

The influence of diabetes on the quality of life and on the body image of elderly people who frequent nuclei of coexistence

A influência do diabetes na qualidade de vida e na imagem corporal de idosos que frequentam núcleo de convivência

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Resumo

Introdução: O diabetes é uma doença prevalente na população brasileira e é um fator complicante na qualidade de vida de idosos. Além disso, a obesidade é um dos fatores que predispõe ao diabetes, além de ser um fator apontado na percepção corporal dos idosos. Interessantemente, a percepção negativa da imagem corporal pode influenciar no desenvolvimento da obesidade. **Objetivos:** Identificar a influência do diabetes na qualidade de vida e na percepção da imagem corporal de idosos. **Métodos:** Foi realizada uma pesquisa de campo transversal com abordagem quantitativa. Os participantes responderam a três questionários sobre caracterização do perfil da amostra para avaliar a qualidade de vida e a percepção da imagem corporal. Os diabéticos responderam a um quarto questionário que avaliou a perspectiva dos pacientes sobre o impacto do diabetes e do tratamento em suas vidas. **Resultados:** Foram incluídos 85 idosos, 52 não diabéticos, 33 diabéticos, 29 controlados com insulina. Os resultados mostraram a qualidade de vida entre regular e boa, considerando os aspectos físicos, psíquicos, sociais e ambientais. No grupo de diabéticos destacou-se a satisfação com a capacidade de trabalhar e desempenho nas atividades de vida diária. E para a percepção da imagem corporal, o paciente não diabético relatou satisfação com sua própria imagem, enquanto os diabéticos apresentaram uma distância percebida e esperada da imagem corporal. **Conclusão:** A doença pode ter uma influência limitante nos aspectos físicos, emocionais e sociais, além de modificar a percepção da imagem corporal. No entanto, os idosos diabéticos mostraram-se mais satisfeitos a realizar as atividades básicas diárias. **Palavras-chave:** idosos; diabetes; qualidade de vida; imagem corporal.

Abstract

Introduction: Diabetes is a prevalent disease in the Brazilian population and is a complicating factor in the quality of life of the elderly. In addition, obesity is one of the factors that predispose to diabetes and also is pointed out in the elderly body perception. Interestingly, the negative perception of the corporeal image can influence the development of obesity. **Objectives:** To identify the influence of diabetes on the quality of life and the perception of body image in the elderly. **Methods:** A cross-sectional research was carried out with a quantitative approach. Participants answered three questionnaires on the characterization of the sample profile to assess quality of life and body image perception. Diabetics answered a fourth questionnaire that assessed patients' perspective on the impact of diabetes and treatment on their lives. **Results:** A total of 85 elderly people were included, 52 non-diabetic, 33 diabetic, 29 controlled with insulin. The results showed the quality of life between regular and good, considering the physical, psychological, social and environmental aspects. In the group of diabetics, satisfaction with the ability to work and performance in activities of daily living stood out. And for the perception of body image, the non-diabetic patient reported satisfaction with his own image, while diabetics presented a perceived and expected distance from body image. **Conclusion:** The disease may present a limiting influence on physical, emotional and social aspects, in addition to changing the perception of body image. However, elderly diabetics were more satisfied with performing basic daily activities.

Keywords: elderly; diabetes; quality of life; body image.

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Introduction

It is known that ageing is a growing reality in the entire population of the world. This data is attributed to advances and health care and observation of the socioeconomic context¹. Therefore, it should no longer be stigmatized when considered only as a decline in functions, diseases and disabilities².

The population of elderly people over 60 years of age in Brazil currently represents 20.6 million people¹ (10.8% of the total population). The expectation is that, in 2060, the country will have 58.4 million elderly people (26.7% of the total). What explains this increase is not only, but also the improvement in the quality of life, which increased the life expectancy of Brazilians, which was 75 years in 2013, and will go to 81 years in 2060 - with women living in mean, 84.4 years, and men 78.03 years-old³. The quality of life for the elderly is linked to the maintenance and promotion of functional capacity, independence, healthy lifestyle habits and the practice of physical activity⁴. However, psychosocial factors, lifestyle, genetics and environmental factors are determinants of the organism's aging process, which in turn undergoes molecular, cellular and functional changes that can lead to a decrease in the ability to maintain the homeostatic balance, leading to greater disposition of diseases⁵.

