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Self-care activities in patients with type 2 Diabetes Mellitus: a cross-sectional study

Atividades de autocuidado em pacientes com Diabetes Mellitus tipo 2: estudo transversal

Actividades de autocuidado en pacientes con diabetes mellitus tipo 2: estudio transversal

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ABSTRACT

Objective: to evaluate self-care activities in patients with type-2 Diabetes Mellitus. **Method:** this cross-sectional study included 40 patients. Two instruments – a sociodemographic questionnaire and a questionnaire on diabetes self-care activities – were applied between January and March 2020. **Results:** the item "Perform specific physical exercise (swimming, walking, etc.)" scored lowest, averaging 0.6 (SD = 1.54) days a week, and "Taking medications as recommended (insulin or pills)" scored highest, with mean 5.1 (SD = 2.74) days a week. 92.5% reported not having smoked cigarettes in the prior seven days. **Conclusion:** self-care activities relating to pharmacological interventions predominated, while non-pharmacological care, including food and physical exercise, was less frequent.

Descriptors: Chronic disease; Diabetes Mellitus, Type 2; Self Care; Nursing.

RESUMO

Objetivo: avaliar as atividades de autocuidado em pacientes com Diabetes Mellitus tipo 2. **Método:** estudo transversal que incluiu 40 pacientes. Aplicou-se 2 instrumentos para coleta de dados: questionário sociodemográfico e questionário de atividades de autocuidado com o diabetes, aplicados entre janeiro e março de 2020. **Resultados:** a menor pontuação foi para o item "Realizar exercício físico específico (nadar, caminhar, etc)", com média 0,6 (DP=1,54) dias por semana, e a maior para o item "Tomar medicamentos conforme recomendados (insulina ou comprimidos)" com média 5,1 (DP=2,74) dias por semana. Quanto ao tabagismo, 92,5% referiram não ter fumado cigarro nos últimos sete dias. **Conclusão:** as atividades de autocuidado prevalentes relacionaram-se as intervenções farmacológicas, enquanto os cuidados não farmacológicos, incluindo a alimentação e realização de exercícios físicos, foram menos frequentes.

Descritores: Doença crônica; Diabetes Mellitus Tipo 2; Autocuidado; Enfermagem.

RESUMEN

Objetivo: evaluar las actividades de autocuidado en pacientes con Diabetes Mellitus tipo 2. **Método:** este estudio transversal incluyó a 40 pacientes. Se aplicaron dos instrumentos, un cuestionario sociodemográfico y un cuestionario sobre actividades de autocuidado de la diabetes, entre enero y marzo de 2020. **Resultados:** el ítem "Realizar ejercicio físico específico (nadar, caminar, etc.)" obtuvo la puntuación más baja, con una media de 0,6 (DE = 1,54) días a la semana, y "Tomar los medicamentos según lo recomendado (insulina o píldoras)" obtuvo la puntuación más alta, con una media de 5,1 (DE = 2,74) días a la semana. El 92,5% informó no haber fumado cigarrillos en los siete días anteriores. **Conclusión:** predominaron las actividades de autocuidado relacionadas con las intervenciones farmacológicas, mientras que la atención no farmacológica, incluida la alimentación y el ejercicio físico, fue menos frecuente.

Descriptores: Enfermedad Crónica; Diabetes Mellitus Tipo 2; Autocuidado; Enfermería.

INTRODUCTION

Chronic diseases are characterized by a long clinical course and, in most cases, by their irreversibility. Thus, they constitute a public health problem, whose persistence over time requires permanent and integral management [1].

Currently, there is an increase in morbidity and mortality, sedentary lifestyle and overweight, redirecting the profile of pathologies and corroborating the persistence of chronic diseases such as Diabetes Mellitus, which stands out for its high worldwide prevalence and high rates of morbidity and mortality. In 2019, 463 million people had diabetes and this number is projected to reach 578 million by 2030 and 700 million by 2045. In Central and South America, an estimated 40 million individuals will have diabetes in 2030 [1-2].

Type 2 Diabetes Mellitus is characterized as a chronic disease, whose physiopathogeny includes modifiable and non-modifiable control factors. Among the modifiable ones, self-care activities stand out, including changes in lifestyle [3].

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In summary, the lack of activities related to drug and non-drug treatment aggravates the condition and favors the onset of complications[4].

