Original Article
DOI: https://doi.org/10.70749/ijbr.v3i8.2197

INDUS JOURNAL OF BIOSCIENCE RESEARCH
https://ijbr.com.pk
ISSN: 2960-2793/ 2960-2807

Knowledge, Attitude and Practice about Diabetic Retinopathy among Health Care Workers

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ARTICLE INFO

Keywords: Diabetic Retinopathy (DR), Knowledge, Attitude, and Practice (KAP), Healthcare Workers (HCWs), Vision Loss / Blindness, Diabetes Mellitus.

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Declaration
Authors' Contribution
All authors equally contributed to the study and approved the final manuscript

Conflict of Interest: No conflict of interest.

Funding: No funding received by the authors.

Article History
Received: 29-06-2025 Revised: 16-08-2025
Accepted: 22-08-2025 Published: 30-08-2025

ABSTRACT

Background: The study investigated the KAP about Diabetic Retinopathy (DR) among health care workers. DR is a common but often overlooked complication of diabetes that can gradually lead to vision loss and in many cases, complete blindness if not caught early. As the number of people living with diabetes continues to rise around the world, the threat of DR is also growing. The good news is that this condition is largely preventable. **Objective:** The goal is to study (KAP) evaluate health care workers. examine the causes, symptoms, prevention, and treatment of DR, evaluate their attitudes toward early detection and management of DR. identify gaps and barriers in KAP. **Methodology:** A total of 98 professionals, including consultants, nurses, medical officers, technicians, and technologists, took part in the survey for data entry and analysis SPSS version 26.0 was used. **Results:** The results showed that while most participants knew DR is a serious issue, there were gaps in how that knowledge translated into action. For example, only 15% said they regularly referred newly diagnosed diabetic patients to an eye doctor, and more than 60% were unsure whether their patients ever followed up on referrals. Even though the majority were confident using ophthalmoscopes, many weren't doing routine eye exams as often as recommended. There were also signs of confusion or uncertainty around certain aspects of DR care for instance, nearly half of the participants weren't sure about the use of fluorescein angiography, a diagnostic tool used in eye care. **Conclusion:** The findings highlight a clear need to support healthcare professionals with more targeted education, better tools, and stronger systems for referral and follow-up. When providers are fully equipped and confident in their role, they can make a huge difference in catching DR early and helping patients maintain their vision.

INTRODUCTION

Diabetic retinopathy is the most common small blood vessel complication caused by diabetes and remains a leading cause of vision loss among working-age adults in Western countries. Research from both large observational and clinical studies consistently shows that keeping blood sugar and blood pressure levels under control is essential to slowing down or even reversing the condition. This significantly reduces the risk of the disease progressing to its more severe, vision-threatening stages.{Abbate, 2011 #1}Preventable blindness in the productive population is a major global public health risk due to diabetic retinopathy (DR).{Abdulsalam, 2018 #2}.

The levels of KAP among primary physicians addressing both diabetic retinopathy screening and treatment of sight threatening diabetic retinopathy have been researched by several groups, such as medical students, pharmacists, Primary Health Care personnel and opticians. In some investigations, the levels were very high, while in others it was reported to be less than desired.{Abu-Amara, 2019 #3}PDM has been found to be related to increased mortality, morbidity and with vascular complications, went with by destitute common wellbeing and lower quality of life.DR grows slowly and causes dynamic microangiopathy of the retinal capillaries in which results irreversible harm to the neurosensory retina. The size and causes of vision misfortune shift significantly between and inside nations, and for which suitable visual impairment prevention programs are required. A around the world move within the the study of disease transmission of eye infections has been detailed and persistent, insteadof irresistible maladies,are presently the driving causes of visual impedance.

Challenges increment from incessant illnesses that are related to lifestyle and maturing (e.g., DR). Untreated DR not as it were leads to visual deficiency which could individual catastrophe for the person but too increments the financial burden of wellbeing care

administrations, nearly 77% of Sort 2 DM patients create DR inside 20 a long time after DM onset. .{Al Ghamdi, 2017 #4}.

