future endeavors.

Subha Reddy

Training & Development

Zonal Head-Human Resources

TO WHOMSOEVER IT MAY CONCERN

This is to certify that **Dr. Versha Yadav** student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at **Eye-Q Super Specialty Eye Hospital** from16 th January 2023 to 30th April 2023

The Candidate has successfully carried out the study designated to him during internship training and his/her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all her future endeavors.

Dr. Sumesh Kumar
Associate Dean, Academic and Student Affairs
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Dr. Sumesh Kumar
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Certificate of Approval

The following dissertation titled **"Awareness and Assessment of Diabetic Retinopathy in Diabetic Patients in Eye-Q Super Specialty Eye Hospital** at **"Eye-Q Super Specialty Eye Hospital"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of the dissertation.

Name	Signature
Dr Kalpana Goyal.	
DR. RATIKA SAMTANI	

Certificate from Dissertation Advisory Committee

This is to certify that **Dr. Versha Yadav,** a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. He/ She is submitting this dissertation titled "Awareness and Assessment of Diabetic Retinopathy in Diabetic Patients in Eye-Q Super Specialty Eye Hospital" at "Eye-Q Super Specialty Eye Hospital" in partial fulfillment of the requirements for the award of the **PGDM (Hospital & Health Management).**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

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EYE Q VISION PVT LTD

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INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH,
NEW DELHI

CERTIFICATE BY SCHOLAR

"Awareness and Assessment of Diabetic Retinopathy in Diabetic Patients in Eye-Q Super Specialty Eye Hospital" and submitted **by Dr. Versha Yadav**, Enrollment No.: PG/021/127

under the supervision of **Dr. Sumesh Kumar** for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from 16th January 2023 to 30th April 2023

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FEEDBACK FORM

Name of the Student: Dr. Versha Yadav

Name of the Organisation in which Dissertation Has Been Completed: EYE-Q VISION PVT LTD

Area of Dissertation: Operations

Attendance: Regular & Punctual.

Objectives achieved: with various departments such as doctors, supply chain, credit team, other resources for smooth functioning of centres.

Deliverables: ensured stock (OT/OPD) consumables, medicines, ophicals, ensured efficient OT utilization general update of centres.

Strengths: Punctual, hard working, good management skills, ready to learn new things

Suggestions for Improvement:

Suggestions for Institute (course curriculum, industry interaction, placement, alumni): None.

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Place: Jhajjar

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Title of the Dissertation/Summer Assignment	Awareness and assessment of diabetic retinopathy in diabetic patients in Eye-Q Super speciality Eye hospital		
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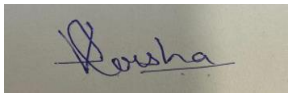
Signature: 

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ACKNOWLEDGEMENT

I would like to express my deepest gratitude and appreciation to all individuals and entities who have contributed to the successful completion of this project. Their invaluable support, guidance, and collaboration have played a pivotal role in the achievement of my goals.

First and foremost, I extend my heartfelt thanks to Dr. Sumesh Kumar, My mentor, for unwavering guidance and expert insights throughout the project's duration. His mentorship and encouragement have been instrumental in shaping the dissertation's direction and ensuring its overall success.

Additionally, I extend my thanks to Tarun Yadav whose guidance have been indispensable in facilitating the smooth execution of this project. Without his generous contributions, this endeavor would not have been possible.

Furthermore, I acknowledge the valuable contributions of all participants and stakeholders involved in this research. Their valuable feedback, suggestions, and active engagement have significantly enriched the research's outcomes.

In conclusion, I recognize and appreciate the support of all individuals and organizations that have played a part in this research's success. Your contributions have been truly significant and have made a lasting impact on our work. Thank you for being an integral part of this journey.

Sincerely,

Dr. Versha Yadav

CONTENTS

LIST OF FIGURES:

LIST OF ABBREVATIONS:

1. **DM - Diabetes Mellitus**
2. **DR - Diabetic Retinopathy**
3. **PDR - Proliferative Diabetic Retinopathy**
4. **CDC - Centers for Disease Control and Prevention**
5. **T2 DM - Type 2 Diabetes Mellitus**
6. **NPDR: Non-Proliferative Diabetic Retinopathy**
7. **PDR: Proliferative Diabetic Retinopathy**
8. **PHCs: Primary Health Centers**
9. **NGOs: Non-Governmental Organizations**

ABOUT THE ORGANISATION:

The Eye-Q hospital network is a well-known healthcare organisation dedicated to providing high-quality eye treatment at reasonable prices throughout India. Eye-Q adheres to strict quality standards as an ISO 9001-2015 recognised organisation to achieve the best possible patient outcomes.

Dr. Ajay Sharma, a well-known eye surgeon in India, is the company's founder and CMD (Chief Managing Director). The organisation has developed and received substantial acclaim for its remarkable services under his leadership. Dr. Ajay Sharma's knowledge and experience were important in establishing the vision and success of the Eye-Q hospitals.

Eye-Q has assembled a team of specialists who have gained vast knowledge in their respective fields while working at premier hospitals throughout India. This group of skilled workers contributes to the hospital's reputation for providing its patients with comprehensive and specialised eye care services.

The Eye-Q Super-Speciality Eye Hospitals chain was founded in 2007 and has since grown to include 32 hospitals in several Indian states, including Delhi-NCR, Haryana, Uttar Pradesh, Uttarakhand, and Gujarat. This extensive hospital network ensures that residents in various regions, including semi-urban and rural areas, have access to eye care services.

Beyond India, Eye-Q has expanded its services to Nigeria, Africa, where it operates three hospitals. This development underscores the organization's dedication to making quality eye care available to a larger international community.

In conclusion, Eye-Q hospitals have developed as a respected and trusted healthcare provider in the field of eye care, with their founder, Dr. Ajay Sharma, leading the way. Their presence in numerous states in India, as well as the expansion of services to Nigeria, demonstrates their commitment to achieving their mission of offering affordable, super-specialized eye care services to a varied population.

The Eye-Q Hospital network is a major healthcare organization with a strong dedication to providing high-quality eye treatment at reasonable prices across India. As an ISO 9001-2000 recognized organization, Eye-Q adheres to stringent quality management practices to ensure that patients receive outstanding medical care and service.

Dr. Ajay Sharma, the acclaimed founder and CMD (Chief Managing Director), is at the forefront of the organization. Dr. Sharma is widely regarded as one of India's most prominent eye surgeons, with extensive experience and expertise in the profession. His vision and accomplishments at Eye-Q hospitals have been shaped by his leadership.

Supporting Dr. Sharma leads a team of doctors with extensive expertise from some of the country's top hospitals. These experts have polished their expertise in their fields, obtaining significant insights and knowledge in advanced eye care practices. With such a diversified and experienced workforce, Eye-Q hospitals can provide comprehensive and specialized eye care services tailored to each patient's specific needs.

