BARRIERS TO DIET SELF-CARE IN OUTPATIENTS WITH TYPE 2 DIABETES IN IRAN

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ABSTRACT

Objective: To determine the level of perceived barriers to prudent diet among adult Iranian with type 2 diabetes, and also to examine the relationship between demographic characteristics and level perceived barriers to prudent diet.

Method: In this cross-sectional survey a total of 253 patients with diagnosed type 2 diabetes completed a questionnaire concerning demographic characteristics as well as a set of questions, of the Farsi translated version of Barriers to Diet Self-care Scale (BDSS).

Results: The overall mean score of Barriers to Diet Self-care Scale (BDSS) was significantly more in men than women (P <0.01). As duration of diabetes increased, the BDSS also increased (P <0.01).

Conclusion: This study showed that barriers to diet-self care are more in Iranian male than females. Longitudinal studies are needed to assess the relationship between barriers to diet self-care and family, social and cultural supports.

KEY WORDS: Diet self care, Type-2 Diabetes, Barriers.

INTRODUCTION

Several studies have indicated that numerous barriers exist to adherence to a prudent diet.[1] Barriers to self-care refer to the environmental and cognitive factors that interfere with following the recommended treatment regimen.[2]

While in developed countries many providers of diabetes care recognize the potential benefits of attention toward barriers to diet in diabetics, this study to the best of our knowledge seems to be the first to draw attention to barriers to diet in diabetics in Iran.

The two specific objectives of the present study included firstly determining the level of perceived barriers to diet among Iranian adults with type 2 diabetics and secondly to examine the relationship between demographic characteristics and level perceived barriers to diet.

PATIENTS & METHODS

The participants were asked to answer questions concerning demographic and medical characteristics as well as to a set of a questionnaire, including the Farsi translated version of Barriers to Diet Self-care Scale (BDSS).[3]

To avoid bias in the study, a standardized statement was read to each respondent before administering the scale. This statement explained that the purpose of the scale was to measure their diet self-care barriers from diabetes self-management. The sequence of the items was also altered. Items that patients regarded as comparatively difficult to respond to were moved to the latter half of the scale, whereas those regarded as easy were placed earlier. The purpose of the re-sequencing was to avoid discouraging the respondents by having them answer easier questions first and difficult ones later.

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Inclusion Criteria: Adults aged 40 or older, diagnosed with diabetes type 2 for at least one year, living in a family environmental and able to provide informed consent.

Exclusion Criteria: Treatment for major psychiatric problems within the previous one year, such as schizophrenia and requirement for nursing care, such as home health nurse assisting with diabetes management.

Patient Selection: The patients who met the inclusion criteria were given more information about the purpose of the study and were asked to participate. Family members who accompanied patients were asked to leave the area so that the participant could complete the survey. The personal consent was also taken for those who were enrolled.

Data Collection:

Demographic & Health Variables: Self-reported demographic characteristics of the subjects included age, sex, marital status, duration of diabetes, years of education, number of diabetes-related complication and a history of psychological treatment (yes/no).

The comordidities related to diabetes included microvascular and macrovascular disorders. Microvascular disorders included retinopathy, nephropathy, neuropathy and foot problems. Macrovascular disorders included cardiovascular, cerebral vascular disease, and peripheral vascular disease.

Table-I: Self-reported demographic characteristics

Characteristics	n	Mean (SD)
Age (years)	253	53.79 (7.95)
Number of diabetes related complications	253	1.77(0.81)
Duration of diabetes	253	1.71 (0.79)
Gender	*n (percentage)*	
Female	133 (52.6)	
Total	253 (100)	
Marital status		
Married	176 (69.6)	
Never married	52 (20.6)	
Divorced or separated	25 (9.9)	
Total	253 (100)	
Highest completed education		
University degree	115 (45.5)	
Total	253 (100)	

Barriers to Diet Self-care: Barriers to diet self-care were measured with the diet subscale of the Barriers to Diet Self-care developed by Glasgow et al.[3] The seven-item scale measures the frequency of both environmental and cognitive factors that interfere with following recommended diet. The instrument asks respondents to rate how frequently they experience various barriers to diet self-care using a 7-point frequency of occurrence scale from 1 (very rarely or never) to 7 (daily). The scale was scored by averaging the responses across the items. Higher scores indicate a higher frequency of barriers. The scale has been

Table-II: Mean score on the scales of the BDSC for 253 Iranian men and women with type2 diabetes.

