

## **A Clinical study of awareness of ocular complications due to Diabetes among Diabetic Patients**

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### **Abstract:**

Ocular complications due to diabetes are becoming a major health issue due to increase number of population suffering from diabetes. Diabetes mellitus is the leading cause of ocular complications. However, awareness about the complication associated with diabetes is not so much high. In this retrospective study data results show that large number of population suffering from diabetes examine their eyes after medical professional advice. Remarkable work needs to be done to increase the awareness and management of complication to decrease the chances of visual impairment.

**Key Words:** diabetes mellitus (DM), diabetic retinopathy (DR), vascular endothelial growth factor (VEGF)

## Introduction:

Diabetes mellitus (DM) is a major health problem with devastating consequences for ocular health in both industrialized and developing countries. Control of Hyperglycemia is crucial to minimize the impact of DM on ocular tissues, because insufficient glycemic control to ocular tissue changes that range leads from a temporary blurred vision to permanent vision loss. [1]. Diabetes is on the rise in the prevalence of disease burdens for [2]. It imposes daunting health issues on societal healthcare by its debilitating vascular complications, those of which increase the burden on healthcare authorities globally [3]. Diabetic ocular complications are increasingly becoming a major cause of blindness throughout the world in the age group 20-60 years which usually results in loss of productivity, quality of life and socio-economic burdens on communities [4]. It was reported that diabetes accounts for all the blind 15% [5].

End stage diabetic eye disease is a major cause of severe visual impairment of working age [6]. Traction retinal detachment (TRD), and non-clearing vitreous hemorrhage (NCVH) are two common complications [7].

Also with early diagnosis by screening, one can predict that the prevalence of end-stage condition is reduced and improved Visual results [8]. Vision loss due to DR occurs through various mechanisms, including retinal detachment, vitreous hemorrhage or preretinal associated with nonvascular glaucoma and macular edema or capillary non-perfusion [9]. The presence of diabetic retinopathy may show microcirculatory dysfunction in other organ systems [10]. However, the risk of vision loss due to diabetic retinopathy by effective control of serum glucose and blood pressure, and early detection and timely treatment can be reduced [11].

The efficiency and economy of early detection and treatment of diabetic retinopathy is well established [12]. Ischemic proliferative retinopathy with elevated levels of the vascular endothelial growth factor (VEGF), lead to Rubeus's abnormal blood vessels on iris. In advanced stages, it can develop fibro vascular membranes to the angle of the anterior chamber and the outflow of water resistance, leading to neo-vascularization glaucoma. Established treatments include preretinal photocoagulation to apply source increased VEGF and cyclo-destructive or drainage to combat angle disability and reduces intraocular pressure (IOP). Recently proposed therapeutic option an additional inhibition of angiogenesis is intraocular injection of bevacizumab [13].

## **Objectives:**

To examine the awareness level among people how diabetes affects their eyes.

To study the measures opted by people to decrease the chances of diabetes effecting eyes.

## **Methodology:**

### **Study Design:**

It was a cross-sectional study.

### **Sample Size:**

Data was collected from 15 diabetic patients suffering from eye disorders.

### **Study Area:**

The study was conducted at Jinnah Hospital Lahore Eye department.

### **Data Collection Tools:**

A questionnaire was used as a tool for collection of data. The questions included were at what age diabetes was diagnosed, currently receiving any treatment for diabetes, type of treatment receiving, from where get diabetic medication, where go for diabetic checkup, have you have your own blood sugar testing device ,how often blood sugar level monitored, from where you came to know diabetes effect your eyes, did any medical personnel advice for eye examination, what type of eye examination test was done and by whom it was done ,how often people with diabetes should have examined their eyes, what makes your eye sight better i.e. Glasses and measures taken by a person to decrease the chances of diabetes effecting their eyes.

### **Data Analysis:**

Data was analyzed by using statistical analysis software 'IBM SPSS Statistic version 19.00.

Descriptive statistics was used to analyze the data.

## Results:

### Division of Study Population According To Age Groups:

It's a retrospective cross sectional study which includes 15 patients belonging to different age groups. One tenth of the population was between 46-55 years, three tenths were between 56- 65 years and three fifths were between 66-75 years.