In this sense, we highlight the importance of self-care activities that include changes in life habits and metabolic control, such as dietary reeducation, introduction of physical activity, care for the body and mind, reduction of harms related to alcohol or tobacco use, and adequate use of drug therapy with oral hypoglycemic agents associated or not with the use of insulin[5,6].

Thus, studies that allow identifying the self-care activities of patients with this disease are indispensable, mainly because they enable the planning and implementation of actions that favor this process, focusing on health promotion and on the prevention of complications, in addition to promoting quality of life and reducing costs to the health system.

In view of the above, the question is: "What are the main difficulties related to self-care faced by patients with type 2 Diabetes Mellitus?" In this sense, the present study seeks to contribute to the literature and present an analysis of the characterization of these users, describing the clinical and therapeutic sociodemographic profile and the self-care activities of users with diabetes mellitus in a primary health care service.

It is expected with this study to identify the main factors, doubts and difficulties faced by individuals affected by Diabetes Mellitus, thus performing a situational diagnosis, with the intention of assisting and promoting self-care and consequently improving quality of life. Thus, the aim of this study was to evaluate self-care activities in patients with type 2 Diabetes Mellitus.

METHOD

This is a descriptive, cross-sectional and quantitative study conducted between January and March 2020.

The population consisted of patients with type 2 diabetes followed-up in a Family Health Strategy Unit in a municipality in the inland of São Paulo, Brazil. Patients treated at the unit between January and March 2020 were considered for the construction of the sample, i.e., 58 patients were invited to participate. Of these, 40 agreed to participate, constituting the sample of this study.

The inclusion criteria were the following: being 18 years of age or older, having type 2 Diabetes Mellitus and having verbal communication skills, i.e., being able to express answers consistent with the questions asked. Users with neurological and cognitive impairment were excluded. Initially, the participants were invited to participate, clarifying the objectives of the research and presenting the data collection instruments.

Data collection occurred in a reserved place by means of two instruments: Sociodemographic Questionnaire and the Diabetes Self-Care Questionnaire (DSCQ)[7].

The Sociodemographic Questionnaire was used to characterize the participants according to the following variables: age, gender, schooling, number of children, and marital or affective status. For the evaluation of self-care, the Diabetes Self-Care Questionnaire (DSCQ) was used[7].

It is a self-applicable instrument, which has been translated, adapted and validated to the Brazilian culture. The DSCQ evaluates self-care activities from 07 dimensions and 17 items, namely: general diet (two items), specific diet (three items), physical activity (two items), blood glucose monitoring (two items), foot care (three items), use of medications (two items) and smoking (three items)[7].

Each item is scored on a "Likert-type" scale, whose score ranges from zero to 7 points, where zero corresponds to the least desirable situation and 7 the most desirable, except in the "specific diet" dimension, where the values are inverted. Smoking is evaluated in isolation, according to the mean number of cigarettes smoked per day. The result evaluates the frequency with which the patient performed the activities, so 0 represents that the participant did not perform any activity in the last seven days. On the other hand, a score of 7 means that the patient performed the activities daily for the last seven days[7].

The data were tabulated by the Excel Program, version 2010, and submitted to descriptive statistical analysis in an Excel 2010 spreadsheet.

The research was approved by the Research Ethics Committee of The Paulista University through edict 3,767,067 and CAAE: 25673419.6.0000.5512. All the participants signed the Free and Informed Consent Form, in line with Resolution 466/12 of the National Health Council on research involving human beings.

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RESULTS

Regarding the characterization of the sample, Table 1 shows the distribution of the surveyed variables.

TABLE 1: Distribution of the participants according to the sociodemographic characteristics. Lençóis Paulista, São Paulo, Brazil. 2020.

Variables		n	%
Gender	Male	11	27.5
	Female	29	72.5
Age Group	20 - 30 years old	1	2.5
	31 - 40 years old	1	2.5
	41 - 50 years old	6	15.0
	51 - 60 years old	7	17.5
	>60 years old	25	62.5
Schooling	Illiterate	8	20.0
	Incomplete Elementary School	14	35.0
	Complete Elementary School	4	10.0
	Incomplete High School	1	2.5
	Complete High School	11	27.5
Time of Treatment	1 - 5 years	12	30.0
	6 - 10 years	11	27.5
	11 - 15 years	3	7.5
	>15 years old	14	35.0
Total		40	100.0

Female participants prevailed (72.5%; n=29), aged over 60 years old (62.5%; n=25), with incomplete elementary education (35.0%; n=14) and undertreated/follow-up for more than 15 years (35.0%; n=14).

