

NUTRITIONAL PROFILE OF HOME CARE PATIENTS

PERFIL NUTRICIONAL DE PACIENTES DO SERVIÇO DE ASSISTÊNCIA DOMICILIAR

PERFIL NUTRICIONAL DE LOS PACIENTES DE ATENCIÓN DOMICILIARIA

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ABSTRACT

To characterize the nutritional profile of patients receiving home care. This was a cross-sectional, descriptive and quantitative study. 160 participants were included and weight, height, upper arm circumference (AC) and knee height were collected. Nutritional status was classified by BMI and AC for adults and by WHO for pediatrics. The sample consisted of 28 pediatric patients, 86 elderly people and 46 adults. The results were expressed as means and percentages. There was a higher prevalence of underweight in the elderly (72%). By AC, most of the elderly had some degree of malnutrition (74.41%). Among the adults, 45.65% (n=21) were underweight and 67.39% were malnourished by AC. An analysis of the weight/age index showed that 82% of the children were of adequate weight, followed by the very underweight (10.71%). The adult and elderly participants had inadequate nutritional status due to some degree of malnutrition.

Keywords: *Nutritional Status, Nutritional Assessment; Malnutrition; Home Care.*

RESUMO

Caracterizar o perfil nutricional de pacientes acompanhados pela assistência domiciliar. Estudo do tipo transversal, descritivo e quantitativo. Foram incluídos 160 participantes e coletados peso, altura, circunferência do braço (CB) e altura do joelho. A classificação do estado nutricional foi pelo IMC e CB para adultos e pela OMS para pediatria. A amostra foi composta por 28 pacientes pediátricos, 86 idosos e 46 adultos. Os resultados foram expressos em médias e percentuais. Observou-se maior prevalência de baixo peso em idosos (72%). Pela CB, a maioria dos idosos apresentou algum grau de desnutrição (74,41%). Nos adultos, observou-se que 45,65% (n=21) estavam com magreza e 67,39% com desnutrição pela CB. Analisando o índice de peso/idade, observou-se que 82% das crianças apresentaram peso adequado, seguido de muito baixo peso (10,71%). Os participantes adultos e idosos apresentavam inadequações no estado nutricional devido a algum grau de desnutrição já instalada.

Descritores: *Estado Nutricional; Avaliação Nutricional; Desnutrição; Assistência Domiciliar.*

RESUMEN


Caracterizar el perfil nutricional de los pacientes que reciben atención domiciliar. Se trató de un estudio transversal, descriptivo y cuantitativo. Se incluyeron 160 participantes y se recogieron el peso, la talla, la circunferencia del brazo (CB) y la altura de la rodilla. El estado nutricional se clasificó utilizando el IMC y el CB para adultos y la OMS para pediatria. La muestra estaba formada por 28 pacientes pediátricos, 86 ancianos y 46 adultos. Los resultados se expresaron como medias y porcentajes. Hubo una mayor prevalencia de bajo peso en los ancianos (72%). Por CB, la mayoría de los ancianos presentaba algún grado de desnutrición (74,41%). Entre los adultos, el 45,65% (n=21) tenían bajo peso y el 67,39% estaban desnutridos según el CB. Analizando el índice peso/edad, el 82% de los niños tenían un peso adecuado, seguidos de los que tenían muy bajo peso (10,71%). Los participantes adultos y ancianos presentaban un estado nutricional inadecuado debido a algún grado de desnutrición.

Descritores: *Estado Nutricional; Evaluación Nutricional; Malnutrición; Atención Domiciliaria.*

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INTRODUCTION

Nutritional status is an important health indicator that reflects the balance between an individual's intake and nutrient demand (need). Its evaluation is a diagnostic tool to characterize diseases in populations, and the combination of anthropometric, dietary and biochemical methods is recommended in the daily routine of health care¹.

Malnutrition tends to increase considerably in the elderly population with the progression of age, presence of comorbidities, and dependence on care. However, this condition remains underdiagnosed and undertreated, including in the hospital setting. It is extremely important to identify patients at higher risk, so that there can be early intervention with personalized nutritional elaboration².

