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ORIGINAL ARTICLE

Social And Psychological Evaluations Of Diabetic Patients Towards Disease Management: A Cross-Sectional Study At A University Health Center In Malaysia

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ABSTRACT

Objectives: This study aims to explore the social and psychological behaviours among diabetic patients regarding diabetes and its treatment at a University Health Center in Malaysia.

Setting: Health Center of Universiti Sains Malaysia

Methods: A cross sectional study design was used to explore the patients' social and psychological domains of diabetes and its treatment by using a Diabetes Care Profile (DCP) questionnaire. All questions used were based on a 5-point Likert scale and appropriate statistical tests were conducted at a significant level of less than 0.05.

Results: The patients showed good level of diabetes understanding, care ability, importance of care, positive attitudes, self care adherence and long term benefits. In addition, they showed a low impact of diabetes on their social and personal lives and low negative attitudes. Adherence to a good diet was seen as the most difficult behaviour to change among diabetic patients. Patients with fewer years with diabetes scored significantly better than those with more years with diabetes, in most of the domains of this study.

Conclusion: A majority of the patients showed a good level of understanding about diabetes and its treatment. Difficulty in controlling diet was the major problem which was identified by most of the respondents. Therefore, these study findings could be used to develop better counseling and educational programs for diabetic patients based on their needs.

Key Words: diabetes, Malaysia, social, behaviour, attitude, psychological

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Introduction

Apart from engaging evidence-based treatment regimens for diabetes patients, successful treatment outcomes can only be achieved if behavioural issues relating to disease management are taken into account. Some behavioural issues such as healthy dieting and personal engagement in physical activity are important for a diabetic patient in order to achieve good glycaemic control [1], [2]. One major obstacle is the lack of seriousness on the management of the disease by either the patient or the healthcare providers. Furthermore, lack of understanding or the ability to remember all the information given by the healthcare provider and the social isolation due to disease suffering are a few obstacles identified, which will negatively have an impact on the adherence of patients living with diabetes [3].

Sources of self management knowledge are very important in the management of diabetes. Many patients derive their information from sources other than healthcare professionals, which significantly affect their healthcare practices.

Patients with internal psychological barriers (health beliefs and self efficacy), internal physical barriers (co-morbidities) and external psychological barriers (environment) are shown to perform less self disease management activities regardless of their sex, age and diabetes knowledge [4]. Lifestyle factors related to eating behaviours, understanding of diabetes, controlling problems, obesity and physical activities play important roles in the prevention and treatment of diabetes. The relationship between the knowledge of diabetic patients about the disease and their self-management practices and ambulatory preventive care were evaluated in Minnesota [5]. A significant positive correlation between knowledge and self-management practices was found.

In real life, there are many confounders, as discussed earlier, which could tremendously have an effect on the patients' beliefs and their behaviours. Therefore, without understanding the patients' knowledge, it would be difficult to assess what their attitudes are and what the main barriers to adherence are; it would be difficult for healthcare providers and educators to properly develop strategies to help diabetic patients. Thus, this study aims to explore the social and psychological behaviours of diabetic patients regarding diabetes and its treatment at a University Health Center in Malaysia.

Methodology

Study Design

A cross sectional study design was used to explore the patients' social and psychological parameters regarding diabetes and its treatment by using a Diabetes Care Profile questionnaire (DCP).

Study Population and Sample

All patients with type 2 diabetes who visited the Universiti Sains Malaysia (USM) Health Center, who were able to read and write in the Malaysian national language and gave verbal informed consent were eligible for this study.

Questionnaire Design

DCP is an instrument which has been developed to measure the social and psychological factors which are related to diabetes and its treatment [6]. Evidence of its reliability and validity has been proven by two different studies [7], [6]. The DCP questionnaire was translated into the Malaysian national language and it was reviewed and validated by an expert committee. A pilot study was conducted to finalize the final draft of the questionnaire. The questionnaire contained 11 sections. Section 1 was about the patients' demographics, which was followed by their understanding of diabetes. The other sections were about control problems scale; social and personal factors; the patients'

positive attitude toward diabetes; negative attitude; care ability; importance of care and self-care adherence; diet adherence evaluation and finally, long term care benefits. All variables in the DCP were measured by using a 5-point Likert scale.

Patients' Recruitment And Data Collection Procedure

The list and contact numbers of all diabetic patients at USM were taken from the Health Center. Then, the patients were randomly contacted and specific dates and times were set to meet them. During the interview, the patients were informed about the study and verbal informed consent was taken from each of them. They were given an average of 30 minutes to complete the questionnaire.

Data Analysis

Cronbach's Alpha was calculated to measure the reliability of the questionnaire. Mann Whitney and One-Way ANOVA tests were used wherever appropriate. All analyses were conducted by using an SPSS software package version 12 at a significance level of less than 0.05.

Results

Patients' Characteristics

A total of 135 patients successfully completed the questionnaire. Cronbach's Alpha results showed high reliability with coefficients of 0.937, 0.859, 0.749, 0.853, 0.931, 0.732, 0.863 and 0.973 for understanding diabetes care, social and personal factors, positive attitudes, negative attitudes, self-care ability, the importance of care, healthcare adherence, diet adherence and long term care benefits, respectively.