Diabetes is a big health and economic problem around the world. The number of people with diabetes is increasing around the world and is becoming a big problem in some areas. As more people are getting diabetes, there will be more problems related tothe disease, which can cause serious health issues, disabilities, andearly death. Around 34.6% of people with diabetes around the world have sometype of eye problem called diabetic retinopathy.{Al Rasheed, 2017 #5}Diabetes Mellitus (DM) is a serious health problem , It is a disease that can't be spread from person to person, it is a disease to think about health right now. More and more people are getting diabetes, and the number of people with the disease will be double by the year 2025.worldwide 170 million people are affected. Besides how the body mechanism works how it processes carbohydrates and how proteins and fats are managed. This can lead to long-term problems with the heart, nerves, kidneys, and other systems in the body. Diabetes has a big impact on the patient's health because of many problems it can cause (DR) is a known problem cause due to diabetes. Out of 39 million people around the world who are blind due to various eye diseases, diabetic retinopathy causes blindness in 1. 8 million of them. To prevent eyes disorder, people with known case of diabetes need to have regular eye exams and take proper actions. They must also control their blood pressure, blood sugar, and cholesterol levels. Current treatment methods can prevent up to 98% of vision loss and blindness from severe retinopathy, as long as patients receive timely and effective care. Having a good understanding or knowledge of retinopathy can help people with diabetes find, treat, and prevent the condition early on. To create an effective health awareness plan about diabetes, it's important to gather information on what diabetic patients know, how they feel, and what actions they take regarding eye problems and care related to diabetes. .{Al Zarea, 2016 #6}

Diabetic retinopathy (DR) is the driving cause of visual deficiency within the workingarea Adherence to screening guideline will offer assistance within the avoidance of visual deficiency. Common specialists (GPs) are the 1st line in administration of diabetic patients. .{Alanazi, 2018 #7}.

DR creates in nearly all patients with sort 1 diabetes mellitus and around 60% of sort 2 diabetes patients amid the primary 20 a long time of the onset of the disease. Its predominance among diabetic patients in Saudi Arabia is detailed in one consider to be at 31.3% in one center in Riyadh locale, Saudi Arabia. In a more later study, which was conducted within the same locale but which has prohibited the capital itself and which has included bigger test measure, has illustrated a predominance of 45% in patients matured 40 a long time or older.Additionally, a comparable consider, which was conducted in Al Taif and included patients matured 50 a long time or more seasoned, has illustrated a predominance of 36.8%.[10] Other ponders conducted in other locales in Saudi Arabia have moreover demonstrated similar numbers with respect to the predominance of DR within the Saudi populace counting Abha, AlHassa, and Al Madinah locales which have a predominance of 36.4%, 30%, and 36.1%, separately.{Alasqah, 2020 #8}.

Visual impairment and diabetic retinopathy (DR) are positive results of diabetes in the event that satisfactory measures were taken. Shockingly, lower rates of ideal measures are detailed driving to tall predominance rates of diabetic retinopathy. These rates extended between 13.16% and 43.1% . Longer length since determination may be a critical indicator for creating this condition where the chance pairs after 5 a long time of determination and gotten to be 3.5 times higher after 12 a long time of determination. Therapeutic understudies and before long common specialist, to begin with line experiences with patients, ought to be mindful of these figures, have great demeanors towards DR and hone concurring to the rules to restrain their predominance and delay movement of the infection. Moreover, most of the practicing doctors were learned approximately the strategies of postponing the onset of this condition. Be that as it may, due to certain obstructions, as it were 50% of the specialists executed the suggested rules. Such boundaries included need of time, preparing and legitimate hardware and expanding eye drops. In spite of the need of preparing, as it were 24% of doctors alluded their patients with diabetes to ophthalmologists for specialized care. On the other hand, thinks about have appeared that satisfactory measures can be taken to maintain a strategic distance from Such measures incorporate convenient and nonstop evaluation and take after up, execution of cataract surgery, well-controlled blood weight and well-controlled blood sugar levels. In reality, it was famous in a relapse investigation that the hazard of creating DR was expanded by 1.7 folds when the HBA1C was lifted by 2%. Having said that, therapeutic instruction ought to be based on rules to guarantee ideal information, state of mind and hone among recently graduating doctors. In spite of the fact that great information and demeanor was detailed in one ponder in a comparable setting as the current, hone was less than ideal particularly among the female therapeutic understudies.{Alenezi, 2022 #9}

Objective

The objective of this study is to:

- Access the knowledge, attitude, and practice (KAP) evaluate health care workers.
- Aims is to investigate the causes, symptoms, prevention, and treatment of DR, evaluate their attitudes toward early detection and management of DR.
- Additionally, recognize gaps and barriers in KAP to help guide the development of targeted educational and intervention programs.

Rationale of the Study

The purpose of this study is to see awareness and practice of kap among health care workers. There is need to conduct the study of kap about DR to identify deficiencies and barriers and strenghthening management of kap and to reduce the diabetic related vision loss.

LITRATURE REVIEW

Definition

Diabetes mellitus (DM) is a global public health problem. Global prevalence of diabetes is 8.5% in adult population.