Nutritional therapy at home is included in the Human Right to Adequate Food (DHAA) for patients with special food and nutrition needs, with clinical stability and who can receive care from their own family members or legal guardians, after they are properly trained through training and health education, providing hospital discharge and reintegration into family life, thus avoiding long-term hospital admissions or rehospitalizations³.

Among the risks and complications of the patient in home care is the risk of malnutrition due to the absence or decrease of supervision of the patient's nutritional therapy, as well as the establishment of a diet therapy that is inadequate to the patient's nutritional needs and to the conditions and family routine in this way. Nutritional risk may be increased in this population and, consequently, malnutrition may occur⁴.

The gaps in the home care process, the need for early nutritional interventions, and the assessment of nutritional status, immediately after leaving the hospital environment and at the entrance of the home, are poorly described in the literature.

Thus, the objective of this study was to characterize the nutritional status of patients followed by a home care service.

METHODS

This is a cross-sectional, descriptive and quantitative study. A cross-sectional study is one that collects and analyzes data at a given point in time. In the descriptive study, we analyzed data from a given population without changing them or performing interventions, with the aim of describing detailed data about a given population. The quantitative study, on the other hand, aims to perform data analysis by applying static analyses, such as percentages, means and regressions⁵.

The research was carried out at the Home Care Service (SAD) of the Waldemar de Alcântara General Hospital (HGWA), an equipment of the Health Department of the State of Ceará (SESA), located in Fortaleza-Ceará.

A total of 160 pediatric, adult and elderly individuals of both sexes were included in the study, with indication for monitoring by the nutrition service of the SAD of the HGWA. Patients who were unable to measure calf circumference due to anatomical (bilateral amputated lower limbs) or clinical (lymphedema) issues were excluded from the study, as well as those patients whose family members did not accept inclusion in the study.

Data collection was performed at the time of the home visit of the SAD nutritionist to the patient. A semi-structured questionnaire was elaborated, containing information on the patient's identification (such as initials of the name, gender and age), clinical diagnosis and presence of comorbidities, feeding route and type of diet in current use (including information on the use of supplementation). Data were collected from May to June 2021, after approval by Plataforma Brasil.

The anthropometric evaluation was performed by measuring the weight using a portable digital scale with a capacity of up to 150kg non-slip Mondial Ellegance®, with as little clothing as possible, without slippers or sandals and accessories that could interfere with the weighing. Height was measured using a compact stadiometer with a capacity of 210 cm, Wiso®. The stadiometer support was attached to the wall at a height of 2 meters, and was pulled down until it reached the height of the individual with him barefoot, with his feet together, leaning against the wall with his head erect.

As for the patients who could not weigh and verify their height by conventional methods, their weight and height were taken by estimation, using the formula of Chumlea⁶, and in the formula for calculating the estimated height, the measurement of knee height is used, and for the calculation of the estimated weight, the knee height and the arm circumference (measured with an inelastic tape).

With the height and weight data collected, the BMI (Body Mass Index) of each patient was calculated using the weight/height formula². To classify the BMI of the elderly, the cut-off point for the elderly, proposed by the *Nutrition Screening Initiative* (NSI)⁷, was used, which considers underweight (BMI < 22 kg/m²), p, adequate or eutrophic weight (22-27 kg/m²) and overweight (>27kg/m²).

To classify the BMI of adults, we used the cut-off points proposed by the *World Health Organization*⁸, which consider thinness (BMI<18.5 kg/m²), adequate weight or normal weight (18.5 to 24.9 kg/m²), overweight (25 to 29.9 kg/m²) and obesity (>30 kg/m²). The diagnosis of weight adequacy for the child's age was made according to the ONIS⁹.