Of the participants, 85% (n=34) presented another disease in addition to Diabetes Mellitus, with predominance of arterial hypertension (47.5%; n=19).

The data investigated with the DSCQ are shown in Table 2.

TABLE 2: Evaluation of the items of the Diabetes Self-Care Questionnaire in the sample studied. Lençóis Paulista, São Paulo, Brazil. 2020.

Dimensions of the Diabetes Self-Care Questionnaire	Mean (Days)	Standard Deviation
1. General Diet		
1.1 Following a healthy diet	1,9	2,39
1.2 Following the diet guidance given by a professional	1,4	2,43
2. Specific Diet		
2.1 Eating five or more servings of fruits and/or vegetables	3,8	2,52
2.2 Eating red meat and/or whole milk derivatives	2,9	1,96
2.3 Eating sweets	3,2	2,29
3. Physical Activity		
3.1 Performing physical activity for at least 30 minutes	1,3	2,43
3.2 Performing some specific physical exercise (swimming, walking, etc.)	0,6	1,54
4. Blood Glucose Monitoring		
4.1 Evaluating blood sugar	2,8	2,93
4.2 Evaluating blood sugar the recommended number of times	1,6	2,45
5. Foot Care		
5.1 Examining the feet	3,1	3,04
5.2 Examining inside shoes before putting them on	2,3	2,89
5.3 Drying the spaces between the toes after washing them	4,9	2,81
6. Medication		
6.1 Taking medications as recommended (insulin or tablets)	5,1	2,74
6.2 Taking insulin recommended	4,8	2,28
6.3 Taking the tablets as recommended	5,7	2,50

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Regarding the dimensions that make up the DSCQ, the lowest score was for the "Performing specific physical exercise (swimming, walking, etc.)" item, with a mean of 0.6 (SD=1.54) days a week, while the highest score was related to the "Taking medications as recommended (insulin or tablets)" item, with a mean of 5.1 (SD=2.74) days a week.

It was also observed that other variables were low-scoring, including: "Performing physical activity for at least 30 minutes" (mean 1.3; SD=2.43), "Following the dietary orientation given by a professional" (mean 1.4; SD=2.43), "Evaluating blood sugar the recommended number of times" (mean 1.6; SD2.45) and "Following a Healthy Diet" (mean 1.9; SD=2.39).

Table 3 shows data related to smoking in the last seven days.

TABLE 3: Smoking habits of the sample under study, according to the items of the Diabetes Self-Care Questionnaire. Lençóis Paulista, São Paulo, Brazil. 2020.

Diabetes Self-Care Questionnaire - Smoking	n	%
Did you smoke in the last 7 days?		
No	37	92.5
Yes	3	7.5

Regarding smoking, 92.5% (n=37) of the participants reported not having smoked cigarettes in the seven days prior to data collection. However, 7.5% (n=3) answered affirmatively, smoking between 2 and 15 cigarettes a day (mean 9.6). When asked about the last time they had smoked, they answered "today".

DISCUSSION

In this study, the characterization of the participants was evidenced, an elderly population, with prevalence of women, with incomplete elementary school, mean disease time greater than 15 years, with diseases associated with Type 2 Diabetes Mellitus, with emphasis on Arterial Hypertension.

Different studies indicate that women, because they seek the health services more, are diagnosed more frequently in relation to men[8-10].

Prevalence of older adults among the participants was observed, according to the literature[10,11]. The prevalence in the older adults is explained by the fact that Diabetes Mellitus is a chronic disease and, consequently, affects this type of population more, especially in those over 65 years of age[9].

The low level of schooling found in this study can result in a condition that favors inadequate performance of the therapeutic plan by limiting access to information and to understanding the complex mechanisms of the disease and treatment, which can increase health risks[12,13].

Another aspect highlighted was related to the time in which the participants presented diabetes mellitus. In this sense, one study demonstrated that the disease period is a relevant variable, since the longer the time of diagnosis, the greater the risk of developing complications resulting from unsatisfactory metabolic control[14].

