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Diet quality of non-institutionalized elderly women from a Brazilian southern capital city: low consumption of saturated fats, sodium, whole grains, and cardioprotective fats

Qualidade da dieta de idosas não institucionalizadas de uma capital do sul do Brasil: baixo consumo de gorduras saturadas, sódio, cereais integrais e de gorduras cardioprotetoras

Abstract

Introduction: The elderly population is susceptible to changes in nutritional status due to factors related to socioeconomic and physiological changes; however, studies that evaluated the current dietary status of the elderly in Brazil are still scarce. ***Objective***: To evaluate the quality of the diet of non-institutionalized elderly women from a capital city in southern Brazil. ***Methods***: This was a cross-sectional study, with 174 convenience sampled elderly women. Food intake was assessed by means of a three-day dietary record. Diet quality was assessed through the Diet Quality Index - Revised (IQD-R) adapted for the Brazilian population. ***Results***: This work showed that 56.9% (n=99), 40.8% (n=71), and 2.3% (n=4) of the diets of the participants were classified as "needs modification", "healthy", and "inadequate", respectively. The mean score obtained through the IQD-R was 62.5 (± 9.6), with a minimum of 30.2 points and a maximum of 84.9 points. In the analysis of food group consumption, there was a low score for saturated fat (9.96±0.50), mono and polyunsaturated fats (1.08±2.21), whole grains (1.7±1.54), sodium (7.31±2.27), and a higher score for the total grains group (4.61±0.54). ***Conclusion***: Most of the elderly women assessed needed improvement in the quality of their diets, with emphasis on the consumption of whole grains and mono and polyunsaturated fats, but with adequate intake of saturated fat and sodium.

Keywords: Aging. Health of Eldery. Food Consumption. Eldery Nutrition.

Resumo

Introdução: A população idosa é suscetível às alterações no estado nutricional devido aos fatores relacionados às modificações socioeconômicas e fisiológicas; porém, estudos que avaliaram a situação alimentar atual de idosos no Brasil ainda são escassos. ***Objetivo:*** Avaliar a qualidade da dieta de idosas não institucionalizadas de uma capital do sul do Brasil. ***Métodos:*** Trata-se de um estudo de caráter transversal, com 174 idosas selecionadas por conveniência. A avaliação do consumo alimentar foi realizada por meio de registro alimentar de três dias. Avaliou-se a qualidade da dieta por meio do Índice de Qualidade da Dieta – Revisado (IQD-R) adaptado para a população brasileira. ***Resultados:*** Verificou-se que 56,9% (n=99), 40,8% (n=71) e 2,3% (n=4) das participantes apresentaram dieta que "necessita de modificação", dieta "saudável", e dieta "inadequada", respectivamente. A pontuação média obtida por meio do IQD-R foi de 62,5 (± 9,6), com mínimo de 30,2 pontos e máximo de 84,9

pontos. Na análise do consumo dos grupos alimentares, constatou-se baixa pontuação de gordura saturada (9,96±0,50), mono e poli-insaturada (1,08±2,21), cereais integrais (1,7±1,54), sódio (7,31±2,27), e maior pontuação para o grupo de cereais totais (4,61±0,54). *Conclusão:* A maioria das idosas avaliadas necessitam de melhoria na qualidade da dieta, com ênfase no consumo de cereais integrais e gorduras mono e poli-insaturadas, porém com ingestão adequada de gordura saturada e sódio.

Palavras-chave: Envelhecimento. Saúde do idoso. Consumo de Alimentos. Nutrição do idoso.

INTRODUCTION

Aging is one of the phases of the life cycle in which decreasing adaptive capacity impairs adequate nutrient intake for health benefits. However, the concept of optimal health, with regard to nutrient intake, refers to the state in which the individual intake is not only intended to prevent deficiency, but to meet the metabolic, physiological, and structural needs of the cells, with no discrepancy between what is needed and what is supplied, so that the balance is maintained.[1]

During aging, changes occur in the body composition characterized by an increase in fat mass and a decrease in muscle and fat-free mass. Skeletal muscle atrophy is prevalent in the elderly population and is associated with functional disability and mortality.[2,3] Among the factors that may contribute to reduce the physiological decline associated with aging is an adequate diet, which can prevent the loss of muscle mass and motor deficiency.[4]

