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Research Article

### THE MOST IMPORTANT VISION EXAMINATION AND ITS RELATIONSHIP TO RETINOPATHY IN DIABETIC PATIENTS

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**Abstract:**

*The aim of the study is the importance of examining eyesight for diabetics to prevent retinopathy, the importance of exercising regularly to prevent diabetes, the importance of performing regular eye examinations for diabetics, the importance of not driving a car immediately after an eye examination due to side effects, the importance of checking lipids and blood sugar levels regularly to avoid Having diabetes, the importance of quitting the bad smoking habit. A questionnaire was created and designed via Google Drive and distributed on the social media network (WhatsApp) to health practitioners and practices in Mecca. 800 questionnaires were distributed and responses were obtained to 750 questionnaires from the targeted targets (health practitioners).*

**Keywords:** Important, Eye examination, Diabetic.

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## INTRODUCTION:

Poor vision or loss of vision is the lack of ability to see, which causes problems that cannot be solved with natural methods such as glasses <sup>(1)(2)</sup>. Some also include those who have reduced vision due to their inability to access glasses or contact lenses <sup>(1)</sup>. Low vision is usually described as visual acuity worse than 20/40 or 20/60<sup>(3)</sup>. The term blindness describes the condition of total or near-total visual impairment <sup>(3)</sup>. Poor eyesight may cause problems for people with daily activities such as driving, reading, socializing, and walking <sup>(2)</sup>. The most common causes of visual impairment globally are refractive error (43%), cataracts (33%), and glaucoma (2%) <sup>(4)</sup>. Refractive errors include myopia, hyperopia, presbyopia, and astigmatism <sup>(4)</sup>. Cataracts are the most common cause of blindness <sup>(4)</sup>. Other disorders that may cause vision problems are age-related macular degeneration, diabetic retinopathy, red eye, childhood blindness, and a number of infections <sup>(5)</sup>. Poor vision may also be due to brain problems such as stroke, premature birth, and trauma <sup>(6)</sup>. All diabetics are susceptible to this condition, whether their disease is type 1 or type 2. The older the disease, the greater the likelihood of eye problems occurring. 40-45% of patients diagnosed with diabetes in the United States have some form of diabetic retinopathy. 20 years after diagnosis, all type 1 diabetics and more than 60% of type 2 patients have some form of diabetic retinopathy. However, these statistics were published in 2002 using data from the previous four years, which limits the value of this study. Because patients were diagnosed with diabetes in the late 1970s before rapid-acting insulin and home blood sugar tests were used. Previous studies suggested the existence of a clear glycemic threshold between diabetic patients at high risk of diabetic retinopathy and patients at low risk <sup>(7)</sup>. Published rates vary between different clinical studies, and a suggested explanation for these differences is variation in methods used and reporting of prevalence rather than incidence rates <sup>(8)</sup>. Diabetic retinopathy can occur in pregnant women with diabetes. The National Institutes of Health recommends that all pregnant women with diabetes receive a comprehensive eye exam <sup>(9)</sup>. Diabetes is the leading cause of blindness in the United States, there are 12,000 new cases of blindness as a result of diabetes each year, and patients with diabetes have a 25 times higher risk of blindness than people in the general population with routine eye screening with an annual dilated eye exam can lead to early detection of retinopathy, early treatment and

