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Original Article

Self-care activities among patients with diabetes attending a tertiary care hospital in Biratnagar, Nepal.

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Abstract

Background:

Diabetes mellitus is a complex disease and has emerged worldwide. Self care management is very important to control and prevent from complications. Although it can be preventable by adopting the healthy numerous skills and health education .

Method and Materials:

A cross-sectional study of 141 patients with >1-year duration of type 2 diabetes mellitus (DM) were interviewed at Nobel Medical College Teaching Hospital using a non-probability sampling technique to select the sample between October 2017 -January 2018 to respond the diabetic self care questionnaire. For the analysis the descriptive statistics was used. T test and anova were used for the association between the variables.

Result:

A total of 141 diabetic were participated in the study, in which 50.4% were male and 49.6% female. Among the respondents 27% were in the age group below 50 years, 50.4% were illiterate , 42.6 % were overweight and most of the respondents had duration of disease between 1 to 5 years. The mostly performed self care activities was foot care whereas least was blood sugar monitoring. The mean score of self care behavior of respondents was 53.56 ± 4.48 . Among them 50.4% of respondents had self care behavior below 69.5% i.e. had poor practice and 78% scored 69.5% and above 49.6% i.e. had good practice. The obtained results showed that there is significant association of self care behavior with age, education level, occupation and age at diagnosis but not with sex.

Conclusion:

The scenario of self care activities in some areas were found not up to the mark. So health personnel should provide education to the people with diabetes as it has significant benefit with regard to have better quality of life and prevention of complications.

Keyword:

Self Care Activities, Type II Diabetic Mellitus

Introduction

Diabetes mellitus (DM) has been a fast leading problem all over the world [1]. In 2015 it was estimated that there were 415 million people suffering from diabetes, mostly with aged 20-79years, 5.0 million

deaths and by 2040 the number is likely to increase by 642 million [2]. The currently pandemic diabetic threatens to both developed and developing countries as a result it affect in social, economic and health [3]. In Nepal, approximately

18.56% of population suffers from the type 2 diabetes mellitus [4]. Furthermore in Nepal it has been found that non-communicable diseases a major public health concern [5,6].

In addition, diabetes associate with its complications affect high on the finances of the families aswell as the economies burden of the country [7]. As a result there is a high risk of physical disability [8]. Diabetes is a serious, chronic disease associated with wide range of comorbidities which required multisectorial approach for its management and individual can play an important role for being adopting the healthy lifestyle [9].

Effective approaches are available such as healthy eating as per the physician, regular exercise, blood sugar monitoring, taking medication, avoiding alcohol and smoking, and controlling blood pressure and lipids to prevent from premature death and its complications [10]. All these approaches have been found to be effective in controlling blood glucose and to prevent from life threatening major and minor complications like stroke, kidney failure, heart disease and nerve damage and ultimately enhance the quality of life [5,11]

Evidence from earlier studies showed patient self-care activities focused interventions has good outcome on diabetes, therefore there is a need of health education program to the diabetic and general population [12]. Despite the fact, adherence to these behavior has been found minimum, especially when looking for a future changes. In order to find a baseline assessment of the self-care activities, taking into consideration these issues, so the objective of our study is to assess the self-care activities of the type 2 diabetic patients and its association with demographic variables..

Materials and Methods

A hospital based cross-sectional study was carried out at Nobel Medical College Teaching Hospital, Biratnagar, Nepal in medicine OPD from October 2017 to January 2018. A total of 141 with T2DM adult patients (≥ 20 years) were recruited as a sample and purposive sampling technique were adopted. In the study, patient who has DM2 for less than one month were excluded. The sample size was calculated by using a population proportion formula. Prevalence from the previous studies was found 58 % of good practice on self care [5], 15 % margin of error, 95% confidence interval and 20 % non-response rate. The interview method was used to collect the information regarding self-care activities using the revised version of summary diabetes self-care activities questionnaire (SDSCA) [13] and tool is highly valid and used in various areas. There are seven components; among these we included exercise, diet, blood sugar testing, medication practices and foot care. Except in blood sugar testing, there is uniform pattern to all the components. The questionnaire was translated in Nepali and pretesting was done and necessary modification was also done.. Ethical clearance was obtained before doing the study. The collected data was calculated by using Statistical Software Package for Social Sciences (SPSS 22 version). Demographic variables, Diabetic profile and Self care activities was calculated using descriptive statistics whereas coorelation between self care activities and demographic variables was calculated using T test and avova test.

