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ASSESSMENT OF KNOWLEDGE REGARDING COMPLICATIONS OF DIABETES MELLITUS AMONG DIABETES PATIENTS ADMITTED AT HOSPITALS OF SELECTED AREAS.

Medical Surgical Nursing

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ABSTRACT

Aim: Assessment of knowledge regarding complications of diabetes mellitus among diabetes patients. Objectives of the study: 1) to assess the knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. 2) to find association of study findings with selected demographic variables. Hypothesis: H01- There is no significant knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. (p=.05). H1- There is significant knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. (p=.05). Method: The study was conducted using exploratory and descriptive design non-randomized one group design was adopted. The population comprised of 60 patients admitted at hospitals of selected areas of Pune city. Data collected by Non-probability convenient sampling technique and provided tool consists of demographic data, structured questionnaire. The result showed that 36 (60.0 %) of DM patients did not have knowledge on diabetes complications. 16 of them representing 26.9 % had inadequate knowledge on diabetics complication while a few of them 8 (13.1 %) had adequate knowledge. **Conclusion:** Participants knew the individual complication of diabetic mellitus but lack an in-depth knowledge on the complications. Further expansion of diabetic educative programs like using mass media and involving national curriculum of education can improve self-regulatory awareness of diabetic complications which may reduce the morbidity and mortality of diabetic patients

KEYWORDS

Diabetic Complication, Knowledge, Type 2 Diabetics)

INTRODUCTION

Diabetes is a serious chronic disease that occurs either when pancreas does not produce enough insulin or when the body cannot effectively use it. Diabetes is an important public health problem and one of four priority Non-Communicable Diseases (NCDs) targeted for action by world leaders. Globally, an estimated 422 million adults were living with diabetes in 2014, compared to 108 million in 1980. Diabetes of all types can lead to complications in many parts of the body and can increase the overall risk of dying prematurely.[1]

Unless treated correctly, it is only a matter of time before encountering an epidemic of the complications of diabetes, like kidney diseases, retinopathy, coronary artery disease, strokes and diabetic foot ulcer can affect most of the body organs especially heart, blood vessels, kidneys, eyes, nerves and teeth.[2,3] Death rates for heart disease and the risk of stroke are about 2-4 times higher among adults with diabetes than among those without diabetes. In addition, 67% of U.S. adults who report having diabetes also report having high blood pressure [4]

The complications of diabetes mellitus are the major health problem among diabetic populations, and it is a significant burden of care on the individual, health care professionals and the wider health system. Individuals with diabetes are 2-4 times more likely to develop cardiovascular disease relative to the general population and have a 2-5-fold greater risk of dying from these conditions.[5]

One of the reasons for occurrence Diabetes Mellitus (DM) complication is lack of knowledge. The common causes of diabetic complications are poor control of diabetes either due to non-adherence, poor attitude towards the disease and its complications, unhealthy diet, and insufficient physical activity, and due to poor management by the health care professionals. On top of these diabetes complications can predispose the patient for different infection.[7]

Need for the Study

Diabetes mellitus (DM) is a serious non-communicable illness that is posing a danger to both wealthy and less wealthy societies worldwide.[8,9]

Diabetes affects more than 170 million people globally, and if the current trend is allowed to continue, this number is expected to more than quadruple by 2030.[10] The increasing prevalence of diabetes on the African continent has the potential to be quite serious, resulting in high rates of morbidity and death that will well outweigh the ravages.[11]

In the late 1990s, the crude prevalence of diabetes in the general population was 6.3%, and the age-adjusted prevalence of diabetes and impaired glucose tolerance (IGT) was 6.1 and 10.7%, respectively.[12] In comparison to the general population, those with diabetes likely to have an increased risk of heart disease and stroke, as well as a higher incidence of retinopathy, peripheral nerve damage, and kidney issues.[13] Knowing enough about the condition is essential for managing diabetes. Several studies have shown the significant benefits that better patient knowledge of the disease and its complications has on patient adherence to treatment and the absence of disease-related issues.[14] The management of the disease, which includes health education, has been studied.[15-19]

Despite all of these studies and efforts at health education on the subject, the international Diabetes Federation found that most people still know less than they should about the problems associated with diabetes.[20]

Aim of the study

The most common aim of this present study is to assess knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas.

Methodology

Research methodology describes the methods used by the researcher to organize and plan the research activity. Research design adopted for this study is exploratory and descriptive design non-randomized one group design and study conducted hospitals of selected areas.

Objectives: 1) To assess the knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. 2) To find association of study findings with selected demographic variables.

Hypothesis: **H_{01}-** There is no significant knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. (p=.05)

H_1- There is significant knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. (p=.05)

Identification of target and accessible population: In this study, the

population consisted of diabetes patients admitted at hospitals of selected areas.

Target population: In this study the target population consisted of diabetic patients all over Maharashtra.

Sample size: Sample consist of 60 diabetic patients admitted at hospitals of selected areas.

Sample Technique: The non-probability convenient sampling technique was adopted in this study.