prevention of blindness diabetic patients often do not realize the importance of a dilated eye exam diabetic patients believe that if they are asymptomatic their eyes are otherwise healthy up to 20% of diabetic patients have diabetic retinopathy at the time of diagnosis and up to 80% will develop it within 20 years of having the disease. In Western societies, diabetic retinopathy is one of the leading causes of visual impairment and blindness in the working age group <sup>(10,11)</sup>. The prevalence of diabetic retinopathy in Norway is sparsely described in the literature <sup>(12,13)</sup>. It is estimated that 90–120,000 Norwegians have known diabetes and that probably just as many have undiagnosed diabetes <sup>(14)</sup>. Most diabetic patients will develop some degree of retinopathy. Studies indicate that between 6% and 30% will develop sight-threatening retinopathy during the course of their illness <sup>(15,16)</sup>. In Western Europe, diabetic retinopathy accounts for 4.7–13.3% of blind and partial sight registrations <sup>(11,17,18)</sup>. Regular examination of ocular health and early treatment of diabetic retinopathy can prevent most cases of visual loss <sup>(19,20)</sup>, and ophthalmologic screening of patients with diabetes is more cost-effective than many other health interventions for detecting and treating disease <sup>(21,22)</sup>. The Norwegian College of General Practitioners has published guidelines for the examination of ocular health in patients with diabetes, first issued in 1988 <sup>(23)</sup>. Annual eye exams for diabetics are encouraged by the staff of MFP With assistance from the EMR system as well tracking annual compliance is cumbersome, most patients see private eye doctors who are not integrated into the EMR, Reports from these eye doctors are typically physically delivered, read by staff and then manually entered into the EMR system unclear as to how compliant diabetics are to their annual eye exams at MFP most practitioners consider compliance to be fairly good currently no practical way to determine a numerical percentage for compliance data from a manual query of the EMR for one physician's diabetic patients discovered that only 28% of patients had documented eye exams. The remaining 72% could be due to either a lack of compliance or failure in tracking existing eye exam methods needed to improve compliance and/or tracking of eye exams.

## 2-MATERIAL AND METHODS:

The is started in (the holy city of Mecca in Saudi Arabia), began writing the research and then recording the questionnaire in March 2022, and the study ended with data collection in August 2022. The researcher

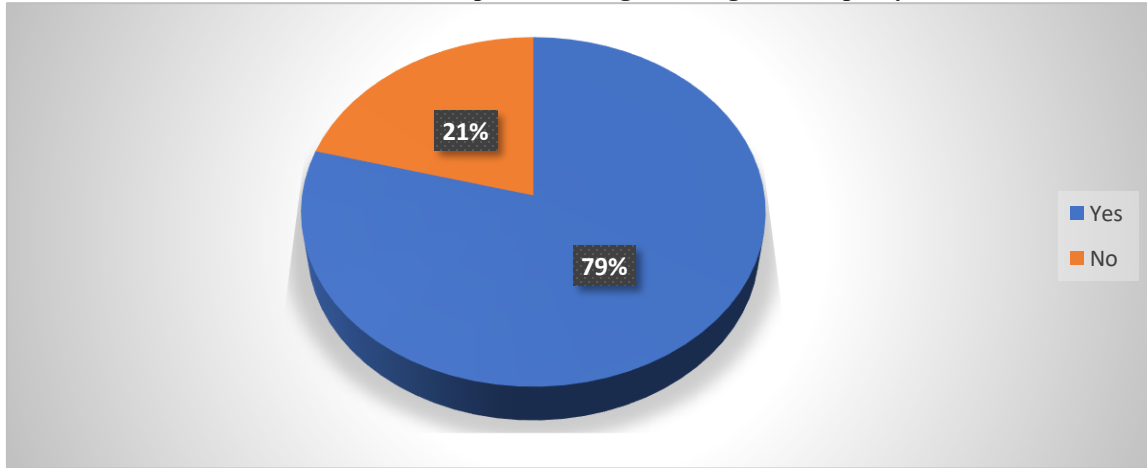
used the descriptive analytical approach that uses a quantitative or qualitative description of the social phenomenon (How important is eye examination for diabetics). This kind of study is characterized by analysis, reason, objectivity, and reality, as it is concerned with individuals and societies, as it studies the variables and their effects on the health of the individual, society, and consumer, the spread of diseases and their relationship to demographic variables such as age, gender, nationality, and marital status. Status, occupation <sup>(24)</sup>, And use the Excel 2010 Office suite histogram to arrange the results using: Frequency tables Percentages <sup>(25)</sup>. A questionnaire is a remarkable and helpful tool for collecting a huge amount of data, however, researchers were not able to personally interview participants on the online survey, due to social distancing regulations at the time to prevent infection between participants and researchers and vice versa (not coronavirus participation completely disappearing from society). He only answered the questionnaire electronically, because the questionnaire consisted of thirteen questions, all of which were closed. The online approach has also been used to generate valid samples in similar studies in Saudi Arabia and elsewhere <sup>(26)</sup>

