Adiposity and mediterranean diet adherence: a comparison between older women with and without sarcopenia

Adiposidad y adherencia a dieta mediterránea: una comparación entre mujeres mayores con y sin sarcopenia

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Resumen

Introducción: Las mujeres mayores con sarcopenia pueden tener mayor adiposidad y peores patrones dietéticos que aquellas sin sarcopenia.
Objetivo: Analizar diferencias en la adherencia a la Dieta Mediterránea (DM) y los niveles de adiposidad entre mujeres mayores con y sin sarcopenia.
Metodología: Estudio observacional descriptivo-comparativo, realizado en 180 mujeres (60 a 90 años) de Talca, Chile. Se evaluó la sarcopenia mediante el algoritmo *del European Working Group on Sarcopenia in Older People*. Se midió la adiposidad con absorciometría dual de rayos X, determinando la cantidad y porcentaje de grasa corporal en los segmentos de brazos, piernas y tronco, y se midió el índice de masa corporal (IMC) y perímetro de cintura. La adherencia a la DM se evaluó mediante el cuestionario MEDAS. El análisis estadístico utilizó la prueba t para muestras independientes ($p < 0,05$).
Resultados: La prevalencia de sarcopenia fue 18,8%. Las mujeres con sarcopenia mostraron un mayor porcentaje de grasa en brazos ($p=0,0476$), un menor IMC ($p = 0,0104$), y una menor adherencia a la DM ($p = 0,0351$) que sus pares. No hubo diferencias significativas en PC ($p = 0,0671$) ni masa grasa total ($p = 0,2718$).
Conclusión: Este estudio confirma que las mujeres mayores con sarcopenia presentan un menor IMC, mayor grasa en brazos y menor adherencia a la dieta mediterránea en comparación con aquellas sin sarcopenia. Los hallazgos respaldan la hipótesis de que la sarcopenia se asocia con un perfil menos favorable de composición corporal y alimentación.

Palabras clave

Absorciometría; envejecimiento; fuerza muscular; dieta mediterránea; sarcopenia.

Abstract

Introduction: Older women with sarcopenia may have greater adiposity and worse dietary patterns than those without sarcopenia.
Objective: To analyze differences in Mediterranean diet adherence and adiposity levels between older women with and without sarcopenia.
Methods: A descriptive-comparative observational study was conducted with 180 women (60 to 90 years old) from Talca, Chile. Sarcopenia was evaluated using the European Working Group on Sarcopenia in Older People algorithm. Adiposity was measured with dual X-ray absorptiometry, determining the amount and percentage of body fat in the arm, leg, and trunk segments, and the body mass index was measured. (BMI) and waist circumference (WC). Adherence to DM was evaluated using the MEDAS questionnaire. Statistical analysis used the t-test for independent samples ($p < 0.05$).
Results: The prevalence of sarcopenia was 18.8%. Women with sarcopenia showed a higher percentage of arm fat ($p = .048$), lower body mass index ($p = .010$), and lower adherence to the Mediterranean diet ($p = .035$) compared to their peers. No significant differences were observed in waist circumference ($p = .067$) or total fat mass ($p = .272$).
Conclusion: This study confirms that older women with sarcopenia have lower BMI, higher arm fat, and lower adherence to the Mediterranean diet than those without sarcopenia. These findings support the hypothesis that sarcopenia is associated with less favorable body composition and dietary profiles.

Keywords

Absorptiometry; ageing; muscle strength; mediterranean diet, sarcopenia.

