LUMEN ET VIRTUS

The health of the elderly with obesity: a literature review

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ABSTRACT

This study analyzes data related to the health of adults with obesity, considering the increase in the elderly population in Brazil and the problems related to obesity in this age group. According to the IBGE, the proportion of people over 60 years old was 6.1% in 1980, rising to 15.8% in 2022. In 2019, obesity in this population already reached 24.8%, and 64.4% of adults over 60 years of age were overweight. In addition to respiratory problems, obesity is linked to chronic non-communicable diseases (NCDs), such as hypertension and type 2 diabetes. A sedentary lifestyle, especially among the elderly, is a significant risk factor, exacerbated by a lack of physical activity and the increasing use of technologies. Inadequate diet, with excess calories and lack of nutrients, also contributes to the increase in obesity and the emergence of NCDs. The study emphasizes the importance of including fruits and vegetables in the diet as a preventive measure against obesity and its consequences. In addition, it examines the main factors associated with obesity in adults, such as eating habits, physical activity levels, and social aspects. The methodology included an analysis of 8 eligible subjects, with a rigorous selection process focused on the review of articles and eligibility criteria. The research revealed a significant prevalence of abdominal obesity among the elderly, especially among women, who are more predisposed to the development of NCDs.

Keywords: Aged, Obesity, Health.

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INTRODUCTION

The Brazilian population is currently going through an aging process, in which the proportion of elderly people becomes increasingly significant. While in 1980 Brazil had 6.1% of the population aged 60 years or older, in 2010 this percentage became 10.8% and, more recently in 2022, 15.8%. (IBGE, 2022). This scenario reinforces the need to seek health strategies for the specificities of this age group, in order to ensure healthy aging.

In the midst of this scenario of increase in the percentage of the elderly population, there is concern about obesity in this age group. In 2019, the percentage of obese elderly was 24.8%, reaching 64.4% when those who were overweight were also included. Another piece of data that serves as a warning is the percentage of 70.3% of adults aged 40 to 59 who are overweight, who, upon reaching old age, will remain at an inadequate weight if there are no significant changes in their habits and living conditions (IBGE, 2019).

Obesity is an important risk factor for the development of chronic non-communicable diseases, especially in the elderly population. In this sense, abdominal obesity (OA) has a high prevalence in the elderly and is associated, in both sexes, with systemic arterial hypertension and other cardiovascular diseases. In relation to elderly women, increased visceral fat is related to increased insulin resistance and an elevated risk of developing type 2 diabetes mellitus. In men, OA was associated with worsening lung function and a restrictive ventilatory pattern, which is the result of mechanical and metabolic processes. (Silveira *et al*., 2018)

When analyzing the lifestyle habits that influence obesity and its complications, a sedentary lifestyle stands out as one of the main factors. This sedentary behavior encompasses activities performed lying down and/or sitting, such as reading, watching television, using cell phones and computers, among others. (Lopes *et al*., 2023). Such activities are often adopted by the elderly, due to parallel medical conditions, greater free time with retirement and the loneliness commonly experienced by this age group.

The type of diet adopted by the elderly has a great influence on their health, including the chance of developing obesity. In this sense, it is observed that the consumption of foods with high caloric density, low amount of fiber, and high glycemic index were significant risk factors for the presence of overweight and obesity, as well as chronic diseases (Thume and Poll, 2018). In addition, a diet with the daily presence of fruits, vegetables, and legumes (FVL) brings significant benefits to the health of this population, since it contributes to the regulation of body fat and also prevents the development of chronic non-communicable diseases (NCDs) (Silveira *et al*., 2015).

Therefore, it is perceived that the aging of the population associated with the increase in the percentage of obese people causes a concern about the health of the elderly with obesity. Therefore, there is a need for studies like this one to evaluate the influence of risk factors, such as inadequate diet and sedentary lifestyle, and to seek alternatives in order to avoid the development of obesity and other associated diseases, providing a better quality of life for this age group.

OBJECTIVE

The objective of this study was to analyze the main factors related to obesity in the elderly population.

METHODOLOGY

This study is a literature review that combined electronic searches in the MEDLINE, LILACS via Virtual Health Library (VHL), SciELO and Google Scholar databases. Controlled and uncontrolled descriptors extracted from the Health Sciences Descriptors (DeCS) vocabulary were used, using the Boolean operator AND to compose the search strategies ("elderly" AND "obesity" AND "health").