The primary goal of Eye-Q hospitals is to make high-quality eye treatment available and inexpensive to individuals throughout India. To accomplish this, they have strategically erected hospitals in strategic areas throughout the country. Eye-Q assures that people from various areas, including semi-urban and rural areas, may access world-class eye care facilities by establishing 32 Super-Speciality Eye Hospitals in regions such as Delhi-NCR, Haryana, Uttar Pradesh, Uttarakhand, and Gujarat.

This strategy is consistent with their dedication to affordability, as it alleviates the stress of travel fees while also providing patients with cost-effective eye care alternatives. Eye-Q hospitals have established themselves as a healthcare provider that actually cares about the well-being of its patients by making their services available to a diverse audience.

Finally, the Eye-Q Hospital network, led by Dr. Ajay Sharma, is a prestigious organisation committed to providing superior eye care services in India. They have positioned themselves as a dependable and compassionate choice for consumers seeking exceptional eye care across the country, thanks to a staff of knowledgeable professionals and a commitment to affordability.

ABSTRACT

Introduction:

Diabetes mellitus (DM) is a persistent metabolic condition with an increasing occurrence worldwide, which can result in several complications, including diabetic retinopathy (DR), a significant contributor to avoidable blindness. Timely detection and intervention are vital in reducing the impact of DR on vision.

In this cross-sectional research carried out at Eye-Q Super Specialty Eye Hospital, the objective is to evaluate the awareness level concerning DR, adherence to regular eye check-ups, and the prevalence of DR among individuals with diabetes. The study also examines related factors such as the duration of diabetes, presence of hypertension, and gender.

Methodology:

The study used a descriptive cross-sectional design and included 65 diabetic patients aged 20 years and above, who were attending Eye-Q Super Specialty Eye Hospital. Data collection involved reviewing patient medical records and administering structured questionnaires. The participants' understanding of diabetic retinopathy (DR), its connection to diabetes, and the significance of regular eye screenings were assessed. The prevalence of DR was determined by conducting ophthalmological examinations, and statistical analysis was employed to investigate associated factors.

Results:

Only 25% of diabetic patients were aware of the link between diabetes and eye damage, according to the study's findings, which point to a serious lack of information regarding diabetic retinopathy (DR) among diabetic patients. Only 20% of participants understood that DR is a curable disorder, and only 30% were aware that regulating blood sugar levels can help prevent DR. It is concerning to see that 65% of those receiving treatment were unaware that diabetes might cause blindness. 30% of hospitalized individuals were confirmed to have DR, according to the research. Proliferative diabetic retinopathy (PDR), which made up 30% of the group, was less frequent than non-proliferative diabetic retinopathy (NPDR), which accounted for 70% of the group. Additionally, the study found that people with diabetes for a longer time was more likely to be diagnosed with both NPDR and PDR.

Additionally, the study found a link among diabetes and hypertension, with 24 individuals experiencing both illnesses concurrently. This raises the possibility that hypertension and the development of DR are related.

Overall, the study underscores the necessity of raising DR knowledge among diabetes patients and stresses the significance of routine eye exams to successfully avoid and control the illness.

Conclusion:

Indeed, this study's findings underscore a worrisome lack of awareness concerning diabetic retinopathy (DR) among diabetic patients, highlighting the necessity for targeted educational programs to enhance their understanding of this condition. The prevalence of DR observed at Eye-Q Super Specialty Eye Hospital emphasizes the crucial role of regular eye screenings in facilitating early detection and intervention. By addressing associated factors like hypertension and diabetes duration, personalized approaches to diabetes care can be developed, ultimately leading to better eye health outcomes for those affected. Bridging the knowledge gap and promoting regular eye examinations are essential steps in reducing the burden of DR-related visual impairment. Implementing such measures can significantly contribute to the well-being of individuals living with diabetes and safeguarding their vision

INTRODUCTION:

Diabetes mellitus is a chronic metabolic illness with increased blood glucose levels that affects many people globally and poses a serious health risk. Particularly among people of working age, diabetic retinopathy stands out as a significant cause of avoidable blindness within its range of sequelae. This progressive eye disease affects the retina and can lead to vision loss and blindness if not addressed promptly. The alarming increase in diabetes prevalence and its associated complications has emphasized the need for increased awareness and effective assessment methods for diabetic retinopathy.

In recent times, Eye-Q Super Specialty Eye Hospital has gained recognition as a premier medical institution dedicated to delivering comprehensive eye care services to patients across various regions. The hospital is well-regarded for its cutting-edge facilities, advanced medical equipment, and a team of highly skilled ophthalmologists, making it an ideal environment for studying the awareness and assessment of diabetic retinopathy in diabetic patients. For diabetic retinopathy management, early identification and prompt intervention are crucial. As the disease progresses, it can lead to irreversible vision impairment or blindness. However, through appropriate screening and treatment, the advancement of diabetic retinopathy can be slowed or stopped, preserving visual function and enhancing the quality of life for those affected.

The primary objective of this research is to investigate the level of awareness among diabetic patients about diabetic retinopathy, their adherence to regular eye examinations, and the overall prevalence of diabetic retinopathy at Eye-Q Super Specialty Eye Hospital.

By identifying gaps in awareness and understanding the factors influencing compliance with eye screenings, the study aims to propose strategies for promoting early diagnosis and intervention. This study is significant because it has the ability to close the gap among medical knowledge and patient behavior, thereby improving the results for diabetics' eye health. Furthermore, the findings of this study may serve as a foundation for targeted educational programs and awareness campaigns, empowering patients with knowledge about diabetic retinopathy and the importance of regular eye check-ups. The subsequent sections of this study will delve into the methodology employed, data collection techniques, statistical analysis, and the interpretation of results. Ethical considerations will be strictly observed to protect patients' rights and confidentiality.

The potential impact of this research on public health efforts to combat diabetic retinopathy-related visual impairment is substantial. Eye-Q Super Specialty Eye Hospital, as a reputable institution dedicated to advancing ophthalmic care, aims to utilize the insights gained from this research to further enhance their services and contribute to the growing knowledge aimed at reducing the burden of diabetic retinopathy on affected individuals and society as a whole.

Diabetes mellitus (DM) has become a significant economic burden for India and the world at large. India held the top spot in terms of DM prevalence in 2000 with 31.7 million cases, and according to projections from the WHO, this figure would increase to 79.4 million by 2030. DM can result in both microvascular and macrovascular problems. The prevalence of microvascular problems, which include neuropathy, nephropathy, and retinopathy, is higher than that of macrovascular consequences, which include peripheral artery disease, cardiovascular disease, and stroke. A frequent and potentially blinding consequence of DM is diabetic retinopathy (DR), which is brought on by changes in the microangiopathy, such as protein production in the matrix of extracellular cells and thickness of the capillary basement membrane.

