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Original Research Article

A Study on knowledge of Patients of Diabetes Mellitus regarding Self-Care Management attending government hospitals of Jamnagar district

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Abstract: A crucial element in secondary prevention is self-care. That is, the diabetics should take a major responsibility for his/her own care with medical guidance. Present study is an attempt to assess the knowledge relating to self-care management among diabetics. In present cross sectional study, total 400 Diabetic patients attending OPD at Government hospital, sub-district hospital and CHCs of the Jamnagar district were included. Data collection was done through oral questionnaire method using a pre-tested, semi-structured type of proforma. 94.2% patients were aware of dietary control, 90% about regular exercise, 66.5% about weight control, nearly half of patients were aware about quit smoking as an important preventive measures. 91.75% were aware regarding regular visit to physician. Only 36.3% were aware regarding periodic eye examination, 78.5% aware regarding daily self-examination of feet while only 30% were aware regarding need for feet examination by physician. 95.5% were aware regarding not walk barefoot inside and outside the house and 51% were aware regarding taking care and avoiding trauma while clipping toenails. 42.7% were aware regarding skin care. Only 9.8% were aware of diabetes card. Awareness regarding blood sugar measurement at home was seen only in 22.8% patients. 86.5% were aware regarding need for regular monitoring blood pressure. Very few number of patients were aware regarding need for checking lipid profile(15.75%) and urine examination(39.5%). 63.5% patients had adequate knowledge about the symptoms of hypoglycaemia and 60.8% were aware of how to manage hypoglycaemic symptoms. Awareness regarding dietary modification has association with education status of patients and also with duration of diabetes, difference was statistically significant. Statistically significant difference was also observed between the education status of patients, socioeconomic class, and duration of diabetes with the awareness regarding exercise. Observations indicate a wide gap in awareness regarding crucial screening test of prevention of various complication.
Keywords: Diabetes Mellitus, self-care management, awareness

INTRODUCTION

Diabetes mellitus (DM) is a major non-communicable disease that is becoming more prevalent, affecting more than 171 million people worldwide. The number of people affected by DM is expected to rise to 366 million by 2030 [1]. Diabetes is a silent disease; many sufferers become aware that they have diabetes only when they develop one of its life-threatening complications. Knowledge of diabetes mellitus can assist in early detection of the disease and reduce the incidence of complications [2]. Self-management can be described as 'a set of skilled behaviours engaged in to manage one's own illness,' influencing the outcomes of the treatment regimen [3]. A crucial element in secondary prevention is self-care. That is, the diabetics should take a major responsibility for his own care with medical guidance – e.g., adherence to diet and drug regimens, examinations of his own urine and where possible blood glucose monitoring; self-administration of insulin, abstinence from alcohol, maintenance of optimum weight, attending periodic check-ups, recognition of symptoms associated with glycosuria and hypoglycaemia, etc. Proper management of the diabetic is most important to prevent complication. Routine

checking of blood sugar, of urine for proteins and ketones, of blood pressure, visual acuity and weight should be done periodically. The feet should be examined for any defective blood circulation, loss of sensation and the health of the skin. The patient should carry an identification card showing his name, address, telephone number (if any) and the details of treatment he is receiving. In short, he must have a working knowledge of diabetes. All these mean education of patients and their families to optimize the effectiveness of primary health care service [4]. The importance of self-management skills in diabetes care has also been stressed by the American Diabetes Association (ADA) and the Veterans Health Administration (VHA). Patient education has been proven to be an important method of management of such a community health problem [5].

Unfortunately, there is still inadequate awareness about the real dimension of the problem among the general public. There is also a lack of awareness about the existing interventions for preventing diabetes and the management of complication. Inadequacies in primary health care systems, which are not designed to cope with the additional challenges posed by the chronic non-communicable diseases, result in poor detection of cases, suboptimal treatment and insufficient follow up leading to unnecessary disabilities and severe complications, often resulting in early death [4]. Present study is an attempt to assess the knowledge relating to self-care management among diabetes mellitus patients which in turn will help these patients for management and prevention of complications of diabetes and will help in improving and designing the strategies to create awareness regarding self-management by patients of diabetes.