The search included original articles published in the last ten years, in Portuguese, English and Spanish, with full text available, which investigated the correlation between overweight, Chronic Non-Communicable Diseases (NCDs), sedentary lifestyle and the consumption of fruits and vegetables (FVL). We found 980 articles that met the search criteria. The studies were chosen and qualified according to the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). The reading of titles, abstracts and full texts was carried out to determine adherence to the previously established inclusion criteria. Articles that did not directly address the correlation between the factors studied and those that were not available in full were excluded. After this screening, 8 articles were included in the review for their adequacy to the proposed theme.

Table 1 -. PRISMA flow chart for selecting the sample of articles.

Phase	Description	Number of articles
Identification	Articles found in the database	980
	Articles Additional sources identified in other sources	0

	Total articles identified	790
Triage	Articles after Duplicate removal	743
	Articles Deleted after reading the titles and abstracts	676
	Articles Remaining towards Full-text evaluation	67
Eligibility	Articles Deleted after full-text evaluation	59
	Articles Included for final eligibility	8
Inclusion	Articles included in the review	8

RESULTS AND DISCUSSIONS

Regarding the type of research design of the articles evaluated, it was evident in the sample that most were primary, cross-sectional, quantitative studies with sample selection by convenience, and a randomized clinical trial was also found.

The main characteristics of the articles analyzed in this review are consolidated in Chart 2, in order of publication from the most recent to the oldest.

Chart 2 - Characterization of the studies analyzed (2014-2024) on the main factors related to obesity in the elderly population.

Author	Year	Local	Type of study	Sample characterization
Galarregui, C. *et al.*	2024	Spain	Randomized controlled trial	127 men and women aged between 50 and 80 years who were overweight/obese.
Xu, Z. *et al.*	2024	United States	Quantitative cross-sectional study	6089 individuals aged between 40 and 79 years, with a mean age of 56.49 years (± 10.65).
Lopes, E. C. *et al.*	2023	Brazil	Cross-sectional study	23,815 and 43,554 elderly people (≥ 60 years old), respectively, from the National Health Survey (PNS) of 2013 and 2019.
Olive tree T. M.	2022	Brazil	Cross-sectional study	398 adults and elderly households with overweight/obesity.

Freitas, A. C. C. *et al.*	2019	Brazil	Cross-sectional study and quantitative	206 elderly people with obesity, 122 females and 84 males. 69.57 ± 7.64 years.
Lima, A.P.; Cardoso, F. B.	2019	Brazil	Cross-sectional study and quantitative	204 elderly people with type 2 diabetes, 128 were female, 76 were male. 131 aged 60 to 69 years and 73 over 70 years old.
Silveira, E. A.; Vieira, L.L.; Souza, J. D.	2018	Brazil	Cross-sectional study	418 were elderly, 142 (34.0%) men and 276 (66.0%) women.
Scott And The. *et al.*	2015	Brazil	Cross-sectional study	416 elderly. 65.9% were female and 34.1% were male. Age between 60 ≥ 80 years.

The main results obtained from the studies included in this research, as well as the objective of each one, are summarized in Chart 3.

Chart 3 - Analysis of the studies.

Objective	Main results
To evaluate the effects of a precision dietary intervention based on the inclusion of individualized foods and digital tools on overall health status, including anthropometry, body composition, general metabolic determinations, dietary intake, gastrointestinal health, and quality of life in a follow-up of 3 months in adults who are overweight or obese.	The precision strategy reduced body weight at 3 months (−4.3 kg) with significant improvements in body fat percentage, blood pressure, and overall metabolic health compared to standard recommendations. The precision approach significantly improved the quality of life of individuals, with further improvements in emotional well-being and vitality. Adherence to the Mediterranean diet was significantly associated with a higher quality of life and vitality.