Proliferative diabetic retinopathy (PDR) and non-proliferative diabetes retinopathy (NPDR) are the two subtypes of DR, respectively. NPDR is further subdivided in moderate, severe, mild, and very severe variations, sometimes with or without retinal edema. Major contributors to severe and irreversible vision impairment are PDR and macular edema. According to studies, almost all people with Type 1 diabetes and more than 60% of those with Type 2 diabetes may expect to get some kind of retinopathy within the initial ten years after receiving a diagnosis. According to reports, 21.7% of those with type 2 diabetes patients who are 40 years or older have retinopathy.

According to the Centers for Disease Control and Prevention (CDC), the prevalence of DR is expected to increase thrice between 2005 and 2050. The prevention and treatment of DR have, nevertheless, significantly improved as a result of developments in our understanding of the risk variables, pathophysiology, and symptoms of the condition. Uncontrolled blood sugar, a prolonged illness course, and the existence of systemic disorders including hypertension and hyperlipidemia are risk factors for DR. It has been demonstrated that effective blood pressure management lowers the risk of DR advancement.

Despite these developments, varying degrees of DR knowledge among diabetic patients have been documented around the globe, including in India. While many people think that persons with diabetes should have regular eye exams, very few people with DM actually have their DR evaluated.

Aim

The aim of this cross-sectional study at Eye-Q Super Specialty Eye Hospital are to determine the prevalence of diabetic retinopathy (DR), assess patient knowledge of DR, and look into DR-related variables. The long-term objective is to support the development of specialized educational programs and treatments that can improve DR early identification and management, therefore lessening the load of DR-related visual impairment.

Objectives

PRIMARY OBJECTIVE

• To determine the level of understanding and awareness of diabetic retinopathy among patients who are currently receiving a diabetes diagnosis.

SECONDARY OBJECTIVES

- To determine the prevalence of diabetic retinopathy among diabetic patients who are receiving care at Eye-Q Super Specialty Eye Hospital.

- Assess the other associated factors of diabetic retinopathy among diabetic patients.

Methodology

- **STUDY DESIGN –** Descriptive- Cross - Sectional study

- **STUDY POPULATION –** Diabetic patients at Eye-Q Super Specialty Eye Hospital who are 20 years of age or older and have previously been diagnosed with diabetes.

- **SAMPLE SIZE-** 65 Patient with diabetic mellitus

- **STUDY SETTING –** Hospital based

- **SAMPLING TECHNIQUE:** Connivence sampling technique

- **STUDY DURATION-** 3 months

- **CONTENT OF DATA COLLECTED –** Data collection through Patient Medical Records Review and Structured questionnaire.

- **Tool -** After a thorough evaluation of pertinent literature on diabetic retinopathy (DR) awareness, a standard survey that was created in English and translated into the language of the region was used to thoroughly examine research participants. Before starting the trial, the Institutional Ethics Committee (IEC) provided its ethical permission. 65 individuals with diabetes who were receiving care at Eye-Q Super Specialty Eye Hospital made up the sample. A local language questionnaire was used to assess the participants' knowledge and comprehension of diabetic retinopathy. Additionally, details on concomitant variables were gathered, including relatives with a history of diabetes, hypertension, and addictions like smoking. On all of the subjects, a thorough baseline physical examination was performed.

Experienced ophthalmologists conducted ophthalmological examinations utilizing a slit lamp for a thorough inspection and fundus image capture of each eye with dilated pupils to particularly assess diabetic retinopathy. A thorough fundus examination was used to test for diabetic retinopathy using direct and indirect ophthalmoscopy. Through a thorough ophthalmological examination, the respondent's awareness and understanding of diabetic retinopathy were evaluated scientifically, along with the existence of diabetic retinopathy and any related risk factors. The goal of the study was to gather important information from diabetic patients at the Eye-Q Super Specialty Eye Hospital in order to further scientific knowledge of diabetic retinopathy.