How often do each of the following happen to you?		
Factors	Men	Women
n	120	133
*Around people who are eating and drinking things I shouldn't	3.96±1.30	4.15±1.18
*Not home for meals	3.97±2.20	2.87±1.42
*Think about costs of foods	4.91±1.13	5.81±1.03
*Unsure about foods	3.78±1.52	2.79±1.01
*Still feel Hungary	4.67±1.67	4.63±4.77
*Don't have time to prepare foods	5.47±1.70	3.76±1.82
*Won't matter if don't follow diet	4.02±1.66	3.78±1.35
Overall scale score	4.40±0.78	3.97±0.96

Scale: 1=very rarely or never, 2-once per month, 3=twice per month, 4=once per week, 5=twice per week, 6=more than twice weekly, and 7=daily.

Table-III: Mean Diet Berries and Gender

Gender	n	Mean	df	t	SD	P Value
Male	120	4.40	119	61.73	0.78	<0.01
Female	133	3.97	132	47.61	0.96	<0.01

validated on adults with type 2 diabetes. The internal consistency for the diet subscale ranges from 0.05 to 0.92 (Cronbach's alpha).[3,4]

Farsi Translation of Instruments: A Farsi version of the instruments was developed by translating the English version of the instruments into Farsi and then back translating it into English. Two blinded professional translator translated and back translated the instrument. Any discrepancies were corrected using the consensus of two bilingual experts.

Statistical Analysis: Descriptive statistics provided information on all variables. The data were analyzed using the statistical packages for social sciences (SPSS Inc, Illinois, USA). A regression model with a significant level of 0.25 in the univariate analysis was used.[5] All other statistical significance was set at P-value of 0.05

RESULTS

Of the 287 patients who were approached for participation, 253 consented to participate. The mean (SD) age was 53.7±7.9 years. All of the 253 subjects had completed all questions and there were no missing values. Sex was almost equally distributed (133 women (52.6%). Most subjects (69.6%) were married. A total of 107 subjects (42.3%) indicated that they suffered from one or more diabetes-related complications, of which 34.2% had Nephropathy (Table-I). The mean score of BDSC are shown in Table-II & III. The results show that thinking about the cost of foods was the most frequent barrier in Iranian male and female with diabetes.

Table-IV: Univariate analysis between the initial set of independent variables and the dependent variable- perceived Barriers to Diet Self-care

Variables	F	Sig.
Age	5.483	0.020
Education	1.196	0.275
Gender	.244	0.622
Marital status	2.123	0.146
Duration of diabetes	22.975	0.000
Diabetes related complication	6.132	0.014

Table-V: Multiple Linear Regression Analysis of Barriers to Diet Self-care

Independent variables	Std. Error	Beta	t	Sig
Age	0.007	-0.147	-2.342	0.020
Marital status	0.056	0.091	1.457	0.146
Duration of diabetes	0.066	0.302	4.793	0.000
Diabetes related complication	0.064	-0.155	-2.476	0.014

Univariate analysis was used to reduce the pool of initial variables entered into the multiple regression analysis (Table-IV). The independent variables included age, gender, education, marital status, duration of diabetes and diabetes related complications. The level of 0.25 was employed[5] as significant point for the final multiple regression analysis and these variables included age, marital status, duration of diabetes and diabetes related complications.

A multiple regression analysis was used to examine the relationship between the variables and barriers to diet self care (Table-V). The results suggested that just duration of diabetes was significantly a predictor of barriers to diet self care (Table-VI). The rate of BDSC has increased as duration of diabetes increased.

DISCUSSION

To our knowledge it seems that the present study was the first to evaluate the barriers to diet self-care among diabetics in Iran. "Thinking about cost of foods" was the most frequent diet barrier in both genders. This may be a problem for most of Iranian adults with diabetes, which can be related to their economic status.

In this study participants reported that it can be difficult to have a diet regimen that most of family member wish which is similar to other studies with different cultures.[6,7]

In this population there was no significant relationship between age and barriers to diet, in contrast with studies from developed countries, which showed a significant relationship between age and barriers to diet in diabetic patients.[4]

There are some limitations in our study that need to be mentioned. Firstly, the present study was conducted in a sample of patients with diabetes, who were living in developed cities

Table-VI: Bivarriate correlations of variables in final regression model

	BDSC	Age	Marital status	Duration of diabetes	Diabetes related complication
BDSC	1.000				
Age	-0.062	1.000			
Marital status	0.080	0.016	1.000		
Duration of diabetes	0.249**	0.216**	0.042	1.000	
Diabetes related complication	-0.074	-0.132*	0.070	0.164**	1.000

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

of Iran, and did not include patients from rural areas. Secondly, this study did not consider cultural and religious belief of the participants which are essential for self-care practice and care-seeking behavior in diabetics.[8]

CONCLUSION

This study has showed that barriers to diet-self care are more in Iranian males than in females. Longitudinal studies are needed to assess the relationship between family, social and cultural supports.

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