

## SATISFACTION OF DIABETES PATIENTS UNDER FOLLOW-UP IN A DIABETES EDUCATION PROGRAM

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*This study aimed to describe the satisfaction of diabetes patients, using the information received and the care offered after the implementation of the health educational program called Staged Diabetes Management (SDM), in April 2005, at a University Research and Extension Center in Ribeirão Preto - SP. Patient satisfaction was assessed through a satisfaction questionnaire, applied to 54 diabetes patients who participated in the program during 12 months. The patients reported that the information received during the program attended their needs; of the 54 patients, 59.3% mentioned information related to nutrition; 33.3% mentioned medicines and 31.5% glucose control. Related to the assessment of care, 81.5% of the patients considered it excellent. We concluded that the patient satisfaction evaluation was a valuable feedback to evaluate the program implemented by the multiprofessional team.*

**DESCRIPTORS:** diabetes mellitus; patient satisfaction; health education

## SATISFACCIÓN DEL PACIENTE DIABÉTICO EN SEGUIMIENTO EN UN PROGRAMA DE EDUCACIÓN EN DIABETES

*La finalidad de este estudio fue describir la satisfacción de los pacientes diabéticos con las informaciones recibidas y la atención ofrecida después de la implementación del programa educativo denominado Staged Diabetes Management (SDM), en abril de 2005, en un centro de investigación y extensión en Ribeirão Preto - SP. Para esto, fue aplicado un cuestionario de satisfacción a 54 diabéticos que participaron del programa por un período de 12 meses. Con relación a las informaciones recibidas durante la atención, los pacientes refirieron que ellas atendieron a sus necesidades, siendo que el 59,3% de ellos mencionó las informaciones relacionadas con la alimentación, el 33,3% los medicamentos, el 31,5% el control glicémico. Respecto a la evaluación de la atención, el 81,5% de los usuarios lo consideró excelente. Se concluye que la satisfacción del paciente constituyó un valioso feedback para que el equipo multiprofesional pudiese evaluar el programa implementado.*

**DESCRIPTORES:** diabetes mellitus; satisfacción del paciente; educación en salud

## SATISFAÇÃO DO PACIENTE DIABÉTICO EM SEGUIMENTO EM UM PROGRAMA DE EDUCAÇÃO EM DIABETES

*Este estudo teve como objetivo descrever a satisfação dos pacientes diabéticos com as informações recebidas e a assistência oferecida após a implementação do programa educativo, denominado Staged Diabetes Management - SDM, em abril de 2005, em um centro de pesquisa e extensão universitária em Ribeirão Preto, SP. Para tanto, foi aplicado questionário de satisfação a 54 diabéticos que participaram do programa por período de 12 meses. Em relação às informações recebidas durante o atendimento, os pacientes referiram que elas atenderam as suas necessidades, sendo que 59,3% deles mencionaram as informações relacionadas à alimentação, 33,3% aos medicamentos, 31,5% ao controle glicêmico. No que concerne à avaliação do atendimento, 81,5% dos usuários o consideraram excelente. Conclui-se que a satisfação do paciente constituiu valioso feedback para a equipe multiprofissional avaliar o programa implementado.*

**DESCRIPTORES:** diabetes mellitus; satisfação do paciente; educação em saúde

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## INTRODUCTION

Various researchers have recommended education of diabetes patients by a multiprofessional team<sup>(1)</sup>. In this sense, several education programs and care services for diabetes patients with this focus have been implemented in different countries<sup>(1-2)</sup>.

In line with the Declaration of the Americas on Diabetes, since December 2000, the multiprofessional team at the Nursing Education Center for Adults and Elderly (NECAE) of the University of São Paulo at Ribeirão Preto College of Nursing has continuously followed the diabetes patients registered at the service.

As from 2003, due to the need to organize care for diabetics at this Center, a systemized care program was implemented, based on a care protocol called Staged Diabetes Management-SDM<sup>(2)</sup>.