MATERIALS AND METHODS

Present study was a cross sectional study. Total 400 Diabetes Mellitus patients attending OPD at the tertiary care hospital, and Patients attending OPD at sub-district hospital and CHCs of the Jamnagar district were included in study. Out of 400, 50% study subjects (200 subjects) were selected from tertiary care hospital of study district and of remaining 50% study subjects; 25% (100 subjects) were selected form sub-district general hospital and another 25% study subjects from CHCs of study district. The study period was one year, from July 2012 to June 2013. Data collection was done through oral questionnaire method using a pre-tested, semi-structured type of proforma. ***Statistical Analysis:*** The data entry and analysis were done using Microsoft Office Excel 2013 and Chi-square test used for analyzing the associations. Approval for the study was obtained from the institutional ethics committee and verbal informed consent was received from all study subjects.

RESULTS

In present study, it was seen that 33(8.25%) belonged to the age group of 20-39 years, 195 (48.75%) belonged to the age group of 40-59 years, 172(43%) were of above 60 years of age. It shows that around one third were belonging to age below 50 and remaining two third belonged to above 50 years. As the age rose, the percentage of diabetic patients also rose. 51.2% were males and 48.8% were females. 37.8% were from urban area and 62.2% were from rural side. Regarding education status, 165(41.3%) were illiterate and 235(58.7%) were literate. 122(30.5%) subjects were educated up to primary level, 58(14.5%) were educated up to secondary level, and 27(6.8%) were educated up to higher secondary levels while 28(7%) had got education above higher secondary level. Only 20.25% were from upper socio-economic class (class I and II), while remaining 79.75% were from lower socio-economic class (class III, IV and V). This would be due to the fact that in government health care set up, beneficiaries (patients) are generally from lower Socio economic class. These also suggest the possibility of wider distribution of diabetes among low as well as upper class, breaking the earlier pattern of diabetes being the disease of upper class. About one-third i.e. 149(37.3%) had diabetes of less than 5 years duration, 105(26.3%) had a disease from 6-10 years; 90(22.5%) had from 11-15 years; 27(6.8%) from 16-20 years; 19(4.8%) from 21-25 years and 10(2.5%) had more than 26 years. Mean duration of diabetes among patients was 9.84 with standard deviation 6.751 [table 1].

Out of 400 individual studied, 94.2% (377) patients were aware of dietary control, 90% (360) about regular exercise, 66.5% (266) about weight control, nearly half of patients i.e. 54% (216) were aware about quit smoking as a important preventive measures. 91.75% (367) patients were aware regarding regular visit to physician for the treatment and control of their diabetes. The awareness was much below than desired regarding investigations for early detection of complications. Only 36.3% (145) were aware regarding need for periodic eye examination, 78.5% (314) aware regarding need for daily self-examination of feet while only 30% (120) were aware regarding need for feet examination by physician. 95.5% (382) were aware

regarding not walk barefoot inside and outside the house and around half of patients i.e. 51% (204) were aware regarding taking care and avoiding trauma while clipping toenails. Only 42.7% (171) were aware regarding skin care, remaining 57.3% (229) had no idea about skin care. Only 9.8% (39) had aware of diabetes card, remaining 90.2% (361) had no idea of diabetes card. Awareness regarding blood sugar measurement at home was seen only in 22.8% (91) patients. As many as 86.5% (346) were aware regarding need for regular monitoring blood pressure. Only very few number of patients were aware regarding need for checking lipid profile i.e. 63 (15.75%) and urine examination i.e. 158 (39.5%). Observations indicate a wide gap in awareness regarding crucial screening test of prevention of various complication. 63.5% (254) patients had adequate knowledge about the symptoms of hypoglycaemia. Out of total 400 patients studied, 60.8% (243) were aware of how to manage hypoglycaemic symptoms [table 2].