To analyze the association between waist circumference (WC), an easily measurable marker of abdominal obesity, and lung function parameters in middle-aged and older adults using the National Health and Nutrition Examination Survey (NHANES).	It was observed that for each unit increase in WC in men, the Forced Vital Capacity (FVC) increased by 23.687 mL, the Forced Expiratory Volume in one second (FEV1) increased by 12.029 mL, and the FEV1/FVC ratio decreased by 0.140%. In women, a one-unit increase in waist circumference resulted in a 6.583 ml increase in FVC and a 4.453 ml increase in FEV1. In the general population, each unit increase in waist circumference led to an increase of 12,014
	ml in FVC, an increase of 6.557 ml in FEV1, and a decrease in the FEV1/FVC ratio of 0.076%. By constructing a smooth curve, we identified a positive correlation between waist circumference and FVC and FEV1. On the other hand, there was a negative correlation between waist circumference and the FEV1/FVC ratio.
To analyze the association between time spent watching television (TV) and the presence of obsessive-compulsive disorder (OCD), obesity, and obesity associated with cardiovascular diseases (CVD) among older Brazilians, according to sex, comparing data from the National Health Survey (PNS) from 2013 and 2019.	Self-reported TV screen time was categorized as: <3, 3-6, and ≥6 per day. Obesity was assessed by body mass index ≥27 kg/m² and CVD by self-reported medical diagnosis. In 2013, older women who watched TV ≥6 hours/day were more likely to have OCD obesity and CVD-associated obesity. In 2019, older women who watched TV between 3-6 hours/day and ≥6 hours/day were more likely to have obesity OCD, while the incidence of CVD-associated obesity was higher for ≥6 hours/day. In 2019, men were more likely to have CVD-associated obesity by watching TV between 3-6 hours/day and ≥ 6 hours/day.
To evaluate the occurrence of food insecurity and overweight, and the relationship with food buying and consumption habits, among the adult and elderly population of the Brazilian Study – Natal/RN.	There was no association between Food Insecurity (FI) and overweight. People who lived in FI households never or almost never consumed vegetable salad or fruits. Regarding shopping habits, 80.2% made their purchases in super/hypermarket and 2.3% in street markets. The habit of consuming powdered juice or soft drinks, between 1 and 4 times during the week, was indicated by 28.7% of the individuals surveyed. In this same weekly interval, the consumption of sweet biscuits and biscuits with or without filling was higher. Super/hypermarkets are frequented by 37.4% of people considered to be in FI and 62.6% of those who are in Food Safety (SA). Regarding the adjusted analysis, a 37% higher prevalence of food insecurity was observed among individuals who reported consuming fruit 1 to 4 times a week, and 42% higher among those who reported consuming fruit never or almost never.

Evaluate the anthropometric indices and body composition, as well as to identify factors associated with eating habits and sedentary lifestyle in obese older adults.	In the body composition variables, women had a higher percentage of fat mass and lower lean mass than men. When comparing BMI according to age group, women > 75 years had a higher BMI than men in the same age group. Regarding the factors associated with diet-related eating habits, a prevalence of elderly people who do not follow diet/food control was observed, 84.5% of whom were gender
	male and 77.9% female, aged between 60 to 65 years old (83.8%), with more than eight years of schooling (100%), married (87.0%), with an average income of one to two minimum wages (83.0%), retired (83.2%), without smoking habits (86.7%) and with alcohol habits (81.4%). Gender was a factor that significantly influenced only the consumption of vegetables, being the most appropriate reported by the elderly than by the elderly males.
OBJECTIVE: To verify the factors associated with the practice of leisure-time physical activity in elderly people with type 2 diabetes.	The results of this study indicate that 77% of the elderly with type 2 diabetes are physically inactive, that is, they do not have a constant practice or do not reach the recommended 150 minutes of physical activity per week. It also showed a significant association between being physically active during leisure time with the age group of 60 to 69 years, not having pain and not suffering falls.
To identify the prevalence of abdominal obesity (OA) in the elderly, to verify its association with different morbidities and sociodemographic and lifestyle variables, according to gender.	Among men, the mean waist circumference was 97.2 cm ± 13.9, in women it was 91.6 cm ± 11.9, and these means were statistically different. No statistical difference was observed between the mean BMI of men (30 kg/m2 ± 2.6) and women (30.1 kg/m2 ± 4.4) with OA. The prevalence of OA in the sample was 55.1% (n = 230), being 65.5% (n = 150) in women and 34.8% (n = 80) in men. The prevalence of OA was 21.2% (n = 89) in the sample, 27.7% (n = 116) in men, and 17.8% (n = 74) in women. In women, the prevalence of OA was 1.9 times higher than in men. For the presence of morbidity, a statistically significant association was observed in men with OA in the age group between 70 and 74 years, with respiratory diseases and SAH. In women, OA was associated with the presence of DM.