The prevalence of diabetic retinopathy (DR) is increasing day by day, the number of persons with diabetes will double by 2030. It is a serious cause of irreversible blindness and is the most common complication of diabetes. Annual fundus examination for diabetics aids in the prevention of blindness and allows intervening at a timely manner. This study's intent to estimate and improve level of awareness (A), knowledge (K), and practice (P) among all King Khalid University (KKU) students besides medical students in Abha, Saudi Arabia.{Alharbi, 2020 #10}

Diabetes Mellitus (DM) is a metabolic disorder which is characterized by elevated blood sugar levels. It is a non-communicable disease and currently, a major disease of concern in terms of public health. The prevalence of DM is increasing and the number of persons with the disease wills bifold by the year 2025. Diabetes mellitus is reported to be affecting a population of more than 170 million globally.{Al Zarea, 2016 #6}

Types

This detailed system classifies diabetic retinopathy into stages, progressing from no DR, then: Very mild NPDR(Non-Proliferative Diabetic Retinopathy),Mild NPDR,Moderate NPDR ,Severe NPDR,Very severe NPDR,High-risk PDR,Advanced diabetic eye disease. Progression is defined by clinical signs like microaneurysms, haemorrhages, venous beading, IRMA(International Microvascular Abnormalities), neovascularization, tractional retinal detachment, and vitreous haemorrhage. [25] {Morya, 2024 #44}

International Clinical Diabetic Retinopathy (ICDR) Severity Scale

A simplified and widely adopted clinical scale used globally:**No apparent retinopathy ,Mild NPDR** (microaneurysms only)**, Moderate NPDR, Severe NPDR** (fulfilling the "4-2-1 rule") **Proliferative DR (PDR)** (neovascularization or vitreous/preretinal haemorrhage).{Morya, 2024 ,#20}While not a separate "type" of retinopathy, **DME** can occur at any stage of DR. It is graded based on OCT imaging: **Mild DME**: retinal thickening or hard exudates away from foveal center **Moderate DME**: near the center but not involving it **Severe DME**: hard exudates or thickening involving the fovea.{Morya, 2024 #20}

Symptoms (What patients often notice)

Often asymptomatic in early stages **– mild non-proliferative retinopathy typically goes unnoticed.**

Blurred or distorted vision, which may fluctuate. **Eye floaters** ("spots or dark strings") and sometimes flashes of ligh **Dark or empty areas** in vision ("scotomas") and **curtain-like** vision loss in severe cases. **Reduced night vision**, **poor peripheral vision**, and **impaired color perception.**

In advanced proliferative retinopathy: **sudden vision loss**, **vitreous hemorrhage**, **retinal detachment**, and **neovascular glaucoma** symptoms like eye pain or redness.{Pushparani, 2025 #23}

Clinical Signs (What an ophthalmologist detects on exam)

Microaneurysms **– tiny outpouchings in retinal capillaries; earliest non-proliferative sign.** Intraretinal hemorrhages **– dot-blot and flame-shaped bleeds.** Cotton-wool spots **– soft, white fluffy infarcts from local ischemia** Hard exudates **– yellowish lipid deposits from leaking vessels.** Intraretinal microvascular abnormalities (IRMA) **– seen in more severe non-proliferative stages.** Macular edema **– retinal swelling at the fovea; major cause of vision loss.** Neovascularization **– new fragile vessels on retina, disc, or iris, typical of proliferative stage.** Vitreous/preretinal hemorrhage **and** tractional retinal detachment **from scarring. {Pushparani, 2025 #23}**

Risk Factors: 1. Diabetes Duration

The longer someone lives with diabetes, the higher their chances of developing diabetic retinopathy (DR). After 15 years, nearly 80% of those with type 1 and 75% with type 2 diabetes may show signs of DR. Around 25% may develop the more advanced proliferative form (PDR). In fact, disease duration is often considered a stronger predictor of DR than even blood sugar levels in long-term studies.{Zhang, 2024 #33}

Poor Blood Sugar Control

High average blood sugar levels (as reflected by HbA1c) and frequent glucose fluctuations significantly increase the risk of developing and worsening DR. Post-meal blood sugar spikes are especially harmful. Landmark clinical trials (DCCT and UKPDS) demonstrated that maintaining tight glucose control can reduce the likelihood of DR by 25% to 76%.{Ma, 2022 #16}

High Blood Pressure

Uncontrolled hypertension independently contributes to DR development and progression. Keeping blood pressure within recommended limits helps slow down eye damage caused by diabetes {Shaheen, 2021 #34}

Abnormal Blood Lipids and Obesity

Elevated cholesterol and triglycerides, along with a high body mass index (BMI), are linked to a greater risk of diabetic macular edema and worsening of DR.{Porta, 2001 #21}

Kidney Disease (Diabetic Nephropathy)

Signs of kidney damage, such as protein in the urine or decreased kidney function (e.g., lower GFR), are closely associated with more severe forms of DR, including vision-threatening complications [46].{Zhang, 2024 #33}

Complications of Diabetic Retinopathy

Diabetic Macular Edema (DME)

