Original Research Article

Knowledge and self-care practices of diabetic patients in an urban community

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ABSTRACT

Background: The term "diabetes mellitus" describes a metabolic disorder of multiple aetiology characterized by chronic hyperglycemia. The GOI's NPCDCS has a focus on awareness generation for behaviour and life-style changes, screening and early diagnosis of persons with high level of risk factors and their referral to appropriate treatment facilities. Earlier studies have reported that knowledge of patients about diabetes care leads to better glycemic control.
Methods: A cross-sectional study conducted over a period of 3 months among diabetic patients coming to private OPD in Bareilly city. Patients with any other serious morbidity were excluded from the study.
Results: Mean age was 61.8±13.4 years. Mostly subjects did not know the type of diabetes they had (42, 75.0%) amongst those who knew, majority had type-2 diabetes (9, 16.1%). Majority had no known history of diabetes in the family (31, 55.4%). Most of the study subjects had diabetes diagnosed for five years or less (26, 46.4%). Most common co-morbidity was hypertension (33, 58.9%) followed by obesity (29, 51.8%). Majority of subjects (23, 41.1%) followed some dietary advice and a little less than half performed exercise daily. Approximately two-third of the subjects (38, 67.9%) did not have blood sugar testing in the previous week and most subjects (31, 55.4%) did not care for their feet. Majority (39, 69.6%) took regular medicine.
Conclusions: It is evident that better education is related to good self-care. Masses need to be made aware regarding self-care emphasizing on foot care and regular blood sugar testing.

Keywords: Diabetes, SDSCA, Self-care

INTRODUCTION

The term "diabetes mellitus" describes a metabolic disorder of multiple aetiology characterized by chronic hyperglycaemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both. The effects of diabetes mellitus include long–term damage, dysfunction and failure of various organs.[1] In 2020, according to the International Diabetes Federation (IDF), 463 million people have diabetes in the world and 88 million people in the Southeast Asia region. Of this 88 million people, 77 million belong to India.[2] According to the 2019 National Diabetes and Diabetic Retinopathy Survey report released by the Ministry of Health and Family Welfare, the prevalence was found to be 11.8% in people over the age of 50.[3] The Government of India has been implementing National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) since 2010. NPCDCS has a focus on

awareness generation for behaviour and life-style changes, screening and early diagnosis of persons with high level of risk factors and their referral to appropriate treatment facilities. One of the objectives of NPCDCS is health promotion through behaviour change with involvement of community, civil society, community based organizations, media, etc.[4] Complications due to diabetes are closely associated with poor glycemic control. Each 1% reduction in the mean glycated hemoglobin (HbA1c) has been shown to be associated with a reduction in risk of 21% for deaths related to diabetes, 14% for myocardial infarction, and 37% for microvascular complications.[5]

Earlier studies have reported that knowledge of patients about diabetes care leads to better glycemic control.[6] Better understanding of diabetes and its risks is gained by better perception of glycemic control and encourages people to follow treatment regimens and keep the disease under control.[7] Blood glucose level and knowledge, attitude, and practice (KAP) of diabetic patients are used as indices of diabetes management in previously published studies.[8]

With this background, we conducted this study with aim to identify knowledge and practices of diabetic patients.

METHODS

A cross-sectional observational study was conducted over a period of 3 months i.e. September 2019 to November 2019 among diabetic patients coming to private OPD named Dr Suresh C Agrawal's Clinic located in Siklapur, Bareilly to determine their knowledge, attitude and self-care practices for glycemic control.

Informed consent was obtained from all diabetic patients and those who consented to give interview were included in the study. No ethical issues were involved as this was an interview based observational study with no interventions. Patients with any other serious morbidity were excluded from the study. All patients coming to the OPD during study period and fulfilling inclusion criterion were enrolled in the study.