Introduction

Aging is a biological process defined by the progressive accumulation of molecular and cellular alterations (López-Otín et al., 2013) which leads to changes in body composition and an increase in the prevalence of geriatric syndromes, such as falls, frailty and sarcopenia (Wang et al., 2024). These syndromes significantly impact the quality of life and autonomy in the elderly population (Frontera, 2017; Cacciatore et al., 2023). Sarcopenia is described by the European Working Group on Sarcopenia in Older People (EWGSOP2) as the simultaneous decline in muscle mass, strength, and physical performance (Cruz-Jentoft et al., 2019). It affects approximately 5-13% of people over 60 years of age and up to 50% of those over 80 years old (Shafiee, et al., 2017; Rodríguez-Rejón, et al., 2019; Tagliafico, et al., 2022). Sarcopenia develops because of multifactorial processes that include not only natural aging but also metabolic alterations, chronic inflammatory states, and lifestyle-related factors. These conditions contribute to a progressive loss of muscle mass and strength, which significantly impacts the quality of life by increasing the risk of falls, fractures, cognitive decline, physical disability, and mortality (Al Saedi, et al., 2022; Lee, et al., 2024).

In a similar way, aging leads to notable alterations in body composition, marked by an increase in fat mass, primarily in the abdominal area, and heightened lipid accumulation in non-adipose tissues such as the liver, skeletal muscles, and myocardium (Cacciatore et al., 2023). These alterations contribute to the development of insulin resistance, chronic low-grade inflammation, and mitochondrial dysfunction, promoting an unfavorable metabolic environment (Cacciatore, et al., 2023; Wang, et al., 2024). Moreover, they are associated with an increased risk of metabolic syndrome, cardiovascular disease, and non-alcoholic fatty liver disease, exacerbating health complications in the elderly population (Kim & Won, 2022). Given the interplay between these metabolic and compositional changes, dietary patterns have emerged as critical modulators that can influence body composition, muscle function, and metabolic health in older adults.

Several studies suggest that adherence to healthy dietary patterns could mitigate the negative effects associated with aging, including those related to changes in body composition, such as increased adiposity and muscle loss (Granic, et al., 2019; Guasch-Ferré, 2021). Particularly, the Mediterranean Diet, characterized by a high intake of fruits, vegetables, whole grains, legumes, nuts, fish, white meats, dairy, and moderate wine consumption, has shown significant benefits in improving metabolic health and functionality (Barrea, et al., 2019; Papadopoulou, et al., 2023). These benefits are primarily attributed to its anti-inflammatory and antioxidant properties, which, in turn, promote cellular quality control processes and help mitigate mitochondrial dysfunction (Coelho-Júnior, Trichopoulou & Panza, 2021). A meta-analysis indicated that the Mediterranean diet not only improves body composition by reducing visceral adiposity but also reduces the negative effects of sarcopenia (Bloom et al., 2018). Similarly, it has been reported that older adults who follow a Mediterranean diet have a greater ability to perform daily activities, contributing to higher functional independence and a reduction in the prevalence of frailty (Coelho-Júnior, Trichopoulou & Panza, 2021; Poursalehi, et al., 2023). In contrast, it has been identified that individuals with sarcopenia tend to have lower adherence to healthy dietary patterns, leading to poor diet quality characterized by low consumption of fresh foods, low protein intake, and higher consumption of ultra-processed products (Ganapathy et al., 2020). An inadequate nutritional pattern promotes the progression of sarcopenia and contributes to increased body adiposity, as well as alterations in various metabolic parameters, including insulin resistance and chronic inflammation (Barrea et al., 2019). These results emphasize the need to understand how diet can be considered a key factor in the development of highly prevalent syndromes like sarcopenia, as well as to understand the complexity of diet's impact on sarcopenia. Therefore, the present study aims to compare adiposity and adherence to the Mediterranean diet between older women with and without sarcopenia. It is hypothesized that older women with sarcopenia have lower adherence to the Mediterranean diet and higher levels of adiposity compared to those without sarcopenia.