Diabetic Macular Edema is one of the most common reasons people with diabetic retinopathy lose vision. It happens when tiny blood vessels in the retina—damaged by high blood sugar—begin to leak fluid into the macula. The macula is the part of the eye that helps us see fine details, like reading small print or recognizing faces.As this fluid builds up, the macula swells and thickens, which blurs or distorts central vision. DME can develop at any point during the course of diabetic retinopathy, but it's especially common in the more advanced, proliferative stage. Without timely treatment, it can make daily tasks

like driving or reading very difficult.{Vieira-Potter, 2016 #29}

Vitreous Hemorrhage

In the more advanced stages of diabetic retinopathy—particularly the proliferative form—abnormal, fragile blood vessels can grow and break, spilling blood into the vitreous, the clear gel that fills the center of the eye.

If the bleeding is minor, it may just cause floaters—small dark spots or strings drifting through your vision. But if the bleeding is more severe, it can cloud or completely block vision. While mild cases may improve on their own, persistent or dense hemorrhages often need surgery (called a vitrectomy) to remove the blood and restore sight{Vieira-Potter, 2016 #29}

Tractional Retinal Detachment

As diabetic retinopathy progresses, scar tissue can form due to abnormal vessel growth. This scar tissue may pull on the retina, eventually detaching it from the back of the eye.

This is a medical emergency. Warning signs include flashes of light, a sudden increase in floaters, or a shadow across your vision—like a curtain being drawn. If not treated quickly, it can cause permanent vision loss.{Vieira-Potter, 2016 #29}

Neovascular (Iris) Glaucoma

Sometimes, new abnormal blood vessels form on the iris (the colored part of the eye) or within the drainage system of the eye. These vessels can block the normal outflow of fluid, leading to a dangerous spike in eye pressure—a condition known as neovascular glaucoma.

This rise in pressure can quickly damage the optic nerve, leading to rapid and severe vision loss—sometimes within just a few days if untreated.{Vieira-Potter, 2016 #29}

Macular Ischemia

In some cases, the tiny blood vessels that nourish the macula become blocked. This cuts off oxygen supply, causing the macula to suffer—despite the absence of fluid buildup.

This condition, known as macular ischemia, damages the cells responsible for sharp, central vision, leading to blurriness or distortion that often can't be reversed.{Vieira-Potter, 2016 #29}

Cataracts

While cataracts—clouding of the eye's natural lens—can develop with age, diabetes often causes them to appear earlier and progress faster. High blood sugar levels can lead to chemical changes in the lens, causing it to become cloudy.

In some cases, cataract surgery might accelerate the progression of diabetic retinopathy, especially if the condition is not well controlled beforehand.{Vieira-Potter, 2016 #29}

Complete Vision Loss / Blindness

If diabetic retinopathy is not managed in time, its complications—like macular edema, bleeding, retinal detachment, and glaucoma—can combine and result in permanent vision loss.

Unfortunately, DR remains one of the leading causes of blindness worldwide, especially among working-age adults. But with early detection and proper treatment, most severe outcomes are preventable.{Vieira-Potter, 2016 #29}.

Prevalence

The global prevalence of diabetic retinopathy (DR) remains a major public health concern. According to a large-scale meta-analysis, approximately **1 in 3 people with diabetes (about 35%)** worldwide are affected by some form of DR. Among these, **around 7%** develop **proliferative diabetic retinopathy (PDR)**, **6.8%** experience **diabetic macular edema (DME)**, and about **10–12%** progress to **vision-threatening diabetic retinopathy (VTDR)**.

In the **United States**, data from the **CDC in 2021** show that about **26% of diabetics**, representing roughly **9.6 million people**, live with DR. Of these, nearly **5% (1.84 million people)** suffer from more advanced, sight-threatening stages.

In the **Eastern Mediterranean Region (EMR)**, DR affects about **31%** of individuals with diabetes. However, prevalence can vary significantly from country to country, with some reports such as in **Jordan** showing rates as high as **64%**.

Turning to **Pakistan**, a nationwide review found an average DR prevalence of **28.8%**, although individual studies reported a wide range from **as low as 10.6% to as high as 91.3%**. Among the total diabetic population, around **8.6%** were found to have vision-threatening forms like PDR or DME.

A **rural study in Sindh Province** showed that among people with significantly elevated blood sugar levels, **24.2%** had some form of DR indicating that the condition is prevalent even in non-urban, underserved areas. Similarly, a **clinic-based study from Karachi** reported that **28.8% of adults aged 30 and above** with diabetes had DR. In that group, about **2.7%** had progressed to PDR, while **approximately half** had **DME alongside early-stage (non-proliferative) DR**.{Vieira-Potter, 2016 #29}

Prevention

Primary Prevention: Control Blood Sugar: Keep HbA1c below **7%** (type 1) or **7–7.5%** (type 2).
Reduces DR risk by up to **76%**.{Ellis, 2013 #56}

Manage Blood Pressure: Aim for BP below **150/85 mmHg**.
Lowers risk of DR worsening and vision loss.{Abbate, 2011 #1}.

