Analysis of Patient Behavior and Needs Using a Survey Conducted during a Seminar Organized by the Diabetes Care Support Team

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ABSTRACT

Diabetes mellitus is a chronic disease that is associated with a higher risk of complications including heart disease, dental disease, eye disorders, kidney disease, nerve damage, and lower leg amputation. Diabetes mellitus and diabetic complications require lifelong medical treatment. Education on necessary lifestyle adjustments for diabetic patients is important and maintains a high quality of life (QOL) for a long period. Japanese Red Cross Saitama Hospital has established a diabetes care support team (DCST) and organizes seminars for diabetic patients once every year in order to assist with self-management. In the present study, we analyzed questionnaires conducted at one of these seminars and discussed the management of diabetes mellitus. In the categories of “dietary therapy,” “exercise therapy,” and “drug therapy,” patients reported the highest satisfaction rate for drug therapy, but lower rates for dietary and exercise therapies. In a comparison of satisfaction rates and HbA1c values, improvements in diet therapy were found to be important, particularly for patients with HbA1c values unanswered. These results suggest that modifications to “diet therapy and “exercise therapy” programs are important for improving the outcome of the self-management.
INTRODUCTION

Diabetes mellitus is caused by malfunctions in the regulation of blood glucose concentrations. High blood glucose concentrations increase the risk of complications including heart disease, dental disease, eye disorders, kidney disease, nerve damage, and lower leg amputation [1-3]. The number of patients with diabetes mellitus continues to gradually increase and is now approximately 20 million in Japan. Most patients have type 2 diabetes, a well-known lifestyle-dependent disease. Furthermore, most patients receiving hemodialysis have diabetes mellitus, which accounts for a large percentage of national health expenditure in Japan [4, 5]. The number of diabetic patients who undergo kidney transplantation is also increasing.

Guidelines to treat diabetic patients have been published in various countries and are frequently updated. The most important concepts for medical care for diabetes mellitus are patient centeredness and lifelong care. Thus, education on necessary lifestyle adjustments for diabetic patients is important and maintains a high quality of life (QOL) for a long period. Self-management, that is, the consumption of healthy food, physical training, and medication with blood glucose monitoring, is the most important factor for achieving and maintaining the recommended lifestyle [6]. Numerous textbooks, DVDs, and classes are available as educational tools to support diabetic patients; however, a large number of patients currently receive unsuccessful medical care. Hospitals generally establish a medical care team for diabetes treatment and team members are learned and licensed diabetes educators. Japanese Red Cross Saitama Hospital has established a diabetes care support team (DCST) and organizes seminars for diabetic patients once every year in order to assist with self-management. The DCST comprises various medical staff, such as medical doctors, pharmacists, nurses, nutritionists, medical laboratory technicians, and physical therapists. In order to ensure that patients consume healthy food, the DCST provides information on the best and worst foods for health and how to count and regulate carbohydrate levels in daily life. For the physical training, the DCST provides information on the daily exercise and representative weekly as well as monthly schedules. Patients are educated on clinical laboratory data, such as blood glucose concentrations and hemoglobin A1c values, in order to understand disease progression, the necessity of taking medicine as directed, and side effects, thereby improving adherence to medication [7, 8].

Japanese Red Cross Saitama Hospital established a DCST and organizes seminars for diabetic patients once a year in order to promote self-management. We provided multiple choice questionnaires at one of these seminars and obtained comments regarding self-management. In the present study, the results of the questionnaire collected in the seminar held in 2015 were analyzed and the future management of care for diabetic patients was discussed.

METHODS

Experimental design: a questionnaire survey was conducted during a seminar for diabetic patients on November 14, 2015. The questionnaire survey sheet, shown below, was prepared by the DCST at Japanese Red Cross Saitama Hospital.