[Table/Fig 1] summarizes all of the respondents' demographics. It was found that males represented almost two thirds of the respondents (65.9%). A majority of the respondents were Malay (82.2%) and were in the age group of 55-59 (40.74%).

(Table/Fig 1) Respondents' characteristics

	Frequency	Percent
Gender		
Male	89	65.9
Female	46	34.1
Age		
40-44	19	14.07
45-49	42	31.11
50-54	55	40.74
55-59	16	11.85
>59	3	2.22
Marital Status		
Never Married	5	3.7
Separated/Divorced	2	1.5
Widowed	2	1.5
Married	126	93.3
Race		
Malay	111	82.2
Chinese	4	3.0
Indian	19	14.1
Other	1	0.7
Number of People Living at Home		
1-2 Persons	18	13.3
3-5 Persons	87	64.4
6-8 Persons	28	20.7
More than 8 Persons	2	1.5
Length of Study		
Not at all	2	1.5
School	97	71.9
Diploma	15	11.1
Degree	5	3.7
Graduate Degree	16	11.9
Income		
Less than Rm1000	22	16.3
Rm1001-Rm1500	38	28.1
Rm1501-Rm2000	32	23.7
Rm2001-Rm2500	13	9.6
Rm2501-Rm3000	11	8.1
Rm3001-Rm3500	3	2.2
Rm3501-Rm4000	1	0.7
More than Rm4000	15	11.1
Diabetes Length		
Less than One Year	27	20.0
1-2 years	33	24.4
3-5 years	41	30.4

The results showed that the patients had a good level of understanding about diabetes and its treatment (mean = 3.19±0.55) [Table/Fig 2]. In addition, the patients showed that diabetes had a lower impact on their social and personal life (mean = 2.39±0.80), where they had enough time to spend with their family andfriends and had the ability to eat the type and quantity of food that they wanted to eat. The patients showed high levels of positive attitudes (mean = 3.42±0.80) since they believed that they are able to control the disease and it would not affect their life. The levels of negative attitudes were lower than tha of the positive attitudes (mean = 2.91±0.73). The patients showed a good level of confidence that they can handle the disease and that they were able to control the disease and their feelings towards the disease (mean = 3.69±0.68). Importance of care was the highest score to which the patients responded in this study (mean = 4.24±0.60), where they believed that it is important to

keep their sugar levels and weight in control. Perceived importance of care only was not enough and thus, the patients had to show that they had already kept their sugar levels and weight under control, which was found in this study, where their mean answer to self-care adherence was 3.90±0.87. The patients showed that they had difficulties in diet adherence (mean = 2.59±1.10), where they didn't frequently follow a scheduled meal plan. On the other hand, the patients perceived that diabetes control would result in long term care benefits (4.16±0.72).

When the patients' responses were compared based on race, Malays reported significant higher responses to the importance of care as compared to the Indians (p=0.035). On the other hand, the levels of diabetes care understanding were significantly higher in patients who were living with diabetes for less than one year as compared to those living with diabetes for 1-2 years and 3-5 years (p=0.008 and 0.016, respectively). When the social and personal impacts of diabetes were compared, patients suffering with diabetes for less than one year showed a significantly lower impact of diabetes on their social and personal life as compared to those living with diabetes for 3-5 years and those living with diabetes for more than 5 years (p=0.032 and 0.001, respectively). In addition, positive attitudes were significantly higher in patients living with diabetes for less than 1 year as compared to those living with diabetes for more than 5 years (p=0.024). Patients with low educational levels showed a significantly higher impact of diabetes on their social and personal lives as compared to patients with graduate degrees (p=0.031). Finally, patients with a monthly income of more than RM4000 showed a significantly lower impact of diabetes on their social and personal life as compared to those with a monthly income of less than RM1000 and RM1001-1500 (p=0.012 and 0.027, respectively).

(Table/Fig 2) Respondents' mean answers

Variable	Mean	SD
Understanding about diabetes	3.19	0.55
Social and personal factors	2.39	0.80
Patients' positive attitude toward diabetes	3.42	0.80
Negative attitude	2.91	0.73
Care ability	3.69	0.68
Importance of care	4.24	0.60
Self-care adherence	3.90	0.87
Diet adherence	2.59	1.10
Long term care benefits	4.16	0.72

Discussion

Studies have suggested that lifestyle changes are very effective in preventing or delaying the development of diabetes mellitus [8], [9]. Therefore, proper behavioural changes are essential for the better management of chronic diseases. Lack of adherence is common in the management of chronic diseases which result from many causes such as the chronic nature of the disease, complexity of the treatment and life style changes. The patients in this study showed an average good level of understanding regarding diabetes and its treatment. The current findings are similar to another study which was conducted in Malaysia, which found that diabetic patients had a better knowledge of diabetes than healthy respondents [10]. In the present study, patients living with diabetes for a period of less than one year showed significantly higher scores of understanding as compared to those patients who lived with diabetes for much more time. This shows that those who are newly diagnosed with diabetes are more enthusiastic to search and know about the disease as compared to the patients who lived for a longer period with diabetes. The knowledge and understanding of any chronic disease should be higher in patients who have been with the disease for a longer period, but advancement in technology and the easy availability of the internet may have facilitated the search about any disease which may played a big role in increasing the understanding and knowledge for those who were recently diagnosed with any disease. In addition, patients who are newly diagnosed with any disease keep on asking many questions about this disease which increases their level of knowledge about that disease.

