

Awareness of Diabetes Mellitus & Its Complications in Southern Part of Assam

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ABSTRACT

Introduction: Diabetes Mellitus prevalence is high in India and is increasing every year, with strain on the economy for management of this disease and its complications. As the data on the level of awareness and knowledge about diabetes is scarce, this study was done.

Material and methods: It is a cross-sectional study conducted on 182 diabetic patients attending a tertiary care teaching hospital of north eastern India, over a period of two months, using questionnaire. The clinical and non-clinical data were tabulated and quantitative data expressed as percentage.

Results: Among 182 diabetics, 43.96% patients knew about the cause of DM, 25.27% knew polyuria as its symptom, 45% patients had an idea of blood sugar testing, 19.23% knew about its management and 27.47% answered loss of vision as its complications. Majority patients, 58.79%, weren't counselled about the disease.

Conclusions: Knowledge and awareness about Diabetes Mellitus was poor in present study population. Hence it is important to extend the diabetic health programs with proper counselling in mass campaigns to improve their knowledge and thus prevent complications.

Keywords: Diabetes Mellitus, Blood Glucose, Polyuria

INTRODUCTION

The World Health Organization (WHO) predicts that maximum increase in Diabetes mellitus would occur in India.¹ India has a high prevalence of DM and the numbers are increasing every year, estimated to be 79.4 million by the year 2030.² The greatest impact of this condition is felt in the developing countries, which account to 80% of the diabetic population.³

Uncontrolled diabetes can lead to lifelong complications associated with increased morbidity and mortality like diabetic retinopathy, neuropathy, nephropathy, cardiovascular disease etc.⁴ Most of these complications are not only irreversible but they are also costly to manage as they usually require management in specialized centres with sophisticated infrastructure and equipment, well trained staff and potent medications, posing as a major economic burden in developing countries.⁵ Many patients become aware of diabetes only when they develop one of its complications. Knowledge of DM can help in prevention and control of the disease and also reduce the incidence of complications. Educational programs should help people assess their risks of diabetes, motivate them to seek proper treatment and care and inspire them to take charge of their disease.⁶

Several studies show that awareness of DM in the general

population seems to be low.^{8,9} Awareness of DM will increase compliance of patients towards management and decrease the complications.¹⁰ There is limited data on the level of awareness and knowledge about diabetes in developing countries like India. Hence, this study was done to assess the awareness and knowledge of DM among diabetic patients in Southern part of Assam.

MATERIAL AND METHODS

It was a cross-sectional study on diabetic patients with the sample size of 182. The study was conducted in the Department of Medicine, SMCH, Silchar, Cachar, Assam over a period of two months from December 2019 - January 2020. Informed consent was obtained from all participants enrolled in the study.

Inclusion criteria

Patients with DM with age \geq 15 years, of either gender.

Exclusion criteria

1. Those who did not give consent.
2. Age <15 years.

Study design

A structured questionnaire regarding patient's demographic characteristics like age, gender and basic details about the awareness and knowledge of various aspects of DM like causes, complications, management was used as a tool. The study was explained to all patients attending the Out-patient department (OPD) and Indoor patients (IP) of hospital diagnosed with diabetes mellitus. The questions were interpreted in local language. After the study period, all the data were analyzed and interpreted. The demographic data were analyzed using descriptive statistics. Quantitative data were expressed as percentages.