RESULT

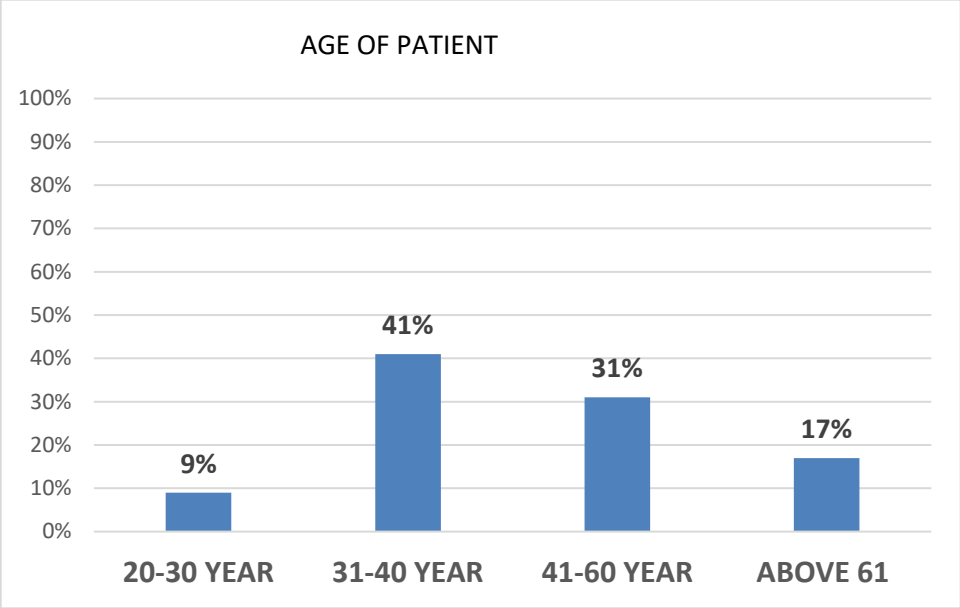

Fig1: Age wise percentage distribution of patient

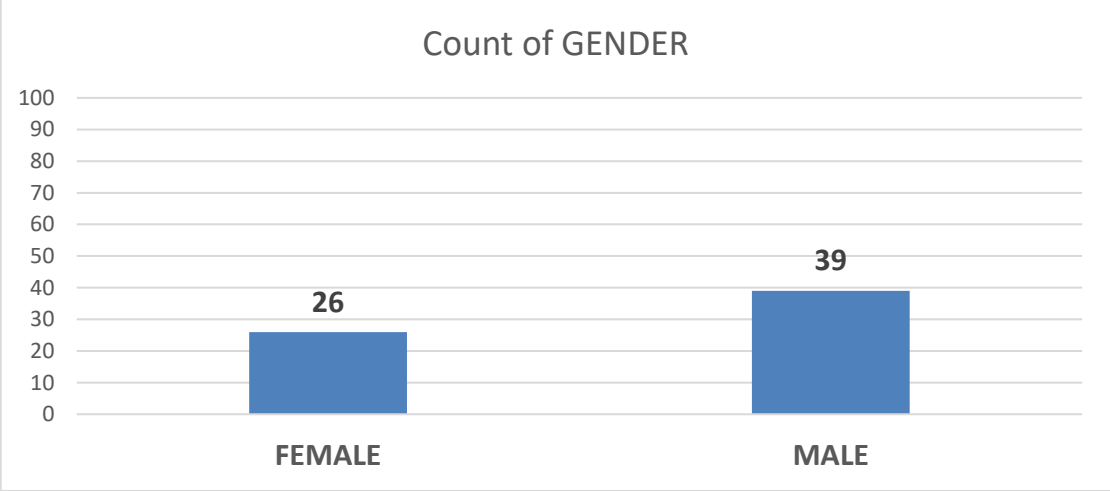

Fig 2: Gender distribution of patient

65 patients diagnosed with diabetes to gain insights into the prevalence of the disease among different age groups and genders. Among these patients, 26 individuals were female, while 39 were male, making for a diverse representation of both sexes.

When analyzing the age distribution, we observed that 9% (5 patients) fell into the 20-30 years age bracket, indicating a relatively smaller proportion of younger individuals affected by diabetes. In the 31-40 years age range, a significant 41% (26 patients) of the participants were included, highlighting the higher prevalence of diabetes in this specific age group. The age group of 41-60 years encompassed 31% (20 patients) of the total, indicating a substantial representation of middle-aged individuals facing the challenges of diabetes. Furthermore, 17% (14 patients) of the participants were aged above 61 years, revealing that older adults also contribute to the diabetic patient population in this study.

By examining these findings, we aim to better understand the distribution of diabetes across different age groups and genders.

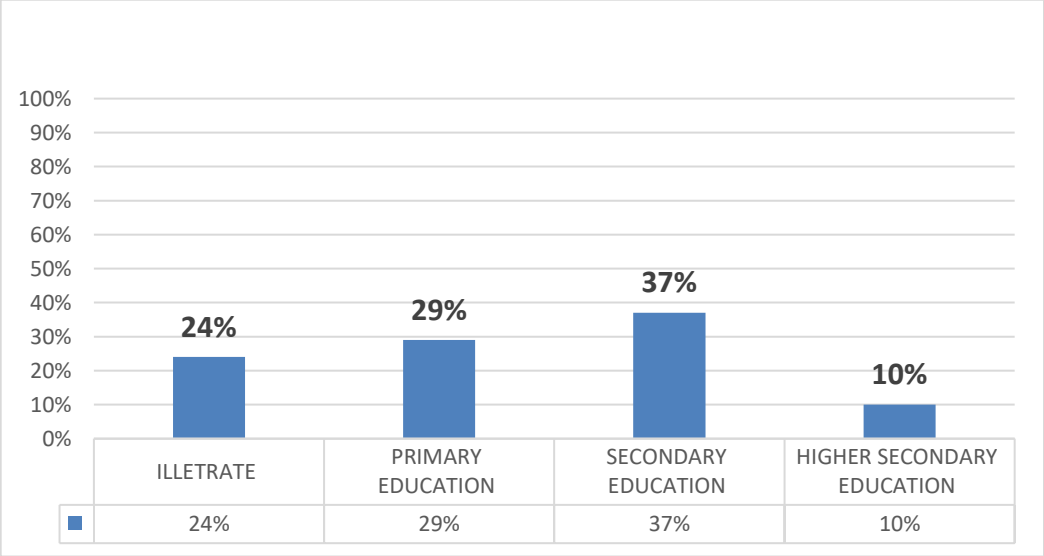

Fig3: Percentage distribution of literacy in diabetic patient

Study of 65 diabetic patients, we meticulously examined various aspects of their medical and demographic profiles to gain a deeper understanding of the disease's impact on different individuals. Out of the total sample, a significant proportion of 24% (15 patients) were found to be illiterate, emphasizing the need for targeted healthcare initiatives and educational interventions to bridge the gap in diabetes management among this specific group.

As we delved further into the duration of diabetes among the patients, compelling insights emerged. Approximately 30% of the participants (19 patients) had a history of diabetes for less than 5 years, indicating a substantial number of recent diagnoses. Notably, 9 individuals (24.07%) had been managing diabetes for a duration of 5 to 10 years, while 12 patients (16.92%) had a diabetes history spanning 11 to 15 years.
Most notably, a significant portion of 31 patients (28.7%) had been grappling with diabetes for over 15 years, underscoring the chronic nature of the disease and the challenges it poses for long-term management.

When examining the family medical history of diabetes, we found that 20% of the patients (13 individuals) had a positive family history of the disease. This observation highlights the potential genetic predisposition to diabetes and its influence on disease prevalence within families.

Furthermore, we assessed the prevalence of other associated diseases among the diabetic patients. A substantial number of 37% (24 patients) were simultaneously coping with hypertension, indicating the common co-occurrence of these two conditions and the importance of managing them together to achieve better health outcomes. Additionally, a small percentage of patients were dealing with comorbidities, such as cardiac disease (3% - 2 patients) and kidney disease (5% - 4 patients), warranting close monitoring and tailored treatment approaches to address these complex health issues alongside diabetes.

Remarkably, 35 patients (55%) did not exhibit any other associated diseases apart from diabetes, signifying a focus on understanding the singular impact of diabetes in this subgroup.

These comprehensive findings provide crucial insights into the diverse characteristics and challenges faced by diabetic patients, emphasizing the necessity for personalized and multidimensional approaches to diabetes care. By acknowledging the varying durations of diabetes, family history, and comorbidities, healthcare professionals can develop targeted interventions and treatment plans to improve the overall well-being and quality of life for those living with diabetes.

