

DIABETES MELLITUS – OVERCOMING THE OBSTACLES AND MANAGING THEM

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ABSTRACT

Aims: People with diabetes have difficulties in many parts of their life. In our country, there are a lot of studies for the patients with diabetes. But the educations given and studies that are made are insufficient and the patients still don't know what to do when they face with problems diabetes cause. For this purpose, a survey was prepared to determine the difficulties patients face, solutions of them and patients' knowledge level. The effect of the project that is based on SMS for better communication to manage diabetes more successful was observed.

Methods: 365 patients with diabetes followed by family medicine department were evaluated with a survey that determines their information, problems and the solutions to those problems. 10 volunteering patients from the group that took the survey were informed about diabetes on daily basis via SMS. After the informing, another survey study was run on the consciousness of the patients about diabetes and this system's profits.

Results: All of the patients have difficulties in their daily lives with managing diabetes. The question, "Would you want text messages from your doctor for management of diabetes?" had yes answer from all the patients. According to some survey results; taking the medicine right and on time, keeping track of blood sugar are unimportant, even the number and percentage of these results are low. There is an insufficiency about the management and treatment of diabetes. Only %15 of the patients know about carbohydrate counting method.

Conclusion: Management of diabetes would get easier with making the communication between doctor and patient continuous. There is a need of platforms and projects serving this cause. SMS system that's been worked on had a positive effect on patients.

Key Words: Diabetes mellitus, family medicine, carbohydrate count

INTRODUCTION

Diabetes has become an epidemic which is being seen more frequently in recent years both in our country and the world. Field studies about diabetes prevalence, the effect on it on public, how much it affects the public are being carried on in the world and our country. One of the most important ones is "Turkey Diabetes Epidemiology (TURDEP)" research. According to the results of TURDEP-I carried on between the years 1997 and 1998, diabetes prevalence in our country is found to be %7.2. The study showed that %32 of diabetes patients in our country are not aware of their disease (1). TURDEP-II study that was carried on in 2010 between January-June was a repetition of TURDEP-I, performed at the same places, by using the same method. It showed that diabetes prevalence in public

went up to %13.7 (2). Diabetes affects the public very fast according to the studies. It is very important to recognize fast, diagnose and treat the patients who are not aware of their condition to get a decrease on mortality and morbidity. Approaching diabetes in the most effective way gives the economic benefits besides patient's comfort.

Getting health services are easier today in our country. Patients get checked by the doctors more frequently and they get more medical tests done (3). Even though, it is now easier to diagnose diabetes, it is a very important problem for diabetes management that physicians specialized on diabetes is a few and patients' knowledge and awareness level isn't high enough. It is obvious that when the communication between patient and doctor is better, patients are going to get more equipped. On the other hand, it doesn't seem to be possible with the current health system.

There are some theories why, such as practitioners not being able to prescribe anti-diabetics, patients not being willing to visit specialists and lack of control mechanism, endocrine clinics being busy all the time, patients being tired of the disease, not caring about health, patients controlling their diabetes right before they visit a doctor and not living a healthy life.

As diabetes is a chronic disease, it must be highlighted. Diabetes is a hard disease to live with and every precaution must be taken to ease patients' life. A survey study was carried on with diabetes patients for this cause. In this survey study, diabetes patients were asked about how much they are aware of their condition, what resources they have to learn about basic and important points on diabetes, how they manage their condition, what difficulties they face with diabetes management and how they get over them. Based on survey results, "The Model of SMS on Daily Diabetes Follow-up" was simulated. Patients were given the opportunity to get daily text messages from their doctor about basic and important points on diabetes with this model and it was searched if this system has any benefits on them to manage their condition.

MATERIAL AND METHODS

365 patients with diabetes from Istanbul Gaziosmanpaşa number 11-12-13-14 Family Medicine Center participated in the study. The study was carried on with the permission of Institution of Public Health of the district. There was no excluding criteria, all the patients who were willing to attend were included. Data was studied with SPSS, statistics program; verbal answers were scored after being categorized and analyzed by scores.