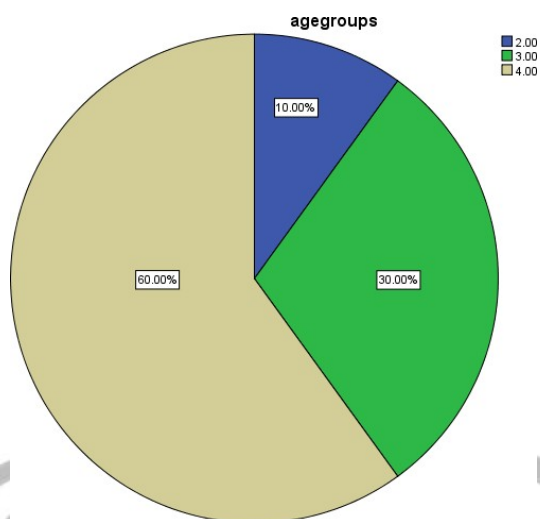


Fig.3.1 Division of Study Population According To Age Groups

### Division of Study Population According To Gender:

66.67% male and 33.33% female participants were part of the study

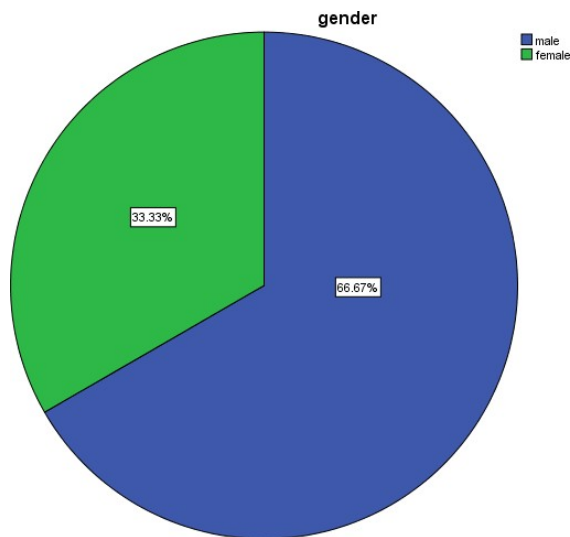


Fig 3.2 Division of Study Population According To Gender

### Divisions of Study Population, According To Age of Diagnosis

In one-third population diabetes diagnosed between 35-45 years of age, two-fifths between 46-55 years and 26.67 % between 56 -65 years of age.

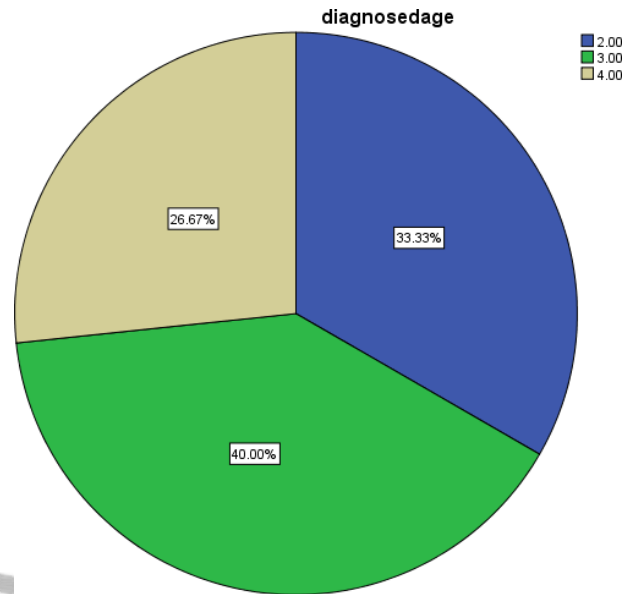


Fig 3.3.Division of Study Population According To Age of Diagnose

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### Division of Study Population Receiving Treatment:

All participants of the study are currently receiving treatment to control their diabetes.

