Knowledge, attitude and behaviour regarding self-care practices among type 2 diabetes mellitus patients residing in an urban area of South India

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Abstract

Introduction: Diabetes mellitus is a major health problem in India with individual, social and economical consequences. Knowledge, attitude and practice surveys are effective in providing baseline for evaluating intervention programmes. This study was conducted with the aim to know the level of awareness about type 2 diabetes mellitus.

Methodology: A cross sectional study conducted to assess the knowledge, attitude and behaviour (KAB) among type 2 diabetes mellitus patients. KAB questionnaire was used to collect data.

Results: Out of 1058 patients 992 patients were included for the analysis, rest were excluded due to various reasons. 43.15% were males. Mean age of patients was 55.82 ± 10.2 years. Mean duration of diabetes was 10.2 ± 6.8 years. The mean knowledge score was 4.94, attitude score was 6.29 and behavior score was 1.64. Nearly 38.5% knew definition and types of diabetes. Majority of the participants believed they can control the disease. Dietary modification and exercise among the interviewed subjects was poor.

Conclusion: Results revealed good attitude but poor knowledge and practices (behaviour) towards diabetes. We concluded that there is a need for structured programmes to improve attitude and practices of diabetic patients to promote better compliance towards diet, exercise and drug regimen.

Keywords: Knowledge, attitude, behaviour, type 2 diabetes mellitus

INTRODUCTION

The dynamics of the diabetes epidemic are changing rapidly. Once the disease of the west, has now spread to every country, once the disease of affluent, it is now increasingly common among poor.[1] According to International Diabetes Federation (IDF) diabetes affects at least 285 million worldwide and that number expected to reach 438 million by the year 2030.[2] The total number of diabetics in India was 41 million in 2006 and that this would rise to 70 million by the year 2025.[3]

Diabetes education and awareness programmes are integral and essential contents of diabetes care.[4] There is now irrefutable evidence that diabetes education, motivation for self care improves diabetes care, reduces diabetic complications and thus eases the economic burden of country.[5] Self-care in the form of adherence to diet and drug regimens, blood glucose monitoring, self-administration of insulin, maintenance of optimum weight, blood pressure, recognition of symptoms associated with glycosuria and hypoglycemia etc. are crucial elements in secondary prevention.[6] Obtaining information about the level of awareness is the first step in formulating a preventive programme for the disease. There is need to investigate knowledge, attitude and behaviour (KAB) among

diabetic patients to aid in future development of national health programmes and techniques for effective health education. KAB surveys are effective in providing baseline for evaluating interventional programmes.[7] This study was conducted to assess the general characteristics of type 2 diabetes patients and their baseline knowledge, attitude and behaviour towards diabetes mellitus.

METHODOLOGY

A cross sectional descriptive study was conducted over a period of 6 months from 1st Jan 2012 - 30th June 2012 in Khasbag, an urban area of Urban Health Centre (UHC), Belgaum- South India. A house to house survey was conducted to identify the known diabetics in the community. A pre-tested questionnaire containing information on various study variables was used for data collection. This questionnaire was translated to local languages (Kannada and Marathi) covering four aspects of disease - demographic factors, knowledge, attitude and behaviour of the diabetics towards self care practices. Written and informed consent was obtained from all the patients. The health education regarding basic knowledge about diabetes, risk factors, prevention of complication and control of diabetes was imparted to them after assessing their existing level of knowledge, attitude and behaviour. The health education sessions were conducted every month over a period of six months, by lectures, slide projections, charts, pamphlets, video-show and distributing book containing literature on diabetes. It was given in groups, each group consisting of approximately 100 members. After the completion of study period the relevant information about knowledge (level of knowledge expressed on selected aspects of diabetes that lead to information regarding prevention of diabetes), attitude (tendency to respond positively or negatively to diabetes) and

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behaviour (expression regarding harmful or beneficial practices that he/she is going to adopt) were documented.

The demographic variables studied were age, gender, occupation, educational status, income, marital status, religion, type of family and duration of diabetes. The final questionnaire included 30 questions. The questions were designed to be short and clear and to contain only one idea in each statement. The questions included aspects about the knowledge about diabetes (15 questions), the attitude of the patients towards their disease (10 questions) and the self care practices (5 questions) followed by the patients. Correct answers were scored one point, while incorrect answers were scored as zero. Responses were coded using Microsoft office and analyzed using SPSS- latest version and descriptive statistics were used to study the characteristics of the study population. Ethical clearance was obtained from Institutional Ethics Committee for Human Subjects' Research, KLE University, Belgaum-590010, Karnataka-India.