Results

Demographic characteristics of the sample

Among the 141 sample, 50.4% were males compared to females 49.6% . We found that over represented age was found to be below 50 years 27% . Similarly majority of the respondents were

illiterate 50.4%. 24.1% of the respondents were business man followed by agriculture 12.8%. The details of socio-demographic of the study respondents are shown in below (Table 1)

Table 1 Demographic characteristics of the sample (n = 141)

Demographic Characteristics	Category	Frequency (n = 141)	Percentage (%)
Age (in years)	Below 50	38	27
	50 – 59	37	26.2
	60 – 69	35	24.8
	Above 70	31	22
Sex	Male	71	50.4
	Female	70	49.6
Marital status	Married	136	96.5
	Widow	5	3.5
Educational level	Illiterate	71	50.4
	Primary level	27	19.1
	Secondary level	27	19.1
	Higher secondary level and above	16	11.3
Religion	Hindu	135	95.7
	Muslim	6	4.3
Residence	Urban	65	46.1
	Rural	76	53.9
Types of family	Nuclear	37	26.2
	Joint	101	71.6
	Extended	3	2.1
Occupation	Agriculture	18	12.8
	Business	34	24.1
	Government services	3	2.1
	Housewife	67	47.5
	Others	19	13.5

Diabetic Profile of the Sample

Furthermore we tried to elaborate the diabetic profile of the respondents, found that 28.36% of the respondents had a family history of diabetes. Likewise 31.91% of respondents had normal BP. Similarly, 45.4% of respondents were of

with normal BMI and weight between 18.5-24.9 kg/m² while 42.6% were overweight followed by 8.5% obese and 3.5% underweight. Nearly more than half 64.5% of the respondents diagnosed DM in between 40-59 years of age. Almost half of the respondents 48.9% of the respondents are living with DM from past 5 years. Similarly 74.56% of the respondents have habit of alcohol consumption. (Table 2)

Table 2 Diabetic profile of the Sample (n = 141)

Variables	Category	Frequency (%)	Percentage
History of DM in family	Present	40	28.36%
	Absent	101	71.63%
Blood Pressure	Normal	45	31.91%
	Abnormal	96	68.08%
BMI (Body Mass Index)	< 18.5 kg/m ² (underweight)	5	3.5%
	18.5-24.9 kg/m ² (normal)	64	45.4%
	25-29.9 kg/m ² (over weight)	60	42.6%
	30-34.9 kg/m ² (Obese)	12	8.5%
Age at diagnosis	20-39	33	23.4%
	40-59	91	64.5%
	60 and above	17	12.1%
Duration of illness	1-5 years	69	48.93%
	6-10 Years	20	14.18%
	More than 10 years	52	36.87%
Habit of smoking	Yes	18	12.8%
	No	123	87.2%
Habit of taking Alcohol	Yes	105	74.46%
	No	36	25.53%

Activities of diabetic self care component among the sample

Most 95.74% of them had been following the food items as per the physician. Similarly 56.7% do the physical activity regularly, 69.5% of the respondents do blood sugar monitory every 3 month where

as 86.5% takes oral hypoglycemic agents. While most frequently performed self-care behaviour was inspecting feet daily. (Table 3)

Table 3 Frequency of self-care activities by various domains

Diabetic self score Items	N = 141	
	Satisfactory	Not Satisfactory
Diet*		
Follow the advice given by treating physician in selection of food items	99 (70.21%)	42(29.78%)
Frequency of meals (at least 5 times)	76 (53.9%)	65 (46.09%)
Reducing the salt after diagnosis	108 (76.59%)	33 (23.40%)
Eating fruits and vegetables at least 5 days in a week	104 (73.75%)	37(26.24%)
Consuming high fat foods such as red meat, diary products on all day of the week	55 (39%)	86(60.99%)
Physical Activity*		
More than 30 minuts of physical activity at least 5 days in a week	80 (56.7%)	61 (43.26%)
Foot care*		
Wash feet daily	141(100%)	
Habit of inspecting feet	130(92.19%)	11 (7.80%)
Trim nails regularly	141 (100%)	-
Drying the toes on all day of the week	110 (78%)	31 (21.98%)
Blood sugar monitoring*		
In the past 3 month for at least blood sugar monitoring	98 (69.5%)	43(30.49%)
Adherence to oral hypoglycemic agents on 7 days of the week	122 (86.52%)	19(13.47%)
Adherence to injection insulin on 7 days of the week	110 (78%)	31 (21.98%)

