







ORIGINAL ARTICLE

EVALUATION OF THE EMOTIONAL ASPECTS AND SELF-CARE OF ELDERLY PEOPLE WITH DIABETES MELLITUS

HIGHLIGHTS

1. They have a clinical profile prone to complications associated with diabetes.
2. The majority had a low level of emotional distress.
3. Self-care evaluation was considered desirable.
4. Emotional condition is a determining factor for the self-care.

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ABSTRACT

Objective: To evaluate the emotional aspects and self-care of elderly people with Diabetes Mellitus. **Method:** a descriptive, exploratory, and quantitative study with 105 elderly people from an outpatient clinic in a hospital located in the city of Belém-Pará, Brazil, carried out between July and September 2022. The following questionnaires were used: sociodemographic, economic, and clinical data; problem areas in Diabetes; and Diabetes self-care activities. The data was analyzed using descriptive statistics (frequency and percentage) and inferential analysis using the following tests: Chi-square, and the G-adherence test. **Results:** low emotional distress was found in items: nine ($p = 0.0001$), ten to twenty ($p < 0.0001$), and good adherence to self-care in the domains of general nutrition ($p < 0.0001$), specific nutrition ($p < 0.0001$), foot care and medication ($p < 0.0001$). **Conclusion:** The findings can be linked to adequate guidance on daily care, contributing to the perception of the emotional condition and its relationship with self-care.

KEYWORDS: Elderly; Diabetes Mellitus; Surveys and Questionnaires; Self-care; Mental Health.

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INTRODUCTION

The growth of the elderly population is a global reality, with significant projections for the coming years. According to the World Health Organization, by 2050, one in six people will be over 65, corresponding to 16% of the population. In addition, the number of people aged 80 or over will triple, from 143 million in 2019 to 426 million in 2050¹.

With the increase in the proportion of elderly people, there is a higher prevalence of chronic non-communicable diseases, such as Diabetes Mellitus (DM), considered one of the leading health problems today. In Brazil, there are approximately 16 million people with DM, an increase of 61.8% in the last 10 years, with the elderly population, especially in the 65 to 74 age group, accounting for 19.9%².

DM in the elderly is related to a higher risk of complications due to the process of physiological decline, with more hospitalizations, mortality, association with other comorbidities, and especially with significant geriatric syndromes, and it is essential to highlight the damage to functional capacity, autonomy, and quality of life (QoL). These changes can compromise patients' quality of life, emotional aspects, and capacity for self-care if these parameters are not adequately investigated and monitored, making it difficult for them to cope, adhere to the necessary habits, reduce complications, and look at their health condition⁵. Limiting disease, people with DM face essential lifestyle changes, such as changes in eating habits and adherence to restrictive therapeutic regimens.³⁻⁴

These changes can compromise patients' quality of life, emotional aspects, and capacity for self-care if these parameters are not adequately investigated and monitored, making it difficult for them to cope, adhere to the necessary habits, reduce complications, and look at their health condition⁵.

These conditions can cause negative manifestations in terms of the emotional aspect and self-care of the elderly due to the complexity of DM and the constant treatment, generating frustrations due to the reduction in personal autonomy, worries, and fears about other serious problems resulting from the evolution of the disease. These trigger feelings of insecurity, helplessness, and anxiety, among others, which in turn can cause severe issues with adherence to treatment⁶.

Emotional changes can be one factor that makes it challenging to control glycemic levels and lead to hyperglycemia due to the hormones produced in this condition. It damages interpersonal relationships, causes social isolation, a reduction in quality of life, and limitations in self-care due to the association with aspects involving difficulty relaxing, insomnia, irritability, and impatience⁷.

Considering that DM can cause complications that compromise not only the physical aspect but also the psychological aspect of the patient, the aim is to assess the emotional elements and self-care of elderly people with Diabetes Mellitus.

METHOD

This is a descriptive, exploratory study, with a quantitative approach, carried out with 105 people with DM seen at the endocrinology outpatient clinic of a reference University Hospital in the city of Belém, Pará, Brazil, between July and September 2022.

The endocrinology outpatient clinic receives the largest number of people with DM for follow-up at the João de Barros Barreto Hospital and is a reference in Diabetes Mellitus. A non-probabilistic sample was used, selected for convenience, with the justification that, at the time of the research, there was a reduced monthly number of consultations due to the vacation period of the professionals involved in the service.