Method

Design

An observational design of the descriptive-comparative type was developed from June to November 2024. Non-probabilistic convenience sampling was used for participant selection. The study began with a two-week initial phase dedicated to the dissemination of information and the recruitment of participants, along with training sessions for the evaluators to ensure standardized and reliable data collection procedures. The older women who agreed to participate in the research were invited to the laboratory facilities of a Chilean university, where all measurements were conducted under controlled conditions. Participants were required to sign an informed consent form, ensuring they were fully aware that their data would be used exclusively for scientific research. Before data collection, participants were thoroughly informed about the study's background, methodology, and objectives to ensure a complete understanding. Participation was entirely voluntary. The research was approved by a local ethics committee and adhered to the ethical guidelines outlined in the Declaration of Helsinki, which governs studies involving human subjects (World Medical Association, 2024).

Participants

The sample consisted of 180 older women from Talca, Chile. The inclusion criteria used were: a) older women between 60 and 90 years old (median age was 71.0 years, with an interquartile range of 9.0 years); b) optimal cognitive level to understand the instructions, evaluated with the Mini-Mental Test (≥ 14 points) (Jiménez et al., 2017). For descriptive purposes, participants were stratified into the following age groups: 60–64, 65–69, 70–74, 75–79, 80–84, and 85–90 years. Exclusion criteria: a) older adults using assistive devices for mobility (walkers, slings, crutches, canes, or other support devices); b) older adults who, due to physical limitations or injuries, are unable to perform physical performance tests; c) older women in a dependent condition according to the functional examination of the elderly - EFAM Chile (Ministry of Health, 2010).

Outcomes

Mediterranean Diet Adherence

Adherence to the Mediterranean diet was evaluated using the 14-item Mediterranean Diet Adherence Screener (MEDAS) questionnaire (Azorín Ras et al., 2018), an instrument validated and also used in the elderly Chilean population (Echeverría, et al., 2016; Silva-Gamarra, et al., 2024).
This instrument consists of 14 questions, each with dichotomous answers (0 or 1), that inquire about the frequency of consumption of specific foods associated with the Mediterranean diet, such as fruits, vegetables, fish, legumes, olive oil, and sugary drinks.
For the questionnaire application, participants were asked to carefully read each item and mark the answer they considered most appropriate, indicating their usual consumption. The total score, which ranges from 0 to 14, classifies participants as adherents to the Mediterranean diet if they score nine or more points.

Body Mass Index

Body mass index (BMI) was determined by dividing body weight in kilograms by the square of height in meters (kg/m^2). Body weight was obtained with a calibrated electronic scale (Seca, Hamburg, Germany) while participants were barefoot and dressed in light clothing. Height was measured using a wall-mounted stadiometer (Seca 274, Seca AG, Reinach, Switzerland). Participants stood barefoot with heels together, back straight, and gaze forward, following the guidelines established by the Pan American Health Organization (PAHO, 2001).

Waist circumference

Waist circumference was measured in accordance with the guidelines provided by the World Health Organization (World Health Organization [WHO], 2011). Participants stood upright with feet shoulder-width apart and balanced weight distribution. A stretch-resistant, retractable measuring tape (Seca 201, Reinach, Switzerland) was positioned horizontally around the abdomen, midway between the lower border of the last rib and the top of the iliac crest. The measurement was taken at the end of a normal exhalation, ensuring the tape was snug but did not compress the skin.

Adiposity

Adiposity was assessed using dual-energy X-ray absorptiometry (DXA), model GE Lunar Healthcare, (Madison, MI, USA) with Encore software version 13.60. This method provided accurate data on fat mass (in kilograms) and body fat percentage, both total and segmental, including the arms, legs, and trunk regions. The procedure began with inputting the participant's basic information, such as age, sex, weight, and height. Participants wore comfortable clothing and were instructed to remove any items that might interfere with the X-ray beam, such as jewelry or undergarments containing metal components like wires.

Scans were performed per the manufacturer's guidelines, with participants positioned supine to ensure proper body alignment and minimize movement, thereby optimizing measurement accuracy (International Society for Clinical Densitometry [ISCD], 2023). The software automatically segmented the body into distinct regions (arms, legs, and trunk) and provided detailed outputs on the percentage of body fat and fat mass for each region.