Patients were asked about their age, gender, occupation, how long they have had this condition, diabetes type, complications, weight, length, last HbA1C value, the last time they saw an endocrinologist, being educated in diabetes, education level, resources to get knowledge in diabetes, if they knew about carbohydrate counting method, importance of following a diet to control their condition, importance of taking the medicine in the suggested way and the importance of daily exercise.

On the second step, knowledge to make life easier as they manage their diabetes have been shared by prepared text message system for 4 days with 10 patients who said yes to the question of "Would you like to get daily suggestion from your doctor about diabetes?" and who were willing to share their contact information. Text messages were prepared specifically. Text messages arranged in 3 categories were sent to 3 groups of patients according to single-blind experimental design knowing which group of patients got

which messages.

Category A (Suggestions, not didactic, indisputable, basic points)

- Being dehydrated because of the heat might make your blood sugar rise instantly. You must check your blood sugar level regularly and stay hydrated.
- Patients with diabetes must have their follow-ups regularly and keep their HbA1C levels stable.
- Patients should stick with their meal and medicine times and pay attention not to skip them.
- Carbohydrate counting is the comfortable way for the patients but injecting too much insulin after eating too much and making this regularly might cause diabetic complications.
- One of the best treatment ways for diabetes is routine exercising. Patients with diabetes must do exercises suitable for their age and body at least 3 days per week for at least 30 minutes.

Category B (Points that are shown to be a must-have but have flexibility and generally create health anxiety on patients)

- High blood sugar levels directly affect eyes, kidneys and nervous system. This is why you should get your eyes examined every 6 months.
- It is important to measure your blood sugar level at least 3 times a day to control your diabetes.
- Your blood sugar level might be high when you are sick. This is why blood sugar must be measured more often and when it is too high ketone level must be measured as well.
- Here comes the bairam, watch your blood sugar. Don't say "I don't eat baklava". One baklava has 15 grams of carbohydrate value. On diabetic baklava boxes, you can see CHO values on them. It is important to do carbohydrate counting correctly.

Category C (Points that create health anxiety)

- Yellow foam on urine is one of the signs of microalbuminuria.
- Tingling, stiffness, numbness on arms in the mornings might be a sign of nerve damage.
- High cholesterol level, hypertension and diabetes are very important risk factors for coronary artery diseases.
- Injecting insulin on the same area all the time might cause lipodystrophy, insulin not being able to spread, a rise in insulin need, a rise in blood sugar and even ketoacidosis.

After making sure the text message system was successful, a survey study was carried on with those patients. There were 16 yes or no questions in the survey. For every "yes" 1 point and for every "no" -1 point were given. Patients who had 8 or higher points were considered to be successful.

RESULTS

Out of 365 patients with diabetes, there were 217 female (%59.4) and 148 male (%40.6). Average age was 40.2 when the youngest patient was 4 and the oldest was 78. 269 of patients were type 2 diabetes (%73.6), 90 of them were type 1 diabetes (%24.6) and 6 of them had other types of diabetes (%1.8). Mean diabetes period was found to be 10.4 years. Patients with at least one complication were 135 (%36.9), patients with two or more complications were 26 (%7.1). The last mean HbA1C value was 8.1. %70 of patients haven't seen an endocrinologist for over a year.

Only 76 (%20.8) of the patients have been to patient schools on diabetes. Education level of the patients were as the following: 2 patients "not educated", 112 patients "primary school", 103 patients "secondary school", 88 patients "high school", 60 patients "university".