* Denotes Domain under SDSCA Questionnaire

Level of overall self care activities of the sample

In our study mean score of self-care behavior of respondents was 52.05 ± 4.44. Among them 50.4% of respondents had self care behavior below 69.5% i.e. had poor practice and 78% scored 69.5% and above 49.6% i.e. had good practice. (Figure 1)

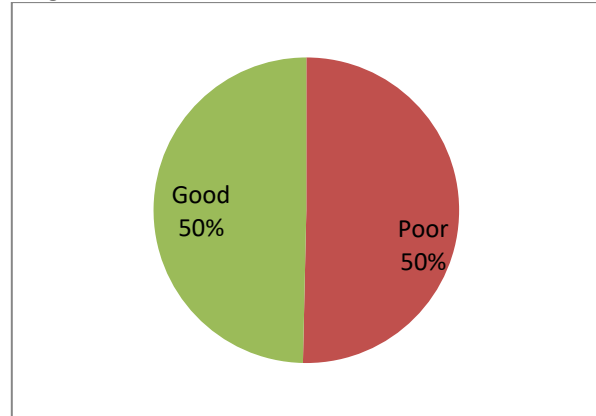


Figure 1 Pie chart showing the Level of Overall Self-care Activities of the sample

Association between Self Care Activities and Demographic Variables

Table 4 explain the association between diabetes self care activities and demographic variables. The findings showed that there is a relationship with age, education level, occupation and age at diagnosis whereas there is no relationship with sex.

Table 4 Association between Self Care Activities and Demographic Variables

Variables	N	Mean S.D	±	t/F	Df	P value
Age	3	67.16	±			
Below 50	8	7.03		F = 5.71	3, 46	0.01* (S)
50-59	3	70.77	±			
60-69	7	6.26				
Above 70	3	71.80	±			
	5	4.50				
	3	67.79	±			
	1	3.76				
Sex	7	70.12	±		113.	
Male	1	7.17		t = 1.47	5	0.14 (NS)
Female	7	68.67	±			
	0	4.22				

Educational level					
Illiterate	7	67.96 ± 4.04	F = 6.11	4, 13 6	0.00* (S)
Primary level	2	67.95 ± 8.14			
Secondary level	2	71.70 ± 6.46			
Higher secondary level	1	73.95 ± 4.09			
Higher secondary level and above	3	76.00 ± 0			
Occupation					
Agriculture	1	72.51 ± 6.42	F = 2.65	4, 13 6	0.036* (S)
Business	8	68.78 ± 4.60			
Government services	3	76.00 ± 0			
Housewife	6	68.69 ± 4.30			
Others	7	68.98 ± 10.33			
Age at diagnosis					
20-39	3	65.53 ± 5.93	F = 10.94	2, 47	0.00* (S)
40-59	9	70.79 ± 5.47			
60 and above	1	69.41 ± 5.02			
	7				

Discussion

Diabetes mellitus is a chronic disorder which requires life long medical treatment and patients should follow a healthy life style in order to prevent from complications . Currently it is a major public health challenge.

Among the study respondents , nearly half are the over weight and obese similar findings have found in srilanka [14]. Canidian Diabetes association states that 80-90% of DM patients in the world are overweight and obese [15].The reason for overweight and obese may be over consumption of carbohydrate containing foods and lack of knowledge on dietary pattern.

The findings of the present study show that 70.21% respondents follows a regularly healthy diet plan. The findings were similar which was observed by [16]. The reasons for not consuming healthy diet may be lack of education; recommended healthy diet is very expensive and may be

busy with family commitments [17]. Regular consumption of health diet is very important as it helps to maintain blood sugar control and proper weight management. Regular activity is a key part of managing diabetes. In our study the physical exercise is found to be poor, as only 56.7% .of the respondents did a 30 min exercise at least 5 days in a week. Similar findings were observed in studies done in [18]. The reasons for poor exercise may be lack of motivation or social influence [17]. Regular exercise helps to maintain ideal body weight, blood sugar and pressure control [19].