Questionnaire

1. Age
2. Religion - Hindu / Muslim / Christian / Others

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3. Sex – Male / Female
4. Marital status - Married / Widowed / Unmarried
5. Residence – Urban / Rural
6. Education level – Illiterate / Primary school / Secondary school / College
7. Awareness of type of diabetes – Yes : type 1, type 2 / Don't know
8. Knowledge of cause of diabetes –
 - Yes
 - a high sugar intake,
 - b Family history,
 - c Lack of insulin,
 - d Overweight
 - e Environmental
 - f Stress related
 - Don't know
9. Symptoms of DM – Polyuria/ Polydipsia/Weight loss/ Don't know
10. Which is the best method for home glucose testing?
 - a. Urine glucose testing
 - b. Blood glucose testing
 - c. Don't know
11. Knowledge about blood tests : FBS / PPBS / HbA1c levels / Don't know
12. Presence of glucometer at home - Yes/no,
13. Knowledge of management of diabetes – Diet / Medications / Exercise / Don't know
14. Perception of severity of DM as a disease –
 - a Serious disease probably fatal,
 - b Curable disease,
 - c Non-curable but controllable
 - d Mild disease,
 - e Don't know
15. Knowledge of complication of diabetes –
 - a loss of vision,
 - b poor wound healing,
 - c heart failure,
 - d kidney failure,
 - e amputations,
 - f stroke,
 - g don't know
16. Which should not be used to treat low blood glucose?
 - a. 3 hard candies
 - b. 1/2 cup orange juice
 - c. 1 cup diet soft drink
 - d. don't know
17. A low blood glucose reaction may be caused by:
 - a. heavy exercise
 - b. infection
 - c. overeating
 - d. not taking your insulin
 - e. don't know
18. Knowledge of preventive measures of diabetes
 - a physical activity,
 - b healthy diet,
 - c don't know,
19. Source of information for diabetes mellitus

- a Media
- b Health care professionals
- c Relatives
- d Others

20. Is controlling blood glucose only sufficient? Should we control HTN/Dyslipidemia to get better outcome? – Yes / No

RESULTS

A total of 182 Diabetic patients underwent the study. Most common age group was 46-60 years. Males were predominant with 76.92%. Most of the study population was married (89%) and lived in rural area (59.89%). Majority of patients were illiterate (67.58%) and the literacy rates for primary, secondary and graduation were 42.44%, 18.54% and 9.26% respectively. Their demographic details are tabulated in table-1.

Most diabetic population (84%) were not aware of their diabetic type. Majority of patients (56.04%) weren't aware of its cause. Amongst those who did know, 91.25% believed it to be high glucose level. Many were not aware of symptoms of DM but according to those who knew (25.27%), it was polyuria. Majority of the patients had no knowledge about blood glucose testing (53.29%) or glucometer (91.2%). Very few patients (19.23%) knew that diabetes can be treated by a healthy diet and medications (table-2).

Very few, 21.43% patients had knowledge about severity of DM and 37.36% knew about complications of DM. Healthcare professionals, 31.32%, were an important source of generating awareness regarding DM (table-3).

Sr No	Characteristic	Frequency
1.	Age	
	30-45 yrs (28)	15.38%
	46-60 yrs (81)	44.51%
	61-75 yrs (59)	32.42%
	>75 yrs (14)	7.69%
2.	Gender	
	Males (140)	76.92%
	Females (42)	23.08%
3.	Religion	
	Hindus (120)	65.93%
	Muslims (50)	27.47%
	Christians (12)	5.59%
4.	Marital status	
	Married (162)	89%
	Widowed (18)	9.9%
	Unmarried (2)	1.1%
5.	Education level	
	Illiterate (123)	67.58%
	Primary School (30)	16.48%
	Secondary school (20)	11%
	College (9)	5%
6.	Residence	
	Urban (73)	40.11%
	Rural (109)	59.89%
Table-1: Socio - Demographic characteristics of study population		

Sr No	Variable	Frequency
1.	Awareness of type of Diabetes	
	Yes	
	Type 1	None
	Type 2 (29)	15.93%
	No (153)	84.07%
2.	Cause of diabetes	
	Yes (80)	43.96%
	High sugar level (73)	91.25%
	Family history of DM (28)	35%
	Lack of insulin (10)	12.5%
	Overweight (23)	28.75%
	Environmental	None
	Stress related	None
	Don't know (102)	56.04%
3.	Symptoms of Diabetes	
	Polyuria (46)	25.27%
	Polydipsia	None
	Weight loss	None
	Don't know (136)	74.73%
4.	Best method for home glucose monitoring	
	Urine glucose testing (4)	2.19%
	Blood glucose testing (18)	9.89%
	Don't know (162)	89.01%
4.	Knowledge about blood tests	
	FBS (83)	45.6%
	PPBS (82)	45.05%
	HbA1c levels (15)	8.24%
	Don't know (97)	53.29%
5.	Presence of glucometer at home	
	Yes (16)	8.79%
	No (166)	91.2%
6.	Knowledge of management of DM	
	Diet (35)	19.23%
	Medications (35)	19.23%
	Exercise (26)	14.29%
	Don't know (73)	40.1%

