ASSESSMENT OF FUNCTIONAL CAPACITY IN DIABETIC ELDERLY PEOPLE IN THE COMMUNITY

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ABSTRACT
The assessment of functional capacity in elderly individuals is a relevant parameter for clinical interventions, in addition to the early detection of vital decline in this population. The present study aimed to assess the functional capacity of elderly people with diabetes in the community. Sociodemographic and economic data, presence of diabetes, and functional capacity (Six-Minute Walk Test) were collected at the Reference Center for Hypertension and Diabetes (CRHD) in Rio Verde, Goiás. Individuals aged 60 years or older, without motor, neurological, or cognitive deficits participated. Among the 110 elderly individuals interviewed, the majority were female (75.5%; n=83), Caucasian (55.5%; n=61), without a partner (59.1%; n=65), had an average of 7.7 years of education, and had a functional capacity level of 1 (n=83). n=83), Caucasian (55.5%; n=61), without a partner (59.1%; n=65), had an average of 7.7 years of schooling, a monthly income of 2.2 minimum wages, and negative self-perceived health (91.8%, n=101). The prevalence of diabetes was 51.8% (n=57), and a significant difference in functional capacity was observed between the groups with and without diabetes (p=0.018). These findings showed that more pronounced limitations in activities of daily living and mobility in this population highlight the relevance of public policies aimed at preserving functionality and promoting healthy and active aging.
Keywords: Elderly health. Aging. Diabetes mellitus. Functional capacity.

INTRODUCTION

Population aging is an intrinsic physiological process marked by a gradual and generalized reduction in basal metabolism. This decline, commonly observed among the elderly, tends to trigger functional limitations and a progressive loss of autonomy, resulting from decreased vitality and the body's adaptive capacity in the face of biological adversities, especially in the context of chronic diseases such as diabetes (GOMES et al., 2021).

The association between functional capacity and diabetes in older adults is especially concerning, since diabetes mellitus, one of the most prevalent chronic diseases in this age group, significantly affects quality of life and functional independence. Diabetes not only contributes to the acceleration of the aging process and functional decline, but

also exacerbates functional decline, increasing the risk of disability and serious complications (MOTA et al., 2020).

Studies show that elderly people with diabetes have a higher prevalence of sarcopenia, peripheral neuropathy, and cardiovascular impairment, all of which impair mobility and the ability to perform activities of daily living (ADLs). In addition, inadequate glycemic control in elderly diabetics can worsen functional status, leading to frequent hypoglycemia, which is associated with an increased risk of falls, mental confusion, and hospitalizations (DIAS et al., 2021).

These events not only compromise functional capacity but can also result in a cycle of progressive decline, where loss of functionality leads to less physical activity, which in turn worsens glycemic control and aggravates overall health (CABRAL et al., 2021). Thus, the objective of this study was to assess functional capacity levels in community-dwelling older adults with diabetes.

METHODOLOGY

The study consists of a quantitative cross-sectional analysis, where sociodemographic and economic aspects, the presence of diabetes, and the functional capacity of elderly people in the community were evaluated.

The study population consisted of elderly people in the community served by a Reference Center for Hypertension and Diabetes (CRHD) located in Rio Verde, GO. Participants were selected for convenience and recruited at the Center itself. People aged 60 years or older, served by the CRHD, without motor deficits that prevented them from walking independently were included. Individuals with cognitive, physical, motor, or neurological impairments that would hinder the performance of functional tests were excluded.

The functional capacity of the participants was assessed by the Six-Minute Walk Test (6MWT), a protocol developed by the American Thoracic Society (ATS) and validated in Brazil. To perform the test, a stadiometer, portable scale, a 30-meter straight corridor with marks every meter, stopwatch, sphygmomanometer, pulse oximeter, and the Borg Scale were used.

