Original Article

Perception of Lifestyle Modification Recommendations among Type 2 Diabetes Patients attending at a Tertiary Level Hospital, Kathmandu

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ABSTRACT

Prevalence of Type 2 diabetes Mellitus (DM) is increasing globally. The objective of this study was to identify perception of life style modification recommendations among type 2 diabetes mellitus patients attending at diabetes clinic at Tribhuvan University Teaching Hospital, Kathmandu, Nepal.

Methods: Descriptive cross-sectional study design was adopted and involved 104 diabetes patients using non- probability purposive sampling technique. Data were collected through an interview by using a structured interview schedule.

Findings: Data were analyzed using SPSS version 16.0. Among the respondents, 29.8% were of 50-59 years age group, 51.0% were female, 63.5% were Brahman/Kshetri, 22.1% were illiterate, 89.4% were married, and 50% lived in a nuclear family and 73.1% were from Kathmandu Valley. Forty four percent were diagnosed for 1-5 years and 43.3 % had family history of diabetes, 70.19% respondents perceived that both regular exercise and planned and controlled diet were as important lifestyle modification to control type 2 diabetes mellitus; and 41.3% respondents felt exercise as potentially exacerbated illness. Similarly, 52.8% respondents perceived that DM patients should eat low carbohydrate, high fiber, and low fat and low calorie diet (89.02 %). More than half of the respondents perceived that cessation of alcohol and smoking is important for DM patients. Maintaining a modified lifestyle is time consuming and a difficult task (61.0%) for them.

In conclusion, Perception of lifestyle modification such as planned and controlled diet and exercise play an important role in the management of patients with type 2 DM. However, significant numbers of respondents had perceived that exercise as potentially exacerbating illness. So, proper counseling is recommended to combat such perception.

Keywords: diabetes mellitus, lifestyle modification, perception

INTRODUCTION

The prevalence of diabetes mellitus (DM) has been increasing all over the world in past 30 years. The global diabetes prevalence for the year 2015 was found to be 8.5%, affecting 415 million adults {International Diabetes Federation (IDF), 2015}. DM affects at least 171 million people and causes 3.2 million deaths, six deaths every minute and 8700 deaths every day. In 2030, there will be an increase of 70% in the number of cases in developed countries, and 42% in developing countries. Currently, the overall direct health care costs of DM ranges from 2.5% to 15% of annual health care budgets of developed and developing countries. This is likely to affect 366 million people by 2030 (World Health Organization (WHO) 2006}. The rate of DM is increasing in the developing countries. DM affects more than 436000 in Nepal and this number will rise to 1328000 by 2030 (Subedi, & Bandhu, 2005). Similarly diabetes death in Nepal reached 3,224 (2.17%) of total deaths (WHO, 2011). A survey conducted in urban Nepal between 2001 and 2002 showed that 10.8% and 13.2% of males suffered from diabetes and pre-diabetes respectively, with the values for females being 6.9% and 10.2%, respectively (Shrestha, Singh, & Bhattarai, 2006). The Nepal Diabetes Association has reported that DM affects

approximately 15% of people ≥ 20 years and 19% of people ≥ 40 years of age in urban areas (Bhattarai, & Singh, 2007). The percentage of diabetic patients had increased from 19.04% in 2002 to 25.9% in 2009 in Nepal (Dulal, & Karki, 2009). Type 2 DM has long been connected with behavioral and environmental factors such as overweight, physical inactivity and inappropriate dietary habits (Narayan, Bowman, & Engelgau, 2001). Major lifestyle changes resulting from industrialization are contributing a rapid rise in diabetes worldwide. Lifestyle intervention has shown effective significant changes over control in body weight and improving insulin sensitivity and that helps to prevent DM (American Diabetes Association, 2003). Physical activity alone plays a pivotal role in health promotion and diabetes control (American Diabetes Association, 2005).

Perception of lifestyle modification recommendations can lessen the disease burden and reduce the morbidity and mortality associated with type 2 DM complications. However, there is no information and data concerning perception of lifestyle modification recommendations amongst the studied population in Nepal. So, this research aimed to identify perception of lifestyle modification recommendations (healthy dietary habits and exercise) amongst type 2 DM patients attending at Diabetes clinic of Tribhuwan University, Teaching Hospital (TUTH), Kathmandu.

