Attitudes towards self-care in type 2 diabetes *mellitus* in primary care

Atitudes para o autocuidado em diabetes *mellitus* tipo 2 na Atenção Primária

Actitudes de autocuidado en *diabetes mellitus* tipo 2 en la Atención Primaria

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Abstract

Objective: To analyze attitudes towards self-care of people with type 2 diabetes in Primary Care.

Methods: This is a descriptive-exploratory study, conducted with 18 people with type 2 diabetes linked to two Basic Health Units, who participated in interviews and focus groups. Text content was processed using the IRaMuTeQ software. To assess the association between categorical variables, the chi-square test was used. For all analyses, a significance level of 5% was considered.

Results: The findings presented a semantic class associated with attitudes towards self-care in type 2 diabetes mellitus, and the other four subclasses, with complementary, decreasing and logical ideas, referred to emotional, behavioral, cognitive and self-care aspects. An association was observed between the subclasses and the variables sex, age and time since diagnosis.

Conclusion: Emotional and cognitive aspects must be taken into account, together with the variables sex, age and time of diagnosis, for modifying attitudes towards self-care in type 2 diabetes.

Resumo

Objetivo: Analisar as atitudes para o autocuidado de pessoas com diabetes tipo 2 na Atenção Primária.

Métodos: Estudo descritivo-exploratório, realizado com 18 pessoas com diabetes tipo 2 vinculadas a duas Unidades Básicas de Saúde, que participaram de entrevistas e grupos focais. Os conteúdos textuais foram processados no *software* IRaMuTeQ. Para avaliar a associação entre as variáveis categóricas, foi utilizado o teste qui-quadrado. Para todas as análises, foi considerado um nível de significância de 5%.

Resultados: Os achados apresentaram uma classe semântica associada às atitudes para o autocuidado em *diabetes mellitus* tipo 2, e as outras quatro subclasses, com ideias complementares, decrescentes e lógicas, referiram-se aos aspectos emocionais, comportamentais, cognitivos e do autocuidado. Observou-se associação entre as subclasses e as variáveis sexo, idade e tempo diagnóstico.

Conclusão: Devem-se levar em consideração os aspectos emocionais e cognitivos, juntamente das variáveis sexo, idade e tempo diagnóstico, para a modificação das atitudes para o autocuidado em diabetes tipo 2.

Resumen

Objetivo: Analizar las actitudes de autocuidado de personas con diabetes tipo 2 en la Atención Primaria.

Métodos: Estudio descriptivo-exploratorio, realizado con 18 personas con diabetes tipo 2 vinculadas a dos Unidades Básicas de Salud, que participaron en entrevistas y grupos focales. Los contenidos textuales fueron procesados en el software IRaMuTeQ. Para evaluar la relación entre las variables categóricas se utilizó la prueba χ^2 de Pearson. Se consideró un nivel de significación de 5 % para todos los análisis.

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Conflicts of interest: nothing to declare.

Resultados: Los resultados presentaron una clase semántica relacionada con las actitudes de autocuidado en diabetes *mellitus* tipo 2, y las otras cuatro subclases, con ideas complementarias, decrecientes y lógicas, estuvieron asociadas a los aspectos emocionales, de comportamiento, cognitivos y de autocuidado. Se observó una relación entre las subclases y las variables sexo, edad y tiempo de diagnóstico.

Conclusión: Deben tenerse en cuenta los aspectos emocionales y cognitivos, junto con las variables sexo, edad y tiempo de diagnóstico, para modificar las actitudes de autocuidado en diabetes tipo 2.

Introduction

Type 2 diabetes mellitus is one of the main worldwide problems for the public health system, due to its upward growth and the high degree of morbidity and mortality.[1] It has an impact on psychological aspects, when in an uncontrolled condition, and can cause damage to the emotional health of people who deal with chronicity on a daily basis, resulting in a decrease in self-care practices.[2]

Attitudes towards self-care are emotional reactions that can interfere in the health condition positively or negatively. [3,4] For example, sadness, anger and fear lead to a mood that interferes with self-care practices, related to physical inactivity, loss of interest in food control and decreased adherence medications.[5,6]

A study on the effectiveness of a behavioral program in diabetes showed that approaches focused on emotion and cognition affected behavioral changes, generating psychological and physical benefits.[2] This suggests that attitudes go beyond the emotional aspect, and may involve cognitive and behavioral aspects, which should be considered together, in order to better live with the disease and maintain self-care.[4]

Understanding the multifactorial nature of attitudes is essential for self-care promotion.[7,8] Attitudes are composed of affective (emotions), behavioral and cognitive (beliefs),[9] determinants that may be related to sociodemographic factors.[8] The joint adjustment of these determinants presupposes the behavior of people with type 2 diabetes mellitus for self-care, favoring the development of positive attitudes.

