

# Knowledge Regarding Complications of Diabetes Mellitus Among Type 2 Diabetic Patients

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**Abstract**—Diabetes mellitus (DM) appears to be a global epidemic and most common metabolic disorder affecting populations all over the world. Many people with diabetes do not achieve optimal glycemic control, leading to increased risk of developing various complications. The study aimed to assess the knowledge regarding complications of diabetes mellitus among Type 2 diabetic patients in a selected hospital, Thrissur with a view to prepare an information booklet. The objectives of the study were to assess the knowledge regarding complications of diabetes among patients with Type 2 diabetes mellitus, to find out the association between levels of knowledge regarding complications with selected socio-demographic variables and prepare information booklet on complications of diabetes mellitus and its prevention. Descriptive design was adopted for the study. The study was conducted on 60 type 2 diabetic patients, who were selected by purposive sampling. The knowledge was assessed by using a structured knowledge questionnaire regarding complications of diabetes mellitus. The study result showed that 20% have inadequate knowledge, 73.3% have moderate knowledge and 60.7% have adequate knowledge regarding complications of diabetes mellitus. The analysis showed that there was significant association between knowledge of Type 2 diabetic patients with selected demographic variables such as occupation.

**Index Terms**—Type 2 Diabetes Mellitus; Knowledge; complications;

## INTRODUCTION

Diabetes is the most common metabolic disorder affecting populations in all geographical regions of the world. The prevalence of diabetes is influenced by genetic, ethnic and socioeconomic factors. Type 2

diabetes mellitus affects many major organs including heart, blood vessels, nerves, eyes and kidneys. Controlling the blood sugar levels can help to prevent these complications. Although long term complications of diabetes develop gradually, client can eventually be disabling or even life-threatening.

## II. NEED FOR THE STUDY

The burden of diabetes as a debilitating health crisis is high and increasing globally; particularly in developing countries like India. The estimates in 2019 showed that 77million individuals had diabetes in India, and these numbers are expected to rise in under two decades, to 134 million and beyond by 2045. Approximately 57% of these individuals remain undiagnosed and under the radar of the medical community

The prevalence of diabetes in India has risen from 7.1% in 2009 to 8.9% in 2019. Currently 25.2 million adults are sufferers of diabetes mellitus, and the number is estimated to increase to 35.7 million by 2045. The Indian disease burden initiative study conducted at a state level in 2021 on diabetes reported that the prevalence and number of people with diabetes in India increased from 5.5% and 26.0 million in 1990 to 7.7% and 65.0 million in the year 2016.

## III. STATEMENT OF THE PROBLEM

A study to assess the knowledge regarding complications of diabetes mellitus among type 2 Diabetic mellitus patients at a selected hospital, Thrissur.

## OBJECTIVES

1. To assess the knowledge regarding complications of diabetes mellitus among patients with type 2 Diabetic mellitus.
2. To find out association between level of knowledge regarding complications of diabetes mellitus among type 2 Diabetic mellitus patients with their selected socio demographic variables.
3. To prepare and provide educational booklet regarding complications of diabetes mellitus to type 2 diabetic mellitus patients.

## HYOTHESIS

H0: There is no significant association between level of knowledge about complications of diabetes mellitus with selected demographic variables.

H1: There is significant association between level of knowledge about complications of diabetes mellitus with selected demographic variables.

## IV. METHODOLOGY

### Research approach Design

Quantitative research approach with descriptive cross sectional survey design

### Setting of the study

Aswini Hospital pvt Ltd Thrissur

### Population

The population comprises Type 2 DM Patients in Aswini Hospital Thrissur

### Sample

The sample of present study comprised 60 Type 2 DM patients in Aswini Hospital Thrissur

### Sample technique

The sampling technique adopted for this study was purposive sampling. The researcher selected the 60 samples with Type 2 diabetes mellitus, based on the inclusion and exclusion criteria.

### Inclusion criteria

Patient with Type 2 DM who were:

- Willing to participate in the study.
- Able to read and write Malayalam

### Exclusion criteria

Patient with Type 2 DM who were:

- Not willing to participate
- Unconscious.
- Pregnant

### Description of tool

The research tool consists 2 sessions.

Section A —Socio demographic data (age, sex, educational status, occupation, socio economic status etc.)

Section B - structured knowledge questionnaires on complications of diabetes mellitus. It consists of 30 multiple choice items; each had 4 alternatives. The maximum score is 30 & the minimum score is 0. The right answer carries 1 mark & wrong answer have 0 marks.

## V. DATA COLLECTION PROCEDURE

The data collection was done from 09-06- 2025 to 17-06-2025. First investigators collect the demographic data. Samples were selected by purposive sampling technique. After obtaining consent, appropriate orientation was given to the samples.

Questionnaire distributed to the estimated sample size of 60 patients in Aswini Hospital, Thrissur. Provided 30 minutes to complete the questionnaire, clarification of doubts, getting response for appropriate answer. The questionnaire was completed in the presence of the investigator to avoid bias in the collection of data.