Method of data collection:
1. Approval from the research committee members and written permission from head of institution to conduct research was obtained.
2. The purpose of study is explained and Informed consent obtained from the participants.
3. Assessed the knowledge by using structured questionnaire.
4. Document the score of test from all the participants.

Description of the Tool
Section A – Structured demographic variables
Section B – Structured questionnaire.

Method of data collection
The researcher visited the selected hospitals in advance and obtained the necessary permission from the concern authorities. The researcher introduced himself and informed them about the nature of the study so as to ensure better co-operation during data collection. The diabetic patients admitted in the Smt. Kashibai Navale Medical College and general Hospital, Pune. Sample size was 60. Diabetic patients admitted were selected with the help of non-probability convenient sampling technique. Patients were selected as per the inclusion criteria from the selected hospitals. Tool consists of demographic data, structured questionnaire. Before Data Collection the consent was taken from the participants. Structured questionnaire provided for assessment of the knowledge. Findings were recorded according to the tool. The data was analyzed using descriptive and inferential statistics. Fisher's exact test is used to find association between study findings and demographic variables.

Data Analysis and Interpretation
Demographic characteristics:
In present study demographic characteristics result showed that the mean age of the patients in this study was 55.28 ± 14.71 years. A higher proportion (46.9 %) of them was between the ages of 40–59 years. Among the patients, there were more female (61.5 %) than male (38.5 %). There were 73.8 % married patients. Out of a total of 60 subjects, 97.7% had no socio economic income, 78.5% were unschooled, 71.5 % had less than 5 years duration of diabetes, while 54.6 % were from rural residency.

Knowledge of diabetic mellitus complications
Participants' response on the knowledge on diabetic complications. The most common diabetic complication known by diabetic patients was diabetic foot (51.5 %), followed by hypertension (35.4 %), neuropathy (29.2 %), hypoactive sexual arousal (25.4 %), arousal disorder (21.5 %), retinopathy (17.7 %), heart disease (9.2 %), and nephropathy (5.4 %) In general higher proportions of them were not knowledgeable on diabetic complications. Out of 60 patients surveyed, 96.2 % had no knowledge on sexual pain disorder, 83.8 % had no knowledge on heart disease, 71.5 % had no knowledge on nephropathy, neuropathy 67.7 %, arousal disorder 66.9 %, retinopathy 65.4 %, hypoactive sexual arousal 65.4 % and diabetic foot 46.9 %.

Table1: Responses of patients to Knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. N=60

Complications	Participants responses		
	Yes	No	Don't Know
Hypertension	21 (35.4 %)	2 (2.3 %)	37 (62.3 %)
Heart Disease	5 (9.2 %)	4 (6.9 %)	51 (83.8 %)
Hypoactive sexual arousal	15 (25.4 %)	5 (9.2 %)	40 (65.4 %)
Arousal disorder	14 (21.5 %)	7 (11.5 %)	39 (66.9 %)
Sexual Pain disorder	0	2 (3.8 %)	58 (96.2 %)
Retinopathy (Eye disease)	11 (17.7 %)	10 (16.9 %)	39 (65.4 %)
Nephropathy	3 (5.4 %)	14 (23.1 %)	43 (71.5 %)
Diabetic Foot	31 (51.5 %)	1 (1.5 %)	28 (46.9 %)
Neuropathy	18 (29.2 %)	2 (3.1 %)	40 (67.7 %)

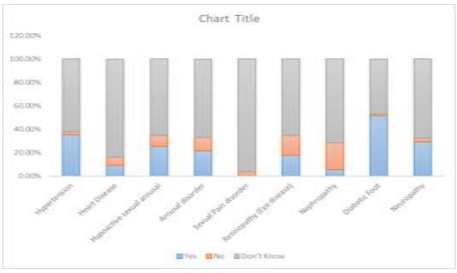

Figure 1: Responses of patients to knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas.

Table2: Level knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. N=60

Level of knowledge	Score
Adequate	13.10%
Inadequate	27%
don't know	60.00%

In general majority 36 (60.0 %) of DM patients did not have knowledge on diabetes complications. 16 of them representing 26.9 % had inadequate knowledge on diabetics complication while a few of them 8 (13.1 %) had adequate knowledge.

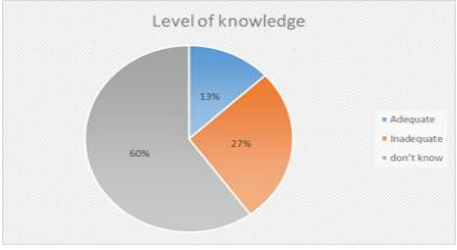

Figure 2: Level knowledge regarding complications of diabetes mellitus among diabetes patients admitted at hospitals of selected areas.