Given the magnitude of the problem, knowing people's attitudes towards self-care in relation to type 2 diabetes mellitus is essential to recognize difficulties and the best form of emotional adjustment.[6] Behavioral programs in type 2 diabetes in primary care should seek to value not only self-care practices, but also attitudes, as they can be predictors of behavioral changes.[2] It is emphasized that emotions must be worked on in groups and individually, respecting the context of life of people with type 2 diabetes mellitus.[2]

In this regard, identifying the relationship between sociodemographic factors and attitudes towards self-care is essential to promote a behavioral program in type 2 diabetes in Primary Care to guide self-care practices.

Thus, this study aimed to analyze the attitudes towards self-care of people with type 2 diabetes in Primary Care.

Methods

This is a descriptive-exploratory study, carried out with 18 people with type 2 diabetes mellitus of both sexes, aged 40 to 80 years, linked to two Basic Health Units in eastern Belo Horizonte (MG), from August to September 2019. Participants were included in the study for participating in the behavioral program to guide self-care practices in diabetes and showing interest in education for self-care practices.

Participants from 40 to 80 years old (since type 2 diabetes mellitus affects this age group more) and presenting chronic complications (defined as renal failure, blindness, limb amputation, among others) were included.[10] Participants with a hearing impairment observed in the first meeting of the behavioral program and not being able to make phone calls, after three attempts to call to effect the invitation to participate in the focus group, were excluded.

A script was developed to collect sociodemographic information (age, sex, income and marital status) from each participant, as well as time of diagnosis, through face-to-face interviews before the focus group. To summarize the collected data, the calculation of relative frequency, expressed as a percentage, was used.

Two focus groups were carried out,[11] , one in each Basic Health Unit, coordinated by a nurse and supported by a nutritionist, who recorded non-verbal communications, attitudes and impressions in a field diary of participants. Each focus group was constituted in a homogeneous manner, with the participation of eight to ten people with type 2 diabetes mellitus and duration of 1 hour.

Initially, a presentation and warm-up dynamic was used, in which participants were encouraged to reflect on themselves and to express their emotions related to self-care. Then, the second step of the behavior change protocol[12] was applied to guide the discussion of attitudes towards self-care in diabetes, made with the guiding questions: How do you feel about this situation of having to take care of your health (taking care and controlling the disease)? Do you feel [insert the feelings exposed by the person] why? The purpose of these two questions was to value the emotional aspects to lead people to the root of the problem, in addition to assisting in the development of strategies that contribute to the adoption of positive attitudes towards self-care.

Participants' testimonies were recorded and transcribed, and the textual contents were processed using the *Interface de R pour les Analyzes Multidimensionnelles de Textes et de Questionnaires* (IRaMuTeQ).[13]

Before processing by IRaMuTeQ, the testimonies interpreted by the authors were analyzed through content analysis adapted by Bardin,[14] according to the Descending Hierarchical Classification. Text content was coded and processed by the program, in which the distribution of vocabulary by the subclasses was made by the similarity of the vocabulary of the text segments. In the Descending Hierarchical Classification, text segments and vocabulary were correlated, forming a hierarchical scheme between the class and the subclasses. The subclasses' origin is due to the retention of, at least, 70% of text segments with words similar to each other and, at the same time, with different vocabulary from the segments of other subclasses.[13]

The relationship between the class and the semantic subclasses was defined by the attribution of meanings originated from listening and sharing opinions, values, ideas and preferences among participants regarding the modification of attitudes towards self-care, under the intervention of emotional aspects and feelings, gender, age and time of diagnosis.

After the simple Descending Hierarchical Classification, the words whose frequency was repeated in the text content were considered for insertion in each subclass. The formation of subclasses took place by means of processed text segments that presented homogeneous words. For the classification and relation of subclasses, text segments were grouped according to work occurrences, which resulted in the creation of a dictionary with reduced forms.[13,15,16]

Pearson's chi-square test was used to assess the association between words and their respective subclass, as well as between categorical variables within each subclass (5% significance level).[16]

The study met the standards of ethics in research involving human beings, according to Resolution 466/12. The project was submitted to Research Ethics Committee, with Opinion 4,249,989.

