



Abstract

Consciousness Level and Disease Awareness among Patients with Diabetes

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Objective: Diabetes mellitus is an important health issue with its increasing incidence, prevalence, complications, and accompanying economic burden. Prevention of this problem is only possible with an enhancement of knowledge and awareness of this disease. In this study, we aimed to point out the awareness and conception of this disease in patients with diabetes.

Methods: Eighty-seven patients with type 2 diabetes mellitus aged above 30 years and who had been tested for their blood glucose and HbA1c levels during the last 3 months in the internal medicine outpatient clinic were included in the study. Questions, including sociodemographic description, were asked and a 5-step questionnaire was applied to patients regarding diabetes, and their answers were classified and evaluated.

Results: Most of the patients had low educational level, diabetes duration of more than 5 years, and accompanying diseases. Although the patients generally had HbA1c levels above ideal levels, very small percentage of the patients were receiving insulin therapy; they mostly used oral antidiabetics, despite their diabetes being unregulated. When the answers of the questionnaire were evaluated, it was found that the knowledge and awareness of the disease was not sufficient. Thus, patients mostly had complications and accompanying diseases.

Conclusion: Patient education aims to deal with diseases, to keep the disease under control, to make patients follow diet, physical exercise, and medical therapy, to regularly control lifestyle, and to develop the feeling of responsibility. Right precision of the disease and sufficient knowledge is essential for the management of diabetes.

Keywords: Diabetes mellitus, consciousness level of the disease, awareness

Introduction

Diabetes mellitus has become a major health problem with its prevalence increasing every day. Along with the rapid change in lifestyle worldwide, especially in developed countries, the prevalence of type 2 diabetes is rapidly increasing. While the number of people suffering from diabetes worldwide by the end of 2009 was 285 million, this number is expected to reach 438 million in 2030 (1-3). According to the 2009 data of the study in Turkey, the prevalence of diabetes over the age of 35 years was found to be 11.3%, and it was calculated to correspond to 3.3 million people (4). In the same study, the increasing rate of diabetes was 6.7%, which corresponded to 350,000 new diabetes patients in a year (4). The main reason for this increase is the growing population, aging, changes in lifestyle brought about by urbanization, unhealthy nutrition, abnormal weight gain, and physical inactivity (5).

Diabetes is a chronic disease that affects many organs and systems. It shortens the life expectancy by 5–10 years, disrupts the quality of life, and increases the risk of cardiovascular disease by 2–4 times. The risk of death in diabetic patients due to all causes is 2-times higher than that in healthy individuals. Diabetes and its complications constitute a growing economic burden to individuals and countries (6).

Because diabetes is a preventable and controllable disease, with the creation of a right perception of the disease and raised awareness, it seems possible to prevent the growth rate and all complications of this disease. In this study, we aimed to put forth the perception and awareness level of diabetes patients of the disease.

Methods

This study was conducted by a face-to-face interview method for patients who applied to the clinic for different reasons. The patients who were over 30 years of age, who had type 2 diabetes diagnosis, and who had HbA1c and fasting blood glucose levels measured within the last 3 months were followed by the internal disease clinic. After obtaining written informed consent from the patients, questions related to age, gender, reason for application, education level, marital status, concomitant disease presence, diabetes duration, and ongoing treatment, which

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include the socio-demographic definition in Table 1, were asked and recorded. Then, the patients were asked 5 questions: What is diabetes? Which organs are affected by diabetes? What the fasting and postprandial glucose levels should be? What might be some consequences if diabetes is not properly treated? What is insulin? The survey 1 responses from the patients were classified, evaluated, and recorded. Ethics committee consent was taken, and the study was conducted according to the suggestion of the Declaration of Helsinki.

Statistical analysis

Data were analyzed using the (SPSS Inc.; Chicago, IL, USA) statistical analysis method.

Results

In total, 87 patients in the age range from 30 to 65 years were included. They included 41 women (47%) and 46 men (53%). The socio-demographic distributions of the patients are summarized in Table 1. Majority of the patients had a low education level and were married and came to the hospital to have an analysis or prescription of medication. In most of them, the duration of the disease was longer than 5 years and concomitant diseases were present. Although HbA1c levels were largely over the target level, a very small number of patients use insulin, and a large part of them still use oral antidiabetics, even though their diabetes is not regulated. When responses to the questions related to their disease were assessed, it was seen that there was still an insufficient awareness of diabetes and level of knowledge. As a reflection of this, diabetes is not regulated in the vast majority of the patients, and they do not get the right treatment; as a result, they are exposed to complications and have additional diseases.

Discussion

According to the results of our study, it is clear that in approximately half of the patients with diabetes, knowledge about the disease is insufficient or incorrect. Lack of education can be considered as the most important reason for this. Because 66% of the patients are primary school graduates and 14% are illiterate and considering that the most important factor in disease perception and the ability to cope with illness is at the socio-cultural level, this situation can be accepted as the most important factor for people who fail to recognize the disease. Education level allows easier access to information needed for awareness of a healthier lifestyle. Patients with a low education level have inadequate skills to manage their diseases, fully apply the given treatment, receive proper nutrition, perform adequate physical activity, and track blood glucose levels. Hence, considering HbA1c levels, only 32% of the patients seem to have levels within the acceptable limits. A study has shown that obesity and diabetes are more common among individuals and groups with a low education level and that in these patients, due to the longer time of diagnosis of the disease, higher rates of complications and mortality are observed (7).