Awareness on diabetic foot care will help to decrease the chances of diabetic foot complications as well as amputation of legs. With regard to foot care, all the respondents take care of their foot. The findings is similar to a study done in Malaysia which is 80.9% of the respondents washed their feet on daily basis [20].This may be due to the religious aspect which enables them to washing feet daily. Similarly the findings is contrast with the findings of study done in Nigeria which is only 10.2% practice foot care [21].This finding of poor practice in nigeria may be illiteracy or low socio economic status.

In our study 69.5% checked the blood sugar every 3 month which is similar were observed to a study done in [22]. The level of education appeared to play a magnificent role in medication adherence in accordance with the previous studies [23]. To assess the effectiveness of ongoing treatment blood sugar should be regularly monitored. In our study we found that adherence to oral hypoglycemic drugs (86.52%) and insulin injections (78%) was high which is contrast with the findings of previous studies [23]. The reasons for nonadherence are multifactorial which includes age, perception, duration of disease, polutheraphy, psychological

factors[24]. However poor adherence leads to poor health outcomes and it also has a high burden on healthcare expenses [25]. Nearly half of the respondents have good practice on self care management which is consistent to a study done in Nepal [5]. Thus there is a need of education to enhance the practice regarding diabetic management. In our current study, there is a relationship with age, education level, occupation and age at diagnosis whereas there is no relationship with sex. The findings is consistent with the study done in Nepal [26] where there is statistically significant with age but not with occupation.

Conclusion

Today, DM is an important challenge for health care providers and health care system in addressing the self care activities . So keeping in mind, there is need of interventional health education to the patient, making them conscious regarding the disease condition, adopting the healthy life style, These helps to minimize the cost of the treatment and maintain the control of the disease with reduce the risk of complications.

Recommendations

Hospital based lifestyle modification intervention program should be launch which include multidisciplinary team including physician, nurses, dietician, psychologist and social worker should be involved.

Limitations

It was carried out in only one hospital so findings cannot be generalized to entire country. We couldn't establish the casual relationship as ours was a cross-sectional study.

Funding

No fund was provided.

Declarations

Competing interest

No conflict of interest was stated..

References

- [1] WHO Global report on diabetes, 2017. www.who.int/diabetes/global-report/en/
- [2] Ogurtsova K, Fernandes JD, Huang Y, Linnenkamp U, et al, IDF Diabetes Atlas: Global estimates for the prevalence of diabetes for 2015 and 2040, *Diabetes Res Clin Pract.* 128 (2017) 40–50.
- [3] Jayawardena R, Ranasinghe P, Byrne NM, Soares MJ, Katulanda P, Hills AP, Prevalence and trends of the diabetes epidemic in South Asia: a systematic review and meta-analysis, *BMC Public Health.* 25 (2012) 12:380.
- [4] Neupane D, Kallestrup P, Non-communicable diseases in Nepal: challenges and opportunities, *J Nepal Health Res Council.* 11(2013):225–8.
- [5] Chaurasia N, Mishra R, Ling H, Thapa B, Pokhrel A, Kumar S, et al, A Self Care Management Awareness Study among Diabetes Mellitus Patients in Rural Nepal, *Am J Public Health Res Am J Public Health Res.* 28;3(2015):67–71.
- [6] Pokharel DR, Khadka D, Sigdel M, Yadav NK, Acharya S, Kafle RC, et al, Prevalence of metabolic syndrome in Nepalese type 2 diabetic patients according to WHO, NCEP ATP III, IDF and Harmonized criteria, *J Diabetes Metab Disord.* 23 (2014) ;13.
- [7] Rosa M, Rosa R, Corriea M et al, Disease and Economic Burden of Hospitalizations Attributable to Diabetes Mellitus and Its Complications: A Nationwide Study in Brazil, *Int. J. Environ. Res. Public Health.* 15(2018):294 .
- [8] Piechota G , Małkiewicz J and Karwat ID , Type-2 diabetes mellitus as a cause of disability , *Przegl Epidemiol.* 58(2004):677-82.
- [9] American Diabetes Association, "Standards of medical care in diabetes—2010," *Diabetes Care,* 33 (2010) :692.
- [10] Shrivastava SR, Shrivastava PS, Ramasamy J, Role of self-care in management of diabetes mellitus, *J Diabetes Metab Disord.* 5;12(2013):14.
- [11] Kasshaun T, Eshetie T and Gesesew H, Factors associated with glycemic control among adult patients with type 2 diabetes mellitus: a cross-sectional survey in Ethiopia , *BMC Res Notes.* (2016);9:78.
- [10] Henk A. van Dam, Frans van der Horst , Bart van den Borne, Rick Ryckman, Harry Crebolder, Provider–patient interaction in diabetes care: effects on patient self-care and outcomes, *Patient education and counseling.* 51(2003):17-2.
- [11] Nabi G, Khan AKA, Rahman NMW, Rabbani R, Chowdhury T I, Life Style Modification Among