Results

Of the 18 (100%) people with type 2 diabetes mellitus interviewed, the majority were female (61%), married (67%), with family income of one to two minimum wages per month (77%). The mean age was 66 years (standard deviation of 10 years). Regarding the time since diagnosis, 61% reported having diabetes for more than 10 years, while 17% lived with the disease for up to 5 years.

Regarding the testimonials, the textual content processed in the program presented 98 text segments with a potential analysis of a total of 126, which indicates a 77.6% level of use. From the reading and interpretation of the textual corpus, through an analysis of word frequency, the authors established a class, referring to attitudes towards self-care in type 2 diabetes mellitus, and four subclasses, with complementary, logical and decreasing ideas: (4) Emotional aspect; (3) Behavioral; (2) Cognitive; (1) Self-care.

Data were organized in a dendrogram, which illustrated the relations of proximity and distance between the subclasses. Hierarchically, there were two major levels of partition. The first distinguished subclasses 1, 2 and 3, on the one hand, while the second separated subclass 4 from the others. Thus, it was expected that the textual content belonging to subclasses 1, 2 and 3 would be more similar in terms of vocabulary. Moreover, as it is the most numerous subclass, involving 35.5% of the textual corpus, it was possible to intuit that subclass 3 was the most heterogeneous of the set.

A significant association was identified between the occurrence of words and the variables gender, age and time of diagnosis only within the subclasses (Figure 1).

The adoption of positive or negative attitudes, related to emotion, was observed in the first level of the partition in subclass 4, which, in turn, permeated the second level of partition, referring to subclasses 3, 2 and 1, that is, in the aspect behavioral and, to a lesser extent, the cognitive aspect and self-care of people with type 2 diabetes mellitus. This connection between the subclasses suggested that the multifactorial construction of attitudes involved the four aspects, and that emotion could compromise the readiness for self-care.

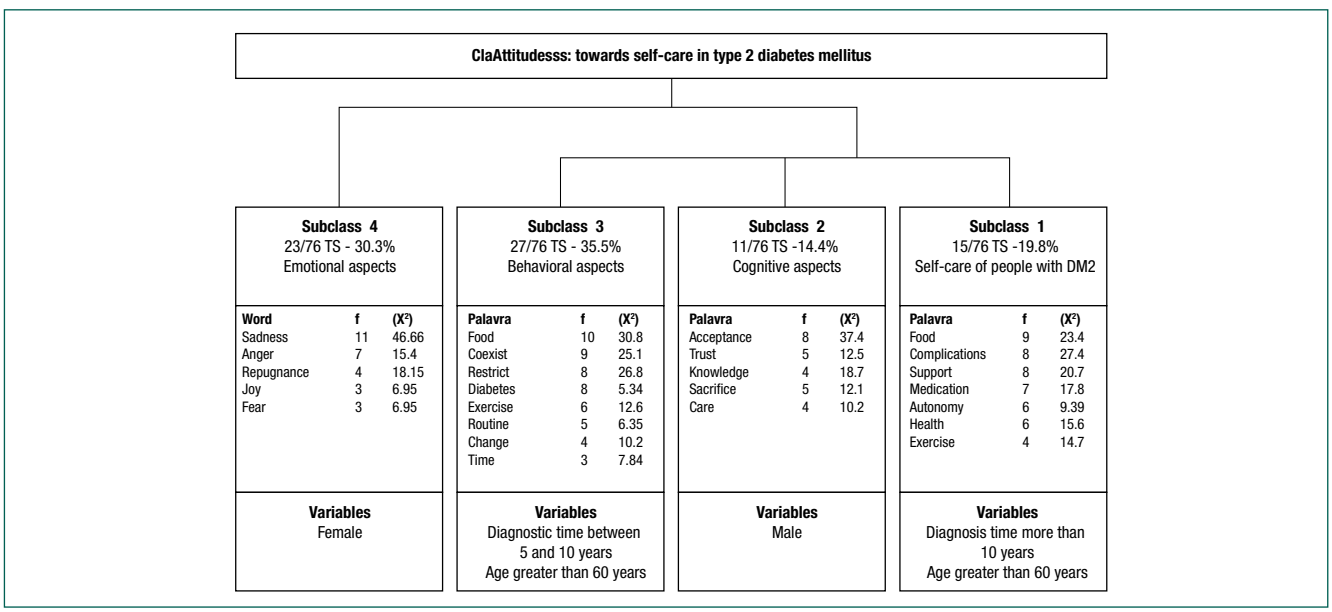
Emotional aspects

The textual contents of this subclass portrayed the positive and negative emotions that were presented by people with female diabetes. Although it was not the significant subclass of the group (30.3% of text segments), it was the one that stood out as to the words and the contents of the text segments represented by the interference on the other subclasses.