RESULTS

Khasbag an urban area has about 1,250 households with 7,689 people. A house to house survey revealed that there were 1058 diabetics in the study community; hence the overall prevalence of diabetes in came to be 13.75%. Of the 1058 diabetics, 48 did not respond to the survey and 18 responders were excluded from the analysis due to incomplete responses. Finally, 992 responses were included for analysis.

Out of these 992, 428 (43.15 %) were males and 564 (56.85 %) were females. Age wise distributions of all patients were shown in Table 1. Mean age of patients was 55.82±10.2 years. Mean duration of diabetes was 10.2±6.8 years. Detail characteristics like family income and education, and their duration with diabetes are shown in Table 1.

Table 1. Socio-demographic features of the study participants

Variable	No. of patients	% age
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Age in years:		
16-45 years	196	19.75
46-60 years	482	48.56
>60 years	314	31.69
Gender:		
Male	428	43.15
Females	564	56.85
Religion:		
Hindu	847	85.38
Muslim	117	11.80
Others	28	2.82
Education Status:		
Illiterate	72	7.25
1st-5th std	243	24.50
6th-10th std	234	23.60
11th-12th/diploma	163	16.43
Graduate or more	280	28.22
Socio-economic status:		
Class I	126	12.70
Class II	315	31.75
Class III	147	14.82
Class IV	154	15.52
Class V	250	25.21
Duration with Diabetes:		
Less than 5 years	298	30.04
5 to 10 years	307	30.95
11 to 15 years	243	24.50
More than 15 years	144	14.51

Questions on knowledge, attitude and behaviour regarding self care in diabetes were assessed separately. Table 2 shows the mean scores of the study participants. The mean knowledge score of the study participants was 4.94 ($\pm$1.45), attitude score was 3.29 ($\pm$1.15) and the mean behaviour score was 3.54 ($\pm$1.59). The respondents were assessed on their knowledge regarding symptoms of diabetes, cause and treatment.

Table 2. Mean scores of the study participants

Mean scores	Score	S.D.
Knowledge	4.94	$\pm$ 1.45
Attitude	6.29	$\pm$ 1.15
Behaviour	1.64	$\pm$ 1.59
Total (30)	9.88	$\pm$ 2.54

Table 3 shows the percentage distribution of respondents by knowledge on different aspects of diabetes. The patients were assessed regarding different aspects of diabetes such as; what is diabetes, its types, symptoms of the disease, symptoms of hypoglycemia and its immediate treatment, effect of diabetes on the eye and foot and treatment. Majority of the responses regarding knowledge were poor.

Table 3. Response of the study participants to knowledge questions

Correct answers on Knowledge about Diabetes	No.	%
Defines Diabetes and states the Types	382	38.5
Cut off points for High and Low Blood Sugars	172	17.3
Lists at least 2 symptoms of Hypoglycemia	114	11.5
Causes of Hypoglycemia	153	15.4
Immediate treatment of hypoglycemia	200	20.2
Lists at least 2 symptoms of Hyperglycemia	85	8.6
Causes of Hyperglycemia	287	25.9
Immediate treatment of Hyperglycemia	105	10.6
Knows the urine and blood investigations done in Diabetes	323	32.6
Knows the complications in Diabetes	172	17.3

The attitude response towards showed that most believed that diabetes can be controlled (55.6%) and realized the importance of medications (46.2%). Table 4 details the attitude and practices in the study patients.

Table 4.Response of the study participants to attitude questions

Correct answers on attitude about Diabetes	No.	%
Believe it can be controlled	552	55.6
Approach to the doctor	200	20.2
Balancing exercise, food and medications	486	48.9
Coping with sick days and sick day rules	314	31.7
Importance of Medications	458	46.2

Table-5 shows the percentage distribution of answers to the questions on self care behavior in diabetes. Only 68% of patients had their blood sugar checked with in one month. Only 16% had eye examination done in last month. Only 17% of patients knew the importance of diet and only 13% were involved in regular exercise.

Table 5. Response of the study participants to behaviour questions

Correct answers on Behaviour about Diabetes	No.	%
Role of Diet in Diabetes	172	17.3
Type of meal and foods	38	3.8
Importance of exercise	257	25.9
Exercise for 40 mins/ day	133	13.4
Eye care in Diabetes	56	5.7
Skin and Foot care in Diabetes	104	10.5

DISCUSSION

The individuals will change their behaviour and attitude regarding diabetes only if they perceive themselves to be at high risk and if they are likely to get affected with diabetes in near future. The management of diabetes mellitus not only requires the prescription of appropriate nutritional and pharmacological regimen by the physician but also intensive self-care education and counseling of the patient.[8]