It is known that there is a higher prevalence of chronic degenerative diseases among the elderly. All cardiovascular, respiratory, cerebrovascular, diabetes and even cancer can be considered chronic diseases. These represent 72% of the causes of death, drawing attention to systemic arterial hypertension (SAH) and Diabetes Mellitus (DM). According to estimates by the World Health Organization (WHO), the number of diabetics in the world exceeds the range of 422 million in 2014, more common in middle and low-income countries, in Brazil, it is estimated that there

are about 13 million people living with DM⁶. DM is the main cause of blindness, kidney problems and failure, heart attacks, strokes and lower limb amputations. Other alarming data are the high numbers of deaths associated with diabetes of 1.6 million people in 2015, with half of these deaths in the elderly aged 70 years on average⁷.

DM is a chronic disease of multiple etiology, which occurs due to a deficiency of the pancreas in producing enough insulin or it does not perform its functions properly and the body is resistant to it⁷. DM is characterized by a series of metabolic disorders, which increasing blood glucose levels. The effect of hyperglycemia results from failures in the secretion or function of insulin in the body, generating systemic complications^{8,9}.

Obesity is considered one of the main predisposing factors for DM and SAH, they are also the most mentioned factors in the body perception of elderly women, and less tolerated in 60% of elderly individuals¹⁰. Therefore, it is not difficult to find elderly people dissatisfied with their body image, which can be intensified due to social aspects related to the media and stereotype patterns, such conditions favor a lowering of self-esteem and quality of life¹¹.

By definition, the body image is the mental figuration of the body, it is the way the body presents itself to us. It arises from bodily self-knowledge, which involves sensory experiences acquired during development acquired by sensory experiences that we have throughout the development process. This becomes evident when we observe the impact of a certain injury on postural recognition and certain limitations caused by trauma¹². In addition, it is common to observe changes in body image in individuals affected by chronic diseases¹². It is known that a negative perception of body image can influence the development of obesity¹³ which can become a risk factor for the development of DM.

Therefore, it is extremely important to investigate the body image of elderly diabetics, in order to intensify general aspects of body image in an elderly population and to identify possible groups at increased risk for the treatment of the disease. Thus, the aim of this study was to identify the influence of diabetes on the quality of life and perception of body image in elderly people who attend a community center.

Materials and methods

Sample and type of study

This study was a cross-sectional study and approved by the Ethics and Research Committee of Universidade Santo Amaro (61497616.5.0000.0081). Elderly people aged 60 years or over and attending the São Paulo Elderly Living Center (NCI) were invited to participate in the study. The volunteers were divided into two groups: diabetic group (GDB) and non-diabetic group (GND) and were invited to answer some questionnaires, as follows.

Design research

The study was conducted at the Elderly Coexistence Center in São Paulo, which is part of the beneficent society Equilíbrio de Interlagos (SOBEI). Sampling is for convenience

Assessment of the level of physical activity in which the elderly performed. Thus, the elderly were classified as active or sedentary. Elderly people who performed more than 30 minutes of physical activity five times a week were considered active elderly¹⁴

Then, the volunteers answered the Whoqol-Bref.¹⁵ which consists of an instrument that assesses the following quality of life domains: Physical, Psychological, Social Relations and Environment. It is composed of 26 multiple-choice questions, appointed by the research subject, on a Likert scale, from 1 to 5, regarding their perception of quality of life. In addition to these, the volunteers were invited to perform body image perception

according to the Sörensen and Stunkard scale¹⁶. The test questions consist of an assessment of a body image perception scale ranging from 1 to 9, this scale considers proportionally to the size of the silhouette. The test also consists of self-assessment in relation to your current body image and how you are expected or would like it to be. Finally, one last test was applied, only to individuals in the DB group, which was the Brazilian version of the Problems Areas in Diabetes (B-PAID) scale⁹. This instrument aims to assess, from the perception of the elderly, the impact of diabetes and the treatment in their lives.