Table-2: Knowledge regarding Diabetes

Sr No	Variable	Frequency
1.	Perception of severity of DM as a disease	
	Yes (39)	21.43%
	Serious, probably fatal (3)	1.65%
	Curable (3)	1.65%
	Non-curable, but controllable (18)	9.9%
	Mild disease (15)	8.24%
	Don't know (143)	78.57%
2.	Knowledge of complication of DM	
	Yes	37.36%
	Loss of vision (50)	27.47%
	Poor wound healing (47)	25.82%
	Heart disease (25)	13.74%
	Kidney failure (27)	14.83%
	Amputations (27)	14.83%
	Stroke	
	Don't know (114)	62.64%
3.	Knowledge about correcting hypoglycemia after taking medications	
	Yes (46)	25.27%
	No (136)	74.72%
4.	Knowledge on preventive methods of DM	
	Physical activity (10)	5.49%
	Healthy diet (25)	13.74%
	Don't know (157)	86.26%
5.	Source of information for DM	
	Media (9)	4.95%
	Health care professionals (57)	31.32%
	Relatives (9)	4.95%
6.	No one (107)	58.79%
	Should other co-morbid conditions (HTN/Dyslipidaemia also be controlled for better outcome	
	Yes (32)	17.58%
	Don't know (150)	82.42%

Table-3: Knowledge about complications and prevention of DM

Studies	Loss of vision	Poor wound healing	Heart disease	Kidney failure	Stroke
Present study	27.47%	25.82%	13.74%	14.83%	-
Foma	67%	46.5%	5.5%	13.5%	4.5%
Benil V	49.03%	33.65%	24.03%	22.11%	-
Mohan	16.1%		5.8%	16.1%	2.2%

Table-4: Prevalence of knowledge of complications

DISCUSSION

The data collected with the help of the questionnaire shows that the level of awareness of patients about diabetes, its complications, its management and prevention in the study population was shockingly poor. Most of the patients (84.07%) did not know the type of diabetes they are suffering from. There was lack of knowledge regarding the most common symptoms of DM. Also in present study, patients were not aware of the various types of laboratory tests done for DM diagnosis and its follow up. It could be due to the low rate of literacy of the study

population (67.58%). Similarly, a study by Noohu Khan¹¹, et al show that areas with low literacy rates (29.76%), have a low level (84%) of awareness regarding type of DM. In present study, high sugar intake was regarded as the most common cause of DM. Only a few patients knew that the lack of insulin is the primary mechanism for DM. More than half patients (56.04%) did not know about the cause of disease. This finding is in agreement with that of a study conducted by Foma et al⁸, showing that 53% patients were unaware of causes of DM. Most patients who knew about management of DM

responded that diet control and medication as an important step but had no idea about role of exercise (76.15%). This is similar to a study conducted by Benil V et al¹² showing the lack of awareness of physical exercise (49.03%) as a means of management of DM.

Knowledge of complications such as loss of vision and poor wound healing was more compared to heart disease, stroke and kidney failure. This finding is similar to the study done by Foma et al⁸, Benil V. et al¹², Mohan et al¹³ (table-4).

This study also showed the lack of knowledge of patients regarding the symptoms of hypoglycemia and how to correct it as only 25.27% patients knew about corrective measures. However, studies by Zia Rehman¹⁴ (65.6%) and Noohu Khan¹¹ (95.42%) show that majority of people were aware of how to correct hypoglycemia.

Knowledge of severity and prevention of diabetes is also poor. It is, therefore, necessary to perform more diabetic camps and awareness program to motivate people for their lifestyle modification, healthy diet, and exercise.

The study also reveals that almost 58.79% of patients were not counselled about DM, its nature, course, treatment and complications.

There is a great need for continuous health education to diabetics and caregivers to improve their knowledge and awareness of different aspects of DM. Current study has given an overview about the knowledge attitude and awareness about DM among the DM patients.

CONCLUSION

It can be concluded that even though DM is a rapidly spreading epidemic, general population knowledge regarding it is poor. Proper counselling of patients regarding the disease in the language they understand and improvements in literacy rates can do productive changes in DM management. Still deep probing has to be done in future to know the contributing factors and solutions for such issues.

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