In order to recruit participants, application form was announced to all the diabetes patients enrolled in the internal medicine section for diabetes mellitus (approximately 700 patients) mainly at about 3 months before the seminar. Those interested in participating in the seminar were given directly the application sheet or sent a postcard including necessary matters for participating. All of the application form (received 331 sheets) was accepted for participation. The number of participants was 215. We provided multiple choice questionnaires at one of these seminars and obtained comments regarding self-management.
Compliance with the Declaration of Helsinki and Ethical Guidelines for Epidemiological Research: this study was conducted in accordance with the tenets of the Declaration of Helsinki, while always bearing in mind the protection of the human rights of subjects, and in compliance with the Ethical Guidelines for Epidemiological Research (the Ordinances of the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Health, Labour and Welfare).

Ethical review: based on the study protocol, the Ethical Review Board (ERB) at Japanese Red Cross Saitama Hospital reviewed the study from ethical and scientific viewpoints in compliance with the Ethical Guidelines for Epidemiological Research (number 2015111-5).

Protection of privacy and personal information: the principal investigator anonymized adverse events and other data related to the study results and did not use the names of the subjects or numbers that may disclose subject identities, addresses, or other information. In addition, those who were involved in this study ensured the protection of the personal information of subjects when conducting the study.

Acquisition of informed consent: prior to study implementation, the principal investigator provided an explanation form that described the questionnaire survey sheet, shown below, to subjects, explained thoroughly the intent and content of the study, and obtained written informed consent from subjects based on their free will.

Evaluation methods: regarding the subjective evaluation questionnaire, differences in the scores of all items were evaluated using the Mann-Whitney U test. Significance of difference was shown as p < 0.05 or p<0.01.

RESULTS

Outline of Participants

We distributed 215 questionnaire survey sheets and collected 89 answered sheets (response rate of 41.3%). By analyzing the answered sheets, it was found that the numbers of participants in this survey were as follows: patients: 78, family members: 4, the persons for the purpose of diabetes prevention: 6, and not mentioned: 1 (Flowchart 1).

Flowchart 1: Number of participants in this questionnaires survey
The numbers of respondents in their 30s, 40s, 50s, 60s, 70s, and 80s were 1, 7, 10, 24, 33, and 3, respectively (Table 1). The numbers of respondents who were male, female, and not mentioned were 29, 27 and 22 respectively.

Table 1. Data of the questionnaire survey. Age, HbA1c, and Duration of diabetes*

<table>
<thead>
<tr>
<th>Age</th>
<th>number</th>
<th>%</th>
<th>HbA1c</th>
<th>number</th>
<th>%</th>
<th>Duration</th>
<th>number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>30s</td>
<td>1</td>
<td>1.3</td>
<td>&lt;6</td>
<td>5</td>
<td>7.6</td>
<td>0 ~ 5 years</td>
<td>22</td>
<td>29.3</td>
</tr>
<tr>
<td>40s</td>
<td>7</td>
<td>9.1</td>
<td>6-7</td>
<td>24</td>
<td>36.4</td>
<td>5 ~ 10 years</td>
<td>10</td>
<td>13.3</td>
</tr>
<tr>
<td>50s</td>
<td>10</td>
<td>13.0</td>
<td>7-8</td>
<td>24</td>
<td>36.4</td>
<td>10 ~ 15 years</td>
<td>12</td>
<td>16.0</td>
</tr>
<tr>
<td>60s</td>
<td>24</td>
<td>31.2</td>
<td>8-9</td>
<td>6</td>
<td>9.1</td>
<td>15 ~ 20 years</td>
<td>16</td>
<td>21.3</td>
</tr>
<tr>
<td>70s</td>
<td>33</td>
<td>42.9</td>
<td>9-10</td>
<td>1</td>
<td>1.5</td>
<td>20 ~ years</td>
<td>15</td>
<td>20.0</td>
</tr>
<tr>
<td>80s</td>
<td>2</td>
<td>2.6</td>
<td>&gt;10</td>
<td>6</td>
<td>9.1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* number and % of patients answered to the questionnaire survey

The numbers of respondents with type 1 diabetes mellitus, type 2 diabetes mellitus, and not mentioned were 17, 42, and 19, respectively. Seventy-one out of 78 patients were prescribed diabetic medication.