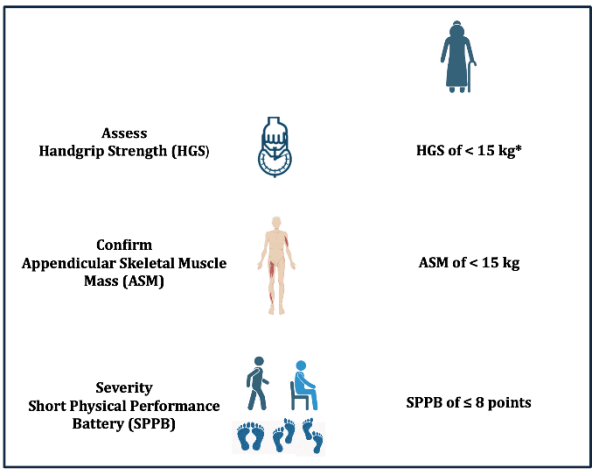
Before each scanning session, the Lunar Prodigy device was calibrated following the manufacturer's standard procedures. This step ensured reliable measurements and consistency in evaluating fat mass and body fat percentage.

Sarcopenia

Sarcopenia was diagnosed based on the EWGSOP2 algorithm, which involves three sequential steps: (i) assessment of muscle strength, (ii) measurement of appendicular muscle mass, and (iii) evaluation of physical performance (Cruz-Jentoft et al., 2019).

Muscle strength was assessed using a hand dynamometer (Takei TKK5401, Niigata, Japan) to measure handgrip strength (HGS) of the dominant hand. Each participant performed three trials, and the highest value was used for analysis. Low HGS was defined as <15 kg, according to validated cut-off points for Chilean older women (Lera et al., 2018). Muscle mass was evaluated using DXA, with low appendicular skeletal muscle mass (ASM) defined as <15 kg. Physical performance was assessed with the Short Physical Performance Battery (SPPB), where scores ≤8 indicated poor performance consistent with severe sarcopenia. According to the diagnostic algorithm proposed by Cruz-Jentoft et al. (2019), participants were classified as either "with sarcopenia" or "without sarcopenia", as illustrated in Figure 1.

Figure 1. Sarcopenia, EWGSOP2 algorithm making a diagnosis and quantifying severity in practice. Adapted from the Cruz-Jentoft et al. (2019). *For Chilean older women.



Data analysis

Data analysis was conducted using GraphPad Prism software version 9.0. A total of 180 older women were included to compare adiposity levels and adherence to the Mediterranean diet between those with and without sarcopenia. The Kolmogorov-Smirnov test confirmed that the variables followed a normal distribution.

Group comparisons for adiposity and Mediterranean diet adherence were performed using an independent t-test. The assumptions of normality and variance homogeneity were verified with Levene's test. In addition to statistical significance (p-values), Cohen's d was calculated to assess the magnitude of the effect size in between-group comparisons. Effect sizes were interpreted using conventional thresholds: small (d = 0.2), moderate (d = 0.5), and large (d = 0.8). Cohen's d values were reported for all variables, but interpreted only when the comparison reached statistical significance. Results are presented as means, standard deviations (SD), and percentages. Statistical significance was set at $p < 0.05$ for all analyses.

Results

The overall prevalence of sarcopenia and its distribution by age group are presented in Figure 2. The total prevalence of sarcopenia among the women in this study was 18.8%. A stratified age analysis revealed notable variation across groups, with the highest prevalence observed in the 70–74 age group (38.2%). In contrast, the lowest prevalence rates were recorded in the 60–64 (2.9%) and 85–90 (5.9%) age groups.

Figure 2. The overall prevalence of sarcopenia and prevalence by age group.