The SDM is a systemized care program for diabetes patients developed by the International Diabetes Center-IDC, Minneapolis, Minnesota - USA. It contains a practical guide for the multiprofessional team to deliver patient care, with specific criteria to establish the treatment and follow-up, with a view to improving the patients' metabolic control and enable the team for clinical practice. This program has already been implemented in different countries, leading to a proved reduction in glycated hemoglobin levels and a decrease in chronic complications resulting from diabetes<sup>(2-3)</sup>.

In the systemized care program for diabetes patients implemented at this Center, we use research instruments recommended by the IDC. One of them refers to the patients' satisfaction with the care they receive<sup>(2)</sup>.

The satisfaction concept privileges the user in the assessment of health quality. There are various measurement models, but all of them depart from the premise of addressing the patients' perceptions in relation to their expectations, values and desires<sup>(4)</sup>. In a general way, user satisfaction can be defined as each individual's assessment of the different health care dimensions.

Literature displays a broad discussion of the concept of user satisfaction<sup>(4)</sup>. The research methodologies used in this area contain similarities, convergences and superpositions of some terms and concepts that emphasize, in a way that is not always clear, users' place in the assessment of health services and systems.

Satisfaction studies in Brazil stood out from 1990 onwards, with the community's participation in care planning and assessment. These studies are relevant because they allow for enrichment and feedback of the interventions made by the health team, providing for health service improvements. In public services, users have little power to exert pressure, as there is no need to capture clients like in the private sector. In this context, the satisfaction assessments of public service users contribute to outline this question, functioning as an instrument to "give voice" to the users, allowing them to express their needs, perceptions and expectations about the health services and system. Thus, it is a relevant resource for the receivers of health actions to monitor the quality of the care they receive<sup>(5)</sup>.

The quality of the delivered services is influenced by the user's subjective perception of the services. Satisfaction is assessed on the basis of the users' opinion of the service quality offered in terms of problem solving in service delivery, among others. In general, these aspects assess the efficacy, effectiveness, efficiency, conformity, equity, adequacy and legitimacy<sup>(6)</sup>.

In Brazil, the quality implantation process in hospitals has stimulated research to identify and measure satisfaction as a part of result assessment. This assessment has motivated health managers' decisions. Health service assessment studies use users' opinion to certify the quality of service delivery<sup>(7)</sup>. Different instruments are used to measure satisfaction. These include opinion questionnaires, with closed alternatives to answer the questions asked, Likert-type scales, and questionnaires with a mixture of closed and open answer alternatives<sup>(8)</sup>.

Studies assessing the results of clinical interventions in diabetes education programs have also been recommended<sup>(2,9)</sup>. Among the available assessment instruments, questionnaires are frequently used<sup>(9)</sup>. These instruments in particular make it possible to address aspects related to treatment and to the understanding of emotional and social factors of care delivery to patients with chronic health conditions<sup>(10-11)</sup>. In this study, the diabetes patients' satisfaction refers to the information received and the care offered after the implementation of the education program called Staged Diabetes Management - SDM.

### *The Staged Diabetes Management - SDM Protocol*

The Staged Diabetes Management - SDM is a systemized care protocol for diabetes patients. It

contains a textbook and two Quick Guides for the multiprofessional team to deliver care to diabetes patients. The Quick Guides are documents based on scientific knowledge and define the bases of treatment and the methods for professional decision-making about treatment, and also guide the multiprofessional team in order to offer the means for diabetes patients to cope with the disease. This guide is structured to classify and diagnose the disease, define treatment options and metabolic objectives, monitor the metabolic and lipid parameters and to follow-up diabetes patients. These documents were adapted by different institutions at global level, in which health care providers could use the resources available in the community. The Quick Guides from the SDM protocol are based on the recommendations by the American Diabetes Association - ADA, the National Diabetes Data Group, the International Diabetes Federation - IDF, the World Health Organization - WHO and on various organizations from different countries.

These Guides are used for clinical decision making, using an algorithm that establishes the maximum time for each intervention type in the start, adjustment and maintenance phase of treatment, using steps and phases.