The study included elderly people aged 60 or over, of both genders, diagnosed with DM at least six months previously and seen at the hospital's endocrinology outpatient clinic. Elderly people who were unable to participate for any reason during data collection, such as problems understanding the study questions or not understanding the instruments, were excluded.

Three instruments were used to collect the data: I - Sociodemographic, economic, and clinical data identification form; II - Brazilian version of the PAID (Problem Areas in Diabetes, in Portuguese) scale (B-PAID); and III - Diabetes self-care activities questionnaire (QAD, in Portuguese).

The B-PAID is a questionnaire made up of 20 questions that focus on aspects related to living with DM and its treatment, including guilt, anger, depression, worry, and fear. It produces a total score ranging from 0-100 and uses a five-point scale ranging from 0 to 4, where zero represents no problem and four that there is a serious problem. The total score of 0-100 is achieved by the sum of the answers multiplied by 1.25. A high score indicates a high level of emotional distress⁸.

The QAD covers six dimensions in 15 items to assess self-care for DM: general diet, specific diet, physical activity, blood glucose monitoring, foot care, and use of medication. It also has three other items for assessing tobacco use. During the assessment, patients must answer how often they have performed the activities or behaviors in the last seven days. These answers should range from 0 to 7, where 0 is the least desirable situation and 7 is the most favorable. The scores indicate the performance of the activities in question. The cut-off point is an average of more than four points to indicate desirable self-care and less than or equal to four as undesirable⁶. Tobacco-related items are converted considering the proportion of smokers, the average cigarette consumption, and even the last time the individual used tobacco.

The survey data was organized in electronic spreadsheets using Microsoft EXCEL version 2016. Statistical processing was carried out using BioEstat software version 5.3, with descriptive statistics (frequency and percentage) and inferential analysis using the Chi-square test and the G Adherence test, with a significance level ≤ 0.05 .

The study was approved by the Research Ethics Committee (CEP) of the João de Barros Barreto University Hospital (HUJBB) of the Federal University of Pará (UFPA), under opinion no. 5.497.624.

RESULTS

The sample consisted of 105 elderly people, with a predominance of males 59 (56.2%) ($p=0.2046$), not obtaining a statistically significant result, age group between 60 and 69 years 45 (42, 9%) ($p=0.0116$), brown race 69 (65.7%) ($p< 0.0001$), complete primary education 42 (40.0%) ($p< 0.0001$), married 57 (54.3%) ($p< 0.0001$) and family income of 01 to < 02 MW 64 (61.0%) ($p< 0.0001$) (Table 1).

Table 1 - Sociodemographic and economic profile of people with DM seen at the Endocrinology Outpatient Clinic, Belém, PA, Brazil, 2022.

Variables	n	%	p-value
Gender			0, 2046
Female	46	43,8	
Male	59	56,2	
Age group*			0,0116*
60 to 69*	45	42,9	
70 to 79	39	37,1	
80 to 89	16	15,2	
90 and over	5	4,8	
Race			< 0,0001*
White	11	10,5	
Brown*	69	65,7	
Black	19	18,1	
Yellow	6	5,7	
Education			< 0,0001**
Incomplete elementary school	16	15,2	
Complete elementary school**	42	40,0	
High school incomplete	12	11,4	
High school complete	33	31,4	
Other	2	1,9	
Marital status			< 0,0001*
Single	8	7,6	
Married*	57	54,3	
Widowed	34	32,4	
Other	6	5,7	
Family income (MW)			< 0,0001*
< 01	7	6,7	
01 to < 02*	64	61,0	
02 to 03	34	32,4	

Source: The authors (2023).

*Chi-Square Adherence Test.

As for the clinical profile of people with DM, the following results were obtained: the predominance of SAH 88 (83.8%) ($p = < 0.0001$); sedentary lifestyle 72 (68.6%) ($p = 0.0001$); diabetic foot 27 (25.7%) ($p = 0.0002$); time since diagnosis was over 16 to 20 years 36 (34.3%) ($p = 0.0039$); the main treatment was the combination of medication + insulin therapy 40 (38.1%) ($p = 0.0001$) and the elderly had never been hospitalized for DM complications 62 (59.0%) ($p = < 0.0001$); have not been infected with COVID-19 58 (55.2%) ($p = 0.2831$, not significant); are vaccinated with 3 doses 50 (47.6%) ($p = < 0.0001$) and have not been hospitalized due to COVID-19 30 (63.8%) ($p = 0.0051$) (Table 2).

Table 2 - Clinical profile of people with DM seen at the Endocrinology Outpatient Clinic, Belém, PA, Brazil, 2022.