All of the participants said "yes" to the question of "Do you face difficulties with your daily diabetes follow-up?". The question of "What are your knowledge resources about diabetes?" had the answers rated from the highest to the lowest: "my physician", "television", "the internet", "published papers", "my pharmacist" and "my friends". All of the patients said "yes" to the question of "Would you like to get daily suggestions on diabetes from your doctor?". Only 55 (%15) said "yes" to the question of "Do you know carbohydrate count method?". All of the participants gave the answer of "very important" to the question of "How important do you think your diet is to control your diabetes?". As 307 (%84.1) participants said "very important" to the question of "How important do you think taking your medicine in the suggested way is to control your diabetes?", 13 (%3.5) participants said "not important". All of the patients gave the answer of very important to the question of "How important do you think to exercise is to control your diabetes?". But weekly exercise average was found to be 22 minutes. Almost all of the participants said "very important" to the question of "How important do you think to measure blood sugar is to control your diabetes?". As the answers of "How long does it take you to finish a box of test strips for measuring blood sugar?" question was analyzed, mean count of daily blood sugar measuring was found to be 0.2. All of the patients said "very important" to the question of "How important do you think to stick with the treatment is to prevent damage related to diabetes (problems with kidneys, eyes, heart and feet) in long term?".

On the second step, a survey study was carried on with patients who received daily text messages. Mean score count of 3 volunteers who were in category A (suggestions, not didactic, indisputable, basic points) was 10, mean score count of 3 volunteers who were in category B (points that are shown to be a must-have but have flexibility and gene-

rally create health anxiety on patients) was 13 and mean score count of 4 volunteers who were in category C (points that create health anxiety) was 13,5.

DISCUSSION

Survey study gave us important conclusions.

By non-statistical analyzes, it is found that male patients participated in this study less because the most of the female are housewives and male patients go to family medicine centers less than females do.

Every age group applied to Family Health Center because of the symptoms related to diabetes. This is why family medicine is one of the milestones in diabetes treatment.

No matter what type of diabetes they have, patients use the advantages of family health centers. But the use of these centers is limited with patients' point of view: "Prescribe the medicine, so I can go home."

Most of the patients (%70) haven't seen an endocrinologist for the last year. There should be a system to lead the patients to an endocrinologist.

Attendance of diabetes schools are less than it should be. For this cause, these schools must be redesigned to attract more patients with diabetes. With the SMS system run by family medicine centers, advantages of patient schools are going to be used better.

It draws attention that type 2 DM are seen more often. As type 2 DM is seen more in old population who cannot take advantages of technological applications, such systems are going to give better results on them.

Most of the participants said they face daily difficulties with their condition. Even though, the highest rated answer was "my physician" for the question "What are your knowledge resources to get over the problems you face?", %70 of them haven't seen an endocrinologist for the last year.

Number of the diabetic patients who know carbohydrate counting method is very less. So, they should be encouraged to be taught carbohydrate counting method to live a more comfortable life. With the SMS system, carbohydrate values in food can be sent to the patients correctly. Even this number is very less; some people don't know that they have diabetes. With first step health care, awareness can be raised.

Usage of SMS

Patients said they had learnt things that they haven't heard of before. This makes us think that this system is going to be very beneficial.

Based on our categorization, it is seen that information which causes anxiety (category C) affects patients

more. Patients who don't know those kind of information, don't take care and aren't of the importance. This is why doctor-patient communication is very important. Usage of SMS is valuable in this way.

It is known that there are still people who are not aware of their diabetes in our country. Despite the new technologies such as insulin pumps, continuous glucose monitoring, our country must give as much attention to diabetes. Basic information given to patient isn't enough; the priority must be educating them.

As diabetes is a chronic condition, habits change by years and patients care less. With this system, patients' motivations can be brought up and their knowledge can be updated.

This system doesn't have to work just with family medicine. Ministry of Health can also follow it. Even, more specific information might be shared with patients based on their complications and conditions by building a new national diabetes follow-up module.

Detection of Difficulties Faced with in Daily Diabetes Follow-up and Their Solutions that Type 1 and Type 2 Diabetes Mellitus Patients Have
Text Messages (SMS)

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Informed Consent: Written informed consent was obtained from the participants of this study.

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