The steps refer to the treatment type, are called therapeutic steps and are adjusted to each type of diabetes. They can be introduced, adjusted or substitute throughout the treatment and are therefore dynamic.

The therapeutic steps are constituted by the nutritional step, by the oral medication agent step and by the insulin step. In the SDM protocol, the nutritional step, known as diet and exercise, constitutes food orientation and the implementation of an exercise program to help patients reach their metabolic objectives. The oral agent step refers to the patient's use of oral antidiabetic drugs. Finally, the step called insulin refers to the administration of fast, intermediary or long-acting insulin.

The therapeutic steps indicated what type of treatment is selected for the patient. For each therapeutic step - nutritional, oral agent and insulin - the patient goes through three treatment phases, which are: initial phase, adjustment phase and maintenance phase. This is justified as care for diabetes patients is a continuum, which starts with the diagnosis - initial phase - and moves to the adjustment phase, until the objectives are reached. At this point, the therapy is maintained - maintenance phase. Thus, care for diabetes patients is defined by the therapeutic steps that indicate the expected progress.

For each therapeutic step, that is, nutritional step, oral medication agent and insulin, the patient goes through the following phases:

In the initial phase, the multiprofessional team obtains the patient's data to reach a diagnosis and start treatment. It should be emphasized that each type of diabetes or complication demands different information and data for diagnosis and clinical decision making.

In the treatment adjustment phase, changes occur in the treatment, that is, in the insulin dose, in food, exercise or oral antidiabetic drugs. These adjustments help to optimize diabetes control. This phase can take days or months and is characterized by the patient's considerable participation, as it are the data (s)he provides that will direct the changes in treatment.

The maintenance phase starts when the patient reaches the expected treatment objectives and is actively involved in its maintenance. Patients are expected to enter and leave this phase independently of the treatment step. The factors influencing the patient's exit from this phase are changes in lifestyle, adherence to the food plan, social and psychological adjustments to the disease, the desire to reach a good control and the natural progression of diabetes.

The SDM protocol recommends that the implementation of the steps and their subsequent phases should occur through the development of an education program directed at the attended patients' actual needs.

The implementation of the Systemized Care Project for Diabetes Patients at the NECAE, using the SDM protocol

To put the Systemized Care Project for Diabetes Patients in practice at the NECAE, using the SDM protocol, we moved through five steps, described next.

In the first step, from August 2003 to March 2004, we performed the following activities: assessment of the NECAE; training of the multiprofessional team; recruitment of the study population; construction of data collection instruments and organization of patient files.

In the second step, from March to April 2004, we clarified the research objectives and steps, registered the patients (n=59). The first consultation by the multiprofessional team took place and the knowledge about the disease was initially assessed.

Lab tests were done, organized and analyzed as a criterion for the patient's entry in the start and/or adjustment phase of treatment.

In the third step, between April and October 2004, the following activities occurred: start of the implementation of the SDM protocol, systemized nursing activity in group, systemized individual nursing consultation, medical and nursing consultation, nursing and medical post-consultation - self-monitoring of capillary glucose at home, systemized individual orientation, nutritional consultation and psychological support.

In the fourth step, from October 2004 to April 2005, the implementation of the SDM protocol continue, with the assessment of the results obtained in the third phase, lab tests, eye test, systemized nursing activity in group, systemized individual nursing consultation, medical and nursing consultation, nursing and medical post-consultation - self-monitoring of capillary glucose at home, systemized individual orientation, nutritional consultation and psychological support.

In the fifth step, which took place in April 2005, the following activities occurred: assessment of the implementation of the SDM protocol, assessment of the results obtained in the third and fourth phase, lab tests, final assessment of knowledge about the disease and assessment of the hypoglycemia episodes the patients presented.

Considering that, after the implementation of the project, the multiprofessional team's work also needs to be evaluated from the patient's perspective, we felt the need to assess patient satisfaction after the implementation of the SDM protocol.

## OBJECTIVE

To characterize the diabetes patients attended at the Nursing Education Center for Adults and Elderly, according to demographic and disease-related variables.