Control Cholesterol & Lipids: Medications like **fenofibrate** and **statins** help reduce DR progression and the need for laser treatment.{Ellis, 2013 #58}**.**

Secondary Prevention:Get Regular Eye Exams:

Type 1: Screen within 5 years of diagnosis.

Type 2: Screen at diagnosis.

Pregnancy: Screen before and during pregnancy.

Frequency: Every **1–2 years** depending on risk.{Gilbert, 2020 #15}

Patient Education & Team-Based Care:
Knowing about DR helps with better control and screening follow-through.
Involve a care team (eye doctors, endocrinologists, etc.) for best results.{Beaser, 2018 #14}

Use of Telemedicine & AI Screening:
AI tools can screen for DR with high accuracy, especially in rural or underserved areas.

Tertiary Prevention:
Timely Treatments

Laser therapy (PRP, focal/grid) reduces risk of vision loss.{Mohamed, 2007 #19}

Anti-VEGF injections or steroids manage advanced DR or macular edema.{Gilbert, 2020 #15}

Vitrectomy may be needed for bleeding or retinal scarring.{Mohamed, 2007 #19}

Consistent Follow-Up & Documentation:
Standardized reporting helps track DR status and ensures timely treatment.{Gilbert, 2020 #15}

MATERIAL AND METHODS

Study Design: Quantitative cross sectional study was used
Setting of Study: This research data was collected from health care professionals.
Duration of Study: The Duration of study was 3 months after the approval of synopsis.
Sample Size: The sample size was 98 according to sample size calculator.
Sampling Technique: Systematic random sampling technique was used.
Sample selection: The participants were selected randomly who meet inclusion criteria.

Inclusion Criteria

- Participant willing to participate in the study.
- Professionals qualifications: PHD, FCPS, MPHIL ,MSPS, MS, MPH, MSN, DIPLOMAS, CONSULTANTS, NURSES, MEDICAL OFFICER, TECHNOLOGIST, TECHNICIANS OF Hyderabad.
- 51%males are included.
- 49% females are included.
- Professionals with role in patient care and diabetic management.
- AGE:20-40years

Exclusion Criteria

- Professional other than role in diabetic management
- Transgender
- Participants who are not present during the time of study
- Students of ophthalmic technician
- Dispenser
- Nursing assistance

Data Collecting Procedure

- In order to collect the data, each participant will be assessed by researcher and select the subjects who will fulfill the inclusion criteria after signing the informed consent.
- The questionnaire covered domains such as:
- Causes and severity of DR
- Risk factors like hypertension, renal disease, and pregnancy
- Screening methods (ophthalmoscopy, fluorescein angiography)
- Knowledge of laser treatment and the importance of early detection
- Role of primary care providers
- Clinic practices regarding patient education and follow-up

Data Analyzing procedure

In this study, frequencies and percentages will be calculated for categorical variables and mean and standard deviation will be calculated for quantitative variables with some advance technique by using SPSS version (26.0) .Chi square test will be used for correlation. P value < 0.05 will be considered significant.

Ethical Consideration

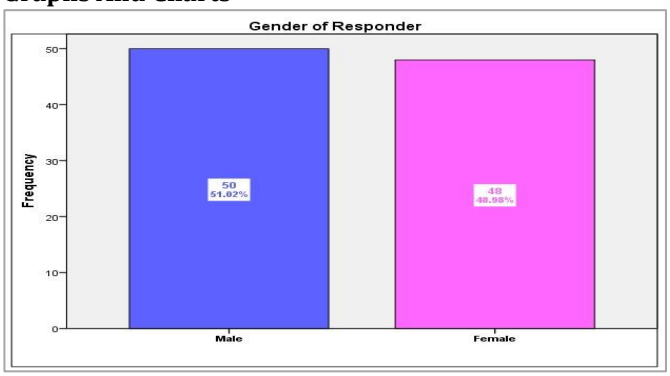
Participants have provided informed consent and are participating voluntarily in the study, with confidentially and privacy being strictly maintained. equal protocols and respect for all participants . There are no conflicts of interest involved in the study.