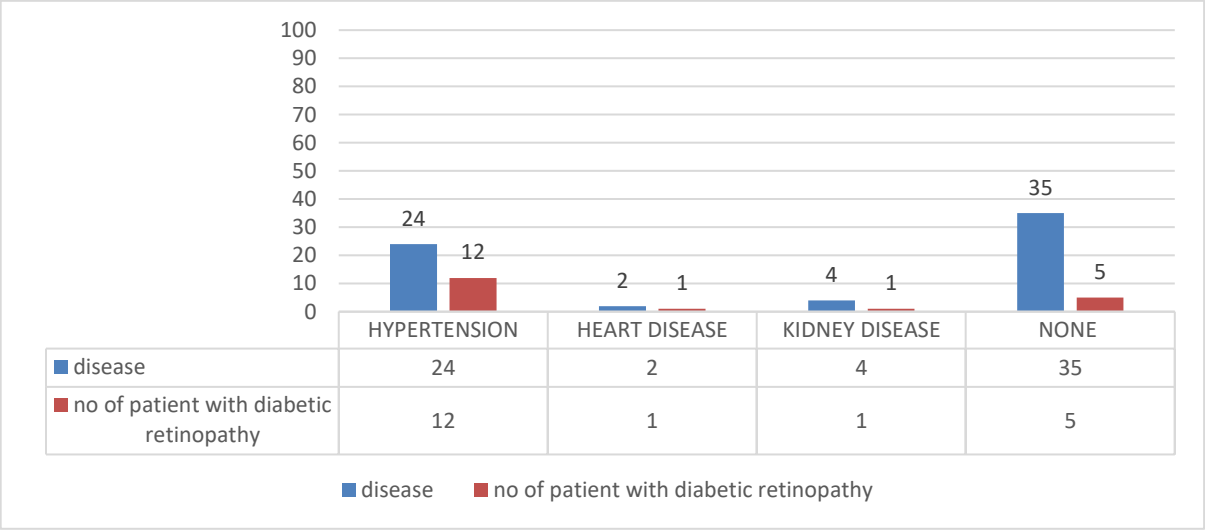

Fig4: Associating between with diabetic retinopathy and other disease

The findings from our study revealed a noteworthy association between diabetes and hypertension, as 24 patients were identified to have both conditions concurrently. This coexistence of diabetes and hypertension is a common occurrence in the population, highlighting the need for a comprehensive approach to manage these interconnected health challenges.

The risk of developing hypertension was notably higher in individuals with diabetes, ranging from 1.5 to 2.0 times more likely compared to non-diabetics. Conversely, approximately one-third of the patients with hypertension in our study were found to have diabetes as well, underscoring the bidirectional relationship between these two conditions.

Moreover, our investigation delved into the occurrence of diabetic retinopathy among those with both diabetes and hypertension. Alarmingly, 8 patients from the group of 24 with comorbid diabetes and hypertension exhibited diabetic retinopathy, indicating a potential link between these conditions and the progression of retinal complications.

Extensive research conducted by various studies has also corroborated the interconnected nature of hypertension and diabetic retinopathy. It has been consistently observed that hypertension can contribute to the advancement of diabetic retinopathy, leading to more severe retinal damage. A particular concern is hypertensive optic neuropathy, a condition characterized by chronic papilledema, which refers to swelling of the optic disc due to increased intracranial pressure. This condition can culminate in optic nerve atrophy, causing a profound loss of visual acuity.

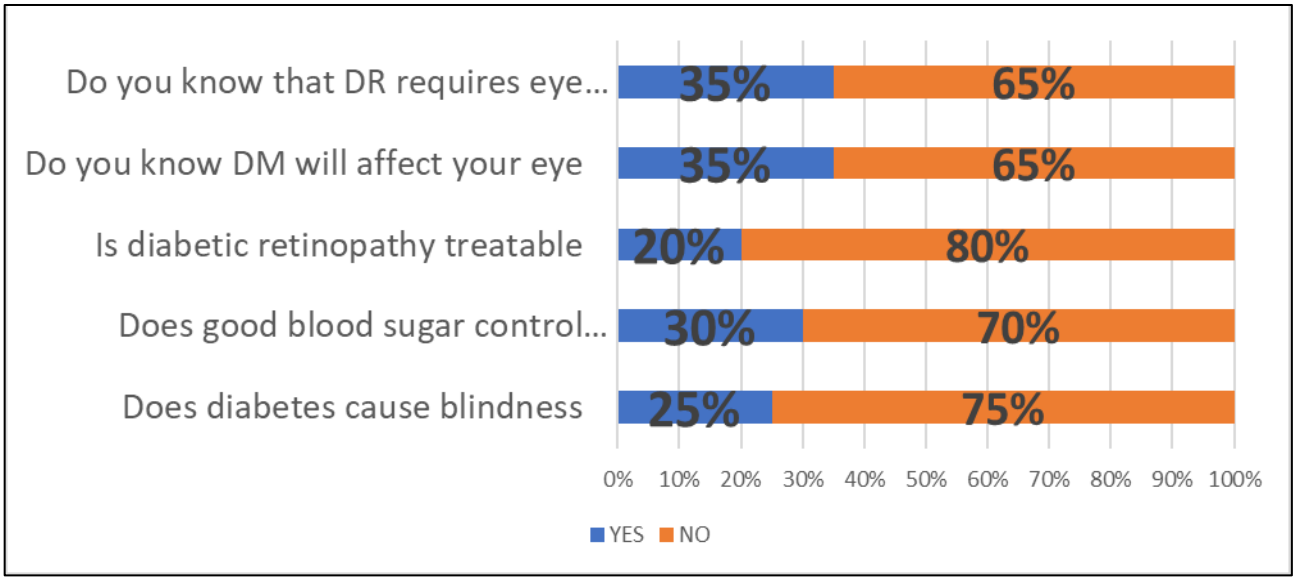

Fig5: percentage of individuals who responded to several inquiries on their knowledge of diabetic retinopathy

The data obtained from our study, which involved 65 participants, provided significant insights into the awareness levels related to diabetic retinopathy (DR) and its potential consequences. The findings revealed that 25% of the participants were aware of the link between diabetes and eye damage, indicating a notable level of awareness among a portion of the studied population concerning the ocular complications associated with diabetes. However, a larger percentage, precisely 75%, were not aware of this connection, signifying the need for increased efforts to educate and inform individuals about the potential risks to their eyes posed by diabetes.

Additionally, the study found that 35% of the participants reported being aware that diabetes can lead to blindness, highlighting a noteworthy level of knowledge regarding the severe visual implications of diabetes. On the other hand, a considerable 65% of the participants were unaware of this specific association between diabetes and blindness, underscoring the importance of raising awareness about the potential ocular consequences of the disease.

Regarding awareness related to the prevention and treatment of diabetic retinopathy, the results were mixed. Only 30% of the subjects demonstrated awareness that strict control of blood glucose levels can prevent the risk of developing DR. This finding indicates that a portion of the participants recognized the significance of maintaining optimal blood glucose levels to reduce the likelihood of diabetic retinopathy. However, it also implies that a substantial 70% of the participants were not aware of the preventive role of blood glucose control in relation to diabetic retinopathy, necessitating targeted educational efforts in this area.

Moreover, 20% of the participants were aware that diabetic retinopathy can be treated, although specific details about the treatment options were not known to them. This observation suggests that a notable proportion of the participants acknowledged the possibility of managing and addressing DR once diagnosed, even if they might not have been fully informed about the various treatment modalities available.