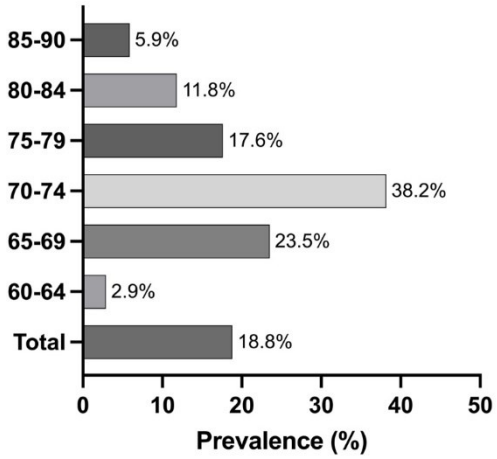


Table 1 shows the descriptive characteristics of the sample stratified by sarcopenia status. Women with sarcopenia had a lower mean body mass index (27.8 ± 3.53 kg/m^2) than those without sarcopenia (29.7 ± 4.47 kg/m^2). Similarly, lower waist circumference values were observed in the sarcopenia group (96.0 ± 12.5 cm) compared to the non-sarcopenia group (99.6 ± 12.5 cm). Regarding adiposity, women with sarcopenia showed slightly higher fat percentages in the arms, legs, and trunk, with a total body fat percentage of 42.3 ± 7.82 compared to 41.5 ± 7.54 in the non-sarcopenia group. Finally, Mediterranean diet adherence was assessed using the MEDAS score, with a cut-off of ≥9 indicating good adherence. Participants with sarcopenia had a mean MEDAS score of 6.40 ± 1.91, suggesting lower adherence than those without sarcopenia (7.07 ± 1.98).

Table 1. Descriptive characteristics of older women stratified by sarcopenia status.

	Sarcopenia		Whitout sarcopenia	
	Mean	SD	Mean	SD
Age (years)	71.1	6.89	71.7	6.60
Weight (kg)	63.4	8.24	73.2	13.7
Height (m)	1.51	0.06	1.56	0.08
Body Mass Index (kg/m^2)	27.8	3.53	29.7	4.47
Waist Circumference (cm)	96.0	12.5	99.6	12.5
HGS (kg)	14.4	4.58	22.3	6.38
AMS (kg)	14.8	2.31	17.9	3.36
Fat mass (kg)	29.3	7.51	28.6	9.56
Arm percentage fat (%)	42.2	8.81	40.4	8.41
Leg percentage fat (%)	40.21	8.52	38.6	8.56
Trunk percentage fat (%)	45.3	9.19	44.9	8.24
Total fat percentage (%)	42.3	7.82	41.5	7.54
MEDAS score	6.40	1.91	7.07	1.98

AMS: Appendicular skeletal muscle mass; cm: centimeters; HGS: handgrip strength; kg: kilograms; kg/m^2: kilograms per square meter; SD: Standard deviation; %: percentage.

Figure 3 compares body fat percentages across arm, leg, trunk, and total body segments between individuals with and without sarcopenia. A significantly higher fat percentage was observed in the arms of the sarcopenia group compared to the non-sarcopenia group, t(48) = 1.082, p = .048, d = –0.212, indicating a small effect size (Figure 3A). No statistically significant differences were observed in fat percentages for the legs (t(48) = 1.464, p = .170, d = –0.290) (Figure 3B) or trunk (t(46) = 1.486, p = .414, d = –0.302) (Figure 3C). Similarly, the two groups did not differ in total body fat percentage (t(47) = 1.648, p = .293, d = –0.331) (Figure 3D).

Figure 3. Comparison of total body fat percentage and fat percentages of the arm, leg, and trunk segments among older women with and without sarcopenia.