Before the test, the height and weight of the participants were measured. The formula used to calculate the expected reference distance (DTC6) based on height and weight was: DTC6 = 511 + height² × 0.0066 - age² × 0.030 - BMI² × 0.068. During the test, participants walked as far as possible for six minutes with only verbal encouragement, and they could slow down or stop and even resume if necessary. The stopwatch continued to run during any breaks. After the test, the same variables measured before the start were measured again, and the distance traveled was recorded. Distances below the reference value indicate a reduction in functional capacity.

The study was based on Resolution 466/12 of the National Health Council (BRAZIL, 2012) and was approved by the Ethics and Research Committee of the University of Rio Verde on February 20, 2024, through opinion 6.658.796 and CAAE number 77067323.1.1000.5077.

The data were submitted to descriptive statistical analysis, and the categorical variables were analyzed using absolute and relative frequencies. To determine whether there is a statistically significant difference in the mean functional capacity between diabetic and non-diabetic elderly individuals, the Student's t-test was applied, using a p-value less than 0.05 to assess this significance.

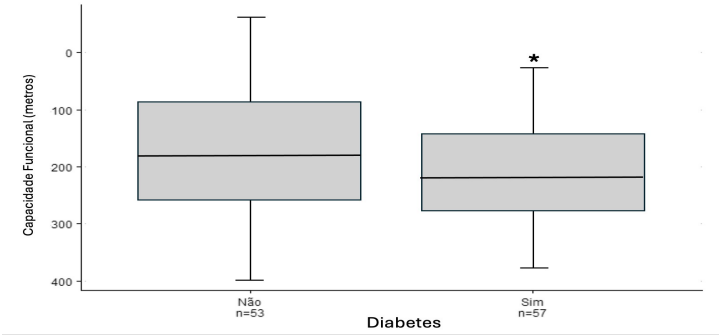
RESULTS

Among the 110 elderly individuals evaluated, 51.8% (n=57) were diabetic. It was also observed that most participants were female (75.5%; n=83), Caucasian (55.5%; n=61), without a partner (59.1%; n=65), had studied for an average of 7.7 years, had an average monthly income of 2.2 minimum wages, and had a negative self-perception of health (91.8%, n=101).

The functional capacity results for elderly individuals with and without diabetes are shown in Figure 1. As shown, a significant difference in functional capacity was observed between the groups, i.e., between the values of the difference between the predicted distance and the distance walked in meters by elderly people with diabetes compared to the values presented by elderly people without diabetes, obtained by the Six-Minute Walk Test (p=0.018).

In the present study, the results showed that elderly diabetics had significantly lower functional capacity compared to non-diabetic elderly individuals, which corroborates the existing literature on the impacts of diabetes on aging (ALMEIDA, FAUSTINO, 2022; NOBESCHI et al., 2023).

Figure 1 - Comparison of functional capacity between diabetic and non-diabetic elderly people in the community



Source: the authors

Other studies that found similar results associated the correlation between diabetes and reduced functional capacity with the presence of micro- and macrovascular complications associated with this comorbidity, such as peripheral neuropathy, reduced muscle strength, and decreased aerobic capacity, which directly compromise mobility and the performance of daily activities (KULZER et al., 2021; LEE et al., 2021).

These factors not only affect quality of life but also increase the risk of falls and dependence on daily activities, reinforcing the need for preventive and therapeutic strategies focused on improving functional capacity and promoting autonomy among elderly people with diabetes (EID et al., 2023).

CONCLUSION

It was observed that diabetes has a significant impact on the functional capacity of the elderly in the community evaluated, and that elderly people with diabetes performed worse on functional capacity tests compared to non-diabetics, showing more pronounced limitations in activities of daily living and mobility.

These findings suggest that diabetes may contribute to reduced autonomy and quality of life in this population. Furthermore, the identification of this impact reinforces the

need for targeted preventive and therapeutic interventions aimed at improving or maintaining functional capacity among elderly people with diabetes, as well as the importance of continuous and multidisciplinary follow-up.

The implications of this study highlight the relevance of public policies aimed at the proper management of diabetes in the elderly, with a focus on preserving functionality and promoting healthy and active aging.

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