

NUTRITIONAL STATUS OF ELDERLY INSTITUTIONALIZED BY THE NUTRITIONAL MINI ASSESSMENT

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Abstract: AAs the Brazilian elderly population ages, the fragility presented in this population is characterized as a condition of increased vulnerability, observing a growing search for long-stay institutions for the elderly (ILPIs). Therefore, the present study aims to analyze the nutritional profile in a Long Stay Institution for the Elderly in the city of Maceió and to evaluate the utility of the Mini Nutritional Assessment (MAN) as a screening tool to predict frailty. This is a cross-sectional, observational and descriptive study. Data collection was performed through admission forms and the application of an adapted questionnaire to trace the sociodemographic and nutritional profile. At the ILPI, the 39 elderly residents (men and women) were evaluated, with an average age of 78.41 years for men and 80.95 for women. The predominant level of education among the elderly was illiterate for both sexes (56.41%). According to the assessment of nutritional status by MAN, the data from this research showed that most of the elderly, 61.54%, were at risk of malnutrition and 30.77% were malnourished. Regarding the circumference of the arm, malnutrition prevailed, as well as the calf circumference. Based on the results of this research, the assessment of nutritional status, according to the MAN, CB and CP, the elderly of both sexes are mostly at nutritional risk or malnutrition.

Keywords: Seniors. Nutritional profile. Long-stay institution for the elderly. Nutritional assessment.

INTRODUCTION

Frailty in the elderly is a condition of increased vulnerability, as the aging process causes a series of changes in the body. It is characterized by the presence of at least three of the following parameters in the same individual: reduced muscle strength, unintentional weight loss, exhaustion, and

decreased physical activity (FRIED et al., 2001).

In Brazil, the demand for care in long-stay institutions for the elderly is growing. According to Brazilian legislation, the family is the main source of support and care for the elderly. However, individuals with physical, cognitive disabilities and/or social vulnerability generated by insufficient income, conflicts or lack of family support, can be admitted to these institutions, which almost always have the character of permanent residence in Brazil (BRASIL, 2009), (INSTITUTE OF APPLIED ECONOMIC RESEARCH, 2010) (DANILOW et al., 2007). However, living in an ILPI leads to a restoration of life in its entirety, which, for those who experience aging, can be a very complex event (FERREIRA et al., 2014).

Several factors can contribute to the development of frailty, such as the natural aging process that affects individuals throughout their lives. With this, it is worth noting that malnutrition, commonly present in the elderly population, is characterized by a reduction in the intake or absorption of nutrients, which can lead to sarcopenia (BARTALI et al., 2006) (CEDERHOLM et al., 2015).

The lack of early diagnosis of malnutrition in the elderly may reflect a deterioration in health and an increased risk of mortality. This way, nutritional assessment can help professionals in the treatment for recovery and health promotion of the elderly (SPEROTTO et al., 2010).

In addition, it contributes to diagnosing individuals who are at nutritional risk, reversing nutritional changes and, consequently, providing the patient with the restoration of their organic functions, as well as improving their quality of life (AZEVEDO; MELO; CABRAL, 2009) (MENEZES; MARUCCI, 2007).

The Mini Nutritional Assessment provides a unique and quick assessment of

the nutritional status of the elderly, whether clinical, institutionalized or hospitalized. It is used as a tool to screen patients early who may later need a more extensive and accurate nutritional assessment. (GARRY et al., 1996).

Faced with the augmented reality of the longevity of the Brazilian population, the present work aims to evaluate the nutritional status of institutionalized elderly in a Long Stay Institution for the Elderly in Maceió/AL, using the Mini Nutritional Assessment (MAN).

MATERIAL AND METHOD

This is a cross-sectional study, with a descriptive observational character, which was carried out in a Long Stay Institution for the Elderly. The sample was census, not probabilistic for convenience, composed of elderly people and caregivers of both sexes. The individuals were invited to participate in the project and received all the necessary information regarding the completion of the study and its stages, and were instructed to sign the Free and Informed Consent Form (FICT). The study was approved by the ethics committee through opinion No. 4,043,034.

To assess the nutritional status of the elderly, the MAN was used. Data collection (age, sex, marital status, education and anthropometric data) and the application of the MAN questionnaire were carried out by the researchers in the elderly's rooms. They were individually evaluated to minimize discomfort arising from the nutritional assessment and the application of the questionnaire, making them more comfortable.