It is worth noting that the elderly may present a poor diet due to the natural changes due to aging, to economic factors, to drug-nutrient interaction, and to psychosocial factors, such as depression, social isolation, reduced cognitive capacity, and loss of a partner.[5] Thus, the adoption of a quality dietary pattern is considered important as a way to promote healthy aging. Different instruments are used In order to verify the quality of a diet. In particular, for the Brazilian population, the Revised Diet Quality Index (IQD-R) has proven to be reliable and valid method to assess and monitor such aspects.[6,7]

From this perspective, and taking into account that mortality among men is higher than in women, the elderly population is predominantly female.[8] Although studies on the quality of the diet of elderly women are important to understand how this population is eating, these data are scarce in the scientific literature.[6,9-11]

Based on the aforementioned, this study aimed to evaluate the quality of the diet of elderly women in a capital city in southern Brazil. Data about this condition will allow the development of actions for health promotion or interventions that might contribute to a healthy aging.

METHODS

Ethical aspects

This study is part of a larger research study entitled "Effects of physical training with virtual games and nutritional guidance on the functional capacity of elderly women", previously approved by the Research Ethics Committee of the Health Sciences Sector of the Universidade Federal do Paraná (CAAE number: 36003814.2.0000.0102). All the participants signed the Informed Consent Form (ICF), according to the Resolution 466/2012 of the National Health Council.

Study characterization

A cross-sectional study was conducted with elderly women from a community in Curitiba-PR, which in 2010, according to the population census,[12] presented 117,179 elderly inhabitants, with a projected increase. The convenience sample totaled 174 non-institutionalized elderly women who were recruited through publicity with verbal invitation and distribution of pamphlets in churches in the city of Curitiba-PR, and among elderly women participating in the Elderly Open University of the Universidade Federal do Paraná.

Telephone contact was made with the elderly women who expressed interest in participating in the study and a meeting was scheduled at the Metabolic Unit of the Hospital de Clínicas of the Universidade Federal do Paraná to introduce themselves and to sign the ICF.

Elderly women considered healthy according to medical evaluation and without cognitive changes by the Mini Mental State Examination,[13] and aged 65 years or older, were included in this study, according to the guidelines of the World Health Organization for developed countries.[14] The elderly women who presented previous clinical diagnoses of systemic arterial hypertension and uncontrolled diabetes mellitus, renal and hepatic alterations, neurological diseases, and used food supplements to replace energy and proteins, were excluded from the study. In addition, those who did not fill out correctly the three-day food register form as well as those who were unable to read and write and did not have a family member to help them filling in the food register were also excluded.

The elderly women who met the inclusion criteria of the study and agreed to sign the Informed Consent Form (ICF) received the socioeconomic questionnaire for completion and were referred for anthropometric and food intake assessment.

Anthropometric evaluation

The data for anthropometric evaluation were collected by trained researchers at the Metabolic Unit of the Hospital de Clínicas, at the Universidade Federal do Paraná, according to the protocol of the Food and Nutrition Surveillance System - SISVAN.[15] Body mass was measured with a calibrated mechanical scale (Filizola brand - with a capacity of 150 kg and graduation of 100g), and height was measured with a wall stadiometer (Tonelli & Gomes brand), both equipments present in the Metabolic Unit.

The body mass index (BMI) classification system was used for the diagnosis and monitoring of the elderly nutritional status, as recommended by the SISVAN.[15] In order to analyze the cut-off points we used the parameters proposed by the Pan American Health Organization, in the Health, Well-Being, and Aging (SABE) project.[16]

Food consumption assessment

We used a three-day food record, covering two alternate days of the week and one weekend day. For this procedure, an appropriate form was given to the elderly soon after the anthropometric evaluation, and trained nutritionists guided the participants about the correct filling out of the food records. The elderly women were instructed not to change their eating habits because of the record and to write down the food consumed right after eating it, describing how it was prepared, the type of food, the amount ingested (expressed in home measures), and, in case of processed food, the brand. After one week, the participants returned to the Metabolic Unit to deliver the filled food records.

Based on the Table of Dietary Measures for Foods Consumed in Brazil,[17] the home measures described were converted into milliliters or grams. The Table for Food Consumption Assessment in Home Measurements[18] or information contained in food labels was used for foods not included in that table. The converted measures were standardized according to the Manual of Food Survey Critiques[19] and entered into the Brasil-Nutri® software, developed for food consumption assessment during the 2008-2009 Family Budget Survey (POF).