Among 66 patients (84.6%) who remembered their own HbA1c values, the numbers of those with values less than 7%, between 7 and 8%, and higher than 8% were 29, 24, and 13, respectively (Table 1). Twelve patients could not remember their own HbA1c value.

The numbers of respondents who had disease durations of less than 5 years, between 5 and 10 years, between 10 and 15 years, between 15 and 20 years, longer than 20 years, and not mentioned were 22, 10, 12, 16, 15, and 3, respectively (Table 1).

Patients’ thoughts on diabetes medication

Patients’ thoughts on diabetes medication were analyzed from two questions: needs and satisfaction with medication. As shown in Figure 1, the numbers of patients who needed support from medical staff for “dietary therapy,” “exercise therapy,” and “drug therapy” were 21, 32, and 21, respectively (Figure 1). This result suggests that patients need further assistance with all the three therapies, particularly exercise therapy.

![Fig. 1](image-url) Data of the questionnaire survey, the first choice of support asking to the medical staffs.
Patient satisfaction was rated on a scale of “very satisfied,” “satisfied,” “slightly satisfied,” “slightly dissatisfied,” “dissatisfied,” and “very dissatisfied.” As shown in Figure 2, most patients were satisfied with overall therapies (the sum of very satisfied, satisfied, and slightly satisfied was 71%). Among “dietary therapy,” “exercise therapy,” and “drug therapy,” the highest satisfaction rate was obtained for drug therapy (the sum of very satisfied, satisfied, and slightly satisfied was 81%), while those for dietary therapy (52%) and exercise therapy (45%) were significantly lower than overall satisfaction. These results suggest that modifications to “diet therapy and “exercise therapy” programs are needed.

![Fig. 2 Data of the questionnaire survey. Rate of satisfaction with therapies.](image)

[* score, 1; very satisfied, 2; satisfied, 3; slightly satisfied, 4; slightly dissatisfied, 5; dissatisfied, 6; very dissatisfied]

**Relationship between patients’ thoughts and HbA1c values:**

In order to more precisely analyze data, the satisfaction rates for each therapy and HbA1c values were compared. Patients were separated into three groups of lower (<7) and higher (≥7) HbA1c values and patients who could not remember the HbA1c value. In the lower HbA1c group, satisfaction rates for diet, exercise, drugs, and overall therapies were 68, 50, 88, and 92%, respectively. In the higher HbA1c group, these values were 50, 43, 82, and 62%, respectively. Regarding drug therapy, more than 80% of patients in both groups felt satisfied. In contrast, 50% (<7) and 60% (≥7) of patients felt dissatisfied with the exercise therapy. Regarding the diet therapy, 30% (<7) and 50% (≥7) of patients felt dissatisfied. These results indicate that further education on the exercise therapy is important for successful diabetes therapy. Furthermore, the diet therapy is important for patients with higher HbA1c values.

As shown in Table 1, 10 patients did not provide their HbA1c values. The satisfaction rates of these patients were shown in Figure 3c. Satisfaction rates for diet, exercise, drugs, and overall therapies were 20, 40, 60, and 44%, respectively, and were the lowest among the three groups. In particular, satisfaction rates of the diet therapy and the overall therapy of unanswered group were statistically significantly low (p < 0.05). These facts strongly suggested that the education for self-management is important for these patients.
Factors affecting the quality of the self-management of diabetes:

Diabetes, particularly type 2 diabetes, is a well-known lifestyle-dependent disease. The establishment of self-management, that is, the consumption of healthy food, physical training, and medication with blood glucose monitoring, is very important for maintaining wellness. However, the establishment of self-management by diabetic patients themselves is difficult, and, thus, further education is needed. Several questions were prepared in order to analyze the self-management status.