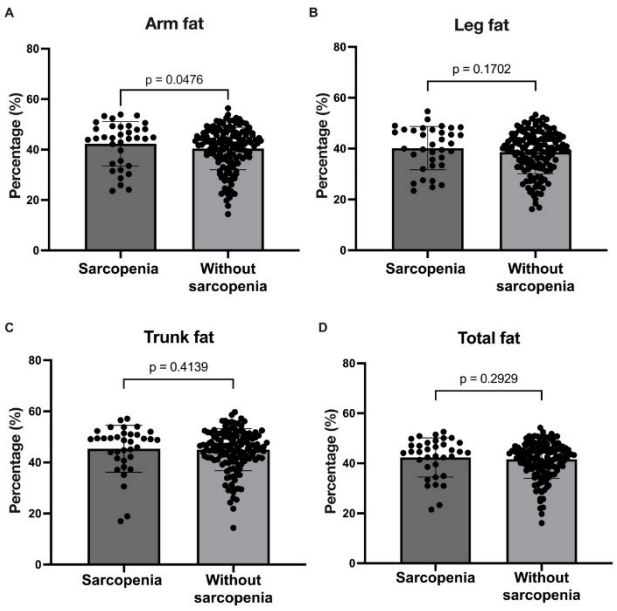
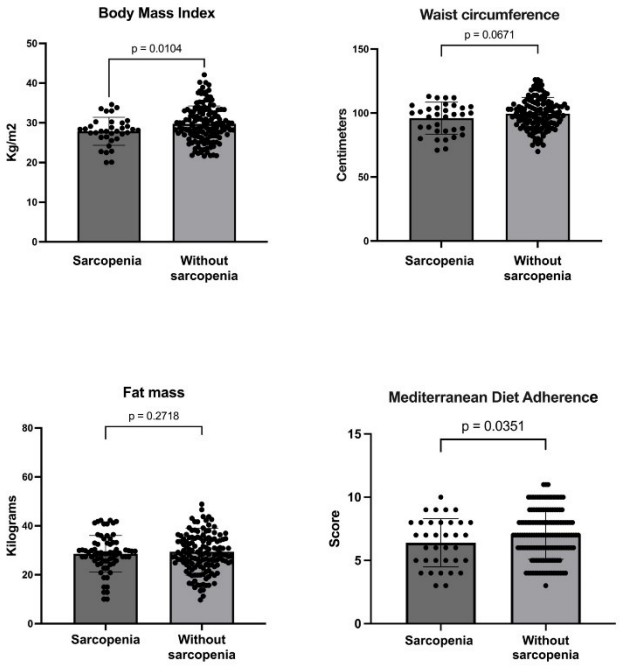


Figure 4 illustrates comparisons of body mass index (Figure 4A), waist circumference (Figure 4B), total fat mass (Figure 4C), and adherence to the Mediterranean diet (Figure 4D) between older women with and without sarcopenia. Body mass index was significantly higher in women without sarcopenia compared to those with sarcopenia, t(60) = –2.678, p = .010, d = 0.441, indicating a small-to-moderate effect size. No significant differences were found in waist circumference (t(50) = –1.512, p = .067, d = 0.300) or total fat mass (t(49) = 0.840, p = .272, d = 0.306). Finally, adherence to the Mediterranean diet, assessed using the MEDAS score, was significantly lower in the sarcopenia group (t(51) = –1.829, p = .035, d = 0.341), reflecting a small effect size.

Figure 4. Comparison of Body mass index, Waist circumference, total fat mass, and Mediterranean diet adherence between older women with and without sarcopenia.