Knee height (KA) is obtained with the individual sitting in the position closest to the edge of the chair, with the left knee flexed at a 90° angle. The distance between the heel and the anterior surface at knee height is measured using a caliper. Height was estimated from the equation by Chumela et al. (1987): Height =

$64.19 - (0.04 \times \text{age}) + (2.02 \times \text{AJ})$ for men and $\text{Height} = 84.88 - (0.24 \times \text{age}) + (1.83 \times \text{AJ})$ for women.

Weight was measured using an Omron digital scale with a capacity of 150 kg for the elderly who walk, for the bedridden, the formula is used to estimate weight from the formula of Jung et.al, (2004): $\text{Weight} = \text{knee height} \times 0.928 + \text{arm circumference} \times 2.508 - \text{age} \times 0.144 - 42.543$ for men and $\text{Weight} = \text{knee height} \times 0.826 + \text{arm circumference} \times 2.116 - \text{age} \times 0.133 - 31.486$.

To perform the circumferences, an inelastic measuring tape with a length of 1.5 m was used. Arm circumference is performed on the left arm, at the midpoint between the acromion of the scapula and the olecranon of the ulna. The midpoint is obtained with the arm flexed at 90° and the BC value is obtained with the arm relaxed, taking care not to compress soft tissues. Its classification is for obesity >120%, overweight 120 to 110%, normal weight 110 to 90%, mild depletion 90 to 80%, moderate depletion 80 to 60% and severe depletion <60%. (BLACKBURN; THORNTON, 1979).

The calf circumference (CP) is performed on the left leg, in its most protuberant part, values above 31 cm indicate eutrophy and values below are indicators of malnutrition (NAJAS; NEBULONI, 2005). For the classification of nutritional status, the body mass index (BMI) is used, obtained by dividing the body mass in kilograms by the height in meters squared, which was classified according to the Pan American Health Organization (PAHO, 2002) that propose specific cutoff points for the evaluation of this age group, with BMI values below 23.0kg/m² indicating low weight, between 23.0kg/m² and 28.0kg/m² normal weight and above 28.0kg/m² overweight and obesity.

The nutritional status of the elderly who walk were classified using the Mini Nutritional Assessment (MAN), CB and CP

as parameters, whereas the bedridden elderly used only CB and CP, given that the weight was estimated using a formula.

The collected data are stored in an electronic data sheet (Microsoft Office Excel®). Descriptive variables were analyzed using measures of central tendency and percentage frequency distributions. The calculations were performed using the statistical application.

RESULT AND DISCUSSION

A total of 39 elderly people and 2 caregivers participated in the study, of which 41% (n=16) answered the questionnaire alone without the help of caregivers, 59% (n=23) were answered by caregivers or had help from the caregiver to answer the questions. This way, the caregiver of the elderly is a health professional who needs professional knowledge and techniques, in addition to a good approximation with the elderly, becoming for some bonds as if they were relatives and for others as just strangers, so it is very important for the caregiver to have bonds and technical mastery for any change in the elderly person and in the coexistence taking care of them.

Table 1 presents the results of the answers given to the questionnaire applied to trace the sociodemographic profile.

Descriptive variables were analyzed using measures of central tendency and percentage frequency distributions. In the ILPI there is a predominance of females, being 56.41% (n=22) and 43.58% (n=17) of the 39 elderly residents. Men with a mean age of 78.41 years ± 8.72 and women with a mean age of 80.95 years ± 8.45. Regarding the data found in the research, the level of education was predominant in illiterate elderly for both sexes, 54.54% (n=12) for females and 58.82% (n=10) for males.

Lima et al. (2013) reports in their study that illiteracy among this older population could be the result of lack of access and family

encouragement, not having instructions and facilities for studies as in the current years. This is a reality in Brazil, especially when it comes to elderly people who lived their childhood at a time when education was not a priority.

Related to marital status in females, 37.81% (n=7) are single and 68.18% (n=15) are widows, in males, a percentage of singles predominates with 52.94% (n=9), 29.41% (n=5) are widowed and only 17.64% (n=3) are divorced. Study carried out by Neto et al. (2017) showed results similar to ours, in which the majority of the elderly are, 62.5% were single and only 25.0% were married, with the rest being divorced. This data becomes important since elderly individuals may be institutionalized due to the lack of a partner at home, resulting in feelings of loneliness, leading them to seek shelter and care in Long-Term Institutions.

Among the comorbidities, 76.92% (n=30) of the elderly of both sexes had some type of disease and only 23.07% (n=9) did not have any comorbidity. It was found in the study that 38.46% (n=15) had only one comorbidity and 38.46% (n=15) had two or more. As most elderly people have some type of disease, 66.66% (n=26) use medication.