When asked about “concentrating on diabetes management,” 56 out of 67 patients felt that “I am able to concentrate on my diabetes management” (Figure 4). Thirty-seven respondents provided answers regarding the triggering events for better management: 19 indicated proper education from staff, 9 answered the aggravation of and complications associated with the condition, 6 answered a change of mind or efforts and change in their state of mind, and 3 answered health checks (Table 2, left).

Table 2. Data of the questionnaire survey. Triggering events and Supporting person to concentrate on the diabetes management*

<table>
<thead>
<tr>
<th>Triggering events</th>
<th>number</th>
<th>%</th>
<th>Supporting person</th>
<th>number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education (proper support from the staffs)</td>
<td>19</td>
<td>51.4</td>
<td>medical staff</td>
<td>32</td>
<td>40.0</td>
</tr>
<tr>
<td>Worsening complication</td>
<td>9</td>
<td>24.3</td>
<td>myself</td>
<td>25</td>
<td>31.3</td>
</tr>
<tr>
<td>Change of the state of mind/effect</td>
<td>6</td>
<td>16.2</td>
<td>family</td>
<td>21</td>
<td>26.3</td>
</tr>
<tr>
<td>Physical examination</td>
<td>3</td>
<td>8.1</td>
<td>others</td>
<td>2</td>
<td>2.5</td>
</tr>
</tbody>
</table>

* number and % of patients answered to the questionnaire survey
Fig. 4 Data of the questionnaire survey. Concentrate on the diabetes management, or not

The main supporting individuals for diabetes management were medical staff, the patients themselves, and family members (Table 2, right).

On examining factors that negatively affect the treatment and self-management of diabetes, 57% of the respondents had never experienced mental distress due to others’ statements or attitudes, and 32% had rarely perceived such events. On the other hand, medical staff’s statements or attitudes had hurt the feelings of approximately 10%. Although the rate was low, efforts to reduce this are necessary (Table 3).

Table 3. Data of the questionnaire survey. Word and Attitude that hurt patients

<table>
<thead>
<tr>
<th>Frequency</th>
<th>number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>never</td>
<td>39</td>
<td>57.4</td>
</tr>
<tr>
<td>seldom</td>
<td>22</td>
<td>32.4</td>
</tr>
<tr>
<td>yes, I have</td>
<td>5</td>
<td>7.4</td>
</tr>
<tr>
<td>often</td>
<td>2</td>
<td>2.9</td>
</tr>
</tbody>
</table>

* number and % of patients answered to the questionnaire survay

Life-fulfilling activities may be essential for active and lifelong treatment and self-management. As hobbies, the presence of other family members, and the healthy life were shown to be fulfilling in the questionnaire survey, it may be possible to promote coping with diabetes throughout life by creating environments to make the most of these resources (Table 4).
Table 4. Data of the questionnaire survey, Goal/purpose of life

<table>
<thead>
<tr>
<th>Goal/purpose of life</th>
<th>number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>hobby</td>
<td>21</td>
<td>38.9</td>
</tr>
<tr>
<td>health</td>
<td>18</td>
<td>33.3</td>
</tr>
<tr>
<td>home</td>
<td>10</td>
<td>18.5</td>
</tr>
<tr>
<td>work</td>
<td>5</td>
<td>9.3</td>
</tr>
</tbody>
</table>

* number and % of patients answered to the questionnaire survey

DISCUSSION

The most important concepts for medical care for diabetes mellitus are patient centeredness and lifelong care. Education on necessary lifestyle adjustments for diabetic patients is important and maintains a high QOL for a long period. In order to support patients, Japanese Red Cross Saitama Hospital established a DCST and organizes seminars for diabetic patients once a year in order to assist with self-management. In the present study, the results of a questionnaire completed during one of these seminars were analyzed and the future management of patient care was discussed. In the present study, 215 attended the seminar and 89 responses were collected (response rate of 41.3%). The response rate was not high, but we regarded it as sufficient to collect analytical data in consideration of voluntary cooperation from participants and their sufficiently high quality responses.