OBJECTIVE: To evaluate the prevalence of daily consumption of fruits and vegetables (FVL) in the elderly and its association with sociodemographic factors, lifestyle, presence of morbidities and hospitalization.	The prevalence of daily consumption of fruits and vegetables was 16.6%. Evaluating only fruit consumption, the prevalence was 44%. The consumption of fruits plus vegetables and greens plus legumes was 24% and the consumption of these two types of foods was significantly associated. 33.6% performed physical activity during leisure time. Regarding health conditions, 27.2% were obese, 51.7% hypertensive, 76.4% were abdominally obese, and 24.5% were hospitalized. Among the variables on health conditions, the following were associated with FVL consumption: obesity, abdominal obesity and arterial hypertension.

Obesity is closely associated with a sedentary lifestyle, which is understood as the lack of physical activity and long periods of inactivity in front of screens, such as TV, computer and smartphone. When people spend many hours a day sitting or lying down, without expending enough calories, it is easier to gain weight, which results in excess body fat. A poor exercise routine and an inadequate diet combine to allow obesity to develop. Similarly, being overweight and physically inactive are associated with worsening health conditions, such as heart disease and type II Diabetes Mellitus, as well as poorer quality of life, due to mobility, self-esteem, and mental health.

Due to food insecurity, people end up consuming cheaper and more accessible foods, a large number of which are high-calorie food products that are high in calories and high in sugars and sodium. Although such foods are cheaper and more attractive from an economic point of view, they have low nutritional value and contribute to the development of chronic diseases, such as diabetes mellitus and systemic arterial hypertension. The consumption of malnourished food in combination with the inability to acquire healthy food increases the risk of obesity and other diseases associated with poor eating habits, as a result of which a vicious circle is formed, which aggravates the health of the vulnerable elderly population.

Abdominal obesity, which is excess fat in the belly area, affects the health of men and women in different ways. In men, this type of obesity is often linked to breathing problems such as sleep apnea and asthma, as the accumulation of fat can put pressure on the diaphragm and reduce the capacity of the lungs. In women, abdominal fat is more associated with increased blood pressure, or hypertension, due to hormonal and metabolic changes caused by excess fat in this region. These differences show how important it is to adopt sex-specific approaches in the prevention and control of abdominal obesity, aiming to improve health and reduce the risk of related diseases.

A balanced diet was essential in helping obese seniors lose weight in a healthy way, improving their overall health and well-being. When this healthy diet is combined with regular physical exercise, the benefits are even greater. This combination not only facilitates weight loss more effectively, but also improves mobility and vitality in the elderly. By adopting these habits, the elderly can enjoy a better quality of life, with more willingness to perform daily activities and feel stronger and more emotionally balanced.

CONCLUSION

Obesity in the elderly is an increasingly worrying health issue, which demands specific attention to promote healthy aging. Factors such as poor diet, sedentary lifestyle, and food insecurity are determinants for the increase in obesity in this age group. The study highlights the importance of interventions that encourage healthy eating habits and regular physical activity. Public health strategies should focus on dietary education and the creation of accessible physical activity programs, with the aim of reducing the effects of obesity and associated chronic non-communicable diseases (NCDs).

Among the elderly, obesity is often linked to comorbidities such as hypertension and diabetes, and abdominal obesity increases the risk for both men and women. Women, for example, are more likely to develop hypertension due to the accumulation of visceral fat, while men are more vulnerable to respiratory problems. In view of this, it is crucial that health policies contemplate differentiated approaches for each gender, in addition to promoting preventive interventions to prevent obesity from leading to the worsening of other health conditions.

Obesity prevention in the elderly should not be restricted to the individual level, but should also consider social and economic factors, such as food insecurity. Many elderly people face difficulties in acquiring healthy food and end up opting for products with low nutritional value due to the lower cost. This scenario aggravates health problems and perpetuates the cycle of obesity and chronic diseases. Therefore, it is essential to implement food and nutrition security policies that help combat this reality.

Finally, the study reinforces that, by adopting lifestyle changes, such as increasing the consumption of fruits, vegetables and legumes (FVL), combined with the practice of physical activities, it is possible to significantly improve the health and quality of life of the elderly who face obesity. Such interventions not only help reduce weight, but also promote emotional well-being, improve mobility, and contribute to increased longevity. In summary, obesity in the elderly is a complex problem that requires an integrated approach, involving education, social support and appropriate public policies.

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