Original Research Article

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Knowledge, attitude and practices about diabetes mellitus and its complications in T2DM patients attending the UHC in Mumbai

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ABSTRACT

Background: Diabetes Mellitus has become a major public health problem in India and also the major cause of disability through complications such as blindness, renal failure, lower limb gangrene etc. People suffering from Diabetes related complications are many times unaware about the measures to curb the onset of the complications. The aim of the study was to assess knowledge, attitude and practices about diabetes and its complications in the diabetic patients

Methods: This was a cross sectional descriptive study conducted at an Urban Health Centre attached to the parent medical college in Mumbai. The knowledge, attitude and practices of the 116 participants who were registered at the non-communicable disease (NCD) OPD were assessed via a pre-designed, pre-tested interviewer administered questionnaire. Statistical analysis used: SPSS version 20.

Results: Majority belonged the age groups of 40-60 years (69%), 63.8% were women, 91.4% were married and 44.4% were illiterate. 13.8% of the respondents had correct knowledge about the causes of diabetes and 62.9% could correctly identify the symptoms of diabetes. Knowledge regarding the complications in diabetics was found to be quite low with only 52.6% correctly identifying one or more complications. The most commonly known complication was neuropathy (83.6%) followed by nephropathy (57.3%). The attitude of the patients with respect to screening of complications was found to be poor and the same reflected in their practices

Conclusions: There is a lack of understanding of the basics of the disease, its prevention as well as prevention of complications in those suffering from the disease.

Keywords: Diabetes mellitus, Knowledge, Complications

INTRODUCTION

Right from Sushruta describing Diabetes as "Madumeh" to India being tagged as the "Diabetic Capital of the World," Indians seem to have a known longstanding association with diabetes. India today leads the world with 32 million diabetic patients and this number is projected to increase to 79.4 million by the year 2030. The annual number of DALYs attributable to diabetes in India nearly doubled from about 4.1 million to nearly 8

million, while, the annual number of deaths due to diabetes in the country increased more than twofold, from about 100,000 in 1990 to 223,999 in 2010 (IHME 2013).² Of greater concern is also 33% of adults with diabetes in India who remain undiagnosed, preventing proper management of the disease.³

The chronic complications of diabetes mellitus affecting many organ systems are responsible for the morbidity and mortality associated with the disease. People with diabetes are 25 times more likely to develop blindness, 30-40 times more likely to undergo a major amputation, 17 times more likely to develop kidney diseases, 2-4 times more likely to develop a myocardial infarction and twice more likely to suffer a stroke as compared to non-diabetics. However, there is inadequate awareness amongst the diabetic patients about the existing interventions for preventing these complications. This study was undertaken to assess the knowledge, attitude and practices about diabetes and its complications in the diabetic patients.

METHODS

The study was carried out for a period of 7 moths from December 2015 to June 2016. A cross sectional study design was adopted and those diabetic patients registered at the non-communicable disease (NCD) OPD (for DM and HTN) at the UHC were included in the study.

Selection criteria of the study subjects were as follows:

- 1) All the adult patients suffering from type 2 diabetes.
- 2) Those with at least 1 year of the disease.
- 3) Those without any co-morbidities.
- 4) Those willing to be a part of the study.

Thus, a total of 116 diabetic patients were a part of this study. The knowledge and practices were assessed via a pre-designed, pre-tested interviewer administered questionnaire and containing both open and close ended questions. Approval was obtained from the institutional ethical committee before proceeding with the study. The participants were interviewed at the time of their follow up in the NCD OPD and their responses were recorded after obtaining a written informed consent from them.

The responses given by the participants were entered in Microsoft Excel 2010 and analysed using SPSS version 20.

RESULTS

A total of 116 type 2 diabetic patients participated in the study. Majority belonged the age groups of 40-60 years (69%), 63.8% were women and 91.4% were married. 56% had received some form of education and 44.4% were illiterate.

The demographic characteristics of the participants are presented in Table 1.

About 36.2% patients were diabetic since more than 5 years. 41.4% patients had a positive family history of diabetes. 88.8% participants had initiated treatment in the form of oral hypoglycaemic drugs) immediately upon diagnosis. Out of the 11.2% who did not initiate treatment immediately, the most common reason given (in 46%) was that they did not perceive the condition of

hyperglycaemia to be a serious one as they did not feel the symptoms of the disease.

Table 1: Socio-demographic characteristics of the study participants.