METHODS

This descriptive cross-sectional study was conducted among 104 diabetes patients who attended at diabetes clinic of TUTH, Kathmandu. TUTH is a tertiary level hospital with different health service facilities where patients visit for treatment from different geographical areas of the country.

Patients who had type 2 DM diagnosed for at least one year before the time of data collection were included purposively. A semi structured, interview schedule developed by researcher herself, was used as tool for the data collection. Data collection was done through face to face interview technique. Data were collected from March to May 2014. Data collection tool was divided into two parts such as socio-demographic profile and perceptions of diabetes patients on the role of lifestyle modification recommendations in the management of type 2 DM. The interview schedule was formulated according to a model established during literature review and translated into Nepali language. Pretest was done among ten percent (i.e. 11) cases of total sample size in endocrinology OPD, Bir Hospital, Kathmandu.

The data were checked for completeness and analyzed by using statistical package for social sciences (SPSS) version 16.0 and simple descriptive statics such as frequency and percentage were used. Ethical approval was taken from institutional review board (IRB), TU IOM. Further, verbal consent was obtained from each respondent before taking interview.

RESULTS

Among the total 104 respondents, the majorities (57.7%) were in the 40-59 years age group and 25.0% of them were 60-69 years old. The mean age of the respondents was 53.8 years (SD± 10.5). More than half (50.1%) were female. The majority of the respondents (63.5%) belonged to Brahman/ Kshetri ethnic group followed by Janajati (29.8%). Regarding the educational status of the respondents, 77.9% were literate. Regarding occupation, 40.4% were house makers whereas only 19.2% were each service holders and business persons. Regarding the marital status, 89.4% of the respondents were married. Fifty percent respondents lived in a nuclear family, 73.1% of the respondents were residing in Kathmandu Valley and remaining 26.9% were from outside Kathmandu Valley (Table 1).

Table 1: Socio-demographic Characteristics of the Respondents

n=104

Variables	Number	Percent
Age in Completed Years		
30-39	10	9.6
40-59	60	57.7
60-69	26	25.0
70-89	8	7.7
Mean age =53.8,(SD=±10.5)		
Sex		
Female	53	51.0
Male	51	49.0
Ethnicity		
Brhaman/Kshetri	66	63.5
Janajati (Newar, Rai/ Limbu, Tamang)	31	29.8
Dalit	4	3.8
Others (Yadav, Shah, Giri)	3	2.9
Education Level		
Illiterate	23	22.1
Informal education	16	15.4
Primary level	15	14.4
Secondary level	19	18.3
Higher secondary level	16	15.4
Graduate level and above	15	14.4
Occupation		
House Managers	42	40.4
Services holders	20	19.2
Agriculture	4	3.8
Business	20	19.2
Others (Informal sectors, Retired from job)	18	17.3
Marital Status		
Married	93	89.4
Unmarried	3	2.9
Widow	6	5.8
Divorce/ separated	2	1.9
Type of Family		
Nuclear	52	50.0
Joint	50	48.1
Extended	2	1.9
Address		
Kathmandu Valley	76	73.1
Out of Kathmandu Valley	28	26.9

It was found that 44.2% of respondents had duration of diagnosis between 1-5 years. Similarly, 43.3% of respondents had family history of DM and 20.2% were unsure about their family history. All of them (100.0%) had heard about the life style modification regarding DM (Table 2).

Table 2 : Illness Related Characteristics of the Respondents

n =104

Duration (in years)	Number	Percent
1- 5	46	44.2
6- 10	36	34.6
11-15	15	14.4
15-20	7	6.7
Family History		
Present	45	43.3
Absent	38	36.5
Unsure	21	20.2
Heard about Life style modification		
Yes	104	100.0