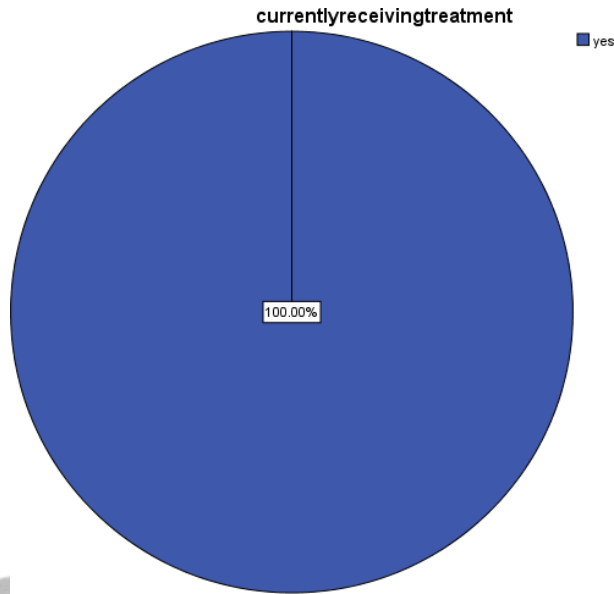
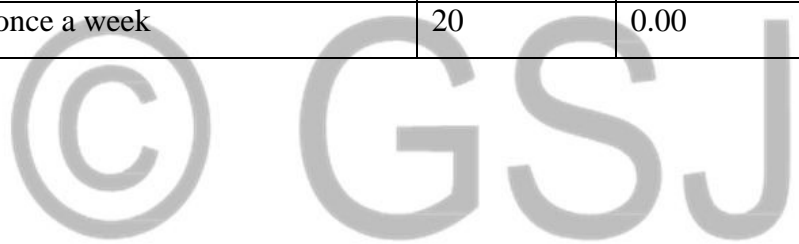


Fig 3.4.Division of Study Population According To Receiving Treatment

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**Table: Results (Percentage and Standard Deviation)**

Sr#	Question	Percentage		STDEV
		YES%	NO%	
1.	What treatment you are currently receiving?			
	Tablets	60	0.00	0.50709
	Insulin	40	0.00	0.50709
2.	Do you have machine for testing blood sugar at home?	86.7	13.3	0.352
3.	Have you checked your blood sugar in the past 4 weeks	86.7	13.3	0.352
4.	How often do you check your blood sugar at home?			
	More than once a day	33.3	0.00	0.48795
	Once a day	13.3	0.00	0.35197
	At least once a week	20	0.00	0.45774



	Less than once a month	13.3	0.00	0.00000
	Greater than and equal to once a week	20	0.00	0.45774
5.	Did a medical professional advise you to examine your eyes because of your diabetes?	60	40	0.507
6.	Have you had examined your eyes because of your diabetes in the last 12 months?	86.7	13.3	0.352
7.	How often do you think a diabetic should have their eyes examined?			
	Once a year	40	0.00	0.48795
	More than once a year	33.3	0.00	0.50709
	Do not know	26.7	0.00	0.45774
8.	If diabetes will affect your eyes will glasses make it better?	53.3	46.7	0.516
9.	What a person with diabetes do to decrease the chance of diabetes affecting their eyes?			
	Diabetic diet	46.7	53.3	0.516
	Taking diabetic medication as prescribed	46.7	53.3	0.516
	Exercise	66.7	33.3	0.488
	Keep blood sugar under control	33.3	66.7	0.488
	Keep blood pressure under control	33.3	66.7	0.488



## Discussion

According to WHO, More than 170 million persons are affected by diabetes mellitus worldwide. By 2030 it will affect an estimated 366 million especially affecting the people in working age group in developing countries. A study of awareness of ocular complications of diabetes among students shows the level of awareness about diabetes mellitus was more than 90% among students. But only 18.83% had some knowledge about the disease and were aware about the vision threatening complications of diabetes mellitus. 73.02% have heard about diabetes but did not have any knowledge about the disease. In this study large no. (60%) of patients were advised by medical professional to examine their eyes effected by diabetes while less no. of patients already know that diabetes can affect their eye and examined their eyes themselves. After knowing the ocular complication associated with diabetes 40% of the study population gave the opinion that a diabetic should examine their eyes more than once a year whereas 26.67 said they don't know.

## Conclusion

Awareness and measures to control diabetes in the population is high. However, their lack of knowledge of disease complication can lead to irreversible visual impairment and blindness. For population, the potential diabetes awareness is very important. Also, physicians should ensure that diabetics are adequately educated on the ocular complications of diabetes and the need for regular eye examinations more awareness programs should be conducted with their understanding of each other.

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