

## A Study To Assess The Knowledge Regarding Cataract Among Diabetes Mellitus Patients Attending Endocrinology Opd, Svims, Tirupati

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### Abstracts

**Introduction:** Diabetes Mellitus (DM) is a chronic disease of metabolic disorder characterized by hyperglycemic condition resulting from defects in insulin secretion, insulin action or both Diabetes mellitus. It is the most common disease among systemic diseases that cause blindness. Every fourth or fifth patient suffering from diabetes has also complications on the eye. The first and the most common one is diabetic retinopathy and the second one is diabetic cataract, which can appear at any age. However, it is more common in older patients. Cataract is the most common cause of blindness which is treatable. The aim of the study to assess the knowledge regarding cataract among diabetes mellitus patients. **Materials & Methods:** The descriptive study, sample size of 100 diabetic mellitus patients selected by purposive sampling technique and data was collected by administering self-structured questionnaire. It included data regarding socio- demographic characteristics and questions pertaining to knowledge on cataract and prevention practice of cataract adopted by diabetes mellitus patients. Analysis was done SPSS package 21 version. **Result:** The study results shows that out of 100 study participants, 31(31%) were 46-50 years, 50(50%) were females and males, 36(36%) were primary education, 79(79%) were family history of diabetes, 62(62%) were no family history of cataract. It was seen that 40 (40%) were having adequate knowledge, 30(30%) were having moderate and in adequate knowledge regarding cataract, 43(43%) were having inadequate knowledge, 35(35%) were having adequate knowledge and 22(22%) were having moderate knowledge regarding prevention of cataract and, 35(35%) were having moderate knowledge, 34(34%) were having adequate knowledge, 31(31%) were having inadequate knowledge among diabetes regarding cataract in overall knowledge. The gender, type of family, family income, duration of diabetes mellitus, age in years, educational status, marital status, occupational status, source of information, family history of diabetes mellitus, family history of cataract was associated with better knowledge regarding cataract among diabetes mellitus patients. **Conclusions:** The study concluded that knowledge on cataract is moderate. More educational campaigns are required for improving the cataract prevention practices among diabetes, both within and outside hospital as part of strategies to prevent, manage and control of cataract in diabetic patients.

**Key words:** Knowledge, Cataract, Diabetes mellitus.

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### I. Introduction

Cataract is a leading cause of blindness worldwide and major public health problem. It is a clouding of the lens inside the eye which leads to decrease in vision. the proportion of blindness due to cataract among all eye diseases ranges from 5% in developed countries to 50% or more in poor and remote regions. It is primarily cause by genetic factors, environmental factors, disorders of the immune regulatory mechanism. A combination of all these factors causes autoimmune restriction of pancreatic beta cells and insulin deficiency leading to hyperglycemia, ketoacidosis and potentially death, if not treated with insulin. Diabetic cataract development is an early complication of diabetes mellitus. That patients are 2-3 times more likely to develop cataract than their nondiabetic counterparts. The risk is more (about 15-25 times) in young diabetics aged less than 40 years. The three main mechanisms involved in the development of cataract are the activated polyol pathway, oxidative stress and accumulation of non-enzymatic glycation end products (AGES). The basement membrane of the lens is thickened and friable in diabetics. The higher incidence of cortical cataract in patients whose blood glucose levels were uncontrolled for more than 5 years. Posterior sub-capsular were found to be more common in these patients. Snowflake cataract, also called as true diabetic cataract, is less common and consists of wide spread bilateral subcapsular opacities. It usually presents as rapidly progressive visual loss in young diabetics with uncontrolled glucose levels. Bilateral cataract can also be the initial presentation in many young diabetics. There is an increased risk of development of macular edema and progression of diabetic retinopathy in these patients.

Objectives of the study

- To assess the knowledge regarding cataract among diabetes mellitus patients
- To identify the association between knowledge regarding cataract among diabetes mellitus patients with their selected socio demographic variables.

Hypothesis

H<sub>1</sub>: There will be significant association between knowledge regarding cataract among diabetes mellitus patients with their selected demographic variables.

**II. Materials and methods**

A descriptive research design was used 100 diabetic mellitus patients attending endocrinology outpatient department, srivenkateswara institute of medical science, Tirupati. A semi structured questionnaire was administered to the patients by an interviewer who is having diabetes mellitus. Informed consent was obtained from the patients before filling the questionnaires. The information obtained include the demographic data. The result was collected and analyzed using SPSS version, with chi square done where necessary.