The impact of diabetes on the patients' social and personal life was quite low in this study. The patients disagreed that diabetes was a reason which was keeping them from: having enough money, meeting their household and other responsibilities, traveling as they wanted, having good relationships with others, having their own life schedule, spending time with others and having enough time alone. Concurrently, according to the findings of the previous discussion, the patients living with diabetes for less than one year, who showed a significantly higher understanding level as compared to the patients living for a longer period with diabetes, were also found to have a significantly lower impact of diabetes on their social and personal life as compared to those living for a longer period with diabetes. This reflects the impact of understanding on the patients' social and personal life,which is controversially related, where whenever the understanding level is found to increase, the social and personal impact decreases. In addition, the patients with higher incomes were found to be less affected by diabetes, especially their social and personal lives, where higher incomes made it easy for them to better manage their social and personal lives. Furthermore, patients with higher educational levels showed a significantly lower impact of diabetes on their social and personal lives as compared to those with only a school level of education. This could be explained by the higher knowledge levels and the income of this group as compared to the other groups, especially the patients with only a school level of education.

On the other hand, the patients' positive attitudes were found to be quite high in the studied group of patients. This could be explained by their higher level of understanding of diabetes and its treatment, as well as the low impact of diabetes on their social and personal lives. Therefore, they have shown significantly higher positive attitudes as compared to the other groups.

Cultural food preferences and family traditions play important roles in behavioural change [11]. In this study, diet adherence was quit low, which could be elucidated by the cultural food preferences in Malaysia, since Malaysians normally prefer to eat spicy and sweet food which made it difficult for the patients to adhere to the healthy and non-sweet food.

Conclusion

The patients' understanding, knowledge, attitude, care ability andlong term care beliefs were high in the studied group of diabetic patients. Patients living with diabetes for less years were more knowledgeable about the disease, they had better attitudes and they were less affected by the disease in their social life as compared to those living for longer years with diabetes. In addition, the patients' counseling programs should focus on diet adherence, since most patients in this study highlighted difficulties to follow healthy meal plans. Therefore, the findings of this study could be used to better develop educational and counseling programs for patients with diabetes.

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References

[1] Marrero, DG, Peyrot, M & Garfield, S: Promoting Behavioral Science Research in Diabetes. Diabetes Care. 2001; 24: 1-2.
[2] Wing RR., Goldstein MG., Acton KJ. et al: Behavioral Science Research in Diabetes:

Lifestyle changes related to obesity, eating behavior, and physical activity. Diabetes Care. 2001; 24: 117-23.
[3] Vermeire E, Hearnshaw, H, Ratsep, A, et al: Obstacles to adherence in living with type-2 diabetes: An international qualitative study using meta-ethnography (EUROBSTACLE). Primary Care Diabetes. 2007; 1: 25-33.
[4] Zgibor JC. & Simmons D: Barriers to Blood Glucose Monitoring in a Multiethnic Community. Diabetes Care. 2002; 25: 1772-1777.
[5] Persell SD, Keating NL, Landrum MB, Landon BE, Ayanian JZ, Borbas C & Guadagnoli E: Relationship of diabetes-specific knowledge to self-management activities, ambulatory preventive care, and metabolic outcomes. Preventive Medicine. 2004; 39: 746-52.
[6] Fitzgerald, JT, Davis, WK, Connell, CM, Hess, GE, Funnell, MM & Hiss, RG: Development and Validation of the Diabetes Care Profile. Eval Health Prof. 1996; 19: 208-30.
[7] Fitzgerald, JT, Anderson, RM, Gruppen, LD, et al: The Reliability of the Diabetes Care Profile for African Americans. Eval Health Prof. 1998; 21: 52-65.
[8] Pi-Sunyer, FX: How Effective Are Lifestyle Changes in the Prevention of Type 2 Diabetes Mellitus? Nutrition Reviews. 2007; 65: 101-10.
[9] The Diabetes Prevention Program Research: The Diabetes Prevention Program (DPP): Description of lifestyle intervention. Diabetes Care. 2002; 25: 2165-71.
[10] Yun LS, Hassan Y, Aziz NA, Awaisu A & Ghazali R: A comparison of knowledge of diabetes mellitus between patients with diabetes and healthy adults: A survey from north Malaysia. Patient Education and Counseling. 2007; 69: 47-54.
[11] Denham SA, Manoogian M M & Schuster L: Managing Family Support and Dietary Routines: Type 2 Diabetes in Rural Appalachian Families. Families, Systems & Health. 2007; 25: 36-52.