The overall prevalence of diabetes in the study population was found to be 13.75%. Estimated prevalence rates in different parts of urban India are based on national surveys and individual studies, which varied depending on geographical location and year of study. Recently, Mohan et al. (2008) provided estimates from a nationwide surveillance study of type 2 diabetes mellitus and found that in urban areas there was a prevalence of 7.3% of known type 2 diabetes mellitus and a prevalence of 3.2% in peri-urban/slum areas.[9]

The gender-wise distribution of the study participants showed that, most of the study participants were females. The study had 56.85% females. Some of the similar studies studying the prevalence of diabetes or its risk factors had majority of females. Gender and age specific prevalence and associated risk factors of type 2 diabetes mellitus in Uyo metropolis, south eastern Nigeria [10] conducted in 2010 had 60% females and 40% males, whereas the studies in India showed higher prevalence among males than in females.[11,12]

Distribution of the study participants based on their duration of diagnosis with diabetes in the present study shows that 30.9% of the participants were living for 5 to 10 years with diabetes. The mean duration of diabetes was 10.2±6.8 years. Similar studies done carried out in 2011 in England and India showed the analyses of adjusted HbA1c levels revealed that longer diabetes duration and female gender were indicative of poorer self-care.[13,14]

The study showed that the majority of the studied patients had low levels of correct knowledge (ranging from 11% to 14%- Table 3) regarding different aspects of diabetes. This finding is consistent with many other studies; CUPS (2000) [15] and Murugesan et al. (2007) [7] who conducted their studies in Chennai and parts of south India respectively. Only 38.52% of patients had correct knowledge about symptoms of diabetes. This result is in agreement with Upadhyay et al. (2008) [16] and Perez and Cha (2007) [17] who found nearly similar results among Nepalian patients (37.91%) and Hmong patients (38%).

Concerning type 2 diabetes complications; in the current study the complications assessed included; hypoglycemia, diabetic retinopathy and diabetic foot disease. Though Hypoglycemia is a serious problem with significant morbidity and mortality, yet only 11-15% of the studied patients were aware of the symptoms and causes of hypoglycemia and only 20.2% of them were aware of how to avoid

it (Table 3). Thus awareness about diabetes complications in the present study is lower than that reported by many studies; among Libyan patients in 2007 (62.2%),[18] Pakistani patients in 2006 (50%) [19] and Omani patients in 1998 (76%). [20]

An encouraging part in our study was that most study participants believed in self care in diabetes. 55.6% of the study participants believed that they can control their disease and 46.2% realized the importance of medications. The attitude scores of the studied patients towards balancing their food exercise and medications control of diabetes and approach to the doctor was also good. Similar findings were reported by Kamel et al. (2003) in Ismailia, Egypt [21]and by Hussein et al. (1999) among diabetics attending outpatient clinic in Cairo, Egypt.[22]

Of all the aspects, the behavior scores were the worst among the study participants. Only 25.9 percent knew the importance of exercise in diabetes and only 13% engaged in regular exercise. 4% of the participants made dietary changes after diagnosis and 6% of the patients went to an ophthalmologist for eye care and 10% took special care of their foot and skin. Pierce et al., drew similar conclusions in the study of offspring's view about diabetes.[23] The study carried out by Wyshak at an interval of 15 years among collegiate students found that they believed modified behavioural practices such as physical activity and weight control would reduce risk of diabetes.[24]

Analysis of the association showed that there was no significant difference between genders and no association between age or duration of diabetes and the behaviour and knowledge scores of the study participants. Age and diabetes duration had no effect on the ability of patients to manage their time in relation to diabetes (e.g. regular exercise for diabetes, inspecting feet, remembering to take diabetes medication, diet control). This is an interesting finding, since one could be justified in assuming that the longer patients live with a chronic condition, the better they become at managing their disease. This probably suggests that it is not the literacy or the duration with diabetes of the patients, but in fact the ignorance of the patients that is responsible for lack of self-care practices. However the attitude of the patients towards the disease was good most of patients believed that they are responsible for their care and this implies that they were ready to change if motivated or educated properly.

CONCLUSION

We conclude that, although the attitude of the study participants towards diabetes was good, the levels of knowledge and behaviour are lower than desirable. Therefore there is a need for structured programmes to improve the knowledge and behaviour of patients. Such studies will help people to replace maladaptive behaviours with healthy behaviours. This can be achieved by increasing quality and scope of health education at community level. We authors believe that primary care physicians should be enriched with more knowledge by scientific events like CME, conferences and workshops and media and Non Government Organizations (NGOs) should be involved in the daunting task of removing misbelieves, ignorance and instituting diabetes preventive measures in the community.

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