The statistical software SPSS Statistics® version 22 was used to associate the data with the Table of Nutritional Composition of Foods Consumed in Brazil,[20] generating a database containing the foods consumed by the participants and their nutritional composition for 100 grams of food. These values were calculated for the amount of food consumed per participant.

The total energy value (TEV) of the participants was estimated based on the Dietary Reference Intakes (DRIs) and compared with the usual energy intake.[21]

Evaluation of diet quality

The quality of the diet was evaluated using the IQD-R index proposed by Previdelli et al.[22] and validated for the Brazilian population by Andrade et al.[7] The index allows the evaluation of the quality of the diet using information from the usual intake of individuals, presenting 12 components, with nine food groups, two nutrients, and a component corresponding to the sum of the energy value from the intake of solid fat, alcohol, and added sugar (called Gord AA).

All the foods and ingredients identified in the food records were classified into the following food groups: total fruits (including natural fruits and fruit juices); whole fruits (excluding fruit juices); total vegetables (including leguminous only after the maximum score for meats, eggs, and leguminous is reached); dark green and orange vegetables and leguminous plants; whole cereals (representing cereals, roots, and tubers); whole grains; milk and dairy products (including milk and dairy products and soy beverages); meats, eggs, and leguminous; and oils (including mono- and polyunsaturated fats, oils from oilseeds, and fish fat). The two nutrients analyzed were saturated fat and sodium and, lastly, the Gord_AA component.

The index uses as reference the Food Guide for the Brazilian Population,[23] which considers the number of recommended daily portions of the food groups for 1,000 kcal; therefore, each component obtained a total caloric value added and calculated for 1,000 kcal.

Daily sodium intake was calculated in energy density (mg/1,000 kcal); saturated fat intake was calculated in caloric percentage; and the consumption of oils, oilseeds, and fish fat was calculated in kilocalories per 1,000 kcal (kcal/1,000 kcal). The GORD_AA component was calculated in caloric percentage, and in this group, alcohol consumption was calculated according to the International Guide for Monitoring Alcohol Consumption and Related Harm,[24] which defines that each ml of beer contains 0.33 g of ethanol; each ml of wine, 0.10 g of ethanol; and each ml of distilled spirits has 0.30 g of ethanol. Based on this, the alcohol content consumed per day by the participants was calculated with the value being converted into kilocalories.

After calculating the caloric value of all components per 1,000 kcal, their scores were calculated based on previously established cut-off points. The components received scores ranging from 0 (minimum score) to 5, 10, or 20 (maximum score according to the component).

In the absence of consumption, the lowest score was received by groups 1 to 9. In components 10 to 12, the minimum score was received if the intake was above the recommended limit. The maximum score was assigned (5 or 10 points, depending on the component) for an intake higher than or equal to the recommended portions of the food groups/1,000kcal. The increase in intake was directly proportional to the increase in score for groups 1 to 9. However, for components 10 to 12, it was inversely proportional. That is, the higher the consumption of these components, the lower was the score obtained. Intermediate scores (between minimum and maximum scores) were assigned proportionally to the amount ingested.

The index has a maximum total score of 100 points, and the closer to this value, the better was the quality of the diet of the participant. It was classified in tertiles, with the first one referring to an "inadequate" diet; the second to one that "needs modification"; and the third one to a "healthy" diet.[25,26]

Leguminous plants have a large participation in the Brazilian diet, being a source of protein, minerals, and fiber. Therefore, we proposed that the score of the "Meat, Eggs, and Leguminous" component be estimated by initially adding the energy value of the "Meat and Eggs" group and then adding the caloric value of "Leguminous" until the maximum score of the whole component is reached (190 kcal = 1 portion = 10 points).[22] This procedure was performed, and when there were surpluses, the energy value from "Leguminous" was calculated simultaneously in the "Dark Green and Orange Vegetables, and Leguminous" and "Total Vegetables" groups.

Statistical analysis

The data of this study were analyzed using descriptive statistics (means, standard deviation, frequency, and range) and the Kolmogorov-Smirnov test was employed to test for the normality of the variables of interest.

All the analyses were performed using the IBM® SPSS Statistics® version 22 software.

RESULTADOS

A total of 174 elderly women (Figure 1) took part in the study with a mean age of 70 years (±4.49), mean weight of 67.3 kg (±11.03), and mean BMI of 27.68 kg/m² (±4.01), with 46.6% being classified as eutrophic according to the BMI. The mean TEV of the participants was estimated at 1,840 kcal/day (±156.53) and the mean energy intake was 1,605.7 kcal/day (± 476.2), as presented in Table 1.