A pre-designed pre-tested semi-structured questionnaire was used for data collection. The instrument consisted of two sections, first section collected basic patient demographics and disease state and second section was a SDSCA (Revised Version) questionnaire on diabetes mellitus.[9] The SDSCA measure is a brief self-report questionnaire of diabetes self-management that includes items assessing the following aspects of the diabetes regimen: general diet, specific diet, exercise, blood-glucose testing, foot care, and smoking.[9]

Data were entered using Microsoft Excel 2010 and statistical analysis was done using IBM SPSS v 20.0.0. Categorical variables were analysed using proportions and percentages. Association between categorical variables was established by Chi square and odds ratio (OR) with 95% confidence intervals (CI) where applicable. Continuous variables were summarized by mean and standard deviation (SD), and association tested by parametric tests.

RESULTS

A cross-sectional study entitled "Knowledge and self-care practices of diabetic patients in an urban community" was conducted at a private OPD in Bareilly city including a total of 56 patients.

Table 1: Baseline characteristics of the study population.

Characteristic	Frequency	%
Age class (years)		
<40	6	10.7
41-60	31	55.4
61-80	18	32.2
>81	1	1.8
Sex		
Male	38	67.8
Female	18	32.2
Education		
Graduate and above	5	8.9
High school and Intermediate	7	12.5
Primary	13	23.2
Below primary	31	55.4
Knowledge about type of diabetes		
Diabetes mellitus Type 1	5	8.9
Diabetes mellitus Type 2	9	16.1
Do not know	42	75.0
Family History of diabetes		
No family history	31	55.4
Father	11	19.6
Mother	10	17.9
Sibling	3	5.4
Duration of Diabetes (years)		
<5	26	46.4
6–15	22	39.3
>15	8	14.3
Associated co-morbidity		
No co morbidity	7	12.5
Hypertension	33	58.9
Coronary heart disease	14	25.0
Obesity	29	51.8
Others	6	10.7

Table 1 shows baseline demographic characteristics of the study population. In our study it was observed that most of the diabetic subjects fell in the age group of 41-60 years (31, 55.4%) followed by 61-80 years, less than 40 years and more than 80 years (18, 32.2%; 6, 10.7% and 1, 1.8%) respectively. The mean age of our diabetic patients was 61.8±13.4 years. Majority of our study subjects were

males (38, 67.8%). It was observed that more than half of the subjects had education below primary level (31, 55.4%), followed in order by primary, high school and intermediate and graduation and above (13, 23.2%; 7, 12.5% and 5, 8.9%) respectively.

In our study it was noted that three-fourth of the study subjects did not know the type of diabetes they had (42, 75.0%) whereas amongst those who knew, majority had type-2 diabetes (9, 16.1%) followed by those who had type-1 diabetes (5, 8.9%). More than half of the study subjects fell in the category of those who had no known history of diabetes in the family (31, 55.4%) followed in order by those whose father, mother or any sibling had diabetes (11, 19.6%; 10, 17.9% and 3, 5.4%) respectively. Most of the study subjects had diabetes diagnosed for five years or less (26, 46.4%), followed by those in whom it was diagnosed in six to fifteen years (22, 39.3%) followed by those in whom it was diagnosed for more than 15 years (8, 14.3%).

The current study elicited that the most common co-morbidity of the diabetic patients coming to this clinic was hypertension (33, 58.9%) followed in order by obesity (29, 51.8%), coronary artery disease (14, 25.0%), and others (6, 10.7%) which included hypothyroidism, chronic kidney disease, chronic obstructive pulmonary disease. A minor proportion of the subjects (7, 12.5%) had no co-morbidity.

Table 2 shows the Summary of Diabetes Self Care Activities (SDSCA) in the studied diabetic patients. It was observed that majority of the study subjects (23, 41.1%) followed some dietary advice on all days of the week followed by those who follow it for five to six days a week (11, 19.6% respectively) and those who follow it for three to four days a week (3, 5.4%; 7, 12.5% respectively). It was seen that minority of patients did not follow any dietary advice (3, 5.4%).

The specific diet response showed that the majority followed specific diet plan two to three times a week (22, 39.3%; 12, 21.4% respectively) followed by those who followed specific diet plan four to five days a week (6, 10.7%; 4, 7.1% respectively). It was also seen that minority of patients did not follow any dietary advice (4, 7.1%). It was observed that a little less than half of the subjects performed exercise (physical activity) daily (26, 46.4%) whereas many did not perform any exercise at all (16, 28.6%).