However, a significant majority, comprising 80% of the patients, were not aware that diabetic retinopathy is treatable, highlighting a critical gap in knowledge and the urgent need for raising awareness about the available treatment options.

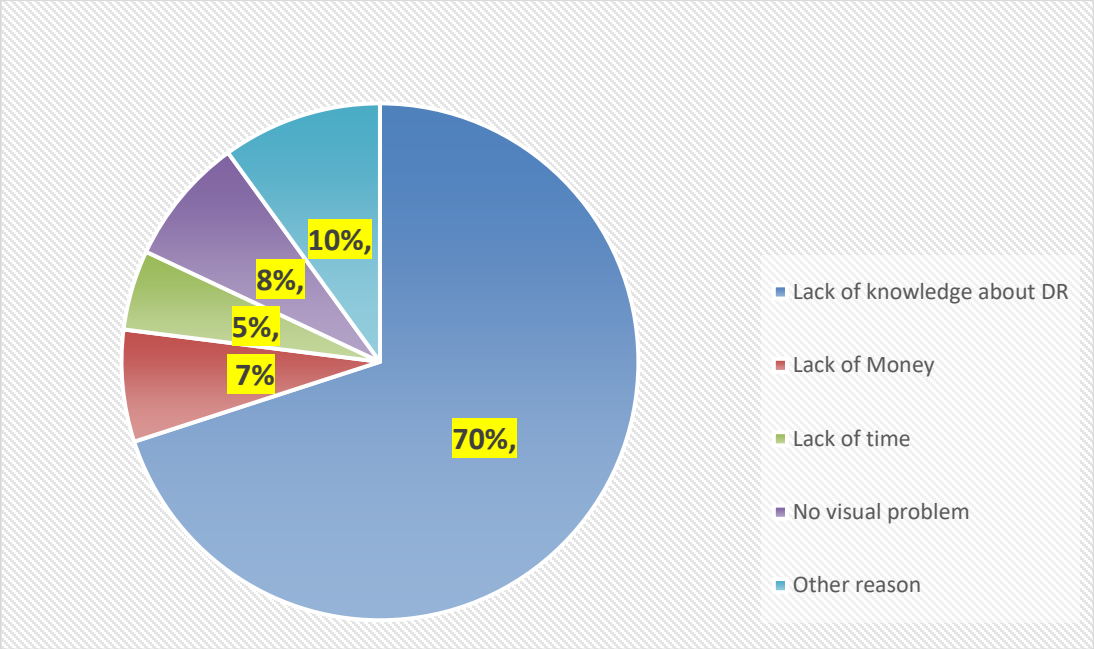

Fig6: Pie chart showing participant decision for not undergoing eye examination for diabetic retinopathy

The study provided valuable insights into the reasons behind the participants' decision not to undergo eye examination for diabetic retinopathy (DR) screening. Among the 65 patients surveyed, a significant proportion of 70% (45 patients) cited a lack of knowledge about the importance and necessity of undergoing regular eye screenings for DR as the primary reason for not seeking such examinations. This highlights a critical gap in awareness regarding the significance of eye examinations in detecting potential diabetic retinopathy early, thereby underscoring the need for targeted educational campaigns to improve understanding and encourage regular screenings.

Interestingly, 8% (6 patients) reported not undergoing eye examinations due to the absence of any noticeable visual problems. This perception of good eye health may lead some individuals to overlook the importance of regular screenings, not realizing that diabetic retinopathy can be asymptomatic in its early stages.

Therefore, it becomes essential to emphasize the significance of preventive screenings, even in the absence of apparent visual symptoms, to detect any signs of DR at an early and treatable stage.

A smaller percentage, comprising 5% of the participants, cited a lack of time as the reason for not pursuing eye examinations. This finding highlights the importance of addressing barriers to accessing healthcare, including scheduling constraints, to ensure that patients can easily avail themselves of essential screenings without facing significant time constraints.

Moreover, 7% of the participants reported financial constraints as the reason for not undergoing eye examinations. The cost of medical services, including eye screenings, can be a significant deterrent for some individuals, particularly those with limited financial resources. To overcome this barrier, it is crucial to explore and implement affordable or subsidized eye screening programs, thereby ensuring that financial limitations do not hinder patients from receiving the necessary eye care.

In addition to the reasons mentioned above, 10% of the participants cited other factors for not undertaking eye examinations. These factors might include fear or anxiety related to medical procedures, lack of accessibility to eye care facilities, or even cultural beliefs influencing healthcare-seeking behaviours. Understanding and addressing these individual-specific barriers are essential to ensure that patients can access the appropriate eye care they require.