Figure 1. Flowchart of the study

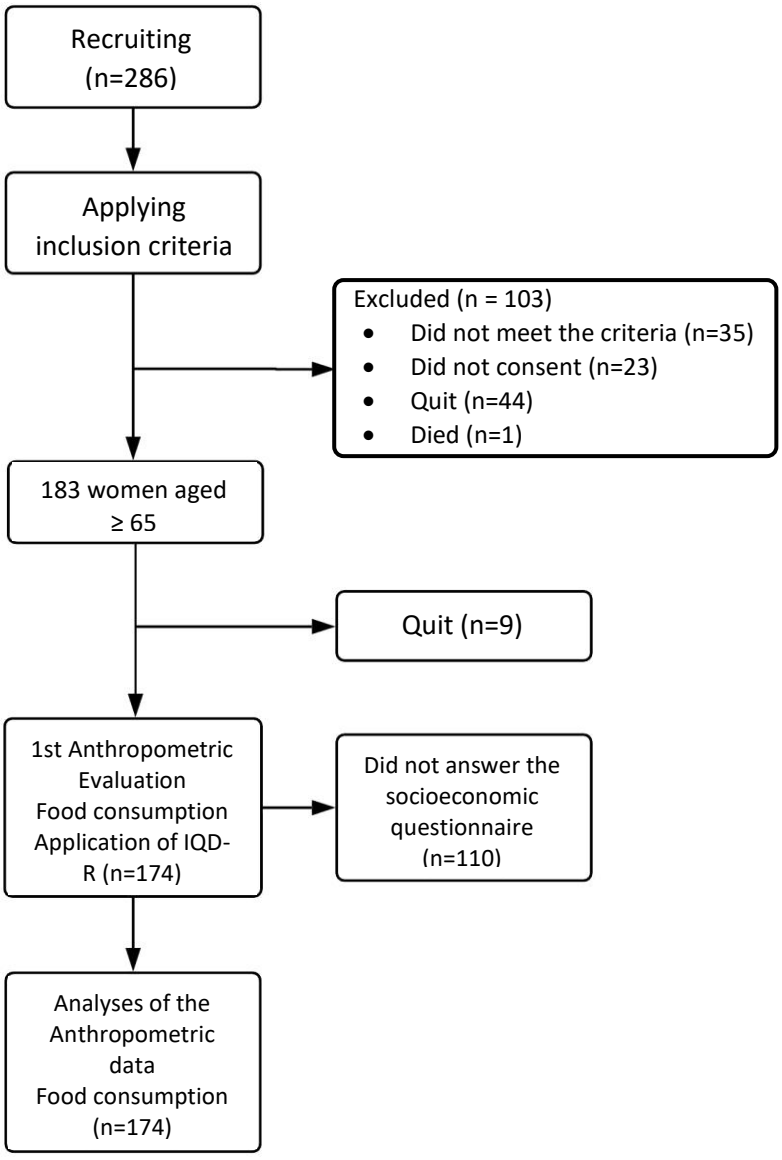

Table 1. Description of age group, BMI, TEV, and energy consumption of the elderly women. Curitiba-PR, 2019.

Variables	Frequency N (%)	Mean (sd)[a]
Age group (years)		
65-69	97 (55.7%)	70 years (±4.49)
70-74	44 (25.3%)	
75-79	24 (13.6%)	
80-84	9 (5.2%)	
IMC (kg/m²)		
Underweight	17 (9.8%)	27.68 kg/m² (±4.01)
Eutrophic	81 (46.6%)	
Overweight	31 (17.8%)	
Obesity	45 (25.9%)	
Total Energy Value (TEV)		
≤1.600kcal/day	15 (8.6%)	1.840 kcal/day (±156.53)
1.600-1.800kcal/day	48 (27.6%)	
1.800-2.000 kcal/day	88 (50.6%)	
>2.000kcal/day	23 (13.2%)	
Energy consumption (kcal/day)		
≤1.400kcal/day	58 (33.3%)	1.605.7 kcal/day (±476.2)
1.400-2.100 kcal/day	92 (52.9%)	
2.100-2.800 kcal/day	21 (12.1%)	
>2.800 kcal/day	3 (1.7%)	

SOURCE: The authors (2019).
[a]Mean (sd) of the score obtained for each group..