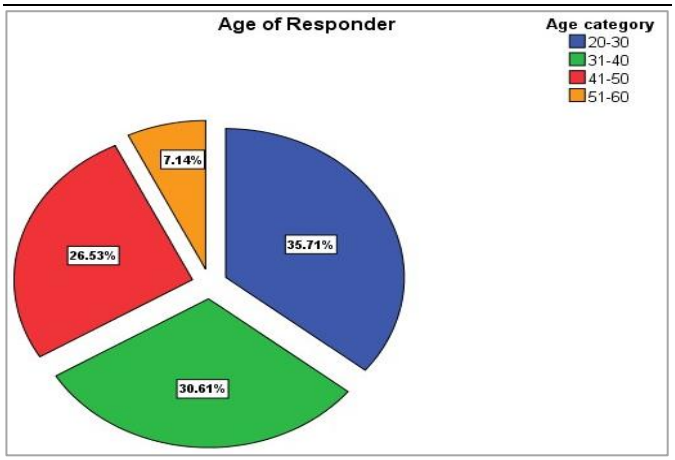
RESULTS

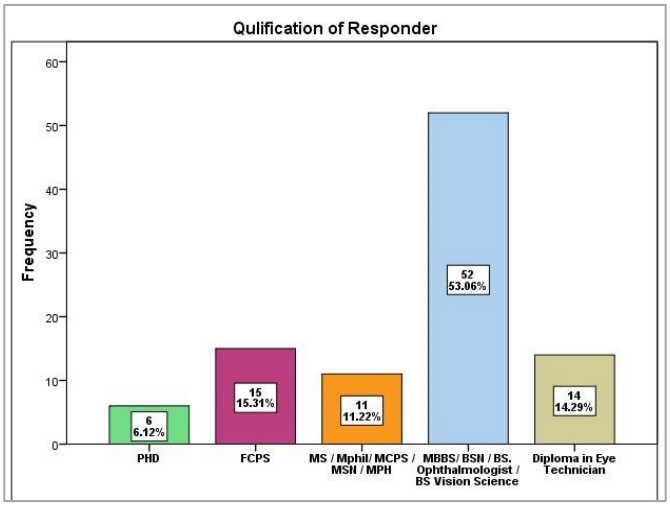
Responses were collected and presented as frequency tables and bar charts.

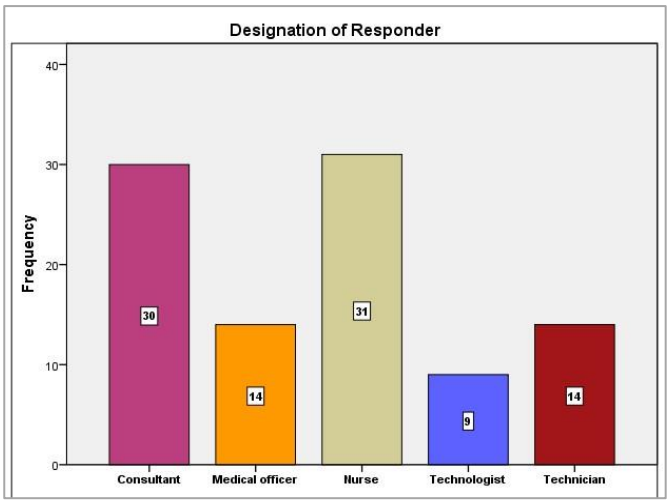
Detailed Report on Diabetic Retinopathy Data Analysis
Frequency Tables and Charts