Inclusion and exclusion criteria

The inclusion criteria were elderly aged 60 years or over, active participants of the NCI, non-diabetic or diabetic, with controlled blood glucose, according to their information and proven by documents submitted, such as: medication prescriptions; blood count or the elderly person's booklet. In addition, they did not have disabling physical or mental morbidities that would impede the understanding of the questions and commands of the assessment instruments.

Elderly people who did not attend the NCI, who were under 60 years old, who mentioned uncontrolled blood glucose even with the use of medication, or who had incapacitating comorbidities or cognitive impairment that prevented them from completing the proposed instruments were excluded from this study. In addition, individuals who refused to sign the consent form.

Procedures

After the application of the questionnaires, the data were tabulated and the variables obtained were used to perform the statistical analysis, using the three-factor anova, variables with $p < 0.05$ between the comparisons were considered significant.

Results

The study included the participation of 85 elderly diabetics and non-diabetics, 09 men and 76 women, who attended the NCI activities weekly, and who practiced or not, physical activity. Of the 85 elderly people interviewed, 52 of them (61%) were part of the non-diabetic group (NDG), while 33 (38%) of the diabetic group (DG), 29 of which were taking insulin. The condition of the disease was self-reported, but proven

through documents (prescriptions of glycemic control medications, as well as the booklet of the elderly person who has glycemic control as well as blood glucose levels in laboratory tests held by the elderly.

Both in the NDG and in the DG, several comorbidities were observed, which can be seen in table 1.

Table 1. Main comorbidities of DG and NDG patients. Legend: DG Diabetes Group; NDG Non Diabetes Group

Comorbidities	DG(%)	NDG(%)
Systemic Arterial Hypertension	25 (29,8)	33 (29,2)
<u>Heart Diseases</u>	5 (6)	12 (10,6)
Cataract	15 (17,9)	12 (10,6)
Artritis	19 (22,6)	30 (26,5)
Osteoporosis	8 (9,5)	14 (12,4)
Thyroid problems	10 (11,9)	7 (6,2)
Fibromyalgia	2 (2,4)	5 (4,4)
Total	84	113

Among all respondents, 82.5% reported practicing some physical activity on average 4 to 5 times a week, for 30 minutes or more. NDG 90.5% did physical activity about five times a week. While the DG 69.6% performed, 4 times a week, 30 minutes or more.

The quality of life (QL) data were analyzed by Whoqol-Bref, it was observed that in both groups the quality of life was classified with means between 3 and 4,

considered by the instrument regular and good quality, in practically all domains, as shown in table 2. There was a statistical difference in domains 17 and 18 of the physical domain, which comprise the performance capacity in Activities of Daily Living (ADL) and satisfaction, work capacity. Individuals from the DG were more satisfied for the ability to perform the ADL and for the ability to work than individuals from the NDG.

Table 2. Score of the main patient domains of the GDB and GND according to the WHOQOL-Bref test Legend: FS = Final Score DG Diabetes Group; NDG Non Diabetes Group

	<u>DG avg</u>	<u>NDG avg</u>
1QL self-assessment	4±0,1	4±0,1
2Health Satisfaction	3,5±0,1	4±0,1
Physical Domain		
3Impairment by Pain	4±0,2	4±0,1
4To medical for life	3±0,1	3±0,1