Only one third of the sample (n=64) answered all the questions of the socioeconomic form. The highest frequencies observed were 55.7% aged between 65 and 69 years; 58% were white, 62.5% single, divorced or widowed; with more than eight years of schooling; and Catholic (73.4%). About 64.1% lived with their children, a maid, or another relative. Regarding family income, 34.4% earned up to two minimum salaries, and retirement was the main source of income (60.9%). The use of medication was reported by 93.8% of the elderly women. Most participants (81.2%) reported not smoking, and 71.9% performed some physical activity.

Regarding the tertile classification of the diet quality, 56.9% (n=99) of the participants had a diet "requiring modification"; 40.8% (n=71) had a "healthy" diet; and 2.3% (n=4) had an "inadequate" diet.

The mean IQD-R score was 62.5 (± 9.6), indicating a diet "in need of modification," with a minimum of 30.2 points and a maximum of 84.9 points. The components with the lowest score for each IQD-R group were whole grains and oils (Table 2).

Tabela 2. Média, desvio padrão e frequência das pontuações por componente, de acordo com os grupos considerados no iqd-. Curitiba-PR, 2019.

IQD_R Groups	Mean (sd)[a]	Percentage of the Score Obtained (%)[b]	Minimum Score obtained (%)[c]	Maximum Score Obtained (%)[d]	Minimum and Maximum Score (of each component)
Total fruits	3.99 (±1.36)	79.8%	0 (3.4%)	5 (50%)	0 ↔ 5
Whole fruits	3.77 (±1.49)	75.4%	0 (5.7%)	5 (43.1%)	0 ↔ 5
Total vegetables	4.17(±1.19)	83.4%	0 (1.7%)	5 (51.7%)	0 ↔ 5
Dark green and orange vegetables and leguminous	3.57 (±1.47)	71.4%	0 (5.7%)	5 (32.8%)	0 ↔ 5
Total cereals	4.61 (±0.54)	92.2%	2.68 (0.6%)	5 (43.1%)	0 ↔ 5
Whole cereals	1.7 (±1.54)	34%	0 (28.7%)	5 (1.7%)	0 ↔ 5
Milk and dairy products	5.18 (±2.67)	51.8%	0 (6.9%)	10 (2.9%)	0 ↔ 10
Meat, eggs, and leguminous	6.96 (±2.20)	69.6%	0 (0.6%)	10 (8%)	0 ↔ 10
Oils	1.08 (±2.21)	10.8%	0 (75.3%)	10 (1.1%)	0 ↔ 10
Saturated fat	9.96 (±0.50)	99.6%	3.33 (0.6%)	10 (99.4%)	0 ↔ 10
Sodium	7.31 (±2.27)	73.1%	0 (0.6%)	10 (9.2%)	0 ↔ 10
Gord_AA	10.12 (±4.54)	50.6%	0 (0.6%)	19.65 (0.6%)	0 ↔ 20

SOURCE: The authors (2019).

Most of the elderly women (99.6%) exhibited adequate consumption of saturated fat, presenting a high score in this group (9.96 ± 0.50), indicating a low consumption of this component. A similar result was observed for sodium (7.31±2.27). The second component that presented the highest score was the whole cereals group, representing 92.2% in relation to its maximum score.

The groups that scored the lowest values were those of oils and whole grains, which presented, respectively, an average of 1.08 (±2.21) and 1.7 (±1.54) points. In the group of oils, 75.3% of the sample obtained a minimum score, showing low consumption of mono and polyunsaturated fats, fish fat, and oilseeds.

Regarding the consumption of milk and dairy products, 51.8% of the elderly women consumed this group adequately.

DISCUSSION

Most elderly women in this study were eutrophic and with a diet that "needs modification". There was a need to improve the consumption of whole grains and mono- and polyunsaturated fats, but they have adequate intake of saturated fat and sodium.