- Diabetic Patients, *Journal of Dhaka Medical College* .6 (2015) :30-36
- [12] Deakin T, McShane CE, Cade JE, Williams RD, Group based training for self-management strategies in people with type 2 diabetes mellitus, *Cochrane Database Syst Rev*. 18;(2005):CD003417.
- [13] Toobert DJ, Hampson SE, Glasgow RE, The summary of diabetes self-care activities measure: Results from 7 studies and a revised scale, *Diabetes Care*. 23(2000) :943–50.
- [14] Padma K, Bele DS, Bodhare TN, Valsangkar S, Evaluation of knowledge and self-care practices in diabetic patients and their role in disease management, *Natl J Community Med*. 3(2012) :3–6.
- [15] Canadian diabetic association. Working together to achieve healthy weights: Addressing the Tsunami of Diabetic 2011. <https://www.diabetes.ca/CDA/media/.../cda-healthy-living-submission-english.pdf>
- [16] Pathariannahelga S, Subhasainai S, Sagarika E, Dietary Habits of Type 2 Diabetic patients: variety and frequency of Food intake, *Journal of Nutrition and Metabolism*. (2016) : 7987395.
- [17] Ghimire S, Barriers to Diet and Exercise among Nepalese Type 2 Diabetic Patients., *Int Sch Res Notices*. 14(2017):1273084.
- [18] Yuan L, Lou QQ, Shen L, Sun LL, Zhao F, et al, A nationwide survey of diabetes education, self-management and glycemic control in patients with type 2 diabetes in China, *Chin Med J (Engl)*. 125 (2012):4175–80.
- [19] Chudyk, A and, Petrella R J, Effects of exercise on cardiovascular risk factors in type 2 diabetes: a meta-analysis, *Diabetes Care*. 34(2011): 1228–1237
- [20] Lufti ARM, Zarahiah MR and Ramdhan IM, Knowledge and Practice of Diabetic Foot Care in an In- Patient Setting at a Tertiary Medical Center, *Malays Orthop J*. 8(2014): 22–26.
- [21] Desalu O O, Salawu FK, Jimoh AK et al , Diabetic Foot Care: Self Reported Knowledge and Practice Among Patients Attending Three Tertiary Hospital in Nigeria, *Ghana Med J*. 45(2011): 60–65.
- [22] Maheshwari U, Sowmiya K R, Kavin S, Self-care practices among type II diabetics attending primary health centre, Thiruvallur district, Tamil Nadu, *Int J Community Med Public Health*. 4(2017):2745-2749.
- [23] Vandenbosch J, Broucke SV, Schinckus L et al, The impact of health literacy on diabetes self-management education. *Health Education Journal*. 2018.
- [24] Polonsky W H, Henry R R, Poor medication adherence in type 2 diabetes: recognizing the scope of the problem and its key contributors, *Patient Prefer Adherence*. 10(2016): 1299–1307.
- [25] Garcia-Perez L E, Alvarez M, Dilla T et al , Adherence to Therapies in Patients with Type 2 Diabetes, *Diabetes Ther*. 4(2013): 175–194.
- [26] Gautam A, Bhatta DN, Aryal UR, Diabetes related health knowledge, attitude and practice among diabetic patients in Nepal, *BMC Endocr Disord*. 5 (2015); 15:25