10 Sufficient energy day to day	4±0,1	4±0,1
15 ability to move	4±0,1	4±0,1
16 sleep satisfaction	3,4±0,2	3,5±0,1
17 Satisfaction Performance cap. ADLs	4,17±0,02*	3,82±0,02
18 Satisfied work cap	4,6±0,0001*	3,82±0,0001
FS	3,89±0,04	3,71±0,04
Psychic Domain		
5 How much enjoy life	3,8±0,4	3,7±0,4
6 How meaningful is life?	4,2±0,8	4,1±0,8
7 Concentration	3,13±0,7	3,21±0,7
11 Acceptance of physical appearance	4±0,2	4±0,1
19 Satisfaction with yourself	4,2±0,1	4,1±0,09
26 Freq negative feelings	4±0,2	3,6±0,1
FS	4±0,1	4±0,1
Social Domain		
20 satisfied with personal relations	4,5±0,1	4±0,1
21 satisfied with sex life	4±0,1	4±0,1
22 Support from friends	4±0,1	4±0,1
FS	4±0,1	4±0,1
Environment Domain		
8 safety daily life	3,6±0,1	3,5±0,1
9 healthy environment	3±0,1	2,94±0,1
12 Income to satisfy the needs	3,27±0,2	3,28±0,1
13 Availability and information	3,5±0,2	3,38±0,1
14 opportunity to act. leisure	4,2±0,1	4,0±0,1
24 Satisfaction with health services	3,13±0,2	2,86±0,1
25 Satisfaction with the Means of transport	3,51±0,1	3,4±0,1
FS	3,53±0,07	3,39±0,07

In the analysis of the B-PAID data carried out in the DG, problems related to the emotional condition of the elderly were highlighted, such as: concern with dealing with possible complications of the disease

(score of 62.5); feeling of guilt with their own negligence in adherence to treatment (score of 45.28). In addition, the elderly also reported other conditions such as lack of clear and concrete goals in diabetes care

(score of 61.2), deprivation regarding food and meals (score of 46.25) and also lack of support from friends and family members in the treatment of the disease (score of 27.5).

In the analysis of the silhouette

scale, the presence of body perception was verified according to a scale that ranged from 1 to 9, where 1 would be extremely thin while 9 would be extremely obese. The frequencies of the silhouette groups' notes are described in table 3.

Table 3. Frequency in the perception of real and expected body image in DG and NDG

Silhouettes groups	DG		NDG	
	Real Body Image (%)	Expected Body Image (%)	Real Body Image (%)	Expected Body Image (%)
1 e 2	6 (20,7)	12 (41,4)	4 (7,8)	12 (23,5)
3	2 (6,9)	8 (27,6)	6 (11,8)	17 (33,3)
4 e 5	15 (51,7)	8 (27,6)	26 (51,0)	17 (33,3)
6 e 7	6 (20,7)	1 (3,4)	14 (27,5)	5 (9,8)
8 e 9	-	-	1	-

Discussion

In our study, there was a predominance of women compared to men (n=76 women to n=09 men), with a mean age of 71 ± 5 years. Women aged 75 years or more represent more than half of the population of this age group in countries like Brazil and South Africa^{17,18}. The feminization of aging has been a global concern, as elderly women are increasingly exposed to problems inherent to social and financial inequalities and health limitations in more advanced stages^{17,18}.

Among the determining factors of morbidity and mortality are DM and SAH, which are the most frequent chronic diseases in the elderly, with considerable incidence worldwide. Due to these factors, the need for acceptance by the elderly is linked to changes in routine habits that are fundamental and, in general, must be continuously established¹⁹. In addition, it is known that diabetics have a higher risk of developing SAH compared to healthy individuals

Our study showed a similar prevalence of SAH among the studied groups, this data, in theory, was not expected, since the frequency of SAH is generally higher among diabetic individuals when compared to healthy individuals.

However, in the NDG, the occurrence of other factors that may contribute to the frequency of SAH were also present. It is noteworthy that there are other comorbidities also associated with diabetes, such as dyslipidemia, overweight, obesity and sedentary lifestyle^{17,20}. A previous study described the high frequency of hypertension, diabetes and arthritis/arthrosis in the elderly²¹, findings that corroborate our data.

Despite the fact that cataracts are present in elderly diabetics with diagnosis time generally greater than 20 years, this data deserves attention because it increases the need for support in ADL, directly affecting the autonomy, functionality and quality of life of the elderly²⁰.

Missias et al.⁴ emphasizes that old age with good quality of life is considered healthy when it is related to affectivity and the practice of physical activities. Grillo²⁰ point out the need for change in lifestyle habits, associating physical activity, healthy eating, sleep quality, functional and social independence, reflecting modest but significant long-term benefits in physical function, especially in middle-aged and obese elderly people with type 2 diabetes.