### 3- RESULTS:

As for the percentage of participants in the research questionnaire, it was 100%. As for the ages of the participants in this questionnaire, it was as follows: from the ages of 25-34 years, it was 36%. From the ages of 35-44 years, their percentage was 44%. As for the ages of 45-54 years, their percentage was 16%, while those aged 55-60 years make up 4%. As for the gender of the participants in the questionnaire, it was: The percentage of males is 80%, and the percentage of females is 20%. As for their professions, they were as follows: Administrators (specializing in health administration, health information, public administration, and technical secretarial) were 32%, and the percentage of technicians was (doctors, nursing, radiology, nursing, pharmacy), anesthesia, optics, infection control) was 68%. As for the educational status, it was as follows: secondary school 0%, health diploma 40%, university 40%, master's 12%, doctorate 8%. When answering the research questionnaire by the participants, it was as follows: The first question was about: Do you suffer from blurred vision of things in front of you? The percentage of those who said yes was 20%, and the percentage of those who said no was 80%. The second

question is: Do you have diabetes and suffer from retinopathy? The percentage of those who answered yes was 8.3%, and the percentage of those who answered no was 91.7%. The third question was: Have you recently examined your eyes after suffering from diabetes? The percentage of yes among the participants was 20%, and the percentage of participants was no, 80%. The fourth question was: When examining your eyes, do you use a flashlight by taking a look at the individual parts of the eye in detail? The answers yes and no were equal (50%). The fifth question: Did the ophthalmologist ask you to wear eyeglasses after examining your vision? The answer was yes, 34.8%, and no, 65.2%. The sixth question: Are there side effects when applying eye drops for vision during examination? The participants' answer was yes, 25%, and no, 75%. The seventh question was about: Are there requirements that the patient must bring with him for examination by the ophthalmologist? Yes, it was 29.2%, and no, it was 70.8%. As for the eighth question, it was: Do eye drops during examination affect driving a car after examining your eyes? The answer is yes, 62.5%, and no, 37.5%. The ninth question was: Do you have the ability to reduce the risks to your eyes as a diabetic patient? Yes, its percentage among participants was 45.8%, and no, 54.2%. The tenth question was: Have you recently checked your blood sugar level? Yes 79.2%, No 20.8%. The eleventh question: Have you recently checked the level of fat in your body? Yes, 62.5%, and no, 37.5%. The twelfth question: Do you currently practice smoking? The percentage of yes was 32%, and no was 68%. Question thirteen: Do you exercise regularly? Yes, 40%, and no, 60%. Question Fourteen: Do you suffer from contagious diseases (diabetes, high blood pressure, obesity)? Yes 36%, No 64%. The fifteenth question: What are the steps that must be followed when examining the eyes of diabetic patients? Most of the participant's answers were about measuring the blood sugar level before going to the doctor, measuring the blood sugar on the same day, whether he has glasses, checking the health of the retina with the specialist doctor, and, I don't know, checking the blood sugar level at the health center, making sure the blood sugar is known before the examination. The last question about: When measuring your vision, does the specialist employee ask you to close one of your eyes and see what is in front of you on the plate, in small or large writing, to know the range of your vision scale in order to detail the glasses? Yes 88%, no 12%. ( figure N0.1)

**Figure No.1: Opinions and attitudes of participants in responding to the research questionnaire about the relationship of blood sugar testing to retinopathy**



#### 4-DISCUSSION:

We conclude from this study that, we note from the participants' answers that checking blood sugar is important at a rate of 79.2%, and checking fats is also important at 62.5% (its presence directly affects the incidence of diabetes, and thus its continuation causes direct harm to those with diabetes who do not protect themselves from it and neglect it, thus affecting retinopathy. When the participants were asked about their smoking habit, a small percentage of them, 32%, answered, while 40% of them exercised regularly. Therefore, there is a need to motivate and encourage those who exercise more to avoid developing retinopathy, and therefore losing it forever.

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