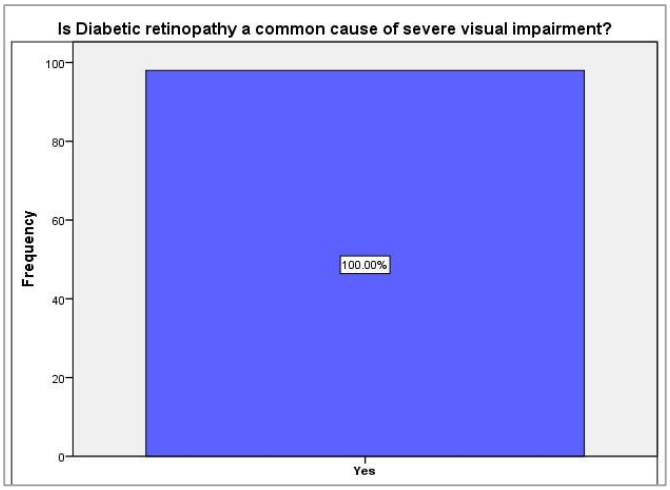
Graphs And Charts











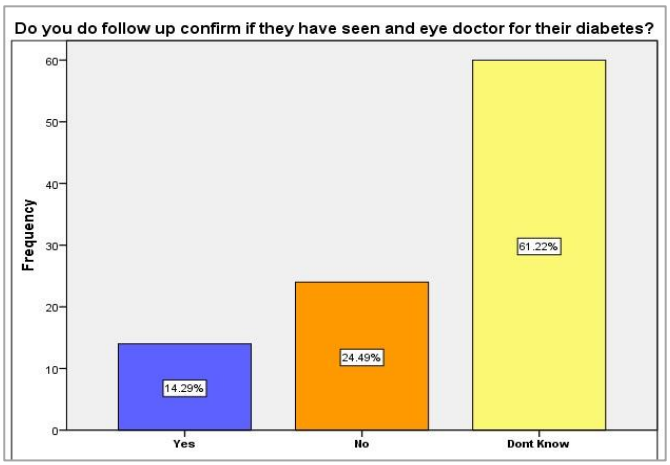


Table 1

	Questions	Frequency	Percent	Cumulative Percent
	1: Is the Severity of DR not Related to the duration of DM?			
Yes		52	53.1	53.1
No		46	46.9	100.0
	2: Can Pregnancy Worsen DR?			
Yes		52	53.1	53.1
No		46	46.9	100.0
	3: Does Early Detection And Treatment Of DR Play A Critical Role in Prevention of Permanent Visual Loss?			
Yes		75	76.5	76.5
No		23	23.5	23.5
	4: Should All Diabetic Patient Have Periodic Retinal Examination?			
Yes		66	67.3	67.3
No		32	32.7	100.0
	5: Is Laser Photocoagulation one of the Modalities for Treating DR?			
Yes		59	60.2	60.2
No		39	39.8	100.0
	6: Do You Advice For Retinal Evaluation Every Trimester For Diabetic Pregnant Patient?			
Yes		68	69.4	69.4
No		30	30.6	100.0
	7: Do You Check Lipid Profile, Renal Function and Blood Pressure Of Patient Regularly?			
Yes		68	69.4	6.4
No		30	30.6	100.0
	8: DM Patient Have Periodic Health Education that Include Eye Affection of Diabetes in Clinic?			
Yes		74	75.5	75.5
No		24	24.5	100.0
Total		98	100.0	

Table 2

Response	Question	Frequency	Percent	Cumulative percent
	1: Do Hypertension And Renal Disease Do Not Influence The Severity Of DR?			
Yes		52	53.1	53.1
No		45	45.9	99.0
Don't know		1	1.0	100.0

	2: Is Fluorescein Angiography Not Essential for Diagnosis and Management Of DR?			
Yes		24	24.5	24.5
No		29	29.6	54.1
Don't know		45	45.9	100.0
	3: Do You Ask Your Diabetic Patient About Their Vision Every Clinic Visit?			
Yes		83	84.7	84.7
No		6	6.1	90.8
Don't know		9	9.2	100.0
	4: Are You Confident In Your Retinal Examination To Detect DR Using Ophthalmoscope?			
Yes		83	84.7	84.7
No		6	6.1	90.8
Don't know		9	9.2	100.0
	5: Do You Have Ophthalmoscope In Your Clinic?			
Yes		59	60.2	60.2
No		24	24.5	84.7
Don't know		15	15.3	100.0
	6: Do You Do Ophthalmoscopy Routinely To Your Diabetic Patient?			
Yes		60	61.2	61.2
No		32	32.7	93.9
Don't know		6	6.1	100.0
	7: Do You Routinely Send Diabetic Patient To Ophthalmologist For An Eye Evaluation Upon The First Diagnosis Of Diabetes?			
Yes		15	15.3	15.3
No		23	23.5	38.8
Don't know		60	61.2	100.0
	8; Do You Do Ophthalmoscopy Routinely To Diabetic Patient?			
Yes		60	61.2	61.2
No		32	32.7	93.9
Don't know		6	6.1	100.0
Total		98	100.0	

Table 3

Response	Question	Frequency	Percent	Cumulative percent
	1: Eye Examination is Required only When Vision is Affected.			
Strongly agree		78	79.6	79.6
Agree		14	14.3	93.9
Strongly disagree		–	–	–
Disagree		6	6.1	100.0
	2: Diabetic Patient Requires an Eye Examination by Ophthalmologist Only at Five Year Interval?			
Strongly agree		9	9.2	9.2
Agree		38	38.8	48.0
Strongly disagree		45	45.9	93.9
Disagree		6	6.1	100.0
	3: Laser Treatment Can Prevent Binding Complication in Patient with DR?			
Strongly agree		–	–	–
Agree		47	48.0	48.0
Strongly disagree		45	45.9	93.9
Disagree		6	6.1	100.0
	4: Primary Physicians of Diabetologists Have Not Much in The Prevention or Treatment of DR?			
Strongly agree		24	24.5	24.5
Agree		23	23.5	48.0
Strongly disagree		45	45.9	93.9
Disagree		6	6.1	100.0
	5; General Practitioner or Diabetologist Should be Actively Involved in Doing Retinal Examination?			
Strongly agree		68	69.4	69.4
Agree		15	15.3	84.7
Strongly disagree		–	–	–
Disagree		15	15.3	100.0
	6: Newly Deselected Diabetics Don't Require an Eye Checkup?			
Strongly agree		23	23.5	23.5
Agree		15	15.3	38.8
Strongly disagree		54	55.1	93.9
Disagree		6	6.1	100.0
Total		98	100	