Pilger, et al.²¹ claim that they do not perceive any difference in quality of life between diabetic and non-diabetic

participants who practiced or not physical activity. The authors' notes contribute to these findings that there was also no statistical difference in the frequency of physical activities among the elderly DG and NDG evaluated, and also in the quality of life.

The Whoqol-bref, an instrument that allows the assessment of quality of life in general, showed that the elderly were satisfied with their quality of life and health. And despite do not presenting statistical significance, in the different domains, it is worth noting that, because they are elderly people, the average tends to decrease according to the difficulties of the aging process itself and becomes an important data that must be maintained or even improved.

It is known that diabetes can influence work and emotional aspects ²². However, it was observed that the elderly in the DG showed greater satisfaction and capacity for the development of ADL and also associated with work. A possible explanation for this finding is the fact that the elderly relate their current condition with a possible ability to develop basic activities. A previous study described that most elderly diabetics associated the degree of satisfaction, above all, with their physical well-being ². Therefore, it is believed that satisfaction in the development of ADL is linked to the independence of these elderly ²³.

In the B-PAID scale, a trend was observed in the concern about complications associated with diabetes and how much the elderly felt guilty when they failed to take the necessary care to control the disease. As for treatment-related problems, they reported feeling the lack of clear and concrete goals in diabetes care. Despite the lack, there is a need to constantly reinforce for the elderly and their families, regarding the care of monitoring

blood glucose, self-administering insulin injections and using medication correctly. These precautions help to increase adherence to treatments and diets and encourage the practice of physical activities ⁹.

The silhouette test evidenced a discrepant body perception, especially in the DG, which evidenced the desire for a much smaller silhouette than they indicated they had. Despite registering an individual perception, it is known that the acceptance of one's own image strengthens self-esteem, interferes with quality of life and personal motivations. The body image is the main axis of the personality and represents the balance between the identity of the elderly and their relationship in the context between body and environment ²⁴.

The further away the perceived body image from the expected one, the more bodily, emotional and social damage that can interfere with self-care. Cavalcante et al., ²⁵ state that identity is built from the body and that the identity of the elderly originates in the symbolic body, which finds support in the real body. As the body undergoes interferences and modifications, progressive impairments of identity occur, with risks of conflicts and difficulties, especially when the personality is developed based on the real image of your body. The fact that the elderly perform group work regularly, over time, makes the results for controlling blood glucose, knowledge of diabetes and some behaviors related to diabetes effective ¹⁷.

Conclusion

According to our data, it is concluded that diabetes may apparently interfere in the perception of body image. However, in terms of quality of life, elderly people with diabetes were more satisfied with their ability to perform ADL.