Based on the words and ideas found in the text segments, the emotional aspect favored reflection on self-care attitudes related to the sadness resulting from bad eating habits, such as the consumption of pasta, sweets, fats and sugary drinks. Sadness was also linked to the understanding that the effort in restrictive eating and physical activity did not represent a cure for type 2 diabetes mellitus - only control.

Anger was pointed out by people as a result of the feeling that the disease controlled their lives, imposing restrictions on pleasurable foods, such as sweets consumed on festive occasions. It was also related to the use of medications several times a day.

Other emotional reactions pointed out were disgust, resistance to change in behavior, and fear of complications, such as diabetic foot, retinopathy, neuropathy and kidney disease. Fear was also linked to the ability to perform self-care related to food,



TS - text segment; f - frequency

Figure 1. Dendrogram of the class and subclasses of attitudes towards self-care in *diabetes mellitus* type 2

physical activity and the correct use of medications. It was also evident the joy of awakening positive attitudes towards self-care.

Behavioral aspects

This subclass involved 35.5% of text segments, and its content was expressive among participants with time between 5 and 10 years of age and over 60 years of age. The significant words highlighted the need for behavioral change to achieve readiness for self-care, associated with healthy eating and physical activity. Food restriction was considered the main difficulty encountered, followed by physical activity.

It was found that the behaviors adopted for the management of type 2 diabetes mellitus, added to cognitive aspects, were motivated by the emotional aspects verified in the first level of the partition, especially sadness and anger, directly interfering in self-care practices, which is represented by the indirect link between subclasses 4 and 3 and direct between subclasses 3, 2 and 1.

It was noticed that the change in behavior is a slow process that happens as the improvement in health is perceived, which, accompanied by positive emotions, favors the increase of confidence verified in the cognitive aspect.

Cognitive aspects

This subclass was made up of 14.4% of the text segments linked to the male gender. It concerned the beliefs, information, ideas and knowledge that people reported regarding the chronic condition and its management. It was observed that the acceptance of the disease and the confidence in carrying out self-care practices referred to the well-being and the possibility of new ways, contributing to the motivation and responsibility to take care of their own health, which was evidenced by the direct link between this subclass and the self-care subclass.

Self-care for people with type 2 diabetes *mellitus*

The self-care subclass, consisting of 19.8% of the segments, was composed of participants' statements with a diagnosis time greater than 10 years and an age above 60 years. It was indirectly linked to the subclass of the emotional aspect and directly to the subclasses of behavioral and cognitive aspects, showing that the attitudes that the person adopted involved the emotional, behavioral and cognitive aspects, with repercussions on self-care.

The sentences related to this subclass showed that self-care regarding healthy eating provided new self-care practices, such as the correct use of medications, contributing to a positive attitude in the management of diabetes. Family support decreased fear and insecurity regarding complications and was representative for the acceptance of the chronic condition, as pointed out in the subclass of the cognitive aspect.

Discussion

Participants' sociodemographic characteristics were similar to those of other studies carried out with people with type 2 diabetes mellitus, such as the predominance of females,[8,17] with partner,[18] age over 50 years,[9,16] low income and diagnostic time over 10 years.[7,19]

In this study, an analysis of attitudes towards self-care for people with type 2 diabetes mellitus showed the four subclasses that determined emotional, behavioral, cognitive and self-care aspects of people with type 2 diabetes mellitus. Understanding each of these aspects and the related sociodemographic factors is essential for understanding the attitudes in the different contexts, overcoming the adversities imposed by the condition, in search of adherence to self-care.[7,8]

Corroborating the findings of this research, a study on the knowledge of attitudes and their influence on adherence to strategies for self-care of people with type 2 diabetes mellitus revealed attitudes regarding the cognitive (knowledge and belief), behavioral (behavior and self-care) and affective components (emotional state).[4]

Regarding the subclasses, the emotional aspects interfered in the behavioral, cognitive and self-care aspects, through different emotions, mainly sadness and anger. Emotions arose, considering the need for specific care, becoming evident in female people

who were not prepared to live with the limitations associated with type 2 diabetes mellitus.