As an associated comorbidity, systemic arterial hypertension prevailed. A study conducted in 23 hospital clinics in England, Scotland and Northern Ireland involving 4,801 individuals with type 2 diabetes showed a significant association between the incidence of macro- and micro-vascular complications and increased blood pressure in patients with diabetes[15].

This morbidity constitutes a risk of cardiovascular disease, since heart disease ranks second among the macro-vascular complications and is strongly associated with mortality and morbidity of diabetic people[16].

Regarding self-care activities, pharmacological practices were highlighted. On the other hand, physical activities had little expressive scores. This result indicates that the greatest concern of the patients is related to drug treatment. It also demonstrates that, for health professionals, managing the therapeutic regimen and complying with the main objective of obtaining adequate glycemic levels and reducing complications is of greater relevance[16,17].

It is noteworthy that patients with Type 2 Diabetes Mellitus are at increased risk of developing micro- and macro-vascular complications and comorbidities, which can only be reduced if the patients actively participate in the management of the disease and perform self-care activities satisfactorily[18].

Regarding the behavioral attitudes of self-care in the participants of this study, the low rates were related to healthy eating, glycaemia assessment and foot care, even knowing the importance of these actions. Despite the

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knowledge about the benefits of performing these behaviors (creating healthy choices, reducing body fat, prevention/control of obesity, low circulating insulin levels and prevention of diabetic foot), the patients still have great difficulty in adding new habits to their routine[19].

Considering that type 2 Diabetes Mellitus presents itself in a phase of life in which the individual already has very consolidated habits, it is relevant to promote discussions and implement strategies that assertively favor disease control[20].

A worrisome factor was the low performance of capillary glucose monitoring. It is known that chronic hyperglycemia is one of the main causes of the development of systemic complications[21].

A similar result was observed in another study, which, when evaluating 25 individuals with type 2 Diabetes Mellitus, identified that few performed the capillary glucose test as a way to monitor blood glucose. However, it is known that, to prevent hyperglycemia, healthy habits should be routinely incorporated, such as: diet, physical exercises, and correct use of medications[22].

The need is also emphasized to establish a routine daily foot evaluation in individuals with diabetes, considering that this measure minimizes several problems, such as: infection, ulceration, destruction of soft tissues, associated with sensorineural alterations and peripheral arterial disease[23]. Inappropriate habits with the feet can trigger the formation of ulcerations that, and in more severe cases, result in amputation of the limb.

In this sense, a research study that included 171 patients with diabetes evaluated the knowledge about preventive measures and self-care with the feet, with participants who were exclusively older adults with low schooling, identified that the participants had a low level of knowledge about preventive measures and did not know important habits of self-care, such as: use of appropriate footwear, evaluation of the feet routinely, and non-hydration between the toes[24].

On the other hand, a positive aspect identified in this study was related to the fact that the vast majority (92.5%) of the participants declared themselves non-smokers. In fact, this seems to be a trend, because a study conducted in Santa Catarina identified the decrease and low prevalence of smokers among patients with diabetes[25]. It is known that smoking increases visceral fat by reducing insulin sensitivity and increasing glycemic levels[26].

In summary, there was an important deficit regarding self-care activities in the patients with diabetes participating in this study, pointing out that this is an area lacking interventions by the health professionals; it is known that older adult patients with diabetes have low levels of self-care and difficulties in managing their symptoms. In addition, they have difficulty in adhering to self-care behaviors continuously[27].

In this sense, the ideal is that the content of the information is transmitted in a simplified way, but that it also has an impact on the life of the population, motivating them to learn about the disease and to actively assume their role.

Thus, health professionals, especially Nursing professionals, are expected to show efforts and involvement to disseminate and monitor interventions aimed at treatment and self-care, always considering the cultural and individual aspects of their patients.

Study limitations

The limitation of this study refers to its cross-sectional design that makes it impossible to establish cause-and-effect relationships. In addition, it should be considered that the sample size limits the generalization of the results. Thus, further research studies on this theme with more robust samples and with a prospective design are necessary, which allow consolidating the findings of this study.

CONCLUSION

It was verified that the prevalent self-care activities were related to pharmacological interventions, while non-pharmacological care, such as feeding and physical exercise, was less frequent. In view of the results, the planning and implementation of interventions aimed at promoting or stimulating non-pharmacological care becomes essential.

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