Discussion

The main result of this study revealed that older women with sarcopenia showed a higher percentage of fat in the arm segment (p = .048, d = –0.212), a lower body mass index (p = .010, d = 0.441), and lower adherence to the Mediterranean diet (p = .035, d = 0.341) compared to their peers without sarcopenia. Sarcopenia is characterized by the progressive loss of muscle mass, often accompanied by the infiltration of adipose tissue in the skeletal muscle (Cacciatore et al., 2023). The finding of a higher percentage of fat in the arm segment in women with sarcopenia aligns with previous studies documenting an increase in fat infiltration in individuals with sarcopenia (Wang et al., 2024; Zhu et al., 2024). This fat infiltration, especially in muscles, not only reflects a loss of muscle mass but also an alteration in muscle quality, which can compromise motor functionality. Fat infiltration in body segments is associated with decreased muscle contractility, increasing vulnerability to fatigue and reducing the ability to perform daily activities (Cruz-Jentoft et al., 2019). Additionally, it has been shown that an increase in body fat contributes to a chronic inflammatory environment, exacerbating muscle loss and negatively impacting metabolic health (Wang et al., 2020). The arm segment is a significant indicator of musculoskeletal function, as it reflects the ability to perform functional movements that are essential for daily life (Wang et al., 2018). However, despite the reported evidence, other body segments, such as the legs and trunk, and total fat mass, did not show significant differences between groups. This underscores the need for further research to determine whether the observed differences in arm fat are specific to certain anatomical regions or if they represent early patterns of sarcopenia in women.

Regarding body mass index, women with sarcopenia had a significantly lower value compared to their counterparts without sarcopenia. This result is consistent with previous research indicating that a reduced body mass index in individuals with sarcopenia reflects an overall loss of body mass and is primarily related to a decrease in lean mass (Merchant et al., 2021). Sarcopenia, characterized by the loss of muscle tissue, is a key factor contributing to the reduction of body mass index in this population, as the decrease in muscle mass leads to a reduction in fat-free mass, resulting in a lower body mass index. Although BMI is commonly used as an indicator of obesity, its use has limitations, as it is an indirect measure of body composition and does not distinguish between fat mass and fat-free mass (Wang, et al., 2018; Merchant, et al., 2021). This lack of differentiation makes body mass index an imprecise marker

for sarcopenia, as it does not allow the identification of muscle mass loss, one of the fundamental components of this condition.

In contrast, older women without sarcopenia showed higher body mass index values, which is also consistent with previous studies. This could be partly explained by the obesity paradox, where higher levels of adiposity are associated with a lower risk of mortality and other health complications (such as the development of sarcopenia) compared to those with a lower body mass index (Liu, et al., 2023; Eitmann, et al., 2024).

Another finding of this study was that, in general, women aged 60 years and older showed low adherence to the Mediterranean diet, which was even more pronounced among those with sarcopenia. Similar results were reported by Cacciatore et al. (2023), who found that older adults with low Mediterranean diet adherence had a significantly higher prevalence of probable sarcopenia (25.9%) compared to those with good (19.1%) or high adherence (15.5%). Likewise, Isanejad et al. (2018) demonstrated that higher adherence to a Mediterranean dietary pattern was associated with better functional performance, evidenced by greater muscle strength and walking speed in women aged 65 to 72 years.

The Mediterranean diet has been widely studied for its benefits on overall health, particularly the preservation of muscle mass in older adults (Granic et al., 2019). This dietary pattern, characterized by a high intake of anti-inflammatory foods such as olive oil, nuts, fatty fish, and abundant fruits and vegetables, promotes the reduction of oxidative stress and chronic inflammation, factors closely linked to muscle deterioration (Coelho-Junior, et al., 2021; Mitchell, et al., 2021).

Low adherence to the Mediterranean diet in women with sarcopenia may be explained by the fact that, as age advances, older adults modify their eating patterns due to anatomical changes such as xerostomia and tooth loss, or due to limited access to healthy foods (Olivares, 2020). Likewise, older Chilean women often have an insufficient intake of high-quality proteins, which are essential for protein synthesis and maintaining muscle mass, as well as a lack of key nutrients such as omega-3 fatty acids from fish and seafood, and plant-based proteins. This could contribute to the progression of sarcopenia, further aggravating muscle deficits (Villota et al., 2023). Finally, it has also been reported that the Chilean population is characterized by low consumption of fruits and vegetables (Villota et al., 2023), a concerning factor considering the prominence of these in the Mediterranean diet pattern and their role in reducing oxidative stress and inflammation, key factors involved in the etiology of sarcopenia (Hashemi, et al., 2015; Koyanagi, et al., 2020; Park, et al., 2022).