The concern about improving the diet of elderly women targets especially the control and prevention of chronic diseases. This was be observed in a study that evaluated the consumption of 8,272 Americans, including 3,286 children, 3,690 adults, and 1,296 elderly, of which the latter group and children had a better diet quality than the adults.[27] A study conducted in Pelotas-RS, Brazil, with 1,519 individuals, with 66% of the sample being formed by women (51.7%) with over 40 years old, observed that age is directly related to a better diet quality. It also pointed out that the elderly aged 60 years or more were seven times more likely to have a better quality diet compared to individuals aged between 18 and 24 years. Additionally, women were 2.4 times more likely to have a better diet quality than men.[28]

The mean score obtained by the elderly women in the IQD-R was similar to that observed by Assumpção et al[29] who applied the same instrument with 1,509 elderly individuals in a city in São Paulo, obtaining a score of 62.2 for women. In Brazil, a population-based, cross-sectional study involving 4,038 individuals (different age groups and elderly) who participated in the Municipality of São Paulo Health Survey in 2003 and 2008 used the IQD-R and identified that the elderly presented a better diet quality when compared to adults and adolescents. However, they still needed improvements in their diet quality (60.73 points in 2003 and 62.78 points in 2008) regarding the maximum score that can be obtained by the index.[30]

A similar result was observed by other authors that evaluated the diet quality of adults and elderly, identifying significant variation according to sex and age group, with women over 50 years old showing a better overall score, but with diets requiring modification.[11,31-34]

These results corroborated those obtained in the present study, showing that although elderly women present a better diet quality, the diet of this population group still needs to be changed.

The elderly women evaluated had appropriate weight and BMI classified as eutrophic, according to the Pan American Health Organization.[16] This result may be related to the better diet quality obtained for this age group. However, it is important to consider that the BMI of women tends to decline after 75 years of age, highlighting the importance of maintaining a healthy diet with adequate energy intake.[35]

The energy intake of the elderly women in the present study was higher than the values described in previous studies,[36,37] although they are below the energy needs for elderly women. A study[36] that evaluated the energy intake of 4,286 elderly individuals from different Brazilian regions observed that the mean energy (kcal) consumed by the elderly was approximately 1,423/day kcal in the country, and 1,438 kcal/day in the South Region, similar to the results found in another study, which reported energy intake between 1,320 and 1,564/day kcal also for the South Region of Brazil.[37] However, the energy intake of the participants in this study was lower than the estimated TEV, similar to the results found by Venturini et al.[37] who evaluated 427 elderly individuals, 70% females, aged between 60 and 69 years. Of these, 58.3% had a caloric consumption below the TEV for their gender and age group, indicating that elderly women may consume fewer calories than the daily needs, which may lead to inadequate consumption of macronutrients and micronutrients.

These findings may be related to several factors, among which women are more concerned with health and aesthetics, being more likely to go on diets for weight loss, and sometimes, autonomously reduce food consumption.[37] It should also be noted that self-reported energy intake may under- or overestimated the amount of calories consumed, and that the guidelines received by the elderly women to fill out the food record may have contributed to the consumption results obtained in this study.

During the analysis of the consumption of the different food groups, a low intake of saturated fat was observed. When Rombaldi et al,[38] evaluated the factors associated with the consumption of diets rich in fat by individuals aged up to 69 years in a city in southern Brazil, they observed that age was directly associated with the consumption of

higher fat diets, with younger people presenting a higher risk of consuming this macronutrient than individuals aged 60 years or older.

The data obtained regarding the adequate sodium intake corroborate a study that evaluated the average sodium intake of the Brazilian population using data from 2008, 2013, 2016, and 2017, and found a 10.4% reduction in the consumption of elderly women.[39] This result may be related to the fact that, over the years, the population has reduced the consumption of this mineral, which may be related to health-promoting campaigns and disease prevention actions.

In Brazil, initiatives have been developed to reduce the sodium content in processed foods. In 2011, the Ministry of Health signed an agreement with the Brazilian Association of Food Industries (ABIA) to improve the nutritional profile of processed foods, and in 2017 the partnership was renewed for another five years. The first cooperation enabled the removal of 17,000 tons of sodium from foods, and the new agreement aims to remove 28.5 thousand tons of sodium from processed foods by 2022.[40] In addition, in 2018, Bill No. 392 was proposed, determining the indication of "high sodium content" on the labels of foods that fall within this category, according to the health authority.[41] This bill amended the Decree-Law No. 986 of 1969, which instituted basic food standards.

The results regarding the consumption of saturated fat and sodium may be a reflection of the age of the group studied. It is well known that the high intake of these components is directly associated with the increased risk of cardiovascular diseases, diabetes, and dementia, which mainly affect the older population.[36] With aging, there is greater concern about maintaining an adequate diet in order to control or prevent chronic diseases, which makes individuals more aware of their own health and diet.[42,43] In this context, it is worth noting that the elderly women participating in this study were active and participated in organized groups, which contributes to a greater awareness about healthcare.