Variables	n	%	p-value
Comorbidities			< 0,0001*
SAH*	88	83,8	
Dyslipidemia	53	50,5	
Heart Disease	26	24,8	
EVA or hemorrhagic CVA	3	2,9	
Heart failure	1	1,0	
Others	3	2,9	
Risk factors for comorbidities			0,0001*
Sedentary lifestyle*	72	68,6	
Family history of DM	53	50,5	
Alcohol consumption	19	18,1	
Tobacco use	12	11,4	
Complicações			0,0002*
Diabetic foot*	27	25,7	
Amputation	15	14,3	
Diabetic neuropathy	13	12,4	
Diabetic retinopathy	3	2,9	
Time since DM diagnosis (years)			0,0039*
Up to 10	11	10,5	
11 to 15	27	25,7	
16 to 20*	36	34,3	
Over 20	31	29,5	
Type of treatment			< 0,0001*
1 drug	15	14,3	
2 medications	37	35,2	
Medication + Insulin therapy*	40	38,1	
Insulin therapy	13	12,4	
Hospitalization due to DM complications			< 0,0001*
None*	62	59,0	
1 in the last 6 months	35	33,3	
2 or more in the last 6 months	8	7,6	
COVID-19 infection			0,2831
Yes	47	44,8	
No	58	55,2	
Vaccination against COVID-19*			< 0,0001*
02 doses	9	8,6	
03 doses	50	47,6	
04 doses	46	43,8	
Hospitalized due to COVID-19*			0,0051*
Yes	17	36,2	
No	30	63,8	

Source: Authors (2023).

*Chi-Square Adherence Test.

The emotional aspects of the 105 people with DM were assessed using the Brazilian version of the PAID (Problem Areas in Diabetes) scale (B-PAID). Data analysis indicated that 16 items were statistically significant: items 1 ($p < 0.0001$), 2 ($p < 0.0001$), 3 ($p < 0.0006$), 4 ($p < 0.0084$), 9 ($p = 0.0001$), and items 10 to 20 ($p < 0.0001$).

The analysis considered that variations from 0 to 2 indicate a low level of emotional distress, and from 3 to 4 indicate a high level of emotional distress. Thus, the elderly scored 0 to 2 on 12 items, representing a low level of emotional distress: item 9 ($p = 0.0001$) and items 10 to 20 ($p < 0.0001$). Although items 5 ($p = 0.0971$), 6 ($p = 0.1432$), 7 ($p = 0.2831$), and 8 ($p = 0.6256$) had a low level of emotional distress, the findings are not considered statistically significant (Table 3).

Table 3 - Questionnaire Brazilian version of the PAID (Problem Areas in Diabetes) scale (B-PAID), Belém, PA, Brazil, 2023

Problems related to treatment.	Score achieved				p-value
	0 to 2 pts		3 to 4 pts		
	n	%	n	%	
1. Worrying about low glucose episodes.	30	28,6	75	71,4	< 0,0001*
2. Worrying about the future and the possibility of serious complications.	31	29,5	74	70,5	< 0,0001*
3. Worrying about food and what to eat.	35	33,3	70	66,7	0,0006*
4. Dealing with the complications of diabetes.	39	37,1	66	62,9	0,0084*
5. Having feelings of deprivation about food and meals.	44	41,9	61	58,1	0,0971
6. Feeling fear when thinking about living with diabetes.	45	42,9	60	57,1	0,1432
7. Facing uncomfortable social situations related to care.	47	44,8	58	55,2	0,2831
8. Feeling that diabetes is taking up too much of your mental and physical energy.	50	47,6	55	52,4	0,6256
9. Feeling exhausted by the effort it takes to care for diabetes.	72	68,6	33	31,4	0,0001**
10. Getting angry at the thought of living with diabetes.	78	74,3	27	25,7	< 0,0001**
11. Feeling that your diabetes is a burden to you.	79	75,2	26	24,8	< 0,0001**
12. Feeling alone with your diabetes.	83	79,0	22	21,0	< 0,0001**
13. Feeling that your friends and family don't support you in dealing with your diabetes.	85	81,0	20	19,0	< 0,0001**
14. Feeling dissatisfied with the doctor who looks after your diabetes.	88	83,8	17	16,2	< 0,0001**
15. Not accepting your diabetes.	90	85,7	15	14,3	< 0,0001**
16. Feeling guilty or anxious when you fail to take care of your diabetes.	91	86,7	14	13,3	< 0,0001**
17. Getting depressed when you think about having to live with diabetes.	92	87,6	13	12,4	< 0,0001**
18. Feeling discouraged about your diabetes treatment.	95	90,5	10	9,5	< 0,0001**
19. Not knowing if your mood/feeling is related to diabetes.	97	92,4	8	7,6	< 0,0001**
20. The lack of clear and concrete goals in your diabetes care.	99	94,3	6	5,7	< 0,0001**

Source: Authors (2023).