Glycated hemoglobin (hemoglobin A1c, HbA1c) is a form of hemoglobin that indicates the three-month average concentration of plasma glucose. It is formed in a nonenzymatic glycation pathway by the exposure of hemoglobin to plasma glucose. HbA1c is a measure of the beta-N-1-deoxy fructosyl component of hemoglobin. Normal levels of glucose produce a normal amount of glycated hemoglobin. The fraction of glycated hemoglobin increases in a predictable manner with elevations in the average amount of plasma glucose.

In diabetes mellitus, higher amounts of glycated hemoglobin, indicating the poorer control of blood glucose levels, have been associated with cardiovascular disease, nephropathy, neuropathy, and retinopathy. HbA1c monitoring for the purpose of assessing glycemic control and modifying treatment may improve outcomes. As shown in Table 1, most patients were aware of their own HbA1c value. This may be because patients often and repeatedly hear this word and, thus, understand that HbA1c is a keyword for monitoring ongoing therapy. In the present study, only 20% of patients had HbA1c values higher than 8. The disease period of each patient varied from less than 5 years to more than 20 years. These results strongly indicate that most attendees at the seminar are capable of establishing a self-management system for diabetes.

In a comparison of satisfaction rates for dietary therapy, exercise therapy, and drug therapy, that for drug therapy was the highest (Figure 2). This result may be due to prescribed drugs being given every one or two months and, thus, patients must visit the hospital and pharmacy. Medical doctors and pharmacists regularly ask patients about the effectiveness or side effects of their medication. The higher satisfaction rate may also be attributed to the national medical insurance system in Japan. Every Japanese citizen must belong to this system, which covers 70 to 80% of treatment costs.

Based on satisfaction rates for diabetes management and HbA1c values, patients were separated into two groups of lower and higher than 7, and satisfaction rates for dietary, exercise, drug, and overall therapies were compared.
(Figure 3). Patients with higher HbA1c values were less satisfied with dietary and exercise therapies. These results strongly suggest that patients need additional efforts for diabetes management. Some of the patients who attended the seminar did not provide their HbA1c values in the questionnaire (Table 1). A comparison of the satisfaction rates of these patients with other patients who provided their HbA1c values revealed that they were lower, including those for drug therapy (Figure 3). And the tendency was significant in the diet therapy. As described in Introduction, education on necessary lifestyle adjustments for diabetic patients is important for the self-management \cite{7, 8}. These patients may not be sufficiently educated about their condition and, thus, fail to maintain a high QOL for a long period.

The purpose of dietary therapy is to establish a healthy eating plan that is naturally rich in nutrients and low in fat and calories, and numerous seminars, textbooks, and movies are available on this topic \cite{14}. Many patients may try some of the menus suggested; however, difficulties are encountered because this therapy involves lifelong learning and habits. Patients typically monitor their disease condition when they visit the hospital to measure their HbA1c value. Although the measurement of HbA1c in the community is possible, it has not yet been conducted on a large scale. Increasing the number of places to obtain information on diet therapy is needed.

Exercise therapy contributes to improving blood sugar control, boosting overall fitness, and reducing the risk of heart disease and stroke \cite{15}. It is also important to note that exercise significantly influences blood glucose concentrations and, thus, may modulate drug therapy. Patients need to consult with medical staff prior to starting any exercise program. Unfortunately, general family doctors do not specialize in therapeutic exercise. As exercise programs developed as part of diabetes care enable patients to perform motor activities similarly to healthy individuals, it may be necessary to increase the number of doctors qualified to prescribe therapeutic exercise.

Diabetes care is necessary throughout the lifespan of patients with this condition. Successful self-management involves knowledge on a broad range of topics, which is difficult without some assistance \cite{16-17}. As shown in Table 2, the triggering event is important for the initiation of self-management, and various events were described in the questionnaire. Although education is the most important event, the deterioration of the disease also prompts patients to face their condition. Diabetes self-management education is a collaborative process with medical staff, such as the DCST. However, the DCST is based in the hospital, and not in the community. As shown in Table 2, family members are also important for diabetes management. Since family members live with patients, they may provide 24-hour care.