Discussion

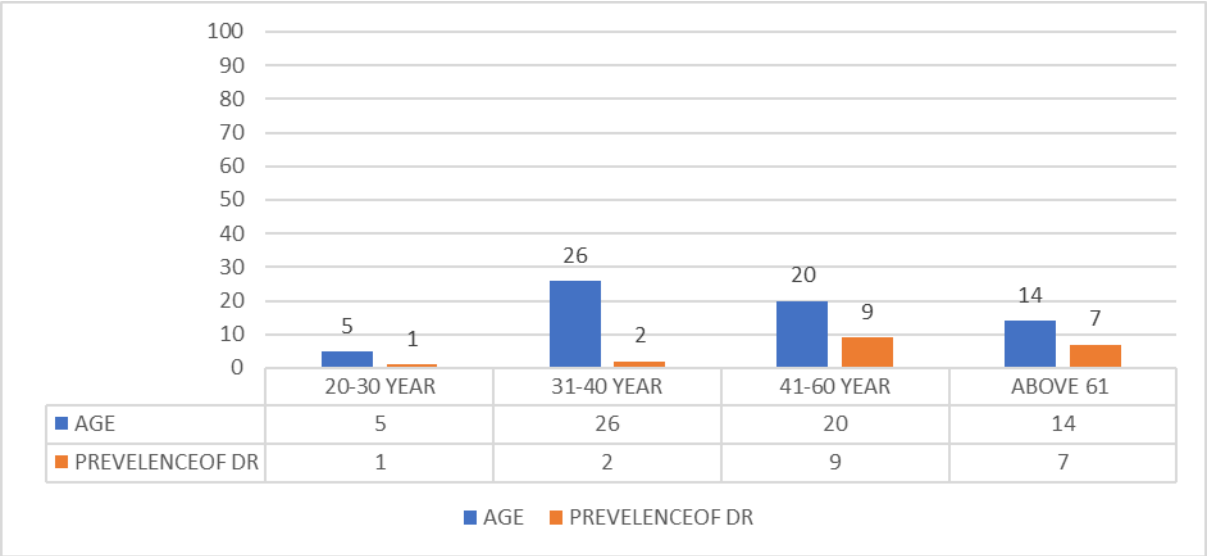

Fig 7: Age wise prevalence of diabetic retinopathy

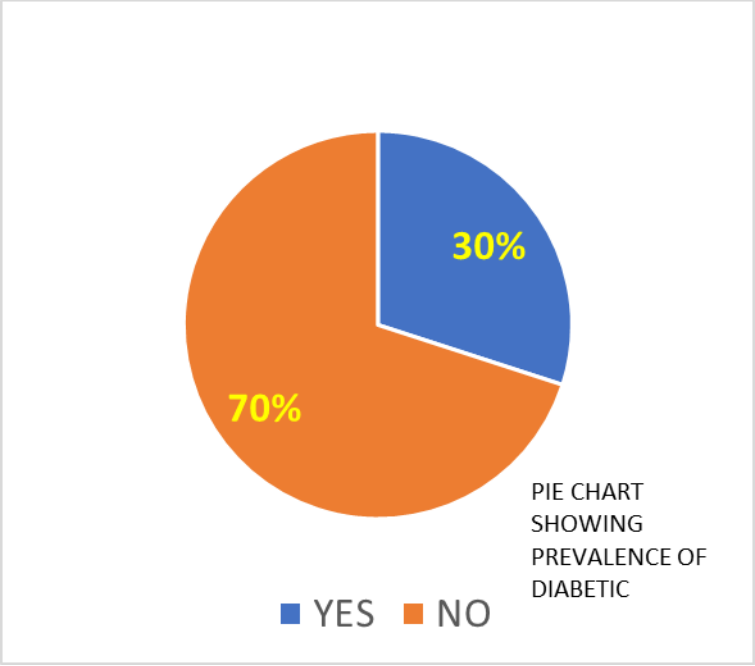

Fig8: Prevalence of diabetic retinopathy in the study population is shown by a pie chart.

The lack of awareness regarding diabetic retinopathy (DR) represents a significant and concerning health issue as it directly impacts the effective management and prevention of visual impairment resulting from diabetes. When individuals are not adequately informed about the potential risks and consequences of DR, they may fail to recognize the importance of early detection and timely intervention, leading to delays in seeking appropriate medical care. This delay can significantly impact the prognosis and treatment outcomes for diabetic retinopathy, potentially resulting in severe visual complications and reduced quality of life for affected individuals

In this study, investigated the prevalence of diabetic retinopathy among the participants and found it to be 30%. This observation highlights the substantial burden of diabetic retinopathy within the diabetic patient population under study.

However, a noteworthy finding emerged when analyzing the association between gender and the occurrence of diabetic retinopathy. Among the participants with diabetic retinopathy, a higher number of males, specifically 39 individuals, were affected by the condition compared to females. Nevertheless, the statistical analysis revealed that there was no significant association between gender and the presence of diabetic retinopathy.

This finding may indicate that the higher number of males with diabetic retinopathy could be a chance occurrence within our study sample. The lack of a statistically significant association suggests that gender alone may not be a major determinant in the development of diabetic retinopathy in this particular cohort.

However, it is essential to interpret this result cautiously, considering the limited size of the study sample and the potential for other confounding factors that were not accounted for in this analysis. Nonetheless, regardless of the lack of a significant association between gender and diabetic retinopathy in this study, the overall prevalence of the condition remains substantial. Therefore, raising awareness about diabetic retinopathy and its implications remains crucial for both males and females alike.

By educating individuals about the importance of regular eye screenings, early detection, and adherence to appropriate treatment, we can strive to minimize the impact of diabetic retinopathy on visual health and enhance the overall management of diabetes-related ocular complications.

Future research with larger and more diverse samples could provide further insights into the potential influence of gender and other demographic factors on the prevalence and severity of diabetic retinopathy. Until then, promoting awareness and emphasizing the significance of regular eye examinations for all individuals with diabetes will be paramount in reducing the burden of diabetic retinopathy and preserving visual function and well-being in this vulnerable population.

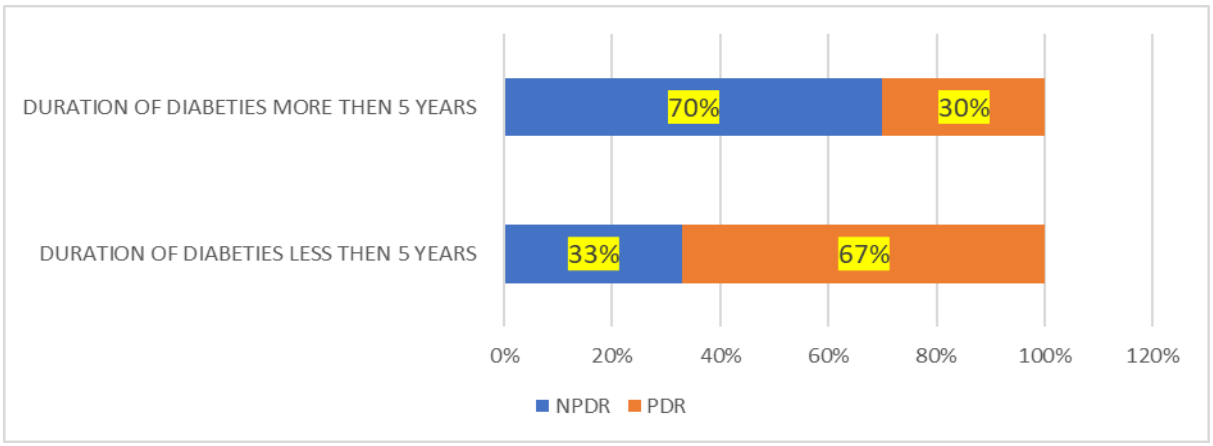

Fig9: Duration of diabetes

The findings of this study have brought to light crucial deficiencies in awareness among diabetic patients regarding diabetic retinopathy (DR) and the necessity for regular eye screenings. A significant number of patients (35%) were only aware that diabetes can affect the eyes, indicating a lack of comprehensive knowledge about specific ocular complications associated with diabetes. Moreover, a substantial majority (65%) were unaware of the essentiality of frequent eye screenings for detecting and managing diabetic retinopathy, underlining the urgency for targeted educational initiatives to improve awareness.

An alarming discovery was that a large proportion (80%) of the study population was unaware that diabetic retinopathy is treatable. This lack of knowledge about available treatment options could deter patients from seeking timely medical intervention, potentially impacting their visual outcomes and quality of life. Addressing this lack of awareness about treatment options is crucial in empowering patients to proactively manage their diabetic retinopathy and minimize its impact on their eye health.