**III. Results**

A total of 100 diabetic patients were studied. Their ages range between 40 years and above 56 years. Majority were between 46–50 years of age. There were 50(50%) males and 50(50%) females. Thirty-six(36%) had primary education, 51(51%) had married , 44(44%) had nuclear family, 31(31%) private employee, 34(34%) had 5000-10000/- of family income, 36(36%) had friends/relatives for source of information, 26(26%) had 6-10years of diabetes, 79(79%) had family history of diabetes , 35(44%) had relationship of the patient having mother/ father, 62(62%) had no family history of cataract, 18(47%) had relationship of the patient having rand mother/ gran father.

**Table -1** Distribution of knowledge levels regarding cataract among diabetes mellitus patients

	Level of knowledge regarding cataract among diabetes mellitus patients		Level of knowledge on prevention regarding cataract among diabetes mellitus patients		Level of overall knowledge regarding cataract among diabetes mellitus patients	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<b>Inadequate</b>	30	30.0	43	43.0%	31	31.0%
<b>Moderate</b>	30	30.0	22	22.0%	35	35.0%
<b>Adequate</b>	40	40.0	35	35.0%	34	34.0%

forty (40.0% ) had adequate knowledge and 30.0% had in moderate and inadequate knowledge regarding cataract in knowledge level, nearly half of the patients (43.0% ) had inadequate knowledge regarding prevention of cataract and (35.0 % ) had adequate knowledge, and 22.0% had moderate knowledge regarding prevention of cataract among diabetes mellitus patients and (35.0% ) had moderate knowledge , (34.0 % ) had adequate knowledge, and (31.0% ) had inadequate knowledge regarding total knowledge levels regarding cataract among diabetes mellitus patients.

**Table 2:** Mean and standard deviation for knowledge regarding cataract among diabetes mellitus patients

	Level of knowledge regarding cataract among diabetes mellitus patients		Level of knowledge on prevention regarding cataract among diabetes mellitus patients		Level of overall knowledge regarding cataract among diabetes mellitus patients	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
<b>Inadequate</b>	9.77	3.29	9.08	2.93	18.85	5.83
<b>Moderate</b>						
<b>Adequate</b>						

The above table showed that, mean (9.77) and standard deviation (3.29) at level of knowledge regarding cataract, mean (9.08), standard deviation (2.93) at level of knowledge on prevention regarding cataract, mean (18.85) , standard deviation (5.83) at total knowledge levels regarding cataract among diabetes mellitus patients.

There was a significant association between level of knowledge regarding cataract among diabetes mellitus patients with gender, type of family, family income, duration of diabetes mellitus (at p< 0.05 level), age in years, educational status, marital status, occupational status, source of information, family history of diabetes mellitus, family history of cataract at p< 0.01 level.

#### **IV. Discussion**

The results reveal that out of 100 diabetic mellitus patients, majority 40 (40%) were had adequate knowledge, 30(30%) were had moderate and inadequate knowledge regarding cataract, 43(43%) were having inadequate knowledge, 35(35%) were having adequate knowledge and 22(22%) were having moderate knowledge regarding prevention of cataract, and 35(35%) were having moderate knowledge, 34(34%) were having adequate knowledge, 31(31%) were having inadequate knowledge in overall knowledge levels regarding cataract among diabetes mellitus patients.

The study shows that there was a significant association between knowledge regarding cataract among diabetes mellitus patients with gender, type of family, family income, duration of diabetes mellitus (at  $p < 0.05$  level), age in years, educational status, marital status, occupational status, source of information, family history of diabetes mellitus, family history of cataract at  $p < 0.01$  level.

There was no significant association was found between religion, if specify the relation to the patient having diabetes, if specify the relation to the patient having cataract.

#### **The study was supported by following studies**

Dr. Odusan et al (2014)<sup>71</sup> a cross sectional study using qualitative method was conducted on the 148 diabetic patients on awareness of ocular complication in Olabisi Onabanjo university, Nigeria. Result shown that(58.8%)diabetic patients had did know the part of the can effected ,61(41.2%) had do not know how diabetes can affect the eye. Study concluded that, the level of awareness of ocular complication of diabetes mellitus is high, the level of knowledge is low. However, knowledge was inadequate which is imparts for the need of the health education through media about awareness of ocular complications of diabetes.

Vasu KamaladeviLathika et al(2016)<sup>72</sup> Conducted a study to assess the evaluate the association of duration of diabetes mellitus in Amala Nagar, Kerala. There was significant association between demographic variables with knowledge such as most common type with no statistical significant difference in prevalence among the gender. The cataracts detected in diabetic patients of 15 or more years of duration. The study concluded that, the duration of diabetes, age, gender did not emerge as a significant risk factor for predicting grade of cataract in female and male diabetic patients. In fact, IMSC was found to be the most common among patients with >15 years of diabetic duration.

**Ethical approval:** Research committee college of nursing SVIMS approved the study. Informed consent was obtained from participants.

**Conflict of interest:**Nil

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