

Knowledge Regrading Manangement and Prevention of Diabetes Mellitus and Its Complications Among Diabetic Patients: A Descriptive Study.

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Abstract—Background of the study: -

India has the 2nd largest diabetes population in the world after China often called the “Diabetes capital”. As per ICMR-INDIAB study, over 101 million of individuals live with diabetes and an additional 136 million people have prediabetes in 2024. Diabetes is an invisible one, about 43% of Indians are walking around with diabetes undiagnosed. Prevention is always cheaper than treatment. There are huge number of myths about diabetes, which obviously delays care awareness corrects these all.

Aim: -

The aim of the study was to assess the knowledge regarding management and prevention of diabetes mellitus and its complication among diabetic patients and selected hospital.

Material and methods

Non experimental design was adopted and a total of 30 patients were selected for the study. A knowledge questionnaire was used as a tool.

Result

Results revealed that around 53% of subject had moderate adequate knowledge, and the remaining 47% had inadequate knowledge.

Conclusion

The study demonstrates that there was scarcity in imparting knowledge to the public regarding diabetes. Especially prevention and management of its complications.

Index Terms—Diabetes mellitus, complication, management and prevention.

I. INTRODUCTION

Diabetes mellitus is a common and a serious metabolic disorder characterized by elevated levels of blood glucose (Hyperglycaemic) resulting from defects in insulin secretion, insulin action or both. It's also a chronic and progressive condition with long term consequences, constitutes a substantial burden for both patient and health care system.

According to the World Health Organization (WHO) and the International Diabetes Federation (IDF) Diabetes Atlas, 11th edition, diabetes mellitus continues to represent a significant global health concern. It is estimated that approximately 830 million people worldwide are living with diabetes. Furthermore, the 2014 estimates indicate that around 589 million adults aged 20-79 years globally were living with diabetes, highlighting the substantial and growing burden of disease worldwide.

Diabetes mellitus continues to impose a substantial global health and economic burden. In 2024 diabetes was associated with approximately 3.4 million death every nine seconds. An estimated 43% of adults living with diabetes remain undiagnosed, representing approximately 252 million people. The global health expenditure attributable to diabetes reached an estimated USD 1.015trillions in 2024, reflecting a 338% increase over the past 17 years.

India has one of the highest burdens of diabetes worldwide. According to the IDF diabetes Atlas, approximately 898 million adults aged 20-79 years were living with diabetes in India. In 2024, placing India second globally in terms of the number of adults with diabetes. The ICMR INDIAB study has also

reported a substantial burden of diabetes of diabetes in India, with considerable variation across states. Tamil Nadu, diabetes is also a major health concern. A state-wide survey among adults aged 18-69 years reported a high prevalence of diabetes, with the burden varying across population and being particular notable in urban area. In Kanyakumari district studies have likewise reported a considerable prevalence of diabetes among both men and women highlighting the need for greater awareness, early detection, prevention and effective management of diabetic complication. Assessing the knowledge of the individual with diabetes mellitus is an important initial step in identifying their understanding of the prevention and management of diabetic complications. Assessing their existing knowledge can help determine what patients know about the preventive measures and appropriate management may contribute to easily recognition of complications and adoption of appropriate preventive practices. Therefore, the researchers intend to assess the level of knowledge regarding the prevention and management of diabetic complications among patients with diabetes mellitus. Considering the time constraints and other practical and ethical considerations, the present study is limited to the assessment of knowledge and does not include a post-test or evaluation of the effectiveness of an educational intervention. Following data collection, an educational pamphlet containing relevant information on the prevention and management of diabetic complications will be provided to the participants as an informational resource.

Objective

To assess the level of knowledge regrading prevention and management of diabetes and its complications among diabetic patients.

II. MATERIALS AND METHODS

➤ Research approach and design

In this study, quantitative research approach was used and the research design chosen was non-experimental descriptive study design.

➤ Variables

Research variable - Knowledge regrading prevention and management of diabetes mellitus and its complication.

➤ Study setting

The study was conducted in selected hospital at Kanyakumari district.

➤ Study population

Target population

All patients diagnosed with diabetes mellitus type 1 and type 2.

Accessible population

The diabetic patients with type 1 and type 2 available at the selected hospital during the study period

➤ Samples

Diabetic patient from selected hospital.

➤ Sample size

30 patients were selected from the selected hospital at Kanyakumari district.

➤ Sampling technique

Non probability convenient sampling technique was used in this study.

➤ Criteria for sample selection

Inclusion criteria

The patients who are,

Not clinically diagnosed with diabetes mellitus type 1 and type 2.

Not willing to participate in the study

Not available at the time of study

Not able to read and write Tamil.

Exclusion criteria

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➤ Research tool

The tool has two sections

Section 1

This consists of demographic characteristics such as age, gender, education, marital status, religion, food habits and previous knowledge etc.

Section 2

This had knowledge questionnaire with 25 questions that included the preventive and management measures of diabetes mellitus and its complications.

➤ Testing of the tools

Content validity

The structured knowledge questionnaire was given to the experts in the field of nursing and items were modified based on their Suggestions.

Reliability

The reliability of the knowledge questionnaire was checked by Split half method. The reliability of the structured questionnaire was 0.81.