Chi-Square test; *Significance of 3 to 4 pts; **Significance of 0 to 2 pts.

The self-care of people with DM was identified using the QAD questionnaire, subdivided by time (in days), in which the groups considered to have low adherence to self-care were the sample that ranged from 0 to 1 day and 2 to 3 days, and high adherence to self-care was the sample that ranged from 4 to 5 days and 6 to 7 days. The findings indicate desirable self-care: general nutrition ($p < 0.0001$), specific nutrition ($p < 0.0001$), foot care and medication ($p < 0.0001$). In the areas of physical activity and blood glucose monitoring, there was low adherence to self-care (Table 4).

Table 4 - Diabetes self-care activities questionnaire (QAD), Belém, PA, Brazil, 2022.

QAD instrument	Time in days								p-value
	0 to 1 day		2 to 3 days		4 to 5 days		6 to 7 days		
	n	%	n	%	n	%	n	%	
1. General diet									
Followed a healthy diet.	4	3,8	4	3,8	58	55,2	39	37,1	< 0,0001*
Followed dietary guidelines.	5	4,8	4	3,8	58	55,2	38	36,2	< 0,0001*
2. Specific diet									
Ate five or more portions of fruit and/or vegetables.	4	3,8	9	8,6	52	49,5	40	38,1	< 0,0001*
Ate sweets.	30	28,6	10	9,5	40	38,1	25	23,8	0,0005*
Ate foods high in fat.	33	31,4	13	12,4	30	28,6	29	27,6	0,0262*
3. Physical activity									
Performed physical activity for at least thirty minutes.	91	86,7	5	4,8	3	2,9	6	5,7	< 0,0001*
Performed specific physical exercises.	91	86,7	5	4,8	3	2,9	6	5,7	< 0,0001*
4. Blood sugar monitoring									
Assessed blood sugar.	36	34,3	44	41,9	14	13,3	11	10,5	< 0,0001*
Assessed blood sugar at the recommended level.	35	33,3	46	43,8	14	13,3	10	9,5	< 0,0001*
5. Foot care									
Have examined your feet.	3	2,9	5	4,8	20	19,0	77	73,3	< 0,0001*
Have examined the inside of your shoes before putting them on.	3	2,9	5	4,8	20	19,0	77	73,3	< 0,0001*
Dried the inter-digital spaces after washing the feet.	3	2,9	5	4,8	15	14,3	82	78,1	< 0,0001*
6. Medication									
0,0									
Took medication as recommended.	0	0,0	1	1,0	2	1,9	102	97,1	< 0,0001*
Taken insulin injections as recommended.	0	0,0	1	3,0	1	3,0	31	93,9	< 0,0001*
Took the indicated number of diabetes tablets.	0	0,0	2	2,9	14	20,0	54	77,1	< 0,0001*

Source: Authors (2022).

*G Test Adherence.

DISCUSSION

The study showed a predominance of males, in line with another finding⁶. This result is contrary to that found in a study carried out in João Pessoa, Brazil, where the majority were women, which is explained by their greater concern about seeking health care⁹. The increase in DM cases in the 60- to 69-year-old age group has been evident and may be associated with the growth of elderly people in this age group over the years, accompanied by the chronicity of diseases and complications¹⁰.

In a study carried out in several states in Brazil, elderly people of the brown race were more prevalent, and individuals of the black race were more likely to have poorer glycemic control¹¹. Schooling can be a limiting factor for self-care, a situation pointed out by a study carried out in IRAN, which revealed that a low level of knowledge had an impact on adherence to treatment, quality of life, and glycemic control¹². In this study, there was a preponderance of elderly people with complete primary education, which is considered a low level of education compared to what is expected for basic education. In addition, it tends to limit and/or reduce access to health care related to learning opportunities, impacting DM preventive approaches and the understanding of therapeutic approaches¹².