Table-1: Demographic profile of Diabetes Mellitus Patients

Demographic variable		**Frequency**	**Percentage (%)**
Age	20-39	33	8.25
	40-59	195	48.75
	>60	172	43
Sex	Male	205	51.25
	Female	195	48.75
Education	Illiterate	165	41.25
	Up to primary	122	30.5
	More than primary	113	28.25
Socioeconomic class	Upper class (I,II)	81	20.25
	Lower (III, IV, V)	319	79.75
Locality	Urban	151	37.75
	Rural	249	62.25
Duration of DM	≤ 5 years	149	37.25
	> 5 years	251	62.75
BMI	≤ 24.99	141	35.25
	> 24.99	259	64.75

Table-2: Awareness regarding Self-Care Management measures

Self-Care Management measures	**Aware (%)**	**Not aware (%)**
Diet control	377 (94.2)	23 (5.8)
Regular exercise	360 (90)	40 (10)
Weight control	266 (66.5)	134 (33.5)
Quit smoking	216 (54)	184 (46)
Regular check up by physician	367 (91.75%)	33 (8.25%)
Eye examination by ophthalmologist	145 (36.3%)	255 (63.7%)
Daily self-feet examination	314 (78.5%)	86 (21.5%)
Not walk barefoot inside and outside the house	382 (95.5)	18 (4.5%)
Take care and avoid trauma while clipping toenails	204 (51%)	196 (49%)
Foot examination by physician	120 (30%)	280 (70%)
Skin care	171 (42.75%)	229 (57.25%)
Diabetic card	39 (9.8%)	361 (91.2%)
Blood sugar at home	91 (22.8%)	309 (77.2%)
Monitoring blood pressure	346 (86.5%)	54 (13.5%)
Urine examination	158 (39.5%)	242 (60.5%)
Lipid profile	63 (15.75%)	337 (84.25%)
Symptoms of hypoglycaemia	254 (63.5%)	146 (36.5%)
Management of hypoglycaemia	243 (60.8%)	157 (39.2%)

An attempt was made to find out the correlation between the awareness regarding dietary modification and various Socio - demographic factors like sex of patients, education status, locality, socioeconomic class and duration of diabetes. It was seen that awareness regarding dietary modification is almost equal in both male and female i.e. 94.63% and 93.84% respectively [$\chi2$=0.115]. Similarly there was not much variation in rural (93.57%) and urban (95.36%)[$\chi2$=0.556]. Awareness was more in patients with higher education i.e. education more than primary (99.11%), it was low in patients with low education (90.98%) and value was further low in illiterate patients (87.27%). The observation indicate that as the literacy has a positive influence on awareness among patients association between literacy and awareness was found to be statistically significant suggesting an impact of education on awareness[$\chi2$=10.002, p=0.007]. Awareness was more in patients of upper SE class (97.53%) than patients of lower SE class (94.41%) but this difference was not statistically significant[$\chi2$=2.017]. It was seen that awareness was more in patients with longer duration (96.01%) i.e. more than 5 year duration than in patients with less duration (91.27%) i.e. less than 5 year of disease and this difference was found to be significant statistically suggesting the awareness regarding dietary modification improved with longer duration of disease[$\chi2$=3.877] (table 3).

Table-3: Association between awareness regarding dietary modification and various demographic factors

Demographic factor	Awareness regarding dietary modification		Chi value	P value
	Aware	Not aware		
Sex				
Male	194 (94.63%)	11 (5.37%)	0.115	0.735
Female	183 (93.84%)	12 (6.16%)		
Locality				
Urban	144 (95.36%)	7 (4.64%)	0.556	0.456
Rural	233 (93.57%)	16 (6.43%)		
Education				
Illiterate	153 (87.27%)	12 (12.73%)	10.002	0.007
Up to primary	111 (90.98%)	11(9.02%)		
More than primary	112 (99.11%)	1 (0.89%)		
Socioeconomic class				
High class (I & II)	79 (97.53%)	2 (2.47%)	2.017	0.156
Lower class (III,IV,V)	298 (94.41%)	21 (5.59%)		
Duration of diabetes				
≤ 5 years	136 (91.27%)	13 (8.73%)	3.877	0.049
>5 years	241 (96.01%)	10 (3.99%)		