➤ **Pilot study**

In order to test the feasibility, relevance and practicability of the study, a pilot study was conducted among 5 patients at selected Hospital. It revealed that the Study is feasible.

➤ **Ethical consideration**

Ethical clearance was obtained from the dissertation committee of the selected hospital. After data collection, as an ethical responsibility, a pamphlet on prevention and management of diabetes mellitus was distributed to all participants. No intervention or evaluation was done after pamphlet distribution.

III. RESULTS**Section-1**

Table 1: Frequency and percentage distribution of subjects according to demographic variables.

S.No	Demographic variables	Frequency	Percentage
1	Age in year		
	a) 31-40	16	53%
	b) 41-50	7	23%
	c) 51-60	5	17%
	d) 61-70	2	7%
2	Sex		
	a) Male	19	63%
	b) Female	11	37%
3	Education		
	a) Primary	16	53%
	b) Secondary	11	37%
	c) degree	3	10%
4	Religion		
	a) Hindu	17	57%
	b) Muslim	2	7%
	c) Christian	11	36%
	d) others	0	0%
5	Marital status		
	a) Marriage	27	90%

	b) Unmarried	2	7%
	c) Divorce	1	3%
6	Any history of smoking		
	a) Yes	23	77%
	b) no	7	23%
7	Any history of alcoholism		
	a) yes	9	30%
	b) no	21	70%
8	Food habits		
	a) vegetarian	17	57%
	b) non vegetarian	3	43%

In this study of 30 patients, most were aged 31-40 years (53%) and were males (63%). Majority had only primary education (53%) were Hindu (57%) and married (90%), 77% had a history of smoking, 70% had no history of alcoholism and 57% were vegetarian.

Section-2

Table 2: Frequency and Percentage distribution of subjects according to the knowledge level.

Level of knowledge	Frequency	Percentage
Inadequate (0-33%)	14	47%
Moderate adequate (33-66%)	16	53%
Adequate (66-100%)	0	0%

Table 2 reveals that 53% of subjects had moderately adequate knowledge and 47% had inadequate knowledge regarding diabetes mellitus. None of them had adequate knowledge.

Table 3

Measurement	Mean	Mode	Standard deviation
Level of knowledge	9.73	9.5	2.40

The mean knowledge score was 9.73 with standard deviation of 2.40, which shows that the overall knowledge is low and patients have similar low scores.

IV. DISCUSSION

The present study was conducted to assess the knowledge regarding diabetes mellitus among 30 hospital patients.

Objective: To assess the level of knowledge regarding diabetes mellitus.

In the present study, 47% of patients had inadequate knowledge, 53% had moderately adequate knowledge and none had adequate knowledge. The mean score was 9.73 with S.D 2.40 which shows overall knowledge is low.

This finding is supported by Lakra et al. (2022) who conducted a descriptive study among 150 diabetic patients in Dehradun using knowledge questionnaire. They found only 8.7% had good knowledge, 78.7% had moderately adequate knowledge and 12.7% had poor knowledge.

Another study is by Shaikh et al (2022) conducted among coastal south Indian diabetic population. They found nearly half of the population 42% had poor knowledge and only 8% had excellent knowledge towards diabetes and its complications

Hence all the study including present study reveal that diabetic patients have poor to moderate knowledge and need health education.

Strength

This study addresses a very relevant and common problem.

The study identifies the knowledge gap (47% inadequate, 53% moderately adequate) which helps nurses to plan health education.

The study was done with a descriptive design with 30 samples. So, it's easy to conduct and cost effective and also provides baseline data for further interventional studies like structured teaching programmes.

Limitation

The limited sample size places limitation on the generalization of the study findings.

The research setting has been selected as per researchers convenient.

The study used convenient sampling technique which limits the randomization.

This study assessed only the knowledge and not the attitude and practice.

Nursing Implication

Nurses should ensure proper patient follow up and monitoring the efficacy of treatment.

Nurses must be given extensive training in diabetes education and have to provide individualized health education to patients and their families.

The nurses administer should organise in service education programs and continuing education

programs for staff nurses regrading current trends in diabetes management and motivate them to conduct health education in wards and OPD.

V. RECOMMENDATION

A similar study can be replicated with larger sample size to generalise the findings.

A comparative study can be conducted between rural and urban patients regarding knowledge on diabetes mellitus.

A study can be conducted family members of diabetes patients or among high-risk groups like overweight, obese and sedentary lifestyle people.

An experimental study can be conducted with structured teaching programme to improve knowledge regarding diabetes mellitus.

A study can be conducted to assess the knowledge, attitude and practice regarding diabetes mellitus among patients.

VI. CONCLUSION

The present study conducted among 30 patients revealed that 47% had inadequate and 53% had moderate adequate knowledge regarding diabetes mellitus, with none having adequate knowledge. The mean knowledge score was 9.73 ± 2.40 , indicating a significant knowledge gap.

This highlights the urgent need for regular health education programs by nursing personnel to improve awareness regrading prevention and management of diabetes and its complication.

As an ethical initiative, a health education pamphlet was distributed to participants after data collection to enhance their knowledge.

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