Regarding the low consumption of food from the Oils group (mono, polyunsaturated fats, fish fat, and oilseeds), a similar result was found in a study in which the elderly showed low intake of foods that are a source of mono and polyunsaturated fats.[44] In a population study with 2,732 individuals, only 30% of the participants consumed fish at least once a week. They also noted a lower consumption of fish by individuals older than 60 years, corroborating the results obtained by the present study.[45]

The mono- and polyunsaturated fatty acids are capable of reducing blood lipid levels and the risk of developing cardiovascular diseases. However, their low consumption may be associated with the difficult access to this food, high cost, food preference, or lack of habit by the population.[45] This result points to the importance of developing public health policies that encourage the consumption of these components, enabling greater access to these foods and raising awareness about their health benefits to the population.

The Whole Cereals group (cereals, roots, and tubers) presented a high score in this study. These data reinforce that these are important foods in the Brazilian diet that contribute to the total daily energy consumed by the population.[46] It is known that cereals and whole grains are important sources of fiber that are associated with reduced risk of non-communicable chronic diseases.[47,48] However, in the present study, the elderly women showed unsatisfactory consumption of this component. This can be explained by the fact that the elderly often do not have natural teeth or have problems with chewing; reducing the ingestion of this nutrient.[44] The same was found in a study conducted in São Paulo, which evaluated the food intake of 100 elderly of both sexes, proposing a list of foods most consumed by this population group. This study observed a high intake of foods that are sources of complex carbohydrates, but with low fiber content.[44] This result is similar to that found by another author that evaluated 87 elderly individuals in southern Brazil, noting that their fiber intake was lower than recommended for their age group.[49]

It is important to emphasize that, at this age, some factors may influence food purchasing decisions: the ease of food preparation and the social context in which the elderly person is placed should be emphasized. The

willingness or need to buy foods that require more time or effort to prepare decreases with advanced age. Also in this context, physiological changes that involve the perception of smell and taste also affect the purchase of certain foods.[50]

In the present study, the score obtained in the milk and dairy products group was slightly above the average. It should be noted that this component plays an important role in the diet of the elderly. The aging process involves physiological changes, with reduced bone and muscle mass, making it important to ingest high biological value proteins, such as those found in milk.[51] Increased protein intake contributes to reduce the loss of muscle mass associated with low muscle function (strength or performance). It is well known that the consumption of milk and dairy products stimulates muscle protein synthesis and contributes positively to muscle quality.[52,53]

When evaluating food intake, it is important to consider aspects that reflect the usual intake of the participant, avoiding under- or overestimation of the result. Even if there is a pattern, food intake may vary daily, or from week to week. Cultural, economic, physiological, and environmental factors can also influence changes in food intake. These variations explain the intra-individual variability, which can be considered more important than the variation between individuals.[38] This analysis revealed the need to correct the variability of the dietary intake. However, the instrument used in this study (IQD-R) allowed us to assess the food quality of the food groups and, since some foods are consumed sporadically (such as fish, added sugars, and alcohol), the correction of intra-individual variability was impossible, based on information from only three days of food records.

When considering the results, it is important to highlight the limitations of the study, such as the sample size, which represents only part of the elderly population of the community, and the small number of elderly women who reported socioeconomic and educational data.

In addition, other limitations were found, such as the food composition tables used, without some foods, and the lack of details about the cooking preparations, which can be considered a systematic error. Regarding the categorization of the components of the Dietary Quality Index, it is relevant to note the lack of a protocol detailing the foods and preparations belonging to each group. In this study, preparations such as porridge, savory pies, and cakes were categorized according to the judgment of the researcher, who analyzed each ingredient present in the preparations, categorizing them into the proposed groups.

However, the data obtained in this study provide knowledge about the diet of elderly women from a city in Paraná, Brazil, and may contribute to the adoption of health-promoting policies and nutritional interventions based on the evaluation of food consumption and encouragement of counseling, monitoring, and nutrition education activities, in order to provide the best quality of life for this population group.

CONCLUSION

This work showed that the diet of most elderly women needed to be modified, with emphasis on the consumption of whole foods and mono- and polyunsaturated fats. Despite the need for dietary improvement, the elderly women in this study showed low intake of saturated fat and sodium.

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