To describe the diabetes patients' satisfaction with the information they received and the care that was offered after the implementation of an education program.

## METHODOLOGY

A descriptive and cross-sectional study was carried out at the NECAE of the University of São

Paulo at Ribeirão Preto College of Nursing (EERP-USP) in April 2005. this Center was chosen as the place of study because it offers care to diabetes patients by a multiprofessional team, through an Education Program, as recommended by the SDM protocol.

### Multiprofessional team

To develop the SDM care protocol for diabetes patients, the following professionals collaborated: four nurses, two endocrinologists, one nutritionist, three psychologists, one physical education professional and three scientific initiation students.

### Universe

The universe consisted of the 240 type 1 and type 2 diabetes patients registered at the Nursing Education Center for Adults and Elderly between September 17<sup>th</sup> 2000 and March 2<sup>nd</sup> 2004, as shown in Table 1.

Table 1 - Patient distribution according to year of entry in the NECAE. Ribeirão Preto/SP, 2004-2005

Year of entry in NECAE	Simple frequency	Accumulated frequency
2000	30	30
2001	55	85
2002	56	141
2003	78	219
January-March 2004	21	240

NECAE register, 2000/2004

### Inclusion criteria

Type 1 and type 2 diabetes patient, with a medical diagnosis of diabetes mellitus confirmed through a fasting plasma glucose test, men and women, coming from Ribeirão Preto-SP and the region, who were registered at the NECAE between September 17<sup>th</sup> 2000 and March 2<sup>nd</sup> 2004 and accepted to participate in the study by signing the free and informed consent term.

### Exclusion criteria

Patients were excluded in case of gestational diabetes; incomplete register; if they could not be located; refused to participate in the study; died; mentioned difficulties to participate in the care due to work or study or mentioned participation in other care offered through their health insurance, as shown in Table 2.

Table 2 - Distribution of diabetes patients registered in the NECAE according to exclusion criteria. Ribeirão Preto/SP, 2004-2005

Exclusion Criteria	No
Refusal to participate	94
Unfound addresses	41
Difficulty to participate due to work or study	26
Incomplete registers	12
Deaths	3
Participation in health insurance care	3
Patients without confirmed diagnosis after fasting plasma glucose test	2
Mentioned not being diabetic anymore	1
Gestational diabetes	1
<b>Total</b>	<b>183</b>

### Study population

In accordance with the inclusion and exclusion criteria, the study population consisted of 57 type 1 and type 2 diabetes patients, who were called upon to visit the NECAE and receive clarifications about the research objectives and steps. During the realization of this study, three patients were lost, two of whom due to death and one to abandonment. Hence, the study population included 54 type 1 and type 2 diabetes patients.

### Instrument

The Patient Satisfaction questionnaire was elaborated to assess patient satisfaction with the systemized care they received, after the implementation of the SDM protocol. This questionnaire was translated to Portuguese. It comprises eight questions, two of which closed multiple-choice and six open.

### Procedure

The Patient Satisfaction questionnaire was self-applied, taking care to preserve patients' anonymity. For illiterate patients or with some kind of limitation to fill out the questionnaire themselves, the instrument was applied through a face-to-face interview, with a mean duration of 15 minutes. In this case, the interviews were carried out by the researcher responsible for applying the instrument, who did not belong to the SDM team, thus guaranteeing data reliability. To organize the data, a database was created in SPSS 11.5, using double entry. To analyze the answers related to user satisfaction, descriptive analysis was used, with results expressed in absolute

figures and percentages. The project was approved by the Institutional Review Board at EERP-USP, protocol number 03172002.

## RESULTS AND DISCUSSION

Characterization of diabetes patients attended at the Nursing Education Center for Adults and Elderly in the SDM Protocol

The 54 type 1 and type 2 diabetes patients were between 29 and 78 years old, with a median of 60 years. Women were predominant (74.1%), with a median of 61 years. Male patients corresponded to 25.9%, with a median of 60 years.

What skin color is concerned, most patients (59.3%) were white. As to civil status, 68.5% were married. With respect to occupation, 42.6% were retired. Related to education, 59.3% did not finish basic education. As to family income, 29.6% indicated between one and two minimum wages (Table 3).