An attempt was made through present study to find out if various demographic factors had any bearing on awareness regarding exercise. The observation revealed that awareness was higher among males (92.68%) as against females (87.17%). However the difference was not significant statistically ($\chi2$=3.363, p=0.067). Awareness was higher among urban (93.37%) patients than rural patients. However, this difference was not found statistically significant (87.95%) [$\chi2$=3.075, p=0.08]. Awareness was more in patients with higher education i.e. more than primary education (97.34%) than with lower education. It was almost equal in illiterate (86.06%) patients and patients with up to primary education (88.52%). This difference was found statistically significant, suggesting a positive influence of education on awareness regarding significance of exercise [$\chi2$=9.914, p=0.007]. Statistically significant association was also found with rise in socioeconomic class and better awareness regarding exercise [$\chi2$=6.40, p=0.011]. It was more in patients with upper class (97.53%) than in patients with lower class (88.08%). It was seen that awareness was more in patients with longer duration i.e. more than 5 years of disease (92.82%) than patients with less duration (85.23%) and the difference was significant statistically [$\chi2$=5.991, p=0.014] (table 4).

Table-4: Association between awareness regarding regular exercise and various demographic factors

Demographic factor	Awareness regarding exercise		Chi value	P value
	Aware	Not aware		
Sex				
Male	190 (92.68%)	15 (7.32%)	3.363	0.067
Female	170 (87.17%)	25 (12.83%)		
Locality				
Urban	141 (93.37%)	10 (6.63%)	3.075	0.080
Rural	219 (87.95%)	30 (12.05%)		
Education				
Illiterate	142 (86.06%)	23 (13.94%)	9.914	0.007
Up to primary	108 (88.52%)	14 (11.48%)		
More than primary	110 (97.34%)	3 (2.66%)		
Socioeconomic class				
High class (I & II)	79 (97.53%)	2 (2.47%)	6.40	0.011
Lower class (III,IV,V)	281 (88.08%)	38 (11.92%)		
Duration of diabetes				
≤ 5 years	127 (85.23%)	22 (14.77%)	5.991	0.014
>5 years	233 (92.82%)	18 (7.18%)		

DISCUSSIONS

Observation indicates that awareness regarding dietary control was high among diabetic patients i.e. 94.2%. Padma *et al.* in their study reported that 75.21% patient were said dietary modification beneficial for control of diabetes [6] and Shah *et al.* in their study reported that 74.78% patients aware about dietary modification [7] which is lower than the finding of this study. This study found 90% of the respondents were aware that regular physical exercise is helpful. Majra *et al.* in their study found that 82% of the respondents were aware that regular physical exercise is helpful [8]. Shah *et al.* in their study observed that 83.16% believed exercise is beneficial [7]. Naheed in their study reported that 75% were said exercise helps in blood sugar control [9]. The result of these studies is lower than the present study. In our study 66.5% patients were aware about importance of weight control. Ding *et al.* in their study observed that 98.8% patients were aware about weight control for management of diabetes which is much above than observation of present study [10]. The observation further reinforces the significance of counselling of lifestyle modification in addition to medication.

This study shows around 90% patients were aware regarding regular visit to physician for the treatment and control of their diabetes. Majra *et al.* in their study showed that all respondents were aware that regular follow up is very important [8]. Only 36.3% were aware regarding need for periodic eye examination, Majra *et al.* in their study had comparatively lower awareness regarding eye care i.e. 15% [8] while Ding *et al.* in their study, found patients having comparatively much higher awareness i.e., 96.4% [10]. Awareness regarding various components of foot care range from 95.5% to 30%. Majra *et al.* in their study showed that knowledge of the respondent regarding foot care was low, only 17% of respondents were aware of these [8]. Our finding regarding skin care shows 42.7% were aware regarding skin care, Majra *et al.* in their study found knowledge of the respondents regarding skin care was only 11% which is much below than observation in present study [8]. Only 9.8% had aware of diabetes card, Naheed in their study reported 82% patients had no idea of diabetes card which is similar to the present study indicating that substantial number of the patients do not know about this simple and cheap tool which can save their life in the time of emergency and hypoglycaemic attack [9]. Also the observation indicates that treating doctors are not briefing their patients regarding carrying diabetic card on their person.