Association between levels of knowledge of diabetic mellitus complication and socio-demographic characteristics
All patients 19 years and below knew nothing about diabetic complication. Higher proportion (22.2 %) of the elderly (80–99 year) had adequate knowledge on diabetic complications than 20–39 year (15.8 %), 40–59 year (13.1 %), and 60–79 (10.0 %). Age was not significantly associated with patient's level of understanding of diabetic complications (p = 0.8198). More males (18.0 %) than female participants (10.0 %) had adequate knowledge on diabetic complications (p = 0.0131). Singles (18.2 %) followed by those widowed (13.0 %) and those who were married (12.5%) had adequate knowledge on diabetic complications. Marital status was not significantly associated with the degree of understanding of diabetic complications (p = 0.2125). Participants (100.0 %) who financially earned between 10000 and 20000 had adequate knowledge compared to 11.0 % of patients with no economic income (P=0.0023). All (100.0 %) participants who had completed tertiary education had adequate knowledge followed by those who had completed senior high school (40.0%), junior high school (33.3 %), basic school (22.0 %) and those who were unschooled (6.8 %) (p <0.0001). The duration of patient's diabetics was significantly (p=0.0076) associated with the degree of understanding of diabetic complications. Approximately 67 percent (66.7 %) of participants with 16–20 years duration of diabetes had adequate knowledge on diabetic complications than to those with 11–15 year duration (37.5 %), 5–10 year (19.2 %) and below 5 years (8.6 %). There was no significant association between area of residence and the knowledge on diabetic complications (p = 0.2060). However, patients from the urban (18.6 %) had adequate knowledge than their counter parts from the rural settings (8.4 %)

Factors associated with understanding of diabetic complications
Female gender adjusted odd ratio (AOR) =2.31(1.56–3.40), married participants AOR = 3.37 (1.44–7.93) and widowed participants AOR = 2.98(1.10–8.08) were significantly ($p<0.05$) associated with increased level of understanding of diabetic complications. Basic educational level AOR = 0.18 (0.082–0.50) JHS and above of educational level AOR = 0.04 (0.02–0.08), 5–9 years of DM duration AOR=0.31 (0.18–0.57), ≥10 years of DM duration AOR = 0.42 (0.20–0.62) and urban dwellers AOR = 0.36 (0.22–0.68) respectively were significantly associated ($p<0.05$) with reduced level of understanding of diabetic complication.

DISCUSSION

The research report reviewed the knowledge of diabetes mellitus among diabetes patients admitted at hospitals of selected areas. It was found that the proportion of complications of type 2 diabetes commonly known by diabetic patients were diabetic foot, hypertension, neuropathy, hypoactive sexual arousal, arousal disorder, retinopathy, heart disease, and nephropathy. The decreased proportion of patients' knowledge on heart disease compared to previous studies could be explained by either the diabetic patients had inadequate knowledge. The majority of the study's respondents had 60.0% of DM patients not having knowledge on diabetes complications, with 16.9% having inadequate knowledge on diabetic complication and 13.1% having adequate knowledge. Tertiary education was found to be significantly higher proportions in terms of adequate knowledge on diabetic complications.

This study also found a significant association between socio-economic income and the level of knowledge on diabetic complication. In this present study, diabetic patients irrespective of low, moderate or high economic income were significantly associated with adequate knowledge on diabetic complication compared to patients without economic income. A higher household income has been found to be associated with adequate knowledge on diabetic complications.[26] Again, the significant association between knowledge on complication and duration of diabetes cannot be overlooked. This finding is expected because the longer the duration of diabetes the more knowledge patient has on diabetic complication. Longer duration of diabetes development are known factors and shown in numerous studies to be associated with the development and progression of chronic complications in diabetes.[25]

In this study, there was no significant difference in knowledge on diabetic complications between rural and urban dwellers probably because diabetes targeted education was lacking in both the groups. There is the need for urgent diabetic education among participants in these areas.

There are good evidences that foot complications are preventable by appropriate foot care and education programme.[27] In this study diabetic patients have successfully highlighted diabetic foot as the most common complication among diabetes in Pune. The major limitation of this study was the sampling technique and the low literacy of the people. Their health literacy is likely low and perhaps they did not fully understand the questions and thus the findings of this study cannot conclusively represent the general diabetic patients in the Smt. Kashibai Navale Hospital, Pune. However, some findings of this study concur well with other previous studies.

CONCLUSION

In this study, the most common complication of Diabetic Mellitus known by diabetic patients was diabetic foot, followed by hypertension, neuropathy, hypoactive sexual arousal, arousal disorder, retinopathy, heart disease, and nephropathy. Higher proportion of the DM patients did not have adequate knowledge on diabetic complications. Male gender, high income earners, higher level of education, and longer duration of DM were significantly associated with degree of understanding for diabetic complications. It is incumbent on healthcare giver to provide early diabetic education regarding causes, management and preventive measures of diabetic complications. Organizing health education programmes as well as health outreaches on preventives measures such as adjusting to lifestyle and dietary modifications will enhance the level of knowledge of diabetic complications among diabetic patients.

Conflict of Interest:
The authors certify that they have no involvement in any organization or entity with any financial or non-financial interest in the subject matter or materials discussed in this paper.

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