This finding was similar to that of previous studies. However, there was a predominance of emotional imbalance in females. It is perceived that the effects of work inactivity due to age tend to potentiate the feeling of unproductivity, adding to the hopelessness and fear of the ability to carry out self-care practices. Added to this are the biological differences between the sexes, with regard to emotional reactions.[6,8,20]

Sadness, evident in the subclass of emotional aspects, was associated with restrictions on food control, due to harmful habits and the loss of the previous "I". It is understood that identifying old habits considered destructive and recognizing the difference between how to live and how to live seem to be processes that are difficult to overcome.[5,21]

The literature points out that sadness is due to discouragement to carry out the control, treatment and prevention of complications and to the understanding that the effort does not represent a cure in itself.[22] However, it was observed that sadness tends to disappear as the acceptance of diabetes appears, evidenced in the cognitive aspect.

Anger, another emotional component, showed that the restriction of freedom to eat as and when desired and the use of medication several times a day brought insecurity and a desolate perspective to living with diabetes, which seems to subtract the pleasure of living.[20,23] The restrictions imposed take away the freedom to do what one feels like.[24]

In the behavioral aspect subclass, the diagnostic time between 5 and 10 years and the age above 60 years favored behavior change, associated with healthy eating habits and the practice of physical activity, with consequent positive attitudes for self-care, since people demonstrated seriousness in living with diabetes.[25] However, there was resistance to the construction of these behaviors, which may be related to emotional difficulties in the initial processes for accepting diabetes.[22]

In line with these results, a study shows that the time since diagnosis can have a significant impact on the emotions of people with type 2 diabetes mellitus, considering that attitudes can be modified over the years, becoming positive in each phase of life.[26] However, the duration of diabetes and old age are factors for the appearance of complications, leading to little motivation for self-care and dependence on the performance of activities, which can contribute to a negative attitude regarding behavior.[8]

As for the cognitive aspect, it was observed that the acceptance of diabetes constituted an adaptation process that favored the coping with limitations, especially following a healthy eating plan and evoking emotions, such as joy.[27]

It is noteworthy that the way each person lives with type 2 diabetes mellitus depends on individual experiences, making it necessary, many times, to deconstruct beliefs, values and customs related to the aspects of daily life, hitherto accepted, in order to achieve an emotional, social and physiological adjustment during treatment.[28]

There was also an increase in confidence as the efforts came to fruition, accompanied by the feeling of regaining control of life and the return of freedom to make safe and comfortable choices.[3,21] Positive emotions result from the perception of improved health and the acquisition of self-care skills, making the person with type 2 diabetes mellitus see new possibilities in life.[5,29]

Being a man was a protective factor to the negative attitude towards self-care, verified in the cognitive aspect. This suggests that male people were better able to deal with the deconstruction of beliefs and were more confident in the treatment. This result corroborates a recent study on sociodemographic attitudes and factors related to self-care, which pointed out that being a man was significantly associated with psychological adaptation, making them have positive attitudes towards type 2 diabetes mellitus.[18]

Regarding the self-care subclass, the time of diagnosis greater than 10 years and the age above 60 years were facilitating factors for the development of self-care, since people with these characteristics demonstrated to be more connected with their needs and goals.[18] This indicates that people have preserved cognitive capacity, despite their age. However, the literature shows that age is considered an impeding factor for the acquisition of self-care

skills, since, with advancing age, cognitive and motor declines occur.[18]

Family support, observed in the self-care subclass, proved to be important for the acceptance of diabetes, recognition of dietary restrictions and the joint construction of self-care practices.[30] Consistently with these results, authors reported that people with type 2 diabetes mellitus, who had support, adhered to healthy eating 1.27 times more than those who did not.[31]

Based on this study, it is understood that attitudes interfere with the propensity of people with type 2 diabetes mellitus to adopt certain behaviors for self-care.[3] However, ignoring the emotional context of attitudes implies not guaranteeing adequate assistance to the needs of each one. The positive attitude towards self-care can be an illusory reality as long as there is no joint adjustment of emotional, behavioral, cognitive and self-care aspects.[2-4]

It is considered as a study limitation the difficulties of attendance of users to the focus group meetings, which, for the most part, were related to the household chores of housewives and consultations scheduled at the time of the meeting. Difficulties related to participants can also be mentioned, such as the lack of assessment of the real cognitive degree and the emotional state of people affected by personal problems, which means that the findings reflect the situation of a limited portion of the population, restricting the possibility of generalization of results.

Conclusion

This study shows the importance of taking into account the emotional and cognitive aspects, together with the variables sex, age and time of diagnosis, for the modification of attitudes towards self-care in type 2 diabetes.

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Collaborations

Nunes LB, Santos JC, Reis IA and Torres HC declare that they contributed to the design of the project, data analysis and interpretation, the relevant critical review of intellectual content and approval of the final version to be published.

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