Table 3 - Numerical and percentage distribution of patients attended at the NECAE according to sociodemographic variables. Ribeirão Preto/SP, 2004-2005

Variáveis Sociodemográficas		nº	%
Skin color	White	32	59.3
	Mulatto	14	25.9
	Afro-American	8	14.8
	<b>Total</b>	<b>54</b>	<b>100</b>
Civil status	Married	37	68.5
	Widowed	10	18.5
	Single	7	13.0
<b>Total</b>	<b>54</b>	<b>100</b>	
Occupation	Retired	23	42.6
	Housework	18	33.3
	Work	13	24.1
	<b>Total</b>	<b>54</b>	<b>100</b>
Education level	Illiterate	1	1.9
	Not alphabatized	2	3.7
	Unfinished Basic Education	32	59.3
	Finished Basic Education	3	5.6
	Finished Secondary Education	9	16.7
	Unfinished Higher Education	3	5.6
Finished Higher Education	4	7.4	
<b>Total</b>	<b>54</b>	<b>100</b>	
Family income (minimum wages*)	Up to 1 minimum wage	3	5.6
	> 1 - 2 minimum wages	16	29.6
	> 2 - 3 minimum wages	12	22.2
	> 3 - 4 minimum wages	9	16.7
	> 4 minimum wages	14	25.9
<b>Total</b>	<b>54</b>	<b>100</b>	

\* Minimum wage in April 2005: R\$ 260

As to the type of diabetes, 53.7% indicated type 2 and 14.8% type 1. It is remarkable that 31.5% could not indicate the type of diabetes. What the diagnosis time is concerned, 34.5% mentioned between 1 and 5 and between 6 and 10 years respectively. Of the 31.5% of patients who could not indicate their diabetes type, we found that 52.9% mentioned they had known the diagnosis between one and five years (Table 4).

Table 4 - Numerical and percentage distribution, attended at the NECAE, according to diagnosis time and diabetes indicated by the patient. Ribeirão Preto/ SP 2004-2005

Diagnosis time	Diagnosis time						Total	
	Type 1		Type 2		Did not know		No	%
	No	%	No	%	No	%		
1 - 5 years	2	25.0	10	34.5	9	52.9	21	38.9
6 - 10 years	3	37.5	10	34.5	6	35.3	19	35.2
11-15 years	-	-	2	6.8	1	5.9	3	5.5
16 - 20 years	3	37.5	2	6.8	1	5.9	6	11.1
>20	-	-	5	17.4	-	-	5	9.3
<b>Total</b>	<b>8</b>	<b>100</b>	<b>29</b>	<b>100</b>	<b>17</b>	<b>100</b>	<b>54</b>	<b>100</b>

In terms of BMI classification, 40.7% of the type 1 and type 2 diabetes patients had class I obesity, 16.7% class II and 7.4% class III. The most frequently indicated co-morbidities were arterial hypertension (61.1), obesity (35.2%), dyslipidemia (31.5%) and peripheral vascular disease (24.1%). With respect to living habits, it was found that 57.4% of the patients practiced some kind of physical activity; none of the patients smoked; 35.2% used to smoke and 50.0% used to consume alcoholic beverages, while a majority (88.8%) mentioned social drinking. As to family antecedents of disease, the highest frequency corresponded to diabetes mellitus, with 79.6% of patients, followed by arterial hypertension with 72.2%. Obesity, dyslipidemia and hyperuricemia were mentioned less frequently.

What the patients' follow-up is concerned, in the 12 months before the SDM, it was found that 57.4% indicated follow-up by means of a medical consultation every three or four months. About education, 83.3% mentioned having received some kind of diabetes education, 18.5% about physical activity, 13.0% nutritional education and 1.9% psychological accompaniment. During this period, 29.6% of the patients performed the foot examination, 24.1% the eye exam and only 11.1% the microalbuminuria exam.