Collected data were analysed by descriptive and inferential statistics. Data were organized, tabulated and analysed based on the objectives of the study by using descriptive and inferential statistics. The data was organized, tabulated, and analysed based on the objectives of the study by using descriptive and inferential statistics. The data on demographic variables were analysed by using frequency and percentage distribution. The association between the knowledge of type 2 diabetic patients on complications of diabetes mellitus with their selected demographic variable were analysed by using chi - square test.

VI. RESULTS

- Out of 60 samples With Regard to age group, 11.7% belongs to age group of 30-45years, 61.7% belong to 46-60 years and 26.7% more than 60 years. 51.7% were males and 48.3% were females.
- Regarding to religious status 33.3% were hindu, 53.3% were Christian and 13.3% were Muslim.
- Regarding to educational status 8.3 were uneducated, 51.7 % have primary education, 16.7% have Higher secondary education, 21.7 % have Degree, 1.7% have master's degree.
- Considering the occupation 15% were government employees, 16.7% have private job, 20% running business, 13.3 % were home maker, 8.3% daily wages, 11.7 % retired and 15% were jobless.
- Out of 60 samples 61.6% have previous knowledge and 38.3% have no previous knowledge
- Out of 37 samples 20.0% source of knowledge is from media, 5.0% from family members and 36.7% from health workers. Out of 60 samples 21.7% have Only alcoholism, 13.3% have only smoking, 5.0% have tobacco chewing 1% have both alcoholism and smoking, 3.3% have alcoholism and tobacco chewing, 55.0% have nothing
- Out of 60 samples, 51.7% have history of DM and 43.3% have no history of DM
- Out of 60 samples, 11.7% have DM for 6 months duration, 13.3% have DM between 6 months to 1 year, 73.36% have more than 1 year in which, 60.0% take medicine for DM, 20.0% take insulin, 13.3% take medicine and insulin, 6.7% take diet and exercise
- Out of 60 samples 70.0% have no co morbidities, 6.7% have cholesterol, 1.7% have copd, 1.7% have fibroid uterus, 3.3% have heart block, 13.3% have hypertension, 1.7% have kidney stone, 1.7% have ulcer

Section B: Distribution of Level of Knowledge About Complications Of DM

LEVEL OF KNOWLEDGE	SCORING RANGE	FREQUENCY	PERCENTAGE
Inadequate	0- 09	12	20.0
Moderate	10- 19	44	73.3
Adequate	20-30	4	6.7

among 60 samples 4 sample (6.7%) have adequate knowledge, 44 samples (73.3%) have moderate knowledge, and 12 sample (20.0%) possess inadequate knowledge.

Section C: Association Between Demographic Variables and Knowledge of Diabetic Patients

Ns- Non significant at 0.05 level  $\chi^2$  calculated value of Age, Sex and Religion is less than table value. There is no significant association between demographic variables such as Age, Sex, Religion, Educational status, Family Income, Previous Knowledge DM, Habits, Family History, Duration of DM, Treatment taken for DM knowledge of diabetic patients.

There is significant association between knowledge of diabetic patients and occupation.

VII. DISCUSSION

The first objective of the study is to assess the knowledge regarding complications of diabetes mellitus among patients with type 2 Diabetes Mellitus.

In depth of analysis of the study findings revealed that among 60 patients with type 2 Diabetes mellitus, 12 (20.0%) patients have inadequate knowledge, 44 (73.3%) patients have moderate knowledge and 4 (6.7%) have adequate knowledge on complications of diabetes mellitus.

The present study findings were supported by a hospital based cross sectional study conducted on assess the level of awareness and knowledge about DM and its complications, treatment options, lifestyle modifications, and self-monitoring among diabetic patients in Puri, Odisha. study was conducted at Shri Jagannath Medical College and Hospital, Puri, Odisha, from August 15 to October 15, 2022. A total

of 211 patients with a prior diagnosis of DM participated. Data were collected using a structured questionnaire covering demographic information, knowledge, and awareness of DM. Analysis was performed using SPSS version 22.0, with categorical data presented as percentages and frequencies, and the mean age of diabetes onset expressed as mean  $\pm$  standard deviation. Results show despite recognizing symptoms and understanding basic disease mechanisms, patients' knowledge about complications and treatment options was limited. Many patients held misconceptions about the disease, including the belief that diabetes could be permanently cured (67%) and that it is caused by excessive sugar intake (84%). These misconceptions highlight the need for better education and awareness programs. The study reveals a significant lack of knowledge and awareness about DM among patients in Puri, Odisha.

Misconceptions about the disease and a shift towards alternative medications pose risks for severe complications. There is an urgent need for community-based awareness campaigns and educational initiatives to promote early diagnosis and effective management of diabetes.

The second objective of the study was to find out association between level of knowledge regarding complications of diabetes mellitus among type 2 diabetes mellitus patients with selected socio demographic variables.