DISCUSSION

In this study 98HCWs were interviewed, assessed level of KAP among HCWs regarding DR each day. FEDERATION IDF (2021) shows many HCWs have strong KAP practice. A total of 98sHCWsparticipated in this study. The mean age of the participants was 42.6 years. the participants were male (51%)and female (49%)The mean BMI of the participants was 23.92 Kg/m2. Most of the participants according to Knowledge & Awareness agreed that DR is a common cause of severe visual impairment(100%),53.1% believed severity of DR is unrelated to duration of

diabetes. 53.1% believed comorbid conditions (HTN, renal disease) do not influence DR severity. 76.5% agreed early detection and treatment prevent visual loss. All of The participants were HCW, PHDs, FCPS, MPHIL, MSPS, MS, MPH, MSN, Diplomas, Consultants, Nurses, Medical Officer, Technologist, Technicians of Hyderabad .According to the Screening & Tools: mostly (84.7%) routinely ask patients about vision at every visit. And were confident using ophthalmoscope. While (60.2%) reported having ophthalmoscopes in their clinic. Only (61.2%)perform ophthalmoscopy routinely. Further (69.4%) advise pregnant diabetics for trimester-wise retinal evaluations. And(67.3%) agreed on the importance of periodic retinal exams for all diabetics. While seeing Practices & Referrals: Only (15.3%) refer newly diagnosed diabetics to an ophthalmologist. (61.2%) didn't know if patients followed up with eye doctors. (69.4%) recommended yearly check-ups if initial exam was normal. Mostly staff (75.5%) provide diabetes-related eye health education at their clinics. The Discrepancies found out that(45.9%)strongly disagreed that ophthalmic exams are only needed every 5 years, strongly disagreed that primary physicians have little role in DR management ,were uncertain whether fluorescein angiography is essential.

Strengths

- This study is bringing attention to previously unstudied area of interest.
- The data collection process was simple.
- Measurements were simple, inexpensive, and non invasive ,
- The study is important because it raises awareness among health care workers about principal of KAP,DR,DM,
- This research focuses on preventing future retinopathy issues due to negligence ,

Limitations

- Sample Size: Only 98 participants, limiting generalizability.
- Geographic Scope: No regional context provided; results may not apply nationally/internationally.
- Knowledge Gaps: A significant number responded "Don't Know" to questions about fluorescein angiography, patient follow-up, and referral practices.
- Practice Gaps: Low referral and follow-up practices reflect potential training or systemic deficiencies.
- Tool Availability: About 40% lacked access to ophthalmoscopes in clinical settings.

Recommendations

- Training: Implement structured education programs for physicians and nurses on DR screening and management.
- Resources: Provide ophthalmoscopes and ensure their regular use in outpatient clinics.
- Policy: Mandate initial ophthalmology referral for all newly diagnosed diabetics. - Follow-Up: Establish mechanisms to track whether patients actually consult ophthalmologists.
- Education: Regular patient health education on diabetic eye care should be institutionalized.
- Collaboration: Encourage inter-professional collaboration (GPs, diabetologists, ophthalmologists) to streamline DR management.

CONCLUSION

The study concludes that while knowledge regarding diabetic retinopathy is high among healthcare professionals, there are gaps in practical implementation and systemic follow-through. Most practitioners understand the seriousness of DR and its association with diabetes, but routine eye screenings, appropriate referrals, and follow-up practices are lacking.

The findings call for targeted interventions, including improving clinical protocols, resource availability, and healthcare worker training. With the growing burden of diabetes, strengthening early detection and care pathways for DR is essential to prevent avoidable blindness.

Acknowledgement

We pay our sincerest, modest, and heartfelt utterance to ALMIGHTY ALLAH, whose mercy enabled us to work in learning environment and helped us on every step towards the completion of thesis. We extend our profound gratitude to our supervisor DR HUSAN BANO CHANNAR People's Nursing Liaquat University Medical and Health Science Jamshoro, under his guidance this project has been successfully completed. Indeed, we are highly grateful for whose inspiring guidance and kind attitude without which project couldn't have been accomplished. Never-the -less we cannot forget our reverent teachers who have been and always be the beacon for all of us specially we would like to offer our heartfelt thanks to Thanks to all our respected teachers, faculty of People Nursing LUMHS Jamshoro who so ever cooperated who helped from time to time till completion of thesis.

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