In the daily life of the elderly, several factors can lead to the occurrence of falls, which are intrinsic and extrinsic, that is, related to changes in aging itself or environmental changes, respectively, however, in the present study it shows that 100% of the elderly did not suffer falls in the last six years. months. To aid walking, 38.46% (n=15) use a wheelchair and 10.25% (n=4) use a cane.

The verification of the nutritional status by the application of MAN, is found in graph 1, data from this research showed that most of the elderly of both 61.54% (n=24) were at risk of malnutrition and 30.77% (n=12) were malnourished. This corroborates with other studies carried out in LTCFs. It can

be seen from the graph that 36% of women are malnourished and 59% are at risk of malnutrition, with a similar result in the male group, these proportions being around 24 and 65%, respectively. This is worrying, as there is a tendency for malnutrition to increase and vulnerability to it with advancing age.

The elderly in this study who are at risk of malnutrition and malnourished, when evaluated by the MAN, total 92.31%. This result differs from other studies, as it was superior. Among the 233 elderly people in Uberlândia/MG, 67.8% were at risk of malnutrition and were malnourished (SOUSA et al., 2014). In a survey carried out with the elderly in Spain, it showed 40.1% in the sum of the two classifications. And concluded that, in general, weight reduces concomitantly with increasing age (SERRANO; GARCIA, 2013).

In the classification of nutritional status according to the table by Blackburn and Thornton (1979), it was verified in graph 2, a predominance of malnutrition 73% (n=15) in elderly males. Regarding the classification of obesity, females had a sensitivity of 19% (n=21). Although the BC parameter is not the best indicator of muscle mass reserve, this data is worrying since it presents the sum of the areas constituted by the bone, muscle, fat and epithelial tissues of the arm, showing to be reduced with age. age.

Since 1995, the WHO has referred to the WC as the most sensitive measure to measure muscle mass, in addition to being more used to estimate height and weight. In the PC classification, in graph 3, referring to genders in the analysis of malnutrition or normality, we found 73% (n=15) for males against 65% (n=21) for females, in the indication of malnutrition.

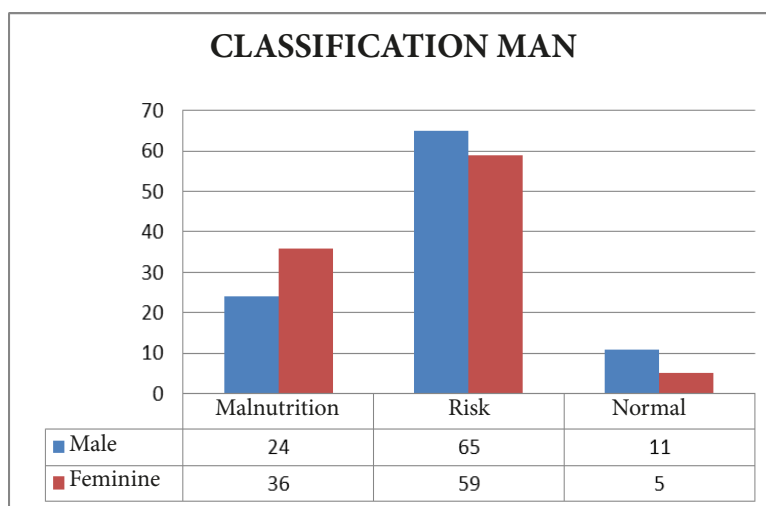
A cross-sectional study of KAWAKAMI et al (2014), calf circumference was positively correlated with appendicular skeletal muscle mass and skeletal muscle index and could be

Variable	Feminine		Male	
	No	%	No	%
age group				
60 - 69 years	01	4.54	02	11.76
70 - 79 years	11	50.00	05	29.41
80 - 89 years	06	27.27	08	47.05
90 - 99 years	03	13.63	01	5.88
>100 years	01	4.54	01	5.88
NC*	-	-	-	-
Marital status				
Single	07	37.81	09	52.94
Divorced	00	-	03	17.64
Widower	15	68.18	05	29.41
NC*	-	-	-	-
education				
Illiterate	12	54.54	10	58.82
Literate	02	9.09	02	11.76
Incomplete fundamental	02	9.09	01	5.88
complete fundamental	-	-	01	5.88
Incomplete high school	-	-	03	17.64
Complete high school	04	18.18	-	-
Graduated	01	4.54	-	-
Incomplete higher	-	-	-	-
NC*	01	4.54	-	-