The present study findings revealed that there was significant association between knowledge of type 2 diabetic patients with selected demographic variables such as occupation of the subjects ( $X^2=18.154$ ), which is significant at 0.05 level. It was also evident that there was no significant association between knowledge of diabetic patients with the selected demographic variables such as age in years ( $X^2=2.482$ ), Gender ( $X^2= 1.359$ ), Religion ( $X^2= 1.045$ ), Educational status ( $X^2= 6.138$ ), family income ( $X^2=6.438$ ), previous knowledge ( $X^2= 2.697$ ), Habits ( $X^2= 18.31$ ), Family history ( $X^2=2.284$ ), Duration of DM ( $X^2= 8.099$ ), Treatment taken for DM ( $X^2=2.525$ )

The present study findings were supported by a study to assess the knowledge of diabetes mellitus complications prevention among patients in the central region of Ghana. 301 diabetic patients are

involved in the study. Binary logistic regression was conducted to examine the association between socio-demographics and participants 'knowledge levels. The findings of the study there was no significance association between level of knowledge with selected demographic variables such as age ( $X^2=6.89$ ), gender ( $X^2=1.20$ ), place of residence ( $X^2=0.32$ ), religion ( $X^2=5.44$ ), education level ( $X^2=12.84$ ), occupation ( $X^2= 2.80$ ). There is significant association between marital status ( $X^2= 2.46$ ) and level of knowledge.

The third objective of the study was to prepare and provide educational booklet regarding complications of diabetes mellitus to type 2 diabetes mellitus patients.

An informational booklet on complications of Diabetes Mellitus was prepared by the investigators. It comprised of information regarding complications of diabetes mellitus causes, signs and symptoms and Preventive measures of complications of diabetes mellitus. The information booklet was distributed to all the samples and as well as all the diabetic patients who were present at the time of data collection. Also, their doubts were clarified by the investigators.

## VIII. CONCLUSION

- Diabetes looks different in different patients. The severity, the signs and symptoms, and even the type of diabetes can vary. To diagnose diabetes, a physician needs to determine if a patient has hyperglycaemia, depending on the patient's history and her signs and symptoms. Treating diabetes consist of keeping blood glucose level as close to normal as possible, using a combination of medication, diet, exercise and stress normal as possible a patient can reduce the risk of acute and long-term complications of diabetes mellitus. Identifying the risk of developing complications of diabetes mellitus in patients can be an effective means for preventing some of the long-term complications associated with the diabetes mellitus. From this study it is clearly evident that some of the diabetic patients had inadequate knowledge regarding of diabetes mellitus so the nurses must take the responsibility to disseminate the importance of

practicing preventive measures. The investigators felt deep sense of satisfaction and fulfilment for undertaking this study.

#### IX. NURSING IMPLICATION

The investigators have drawn the following implications from the study which is vital concern to the field of Nursing service, Nursing Education, Nursing Administration and Nursing Research.

##### Nursing Practice

- The findings of the study will help the nurses in planning organizing and implementing various health education programs in clinical settings regarding prevention of complications of type 2 Diabetes Mellitus.
- The findings will help the nurses to control the complications of type 2 Diabetes Mellitus
- Findings of the present study enables the medical surgical nurses to update their knowledge on complications of type 2 Diabetes Mellitus.

##### Nursing Education

- The nurse educator should arrange an in-service education programme for staff nurses regarding complications of type 2 diabetes mellitus.
- The student nurses can be encouraged to conduct puppet show, street play, skit and video assisted programme on prevention of complications of type 2 diabetes mellitus in hospitals as well as in community.
- Under the guidance of nurse educator, the student nurses can prepare educational materials on life style modification for prevention of complications of type 2 diabetes mellitus and can provide it to the diabetic patients in the community as well as in the Nursing Education
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on life style modification for prevention of complications of type 2 diabetes mellitus and can provide it to the diabetic patients in the community as well as in the hospital settings.

#### X. NURSING ADMINISTRATION

- The nurse administrators can distribute handouts and booklets in community and hospitals for the prevention of complications of type 2 diabetes mellitus
- Nurse administrator can motivate the student nurses to conduct continuing nursing education program regarding Diabetes mellitus

##### Nursing Research

- The study will serve as a valuable reference for the future investigator.
- Nursing researcher can utilize the findings of the present study to conduct the studies in different aspects diabetes mellitus such as complications and management.
- This study emphasizes the importance of evidence-based practice regarding the preventive aspects of complications of diabetes mellitus.

##### Limitations

- No broad generalization could be made due to small sample size and limited area of size.
- The tool used for data collection was not standardized
- The study was limited to 60 samples in selected hospital
- The study is limited only in the assessment of knowledge levels about complications of type 2 diabetic patients.

##### Recommendations

Based on the findings of the present study and keeping of all the limitations in the mind, few recommendations were offered by the investigators for the further research system.

- Similar study can be replicated in a larger sample for wider generalization.
- Study can be used to gather information regarding the complications of diabetes mellitus.

- A true experimental study can be undertaken to assist the effectiveness of information booklet regarding complications of diabetes mellitus.
- Study can be carried out to find out the knowledge level of Type 2 diabetic patients regarding complications of diabetes mellitus.
- The study can be replicated in different settings to strengthen the findings.

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