The DCST comprises various medical staff, such as medical doctors, pharmacists, nurses, nutritionists, medical laboratory technicians, and physical therapists. Pharmacists are the professionals responsible for drug therapy. Satisfaction rates for drug therapy were the highest, indicating that pharmacists perform their function well. The field of pharmacy includes a number of different specialties: hospital pharmacist, community pharmacist, industrial pharmacist, school pharmacist, sports pharmacist, managed care pharmacist, military pharmacist, oncology pharmacist, and veterinary pharmacist. Therefore, pharmacists play a role not only in drug therapy, but also in general health care. Community pharmacists provide care for a wide variety of health issues in the community. The active contribution of community pharmacies and pharmacists, such as the frequent monitoring of patient conditions, may increase the satisfaction rates of diabetic patients \cite{18-22}.

The number of patients with diabetes mellitus is gradually increasing and is approximately 20 million in Japan \cite{23}. Diabetes and diabetic complications require lifelong medical treatment, which enhances QOL, but is also an economic burden on patients and family members \cite{24}. 

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In the present study, application form was announced to all the diabetes patients enrolled in the internal medicine section for diabetes mellitus (approximately 700 patients) mainly at about 3 months before the seminar, and the number of participants was 215 (30%). These participants in our seminar might be highly conscious of their treatment compared to the general population, because they wish to attend by their own interest. In addition, 89 out of 215 patients kindly answered the questionnaires (41.3%). It is only 12.7% of all the diabetes patients enrolled in this hospital. From these findings, the present data might be deflected to the excellent patients for the self-management of diabetes mellitus, even though some values were correlated with HbA1c value. We again are convinced that the most important action for the diabetes patients was to establish highly constructed self-management system. Repetition of organizing the seminar and recruitment of patients are important.

The continuous improvement of diabetes care is important in various fields. The Ministry of Health, Labor and Welfare (MHLW) recently established guidelines to support the balance between work and medical treatments for chronic diseases including diabetes [25]. The MHLW also established a vision of Japan’s health care policies for 2035 and a new system for medical treatments in the community. This support from the government will enhance the motivation of patients both directly and indirectly.

DECLARATION OF CONFLICTING INTEREST

The authors have no conflicts of interest (political, personal, religious, ideological, academic, intellectual, commercial or any other) to declare in relation to this manuscript.

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APPENDIX

Questionnaire Survey Sheet

Request for Participation in the Questionnaire Survey

November 14, 2015

Japanese Red Cross Saitama Hospital

Diabetes Care Support Team

Aim of the Questionnaire Survey

It is important to set a goal when managing diabetes.

We, the providers of medical care (hereinafter medical providers), have set a goal, namely, lower HbA1c values and body weight, in order to prevent complications. However, if you view it as your personal goal, you may feel that it is not the goal for you in the immediate future, although it is the final goal of diabetes treatment. This may be the case because you may feel like the final goal of medical providers has been imposed on you so that you are forced to aim for a final goal that you cannot achieve easily. Diabetes management must be implemented by yourself on a daily basis. It will not be successful unless you make a conscious decision to change.

Therefore, how about setting your own GOAL?

It may be a very small goal. If you achieve this small goal, you may set the next goal and consciously live toward achieving that goal. By repeating this cycle and achieving small goals one at a time, the ultimate goal (the prevention of complications) will be within your reach. Let us work together to that end.

This is an anonymous questionnaire survey. (You do not need to write your name.)