Approximately two-third of the studied diabetic subjects (38, 67.9%) did not have blood sugar testing in the previous week followed by those who had blood sugar tested atleast once (14, 25.0%) in the previous week. In the present study it was seen that most of the study subjects (31, 55.4%) did not care for their feet followed by those who cared for their feet three to four days of the week (7, 12.5%; 10, 17.9% respectively).

Majority of the study subjects (39, 69.6%) took regular medicine (seven days a week) for glycemic control where as two patients (3.6%) never took any medication for hyperglycemia. It was seen that minority of patients took anti-hyperglycemic drugs five to six times a week (6, 10.7%; 9, 16.1% respectively).

Table 2: Summary of Diabetes Self Care Activities (SDSCA) of the study population.

Item of Questionnaire	Number of days in a week								Total respondents
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	
	Frequency of subjects according to response to number of days								
General diet response	3	0	0	3	7	11	11	23	
Specific diet response	4	0	22	12	6	4	0	0	
Exercise in previous week response	16	1	1	2	5	1	4	26	56
Blood sugar testing response	38	14	2	2	0	0	0	0	
Mean foot care response	31	1	2	7	10	2	2	0	
Regular Medication response	2	0	0	0	0	3	9	39	

DISCUSSION

This study was done to understand the knowledge and practice of self-care in diabetics in an urban setting. In our study it was observed that more than half of the diabetic subjects fell in the age group of 41-60 years which are active individuals earning bread for the family. The mean age of our diabetic patients was 61.8±13.4 years. More than two-thirds of our study subjects were males. It was observed that more than half of the subjects had education below primary level and proportion reduced as educational level increased.

In our study it was noted that only a quarter of the diabetic patients had knowledge regarding the type of diabetes they had and amongst them majority had type-2 diabetes. Knowledge of diabetes in family was observed in less than half of the study subjects (44.6%) and amongst them most common family member with diabetes was father followed by mother and sibling in least. Nearly half of the study subjects had had diabetes

diagnosed for five years or less and proportion decreased as the duration of diagnosis increased. These findings were similar to study done by Kushwaha et al who also reported similar proportions knowing about type of diabetes and family history.[10] Asmelash et al reported higher proportion of patients having knowledge regarding type of diabetes they had probably due to higher proportion with better education in their study population.[11] The current study elicited that the most common co-morbidity of the diabetic patients coming to this clinic was hypertension followed in order by obesity, coronary artery disease and others which included hypothyroidism, chronic kidney disease, chronic obstructive pulmonary disease. A minor proportion of the subjects had no co-morbidity. These findings were also similar to study done by Kushwaha et al who reported similar proportions of comorbidities in diabetic patients.[10]

About the Summary of Diabetes Self Care Activities (SDSCA) in the studied diabetic patients, it was observed that a good proportion of the study subjects followed some dietary advice on five or more days of the week whereas specific diet plan was followed only two to three times a week. It was also seen that minority of patients did not follow any dietary advice. It was observed that a little less than half of the subjects performed exercise (physical activity) daily. Only a quarter of the studied diabetic subjects are getting blood sugar tested weekly while others are getting tested at greater intervals. These findings were contrary to what was reported by Nejaddadgar et al in there study where they reported lowest scores were related to blood glucose testing, taking medication and physical activity whereas these findings were more or less similar to those of Dedefo et al who also reported poor compliance in blood sugar testing.[12,13]

It was also observed that foot care is being neglected by majority of the subjects in our study similar to Dedefo et al who also reported poor compliance whereas Nejaddadgar et al in their study reported highest scores for following healthy diet and foot care.[12,13] Majority of the study subjects took regular medicine (seven days a week) for glycemic control whereas a minority of patients missed the drug once or twice a week and two patients never took any medication for hyperglycemia. Most of these findings were similar to study done by Kushwaha et al who also reported similar patterns in various components of SDSCA.[10]

CONCLUSION

It is evident that better education is somehow related to good self-care in diabetic patients. Masses need to be provided health education regarding importance of self-care in diabetes emphasizing even more on foot care and regular blood sugar testing.

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