References

1. Veras R. Envelhecimento populacional contemporâneo: demandas, desafios e inovações. *Rev Saude Publica*. 2009 Jun;43(3):548–54.
2. Dawalibi NW, Anacleto GMC, Witter C, Goulart RMM, Aquino R de C de. Envelhecimento e qualidade de vida: análise da produção científica da SciELO. *Estud Psicol*. 2013 Sep;30(3):393–403.
3. Ministério da Saúde. Brasil é reconhecido por políticas públicas em favor de idosos — Legado Brasil [Internet]. [cited 2019 Sep 15]. Available from: http://legado.brasil.gov.br/noticias/saude/2014/01/brasil-e-reconhecido-por-politicas-publicas-em-favor-de-idosos/agenciabrasil190812mca_4.jpg/view
4. Moreira RM, Santos CES dos, Couto ES, Teixeira JRB, Souza RMMM. Qualidade de vida, Saúde e Política Pública de Idosos no Brasil: uma reflexão teórica. Vol. 16, *Revista Kairós : Gerontologia*. 2009. 27–38 p.
5. Leme L. A Gerontologia e o problema do envelhecimento. *Visao historica. Gerontol a velhice e o Envelhec em visao Glob*. 2002;
6. Bertoldi AD, Kanavos P, França GVA, Carraro A, Tejada CA, Hallal PC, et al. Epidemiology, management, complications and costs associated with type 2 diabetes in Brazil: a comprehensive literature review. *Global Health*. 2013 Dec 3;9(1):62.
7. World Health Organization. Diabetes [Internet]. 2018 [cited 2019 Sep 15]. Available from: <https://www.who.int/news-room/fact-sheets/detail/diabetes>
8. Duarte E, Marques A, Leal M, Melo GP, Silva C. Idosos diabéticos Autopercepção do estado geral de saúde. *CIAIQ2015*. 2015 Jul 16;1.
9. Gross CC. Versão brasileira da escala PAID(Problem Areas in Diabetes) : avaliação do impacto do diabetes na qualidade de vida. 2004;
10. Knight T, Illingworth K, Ricciardelli L. Health Implications of Body Size Perception and Weight Tolerance in Older Adults. *J Health Psychol*. 2009 Apr;14(3):425–34.
11. Ferreira AA, Menezes MFG, Tavares EL, Nunes NC, Souza FP de, Albuquerque NAF, et al. Estado nutricional e autopercepção da imagem corporal de idosas de uma Universidade Aberta da Terceira Idade. *Rev Bras Geriatr e Gerontol*. 2014;17(2):289–301.
12. Scatolin HG. A imagem do corpo: as energias construtivas da psique. *Psicol Rev*. 2012 Feb 6;21(1):115–20.
13. Bjerggaard M, Philipsen A, Jørgensen ME, Charles M, Witte DR, Sandbæk A, et al. Association of self-perceived body image with body mass index and type 2 diabetes—The ADDITION-PRO study. *Prev Med (Baltim)*. 2015 Jun;75:64–9.
14. WHO | Physical Activity and Older Adults. WHO. 2015;
15. Fleck MP, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref"; *Rev Saude Publica*. 2000 Apr;34(2):178–83.
16. Débora Cristiane Machado, Nara Sudo AHGP. Body image of elderly living in long-stay residences for the aged in Porto Alegre-RS. Vol. 5, *CERES: Nutrição & Saúde*. 2010. 139–148 p.
17. Menon K, Mousa A, Courten MP de, Soldatos G, Egger G, Courten B de. Shared Medical Appointments May Be Effective for Improving Clinical and Behavioral Outcomes in Type 2 Diabetes: A Narrative Review. *Front Endocrinol (Lausanne)*. 2017;8:263.
18. Prefeitura de São Paulo. Informes Urbanos: Cresce número de idosos na cidade de São Paulo. *Inf Urbanos*. 2011;3:1–3.

19. Marianne Pinheiro da Rocha, Renata Furlan Viebig, Andrea Romero Latterza. Imagem corporal em idosos: influências dos hábitos alimentares e da prática de atividade física [Internet]. EFDeportes. 2012 [cited 2019 Sep 18]. Available from: <https://www.efdeportes.com/efd166/imagem-corporal-em-idosos-influencias.htm>
20. Grillo M de FF, Gorini MIPC. Caracterização de pessoas com Diabetes Mellitus Tipo 2. Rev Bras Enferm. 2007 Feb;60(1):49–54.
21. Pilger C, Menon MH, Mathias TA de F. Socio-demographic and health characteristics of elderly individuals: support for health services. Rev Lat Am Enfermagem. 2011 Oct;19(5):1230–8.
22. Krstović-Spremo V, Račić M, Joksimović BN, Joksimović VR. The effects of diabetes mellitus and hypertension on work productivity. Acta Med Acad. 2014 Nov 15;43(2):122–33.
23. Franchi KMB, Monteiro LZ, Almeida SB de, Pinheiro MHNP, Medeiros AIA, Montenegro RM, et al. CAPACIDADE FUNCIONAL E ATIVIDADE FISICA DE IDOSOS COM DIABETES TIPO 2. Rev Bras Atividade Física Saúde. 2008;13(3):158–66.
24. Neto F. Manual da Avaliação Motora para a Terceira Idade. Porto Alegre; 2009. 268 p.
25. Cavalcante A. M. Psiquiatria, outros olhares A psicologia do idoso [Internet]. Psychiatry online Brasil. 2002 [cited 2019 Sep 15]. p. 5. Available from: <http://www.polbr.med.br/ano02/mour0502.php>

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