It was found that 70.19% of the respondents perceived of having both regular exercise and planned and controlled diet as important life style modifications for controlling DM. Similarly, 20.19% and 1.92% of respondents perceived that only planned and controlled diet; and taking medicine as most important life style modification respectively. The majority (77.9%) of the respondents agreed that exercise is important to control DM but 14.4% did not agree on it. Similarly, 41.3% had negative perception that exercise exacerbated the illness. Respondents perceived that planned and control diet had proper role to control DM (89.4%) and 82.9% believed that diet including fruits & vegetables was good for DM patients, DM patients should eat low carbohydrate and high fiber diets (52.8%) and low fat and low calorie food (89.0%). Only 1.2% respondents perceived that DM patients can eat any kind of food. Likewise, cessation of alcohol intake and smoking was important for DM patients (61.0%) but 60.97% respondents perceived that maintaining lifestyle was time consuming and difficult task (Table 3).

Table 3: Respondents' Perceptions of Life Style Modification (Diet and Exercise)

n=104

Variables *	Number	Percent
Regular exercise only is most important life style modification for DM patient	1	0.96
Planned and controlled diet only is most important life style modification for DM patient	21	20.19
Both(Regular exercise and Planned and controlled diet) are most important life style modification for DM patient	73	70.19
Taking Medicine is most important life style modification	2	1.92
Role of Exercise to control Diabetes Mellitus is very important	81	77.9
Role of Exercise to control Diabetes Mellitus is not important	15	14.4
Exercise as Potentially Exacerbating Illness i.e. as Negative Physical Reaction	43	41.3
Diet plays important role to control diabetes.	93	89.4
Diet includes fruits & vegetables i s good for DM patients	68	82.9
Diabetes patients can eat any kind of food	1	1.2
DM patients should eat Low carbohydrate and high fiber diets	43	52.8
DM patients should eat low fat and calorie food	73	89.02
Cessation of alcohol intake and smoking is important for DM patients.	50	61.0
Maintaining Lifestyle is time consuming and difficult task	50	60.97

*Multiple responses

DISCUSSION

It was found that 70.19% of the respondents had perception of having planned and controlled diet and exercise both as a life style modification to control DM. About 0.96% of respondents perceived regular exercise only as an important life style modification and 20.2% respondents perceived that planned and control diet as an important life style modification to control diabetes. Out of total respondents, 1.92% perceived that taking medicine as life style modification but 6.7% respondents had no idea of life style modifications. These findings are supported by the study done in Kuwait where most patients (69.1%) had strong beliefs that adherence to a diet regimen and regular exercise could have a positive effect on their diabetic condition (Serour et al. 2007). Self-perceptions, beliefs and responses to diabetic condition significantly influence adherence to lifestyle measures. For example, compliance may be compromised if people with type 2 DM do not believe that lifestyle modification recommendations-healthy diets and physical activity affects their glycaemic control. Similarly, study that more than two third of individuals with diabetes believe strenuous exercise would improve their diabetic control; but majority find it difficult to initiate and sustain (Thomas et al. , 2004) . In the present study, 41.3% respondents had perceived negatively that exercise as a potentially exacerbating illness i.e. as negative physical reaction. This is supported by a study done in Botswana where exercise was considered to potentially exacerbate the illness by 57.6% (Adewale, Langalibalele, Nomsa, Indiran & Gboyega, 2013), In contrast, study done in India reported that 93% respondents' perception was regular exercise helped to control DM (Srisanthanakrishnan & Shah, 2016). This difference may be due to difference in study setting and population.

Similarly, 89.4% respondents perceived that diet plays important role to control DM in our study. Study done in India reported that 72.1% respondents perceived that modification of dietary pattern played an important role to control DM (Srisanthanakrishnan & Shah, 2016). Similarly, 95.1% respondents perceived that diet was important to control DM (Adewale, Langalibalele, Nomsa, Indiran & Gboyega, (2013). In this study, 52.8% and 89.0% respondents had perception of DM patients should eat low carbohydrate, high fiber, low fat and low calorie food respectively.

CONCLUSION

Though the respondents had positive perception regarding life style modification like diet and exercise, some had perception of exercise as a potentially exacerbating. A significant number believed that life style modification is time consuming. So, further counseling should be done to combat these negative perceptions.

ACKNOWLEDGEMENT

The author acknowledges the respondents for their participation in the study and University Grants Commission, Nepal for providing financial support.

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