Characteristic	No. of participant (n=116)	Percentage (%)
Age (in years)		
<40	13	11.20
40-60	80	69
>60	23	19.80
Gender		
Male	42	36.20
Female	74	63.80
Marital status		
Married	106	91.40
Single/ separated/	10	8.60
widowed		
Religion		12.20
Hindu	18	15.50
Muslim	98	84.50
Occupation		
Semi-professional	3	2.60
Skilled	31	26.70
Semi-skilled	54	46.60
Unskilled	15	12.90
Retired	13	11.20
Education		
Primary	32	27.60
Secondary	27	23.30
Higher secondary &	6	5.20
above		
Illiterate	51	44
SEC	4.4	0.70
2	11	9.50
3	26	22.40
4	57	49.10
5	22	19

Knowledge

13.8% of the respondents had correct knowledge about the causes of diabetes with advancing age being recognised as the most commonly given correct response in 43.75%. 62.9% could correctly identify the symptoms of diabetes with polyuria being the most commonly known symptom of diabetes (43.1%) followed by lethargy and weakness (35.6%). Knowledge regarding the complications in diabetics was found to be quite low with only 52.6% correctly identifying one or more complications. The most commonly known complication was neuropathy (83.6%) followed by nephropathy (57.3%). Even though hypoglycaemis is an important complication, only 24.5% were actually aware of this

complication and only 17.2% could correctly identify the symptoms of hypoglycaemia.

Table 2 shows the knowledge of the study participants regarding various aspects about the disease.

Table 2: Knowledge of the study participants regarding various aspects about the disease.

Kn	owledge items	No. of participants who answered correctly (N=116)	Percentage (%)		
Dis	Disease				
a)	Causes	16	13.80		
b)	Symptoms	73	62.90		
c)	Normal blood sugar level	59	50.90		
d)	Symptoms of hypoglycemia	20	17.20		
e)	Is diabetes is a preventable disease?	38	32.80		
Ma	nagement of diabetes by lifestyle changes				
a)	What are the food items avoided in diabetes	104	89.70		
b)	How much of physical activity in should a diabetic indulge in?	37	31.90		
Co	Complications in diabetes				
a)	What are the complications seen in Diabetics?	61	52.60		
b)	What do you know of diabetic foot protection and care?	7	6.03		
c)	Do know immunity in diabetics is compromised?	11	9.48		

Table 3: Attitude of the diabetic patients regarding screening of diabetic complications.

Attitude	Agree (%)	Disagree (%)
1. Diabetics should get their BP monitored regularly.	99.10	0.90
2. Frequent blood sugar testing is important to monitor Diabetes.	87.10	12.90
3. Controlled diet* is important in Diabetes	87.10	12.90
4. Regular, moderate intensity exercise for 30 mins per day helps in the management of diabetes.	42.92	57.08
5. Fundoscopy eye examination can help in prevention of diabetes related ocular complications.	41.40	58.60
6. Urine protein assay should be measured annually to check for early signs of diabetic nephropathy.	9.40	90.60
7. Screening for hyperlipidemia in diabetics can help reduce cardiovascular morbidity and mortality in diabetics.	12.90	87.10

^{*} Controlled diet – reduction in the overall calories, reduced intake of saturated fats and refined sugars and increased intake of grains, fruits and vegetables.

Attitude

Table 3 shows attitude of the diabetic patients regarding screening of diabetic complications.

Practices

Almost all the respondents got their BP monitored on a regular basis. 86.2% had made changes in the diet as per the advice given by the treating physician. 87.1% got their blood sugars checked within the last 3 months. While only 36% out of the total respondents who had a positive attitude towards physical activity indulged in physical activity (defined at least 30 mins of regular, moderate intensity activity on at least 5 days of the week).

Within the past one year, 41.6% of the respondents with a positive attitude had done a fundoscopy. However, none of the respondents had done a urine protein assay to

check for early signs of diabetic nephropathy or a lipid profile to check for dyslipidemia.

DISCUSSION

This study revealed that only 13.8% of the diabetic patients out of the 41.4% who had a positive family history of diabetes mellitus, only 25% of them knew about the role of genetic factor in diabetes mellitus. In a study done in India, 38.2% of the individuals with self-reported diabetes stated that family history was a cause of diabetes.⁵ In a study done in Gambia, it was found that 80% diabetics had a diabetic family member but only one third knew that diabetes could be a hereditary disease.⁶

In the present study, about two thirds of the study participants had correct knowledge about symptoms of diabetes. Foma et al reported, about three quarters of the studied patients had correct knowledge about the symptoms of diabetes. The normal level of glucose in

the blood was known to about 50.9% of our participants. This was similar to a study done in Omani patients where 57.5% knew the normal blood glucose levels.⁷ This needs to be improved in the community as it can lead to better self-care and involvement of patient in management of diabetes mellitus.