These results reinforce the need to promote adherence to diets rich in these nutrients to prevent and treat sarcopenia in older populations, particularly in non-Mediterranean regions, where there are differences in food availability, dietary patterns, and lifestyle habits (Hoffman & Gerber, 2013).

The overall prevalence of sarcopenia among the women in this study was 18.8%. Descriptive analysis revealed notable differences across age groups, with the highest prevalence observed in the 70–74 age group, and the lowest in the 60–64 and 85–90 age groups. These findings suggest a non-linear trend in sarcopenia prevalence with age, although no formal statistical comparison was performed between age groups. Current literature indicates that the prevalence of sarcopenia varies widely, ranging from 9.9% to 40.4%, depending on the population characteristics and diagnostic criteria used (Mayhew et al., 2019). In our analysis, we used the algorithm proposed by the EWGSOP2 and DXA technique, recognized as the most precise and reliable method for evaluating body composition and muscle mass due to its ability to measure different body compartments with high accuracy directly.

Similarly, Fernandes et al. (2022) reported a prevalence of 11% using the EWGSOP2 criteria, while Petermann-Rocha et al. identified a general prevalence ranging from 1% to 10% in various contexts using the same diagnostic algorithm. On the other hand, a meta-analysis conducted by Shafiee et al. (2017), which included participants over 60 years old living in the community, estimated a global prevalence of 10%. This latter study highlighted that prevalence values tend to be higher when bioimpedance is used instead of DXA, suggesting that measurement methods influence the results obtained.

These findings reflect the need for standardized and highly accurate diagnostic tools to achieve a reliable assessment of sarcopenia. Early detection through precise methods like DXA allows for the implementation of timely intervention strategies, which can improve quality of life and reduce the adverse effects of aging. Therefore, it is crucial to promote regular sarcopenia assessment in public health programs

targeted at the geriatric population to effectively address risk factors and improve clinical management of older women.

Implications of the study

The findings have practical implications for designing nutritional and physical exercise programs for older women with sarcopenia. These programs could focus on improving adherence to the Mediterranean diet and promoting the maintenance of muscle mass through adapted physical activities. Furthermore, the findings suggest the need to implement public policies that promote awareness campaigns on the benefits of the Mediterranean diet and the prevention of sarcopenia, as well as the incorporation of periodic assessments of body composition in health checks for the early detection of sarcopenia in vulnerable populations

Strengths and Limitations

This study presents several strengths, including the use of precise methods to measure adiposity through DXA and muscle strength via manual pressure dynamometry. However, the study has limitations, including its observational design, which prevents the establishment of causal relationships between variables, and the lack of consideration of additional confounding variables, such as physical activity and comorbidities. Furthermore, measuring Mediterranean diet adherence using a self-reported questionnaire may be subject to reporting biases, which could lead to overestimating or underestimating adherence levels. It is important to highlight that this study only included women, which limits the generalization of the findings to other populations. Future studies should consider a longitudinal design, better control confounding factors, and explore interventions that improve Mediterranean diet adherence and reduce adiposity in this population group.

Conclusions

This study confirms that older women with sarcopenia present significant differences in body composition and lower adherence to the Mediterranean diet compared to those without sarcopenia, thereby supporting the initial hypothesis. The reduced adherence to the Mediterranean diet in this group may represent a contributing factor in the development and progression of sarcopenia.

Based on these findings, it is recommended to develop targeted nutritional and physical activity interventions to promote adherence to healthy dietary patterns and improve quality of life in this population. Likewise, these results reinforce the importance of implementing public policies focused on the early detection and prevention of sarcopenia.

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