The predominance of married elderly people in the study is in line with research carried out in Bauru-São Paulo, Brazil, which pointed out that the family plays an important role in supporting and helping to control diseases such as DM and its possible complications, which require constant care to maintain life⁶. In this study, the elderly had a family income of between one and two minimum wages, showing the insufficiency and significant impact on the basic maintenance of the elderly. With retirement, significant financial losses can occur, compromising their ability to maintain the necessary care about a good diet, the use of medication, periodic examinations, factors that compromise the preservation of health, and, consequently, disease control¹⁰.

Regarding the clinical profile of the elderly, hypertension was the most significant comorbidity, corroborating the study conducted in São Paulo, Brazil¹⁰, and is considered a risk factor for DM2, since it can contribute to vascular lesions in the elderly. Among the risk factors, the study¹³ carried out in Brasília, Brazil, showed that a sedentary lifestyle can cause cardiovascular complications and risks, corroborating this study¹³.

As observed in this study, diabetic foot complications are still one of the main complications found in people with DM. Corroborating this finding, a study carried out in Minas Gerais, Brazil, showed a prevalence of diabetic foot in 74% of participants¹⁴.

The most prevalent time of diagnosis was between 16 and 20 years, more than 10 years, which is like another finding⁹. The most used type of treatment is the combination of medication and insulin therapy, considered a third-line treatment when metabolic control is no longer effective with just the use of up to two combined tablets and lifestyle changes. This treatment is commonly used for the elderly, who tend to have had DM for a long time¹¹⁻¹³.

When evaluating the Problems Areas in Diabetes Questionnaire - Brazilian Version (B-PAID), it was observed that most of the elderly had low emotional distress, corroborating the studies carried out in São Paulo, Brazil, and Paraíba, Brazil, which used the same questionnaire and obtained a score of 19 and 23 points, respectively, confirming low distress^{2,6}.

In contrast, a study carried out in the city of Belém do Pará, Brazil, found that the emotional distress of people with DM was higher than 40 points, indicating a high impact on quality of life. This difference in results can be explained by the fact that DM brings specificities that vary from individual to individual and from one population to another, as it is a unique phenomenon, as well as the presence of inequities that negatively influence self-care and the way of dealing with and living with diabetes¹⁵.

The self-care assessment of elderly diabetics, carried out using the QAD questionnaire, was considered desirable about general nutrition, specific nutrition, foot care, and medication. Studies indicate¹³⁻¹⁶ that people with DM have been concerned about eating a healthy and balanced diet, good adherence to foot care, and drug treatment to prevent acute and chronic complications.

A study¹⁷ carried out in the state of Maranhão, Brazil, showed similar results in relation to self-care of the feet (an average of 7 days in 66% of patients) and drug treatment (an average of 7 days in 86% of patients). In addition, there was difficulty in following professional guidelines, which interfered with the understanding of their importance and, as a result, with patient follow-up.

Among self-care practices, healthy eating and foot care are among the pillars of non-pharmacological treatment for diabetes, to control blood sugar levels and weight, prevent complications of the disease, and reduce cardiovascular risks. In addition, routine foot care helps prevent diabetic foot disease, which is one of the most feared complications of the disease, responsible for 50 to 70% of non-traumatic amputations, as well as accounting for 50% of hospital admissions⁵.

It is worth noting that the domains of low adherence to self-care found in the study, such as physical activity and blood glucose monitoring, are relevant points and corroborate another study, which showed low adherence in the same domains, with an average of 1.57 days and 1.40 days¹⁸. Physical activity is still seen as a challenge for changing habits. Its low adherence is a serious risk factor for mortality. Being an essential factor for reducing insulin resistance⁶ and recording glycemic control is essential for identifying possible failures in this control and encouraging the search for risk factors associated with glycemic instability.

A limitation of this study was the scarcity of studies that use the term "emotional aspects" about self-care, as well as the use of the B-PAID and QAD instruments in the assessments.

CONCLUSION

Elderly diabetics showed low emotional distress and good adherence to self-care in terms of diet, foot care, and drug treatment. These findings show that, regardless of social, demographic, economic, and clinical characteristics, which can lead to greater susceptibility to unstable glycemic and possible complications, such as those found in this study, the emotional condition is a determining factor for the elderly to take care of themselves. This condition must be coupled with adequate guidance on daily care and the prevention of complications.

It is hoped that the findings of this research will draw the attention of health managers and professionals to the importance of caring for diabetic patients, including emotional aspects and self-care as determining factors for the best treatment results. It is believed that this will enable early intervention and, consequently, reduce the rates of complications and reduced quality of life.

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