The study also explored the distribution of diabetic retinopathy subtypes among the patients. The majority (70%) of individuals with diabetic retinopathy had non-proliferative diabetic retinopathy (NPDR). This highlights the need of routine screenings and prompt treatment to stop NPDR from progressing to more serious stages.

In contrast, 30% of the patients had Proliferative Diabetic Retinopathy (PDR) identified. A more severe and advanced type of diabetic retinopathy, PDR is characterized by aberrant blood vessel development in the retina. The high prevalence of PDR among patients emphasizes the significance of early identification and vigorous treatment to avert complications that might compromise eyesight.

The study also found a strong link between the length of time of diabetes with the emergence of diabetic retinopathy. In contrast to PDR, which was shown in individuals who had diabetes for more than 5 years, people with diabetes for a period of time exceeding five years were more likely to develop NPDR. This association highlights the progressive nature of diabetic ocular problems and highlights the significance of early diagnosis and ongoing surveillance to quickly recognize and treat diabetic retinopathy.

Conclusion

The results of this lengthy study have shed vital light on the association between diabetic retinopathy (DR) and a number of patient characteristics, such as age, the length of the patient's diabetes, and a positive family history for the disease. The findings overwhelmingly support the advice to conduct routine DR screenings since early identification and treatment can significantly reduce the risk of blindness and avoid blindness altogether.

The substantial correlation between the length of diabetes mellitus and the emergence of diabetic retinopathy is one of the major findings of this study. Long-term diabetes offers a larger hazard to eye health since the chance of diabetic retinopathy grows as diabetes duration increases. This emphasizes the critical importance of diligent monitoring and proactive management of diabetes over time to mitigate the potential visual consequences associated with diabetic retinopathy.

The study's main goal was to gauge how many people with diabetes mellitus who have previously received a diagnosis are aware of diabetic retinopathy. Unexpectedly, it was discovered that a sizable majority of these individuals were not aware that diabetic retinopathy was a potential consequence of diabetes. The study also showed that many of these individuals were non-compliant with regards to controlling their diabetes and going for routine checkups. This lack of understanding and adherence highlights the critical need for focused educational activities to boost patient knowledge and participation in their eye health and raises the risk in creating sight-threatening problems connected to diabetic retinopathy.

The study also clarified a number of key risk factors that diabetic people may experience while developing diabetic retinopathy. Longevity of diabetes, ineffective blood glucose regulation, and the existence of hypertension stood shown as key contributors among these variables. The management and mitigation of diabetic retinopathy and its possible effects on visual health depend critically on recognizing and managing these risk factors.

To protect sight from diabetic retinopathy, a multifaceted approach is essential. This includes regular and timely screenings to detect any early signs of diabetic retinopathy, appropriate laser treatment to manage and halt its progression, intraocular injections of steroids and anti-vascular endothelial growth-factor agents to target specific complications, and in some cases, intraocular surgery to address advanced stages of the condition. By implementing these preventive and therapeutic measures, healthcare professionals can significantly reduce the risk of severe visual impairment and enhance overall eye health outcomes for patients with diabetic retinopathy.

In order to effectively manage the illness and avoid visual consequences, one of the most important factors in managing diabetic retinopathy is the degree of awareness and understanding about the condition. By increasing awareness and educating patients about the importance of regular screening, early detection, and adherence to prescribed treatments, healthcare providers can empower patients to take proactive measures in managing their diabetic retinopathy effectively and minimizing its potential impact on their vision.

In conclusion, the comprehensive findings of this study underscore the multifactorial nature of diabetic retinopathy, emphasizing the significance of various patient factors and the critical role of regular screenings and timely interventions. By prioritizing awareness, education, and active management, healthcare professionals can make significant strides in reducing the burden of diabetic retinopathy and preserving sight for patients living with diabetes mellitus. These insights are crucial in developing tailored strategies to improve patient outcomes and enhance the overall quality of life for those affected by diabetic retinopathy.

Recommendations

The research findings from this study have revealed a significant and noteworthy observation: healthcare professionals, especially physicians and eye doctors, are considered the most reliable sources of information when it comes to knowledge about Diabetic Retinopathy (DR). Understanding the pivotal role played by these healthcare providers in educating and guiding diabetic patients about DR, it becomes imperative for hospital administrations, eye care specialists, and physicians to collaboratively devise a comprehensive and strategic intervention aimed at enhancing awareness and knowledge about DR among diabetic patients.

To effectively improve knowledge about DR, the implementation of a comprehensive health education program within the hospital setting is strongly recommended. This program should involve a well-coordinated effort from various healthcare stakeholders, including physicians, eye care specialists, diabetic educators, and counselors. Through their collaborative efforts, these healthcare professionals can consistently and accurately disseminate vital information to diabetic patients, effectively conveying the risks and potential complications associated with DR, the critical importance of regular eye screenings, and the available treatment options.

The involvement of diabetic educators and counsellors assumes paramount importance in providing personalized support and guidance to patients. Their active participation can significantly enhance patient engagement, address individual concerns, and tailor information according to specific patient needs. By empowering patients with personalized guidance and support, diabetic educators and counsellors can foster improved patient compliance and adherence to recommended screenings and treatment regimens, thereby contributing to the effective management of DR and yielding better visual outcomes.

To further augment knowledge and awareness among healthcare professionals, the organization of seminars with a specific focus on diabetic eye complications, particularly highlighting the importance of eye screening, becomes crucial. These seminars should provide up-to-date and evidence-based information on the latest advancements in

DR management, guidelines for eye screenings, and best practices in diabetic care. By equipping healthcare professionals with this up-to-date knowledge, they can become better educators for their patients, ensuring the timely detection and appropriate management of DR.

Expanding awareness efforts beyond the hospital setting is equally vital. Displaying informative awareness posters at primary health centers (PHCs), diabetologist's clinics, hospitals, and other healthcare facilities can serve as constant reminders for both patients and healthcare providers about the significance of DR screenings. These posters should encompass key messages about the importance of early detection, the benefits of regular eye check-ups, and the potential impact of DR on vision. By fostering a culture of proactive eye care within the healthcare community and among patients, these awareness posters can serve as potent tools for promoting vigilant eye health practices.

Hospital administrators, eye care specialists, doctors, diabetes educators, and counselors can work together to improve diabetic patients' understanding and consciousness of diabetic retinopathy by incorporating these multifaceted and evidence-based solutions. This concerted effort will not only lead to improved patient outcomes and cut down on problems that might endanger your vision but also foster a comprehensive approach to diabetic care that prioritizes eye health and overall well-being. Ultimately, nurturing a culture of awareness and vigilance surrounding DR can lead to enhanced patient empowerment and better overall eye health outcomes for individuals living with diabetes. These initiatives hold immense promise for enhancing public health efforts and achieving better eye health outcomes on a broader scale, contributing to the overall well-being of the diabetic population.

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