*NC = not included

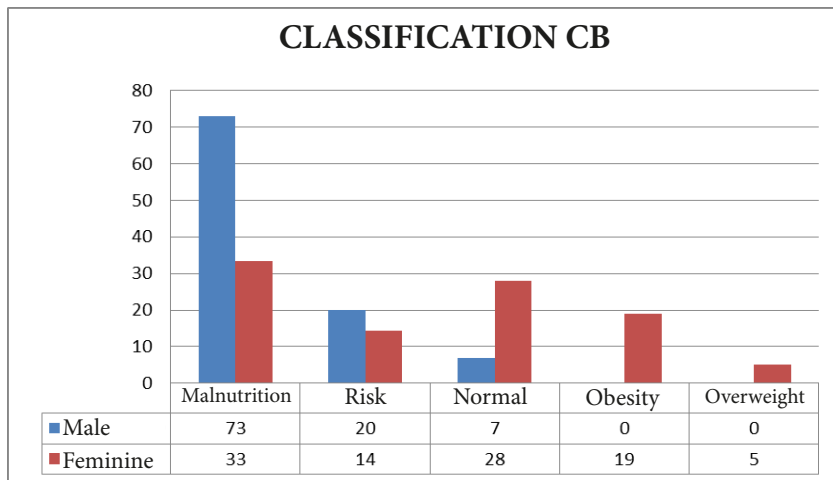
Table 1- Distribution of socioeconomic and demographic variables of institutionalized elderly in an ILPI in the city of Maceió, Alagoas

Source: Survey data, 2021.



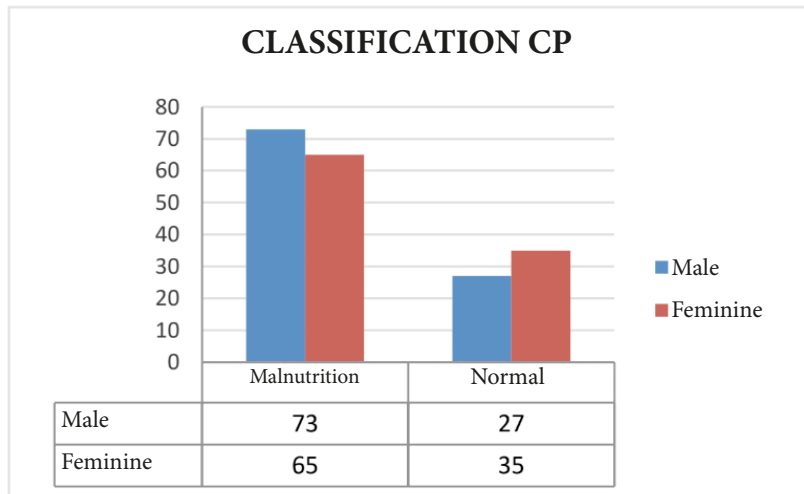
Graphic 1 -Classification of the nutritional status of the elderly using the Mini Nutritional Assessment (MAN), Maceió, 2021.

Source: Survey data, 2021.



Graph 2 -Classification of the nutritional status of the elderly using the Brachial Circumference (BC), Maceió, 2021.

Source: Survey data, 2021.



Graph 3 -Classification of the nutritional status of the elderly using the Calf Circumference (CP), Maceió, 2021.

Source: Survey data, 2021.

used as a surrogate marker of muscle mass for the diagnosis of sarcopenia.

In view of the results obtained above, the results of this investigative research are compatible with malnutrition for the majority, both male and female. So, the monitoring of a health professional, able to reestablish quality of life and reverse the malnutrition situation, will positively influence the results of lean mass recovery and cognitive improvement of the elderly residing in ILPIs.

CONCLUSION

According to the results obtained, it can be seen that the profile of these elderly people are mostly female, with an average age of seventy-nine years, women are mostly widows and men are single, illiterate, retired,

residents in the institution for six to ten years. Non-smokers, non-alcoholics, without food allergies, and with little water intake prevail.

Regarding the assessment of nutritional status, according to the MAN, CB and CP, the elderly of both sexes are mostly at nutritional risk or malnutrition.

It is noteworthy that in addition to the continuous analysis of the health conditions of the elderly, it is essential to analyze the institutional structure and functioning from the point of view of the different subjects involved, so that the assistance offered within the ILPI can be improved.

Therefore, it is important to be aware of the changes of aging, since it is a factor of paramount importance for the health professional for better planning of care and obtaining results.

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