One of the major behavioral problems in the treatment of patients with diabetes is the use of insulin. The perception that it causes addiction in patients, needle fear, and illiteracy and the idea of inability due to senility lead to delays in treatment. In our study, HbA1c levels in only 32% of the patients was 6.9 and below. It level was 8.5 and above in a substantial rate (24%) of the patients. Many studies indicate similar results. In a study by McDonald et al (8),

Table 1. Socio-demographic distribution of patients

Variable	Subgroups	Number (n=87)	Percentage (%)
Gender	Female	41	47
	Male	46	53
Marital status	Married	74	85
	Single	8	9
	Divorced	2	2
	Other	3	3
Educational status	Illiterate	12	14
	Primary school	57	66
	High school and equivalent	11	13
	University and over	6	7
Reason for applying to the hospital	Examination	48	55
	Drug supply	38	44
	Others	1	1
Duration of diabetes	0–5 years	15	17
	5–10 years	31	36
	10 years and above	41	47
Additional disease	Yes	59	68
	None	28	32
Treatment	OAD	69	79
	Insulin	7	8
	OAD+Insulin	11	13
HbA1c levels	≤6.9	28	32
	6.9–8	38	44
	≥8.5	21	24

OAD: oral anti-diabetic

in only 50% of patients over the age of 65 years, HbA1c was found fewer than 7%. However, a small percentage of patients (8%) use insulin, a slightly larger percentage of patients (13%) use insulin and a combination of antidiabetic, and a huge percentage of them still get oral antidiabetic therapy. The role of physicians and assistant health personnel in creating this perception is important. The effect of glycemic control on micro- and macro-vascular complications of diabetes has been defined well in the Diabetes Control and Complications Trial (DCCT) (9) and the United Kingdom Prospective Diabetes Study (UKPDS) (10). The late start in using insulin and not using appropriate doses cause an early encounter with complications, and it increases morbidity and mortality in patients and also brings about a significant economic burden to individuals and society. In our study, in 68% of the patients, numerous additional diseases such as cardiovascular diseases, hypertension, and renal failure were identified. The fact that 47% of the patients had diabetes for 10 years or more shows parallelism with these findings.

Type 2 diabetes is a chronic multifactorial disease that disrupts the quality of life. Because it is a disease with a very high growth rate worldwide and negatively affects individuals and communities, policies for the fight against it are present. In the international arena, organizations such as the World Health Organization (WHO), the International Diabetes Federation (IDF), and in our country,

the Ministry of Health, participated in the formation of policies with the Turkey Diabetes Prevention and Control Program 2011–2014 (11). In this program, the prevention of diabetes, early provision of diagnosis and treatment, and reduction of frequency of complications due to diabetes to the WHO target level were aimed. In the aforementioned program, the prevention of diabetes as well as increasing the awareness of diabetes in communities was aimed (11). The Turkish Diabetes Foundation is still working on the current state of diabetic patients in Turkey, disease control, patient care, and issues on follow-up and treatment quality with the Project of Diabetes 2020 project with (12).

However, despite all these advances, diabetes centers in our country have not reached the number and quality to meet the needs. Diabetes is a disease that is supposed to be followed by a multidisciplinary team. The time that physicians can spare for patients with diabetes is often insufficient. This situation changes the perception and attitude of patients, and most of the time, patients continue treatment only by taking medicines. It was observed in our study that although 80% of the patients had the disease for more than 5 years, 44% of them applied to health institutions for the supply of drugs. While similar situations are experienced in some countries, some made considerable progress in treatment and prevention with training and new regulations. Tavakolizadeh et al. (13) showed that the blood sugar levels of diabetic patients significantly decreases after training and that their diet and exercise habits changed in a positive way.

Questionnaire 1.

What is diabetes mellitus?

26% - insulin deficiency/a disorder related to obesity
74% - wrong answer/don't know

Which organ impairment does diabetes develop in association with?

23% - pancreas
15% - kidney
7% - liver
44% - don't know
11% - different organs (blood, heart, etc.)

What are the normal fasting and postprandial blood glucose levels?

47% - correct or nearly correct answer
53% - wrong answer/don't know

What happens if diabetes is not treated properly and effectively?

52% - ocular or renal impairment
46% - an irrelevant answer
2% - don't know

What is insulin? What does it remind you of?

52% - a drug/hormone
47% - an injection
1% - don't know

Yarahmadi et al. (14) demonstrated that continuing education and telephone message service provides significant effects on HbA1c level reduction. Khadilkar et al. (15) showed that 70% of patients were educated about their disease but that only 48% of them received training of insulin. Wee et al. (16) stated that their patients had sufficient information about diabetes except for a few issues; this was due to the training they received before. Through programs for the purpose of informing about diabetes and raising awareness, the process of accepting the disease of diabetic patients can facilitate the process, and treatment compliance can be provided.

Because of relatively small number of patients participating, it will be more appropriate to evaluate the results obtained in our study not as absolute values but rather as clues obtained.

Conclusion

Improving the course of the disease in a population, enabling individuals with chronic disease to gain self-sufficient condition, and raising the quality of life would only be possible with patient education. Patient education aims to cope with the disease, to keep disease under control, to maintain necessary diet to improve health, to exercise, to regularly use drugs, and to develop a sense of responsibility in individuals by inculcating attitudes and behaviors such as regular follow-up a habit. Accurate perception and reaching the right level of knowledge about the disease have a significant impact for individuals for manage the disease.

Ethics Committee Approval: Ethics committee approval was received for this study.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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