Even though hypoglycaemia is an important complication, only 24.5% were actually aware of this complication and only 17.2% could correctly identify the symptoms of hypoglycemia. A study done in Egypt reported that 48.1% of the diabetics were aware about the symptoms and about one quarter was knowledgeable about the cause of hypoglycemia.⁸

Patients suffering from diabetes mellitus, if educated can play a role in imparting knowledge to their family members and friends which could create a general awareness in the community regarding diabetes. However, in our study only one third of the participants knew that diabetes mellitus was preventable. This is important from the primary prevention point of view in order to create general awareness in the community regarding diabetes, its risk factors and the prevention strategies.

89.7% could correctly identify the food items that should be avoided in diabetics and 87.1% agreed that a controlled diet was important in diabetes management. This good knowledge and positive attitude reflected in their practices as 86.2% of the respondents had made changes in their diet as per the advice given by the treating physician. This was contrary to the study done in Omani patients where only 56.6% were following a controlled and planned diet. The constant reinforcement and dietary history taken by the physician during the follow up at the UHC could be the reason for these favourable practices amongst the participants.

Regular physical activity is important to improve metabolic control, cardiovascular risk and lower the overall morbidity in people with diabetes. While 31.7% correctly stated that 30 mins of regular activity was a must in diabetes, only 36% of those with positive attitude actually indulged in it. This was similar to the findings of Bimani et al. This could be due to lack of motivation on the part of the Diabetics and difficulties related to old age. Public health programmes should be developed to increase awareness and encourage on increasing the physical activity in diabetic patients.

About 60% of the non-traumatic lower limb amputations among people aged 20 years or older occur in people diagnosed with diabetes mellitus. ¹⁰ In our study we found that 93.9% of the respondents were not aware of any foot care practices which is a glaring gap as studies show that trials in which patient education about foot care, foot wear and a daily inspection of feet and increased surveillance by treating physicians was carried out resulted in a significant decrease in serious foot lesions.

Efforts need to be concentrated in this direction as foot care in people with diabetes would lead to a 50-60% reduction in serious foot disease. 10

Regarding knowledge about diabetic complications, our study revealed that 52.6% of the respondents knew about the complications. In a study done in Egypt, 61.5% were knowledgeable about stroke, cardiac, renal and retinal complications.⁸

Diabetic neuropathy which was the most commonly known complication was experienced by 62.6% of the study participants. Doctors and diabetic peer also played a role in imparting knowledge about complications to the patients. Timely counselling regarding screening of complications should be carried out at regular intervals to prevent their development and decrease the associated morbidity.

Almost all our study participants agreed that BP should be regularly monitored and also got their BP monitored every 15 days. In the study done on Omani patients, it was found that only 24.5% had their last BP checked more than 1 month ago. The high response rate amongst our study population could be attributed to the fact that participants visited the NCD clinic every 15 days and the treating physicians insisted on this practice at every visit.

As per the suggested frequency of T2DM screening intervals, urine for albuminuria, lipid profile, fundoscopy, KFT should be performed at least once a year. 11 El-Khawaga, Abdel-Wahab, reported that periodic renal check-up was practiced by three quarters of the participants while fundoscopy was practiced by half of the participants. 8 None of our study participants had been screened for Diabetic Nephropathy or Dyslipidaemia while one quarter of our participants had done a fundoscopy within the past one year. Fundoscopy was done as a routine examination for those who had any ocular complaints.

People tend to utilise services if they are cost effective. Facilities for testing Blood Sugar Levels were available at our UHTC at no additional cost to the patient. This could be the reason that 87.1% participants had checked their blood sugar levels in the last 3 months.

Limitations of this study

The study was an outpatient clinic based one, conducted at a UHC; it may not truly represent all diabetics. A larger sample based survey is needed for further in depth research on diabetes knowledge, attitude, practices and compliance and how they inter relate.

Recommendations

Summarizing the results of this study, the findings in our study indicate a lack of understanding of the basics of the disease, its prevention as well as prevention of complications in those suffering from the disease. A Diabetic education programme for diabetics needs to be designed focussing on educating the diabetics to prevent complications and encourage self-management in patients with type 2 diabetes. Self-care practices including teaching the patients how to maintain their blood sugar levels within normal range by adopting a healthy life style, foot care, dietary guidance and importance of screening for diabetes related complications should be reinforced at every visit by the health care providers. Adequate health messages and counselling to the patients by the treating physicians during every visit can improve the perception about the disease and its management Efforts also need to be made to provide for screening at low cost to the diabetic patients in order to ensure a better compliance.

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Institutional Ethics Committee

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