• Although participation is voluntary, we hope that you will answer the questionnaire. You do not have to participate if you are reluctant to do so. Rest assured that your decision to not participate in the survey will not result in unfavorable treatment of any form or shape.
• We hope that you will answer all the questions; however, if you are reluctant to do so, please only answer the ones you feel comfortable with. If you wish to stop answering the rest of the questions for any reason, feel free to do so.
• The personal information and answers of the respondents will NOT be used for any other purpose than to improve medical care in the future. Although we are planning to publish an analysis of the survey results, the publication will never reveal the identity of the respondents.
(1) **First, tell us about yourself.**
   a) How old are you, and what is your sex? Circle the answer that applies.
      - Age: 20s 30s 40s 50s 60s 70s 80s 90s
      - Sex: Male Female

   b) Identify the type of diabetes you have been diagnosed with. (Circle applicable one.)
      1) Type I Diabetes 2) Type II Diabetes

   c) You are attending this citizens’ open seminar today
      1) as a patient, 2) as family of a patient, 3) for prevention (I do not have diabetes)

         I am (using/not using) a diabetes drug.

   d) If you are a patient, tell us your latest HbA1c value.
      In %

   e) If you are a patient, how long has it been since you were diagnosed with diabetes?
      Approximately years  months

   f) Tell us how you felt when you were diagnosed with diabetes, and about the mental image you
      have of the condition called diabetes.

(2) **A diabetes treatment plan is composed of three therapeutic approaches: dietary therapy, exercise
therapy, and drug therapy.** Of the three approaches -- diet, exercise, and drugs -- with which do
you need the most support from medical staff? Please circle one. Please specify the support you
wish to receive.

   Dietary Therapy  Exercise Therapy  Drug Therapy  (←Circle one.)

   Specify the support you wish to receive for the therapy selected above:

   (Please indicate what support in what area(s) you wish to receive.)

(3) **How satisfied** are you with each of the three therapeutic approaches (diet, exercise, and drugs)?
What overall **satisfaction** level **do you have with the therapies?** Circle the level of **satisfaction with
the therapies.**

Please tell us “**what you are satisfied with**” and “**what you are dissatisfied with**”, if any.

Dietary

| Very dissatisfied | Dissatisfied | Slightly dissatisfied | Slightly satisfied | Satisfied | Very satisfied |

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Exercise

Very dissatisfied  Dissatisfied  Slightly dissatisfied  Slightly satisfied  Satisfied  Very satisfied

Drug

Very dissatisfied  Dissatisfied  Slightly dissatisfied  Slightly satisfied  Satisfied  Very satisfied

Overall

Very dissatisfied  Dissatisfied  Slightly dissatisfied  Slightly satisfied  Satisfied  Very satisfied

What are you satisfied with?

What are you dissatisfied with or what do you want the therapy to accomplish?

(4) Are you able to concentrate on your diabetes management because of the support provided by someone? Circle one of the options below, and if you are able to concentrate on your diabetes management, please circle the people whose support enables you to do so. (Example: Family (specify relationship to you), medical staff (specify the title of the medical worker), nursing staff, and friends (specify the relationship to you))

I am not able to concentrate on my diabetes management.

I am able to concentrate on my diabetes management thanks to

Myself  Family  Medical staff  Nursing staff  Friends  Other

(5) What triggering event enabled you to concentrate on your treatment? If you remember the triggering event, please tell us about it.

(6) Have you ever been offended by a medical provider’s words or attitude, and abandoned therapy
goals because of that experience despite implementing your diabetes therapy with a goal in mind? What was the frequency of such an experience? If you don’t mind, tell us the details of that incident.

<table>
<thead>
<tr>
<th>Never</th>
<th>Seldom</th>
<th>Yes, I have</th>
<th>Often</th>
</tr>
</thead>
</table>

Words and attitude that offended you during out-patient care at a hospital (not necessarily this hospital):

(7) Please indicate your “life goal from now” or “purpose in life”. Let us set a specific goal that will help you to achieve your life goal and purpose. What is possible for you to consciously change in the next week, month, or three months (or any period of your choice)?

**My life goal from now on/purpose in life:**

Example: Enjoy traveling with my spouse even after 10 years from now; celebrate the coming-of-age of my grandchildren; continue mountain climbing. **Lifestyle or habits I will change in order to manage my diabetes from now on:**

Example: I will do the exercise I learned today three times a week; I will be conscious of my calorie intake and rethink the amount of food I consume; I will stop smoking.

Thank you very much for your cooperation.