#### Description of diabetes patients' satisfaction after the implementation of the SDM Protocol

When planning an Education Program, there is a need to take into account the patients' satisfaction, because that is what produces the motivation to make the adjustment needed in terms of medication treatment, food planning, physical activity, foot care, self-monitoring of capillary glucose, among others.

When analyzing the diabetes patients' satisfaction with the information they received that contributed to control the disease, it was found that 32 (59.3%) of them indicated information related to food, 18 (33.3%) related to medication and 17 (31.5%) to glucose control, as shown by the following reports. *[...] I learned how to eat in order to lose weight [...] I learned to eat well [...] eat little at the right time, eat a lot of vegetables, having a snack before sleeping [...] I learned a lot of useful things, such as reeducating the anxiety to eat [...]; I learned how to take the medication correctly [...] how to value the results of the medicines I took [...] I learned how to use the insulin and the other medicaments [...]; I learned how to control the blood sugar level [...] I learned the care needed to maintain a satisfactory control, avoiding hyper and hypoglycemia [...].*

These reports show that the needs are related to the factors they value as adult and elderly subjects. Thus, it is known that adults are interested in learning what is useful and necessary for their progress<sup>(12)</sup>. It should be highlighted that, during care at the NECAE, the patients participated in decisions about modifications needed in the care they were offered.

When analyzing what feelings the patients expressed about the control of their disease, it was found that most of them 34 (62.9%) indicated living normally with their diabetes, and that 27 (50.0%) mentioned good control of their diabetes. This makes us think that, despite the difficulties the patients present to adapt to the treatment according to the algorithms of the SDM protocol, most of them seem to manage to live adequately with their disease.

Moreover, considering the feelings related to their disease, the patients indicated that, before participating in care through the SDM protocol, they did not have the knowledge needed for diabetes self-management, and that their participation favored learning to control their disease. When assessing care offered through the SDM protocol, 44 (81.5%) patients considered it excellent, 6 (11.1%) good, and 4 (7.4%) satisfactory. When assessing patient satisfaction in another care service that used SDM protocol, they also revealed their satisfaction with the care<sup>(13)</sup>.

The following suggestions were given to improve the care offered: the expansion of space,

more professionals; the creation of a voluntary patient commission to visit the ill at home and to organize other Center activities; shorter consultation time per patient; provision of medication offered at Basic Health Units by the Center and establishment of urgency care in case of problems.

Health institutions reveal their increasing concern with user satisfaction. It is observed that health service providers are becoming more involved with patient satisfaction, because there is evidence that this determines treatment success, care quality and patients' return to the health service.

The patient's satisfaction also constitutes a valuable feedback to assess the care offered and the work done by the multiprofessional team. This imposes a constant search to identify the factors that promote the satisfaction of patients attended at health services. The factors related to patients' satisfaction with the health service are translated as confidence, updating, competence, humanity, readiness, punctuality, cordiality and technical-scientific preparation of the multiprofessional team and organization of the work environment<sup>(14-15)</sup>.

For a long time, health services remained distant from the possibility of assessment by users, alleging that they do not have technical knowledge and, therefore, lack preparation to perform the assessment<sup>(15)</sup>. Nowadays, the assessment users

make is used with a certain reserve, as it is influenced by different situations, expectations and antecedents, making the delimitation of criteria for its assessment difficult. Nevertheless, as care processes are complex, it is not enough to know the patients' assessment. There is a need to decompose the care process and identify, in each of its parts, who the users are and what their needs are.

## CONCLUSION

As to the information received during care through SDM, the patients indicated that it attended to their needs, with 59.3% mentioning information related to food, 33.3% to medication and 31.5% to glucose control. Another highly relevant factor refers to the assessment of care, which 81.5% of the patients considered excellent.

Patient satisfaction is a valuable feedback to validate the strategies used and the contents offered in diabetes education programs, to modulate the work dynamics and to provide important elements for permanent education of the multiprofessional team. Acknowledging the difficulties to elaborate user satisfaction measurement instruments, the use of the questionnaire in other studies of this kind is recommended, with a view to comparing the results obtained in different health contexts.

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