Very few patients in our study only 22.8% were aware regarding need for monitoring blood sugar monitoring at home, Majra *et al.* in their study shows 66% were aware regarding self-blood sugar examination [8] and Ding *et al.* in their study observed that 78.3% were aware about testing blood sugar level

at home [10]. 86.5% were aware regarding blood pressure check-up regularly, while Naheed in their study reported that 92% patients believed that blood pressure control is important for them [9].

Around one third of patients 63.5% had adequate knowledge about the symptoms of hypoglycaemia. Majra *et al.* in their study found that 56% respondents had adequate knowledge about the symptoms of hypoglycaemia which is similar to present study [8] while Naheed in their study reported that 83% patients had knowledge of symptoms of hypoglycaemia which is higher than present study [9]. Only 60.8% were aware of how to manage hypoglycaemic symptoms. Upadhyay *et al.* in their study observed that only 36.26% were aware of how to manage hypoglycaemic symptoms which is lower than the present study [11] while Swetha *et al.* in their study reported that total of 80.92% were aware of dealing with hypoglycaemia which is higher than the present study [12].

CONCLUSION

From the observation of the present study it is concluded that awareness regarding preventive measures like diet control, regular exercise, weight control etc was inadequate. There is wide gap in awareness regarding crucial screening test like eye examination, daily self feet examination, blood pressure measurement, regular blood sugar check up etc. for prevention of various complication. There is inadequacy and insufficiency in awareness regarding various aspects of self-care management among diabetic patients. All these lacunae indicate that the patients were not given adequate time to properly consult regarding necessary life style modification to be undertaken and various self-care management practices to be adopted and the significance of these measures as a tool for effective management of diabetes and prevention of its complication. The observations further indicate the need for devoting adequate time to counsel patients by treating doctor.

REFERENCES

1. Wild S, Roglic G, Green A, Sicree R, King H. Global prevalence of diabetes: estimates for the year 2000 and projections for 2030. Diabetes Care 2004, 27:1047-1053.
2. Wee HL, Ho HK, Li SC. Public Awareness of Diabetes Mellitus in Singapure. Singapore Med J 2002, 43(3):128-134.
3. Goodall TA, Halford WK. Self-management of diabetes mellitus: A critical review. Health Psychology. 1991;10(1):1.
4. Park K. Park's Textbook of Preventive and Social Medicine, twenty-second edition, Bhanot publisher, Jabalpur, 2013.
5. Hassan TA. The centrality of the patient's role in the management of insulin-dependent diabetes mellitus. Saudi Med J 1998;19:370-5.
6. Padma K, Bele S, Bodhare T, Valsangkar S. Evaluation of knowledge and self-care practices in diabetic patients and their role in disease management. National journal of community medicine, Vol 3, Issue 1, Jan-March 2012.
7. Shah V, Kamdar P, Shah N. Assessing the knowledge, attitudes and practice of type 2 diabetes among patients of Saurashtra region, Gujarat. International journal of Diabetes in Developing Countries. 2009 Jul-Aug; 29(3): 118-122.
8. Majra J, Acharya D. Awareness Regarding Self Care among Diabetics in Rural India.middle east jur of fam med. Jul 2009; 7(6).
9. Naheed G. Knowledge, Attitudes and Practices of type 2 Diabetic patients, J Ayub Med Coll Abbottabad 2010;22(3).
10. C H Ding, C L Teng, C N Koh. Knowledge of diabetes mellitus among diabetic and non-diabetic patients in klinik kesihatan seremban. Med J Malaysia, Vol 61, No 4, October 2006.
11. Upadhyay DK, Palaian S, Shankar PR, Mishra P. Knowledge, Attitude and Practice about Diabetes among Diabetes Patients in Western Nepal. Rawal Med J 2008;23(1):1–12.
12. Thungathurthi S, Thungathurthi S, Kumar V. Self-care knowledge on diabetes among diabetic patients in Warangal region. International journal of life science and pharma research, 2012; 2(2).