The calf circumference (NC) parameter was also used, measured with the individual seated (with the use of a Sanny single-fiber tape measure with lock), with the left leg forming a 90° angle with the knee. The measurement was performed in the region of greatest calf enhancement, without compressing it. Values lower than <31cm indicate loss of muscle mass, with a diagnosis of malnutrition; Values >31 indicate preserved or adequate muscle reserve¹⁰.

To check the arm circumference, the patient's arm was at a 90-degree angle, and the prominence of the olecranon and ulna was palpated and measured with a tape measure. Then the midpoint between the distance of the two was checked; then contouring the arm with the inelastic tape measure at the midpoint height without pressing¹¹. Knee height was measured with the patient sitting or lying down, with the ankle and knee flexed at right angles and positioning the base of the anthropometric tape under the heel of the right foot and the rod pressing on the head of the fibula¹².

The information about the presence of pressure ulcers in the patient followed by the SAD was provided from an active search of the patient's electronic medical record. It is noteworthy that within the team there are nursing professionals who perform this

diagnosis. Before each home visit, the electronic medical record is opened for reading and appropriation of the patient's clinical case. This is considered a routine procedure specific to the service.

Data analysis was performed using Microsoft Excel version 2010, using simple and absolute frequency. The calculation of the prevalence rate of LLP will be obtained from the number of affected individuals at a given time, divided by the number of people at risk (total number of respondents).

This study was approved by the Research Ethics Committee of the Gonzaga Mota District Hospital, as stated in Substantiated Opinion No. 5,649,747. The interviewees were presented with the Free and Informed Consent Form, in accordance with Resolution No. 466/1213, which directs the ethical aspects of research involving human beings.

RESULTS

The data were separated into two blocks, divided between adult/elderly and pediatric axis to better understand the results. The sample consisted of 132 patients with a higher prevalence of females, 53% (n=70). Of these patients, 65% (n=86) were elderly and 12% (n=16) were under palliative care. 15% (n=19) had LPP in different stages and regions.

When evaluating BMI, a higher prevalence of underweight was observed in the elderly (72%/n=62). By measuring BC, it was possible to infer that most elderly people had some degree of malnutrition when the three classifications were added together (74.41%/n=64). In the adult population, it was observed that 45.65% (n=21) were with some degree of thinness based on BMI and 67.39% (n=31) had some degree of malnutrition based on WC.

Table 01. Stratification of nutritional status by BMI and WC of patients receiving home care. Fortaleza, CE, 2024

Adult BMI	N°	%	Elderly BMI	N°	%
Thinness	21	45,65%	Low weight	62	72,09%
Eutrophy	18	39,13%	Eutrophy	16	18,60%
Overweight	4	8,7%	Overweight	5	5,81%
Obesity	3	6,52%	Obesity	3	3,5%
CB Adulto	N°	%	CB Idoso	N°	%
Severe Depletion	8	17,4%	Severe Depletion	17	19,76%
Moderate Depletion	9	19,56%	Moderate Depletion	18	20,93%
Mild Depletion	14	30,43%	Mild Depletion	29	33,82%
Eutrophy	9	19,56%	Eutrophy	10	11,62%
Overweight	2	4,35%	Overweight	7	8,13%
Obesity	4	8,7%	Obesity	5	5,81%

Source: prepared by the authors, 2024.

Regarding the chosen feeding route, it was identified that the use of nasoenteral tube (NET) was the most prevalent (59%/n=51), as can be seen in the table below:

Table 02. Stratification of feeding routes for patients receiving home care. Fortaleza, CE, 2024

Feeding Path	N°	%
Oral	37	28%
Nasoenteric tube (SNE)	71	54%
Gastrostomy	23	17%
Mixed (SNE + Oral)	1	1%

Source: prepared by the authors, 2024.

Data analysis in pediatrics revealed a sample composed of 28 patients, with a mean age of 6.4 ± 4.2 years, with a higher prevalence of males - 55.55% (n=15).

When evaluating the anthropometric weight-for-age index, it was observed that 85.18% (n=23) had adequate weight for their age, followed by 11.11% (n=3) of very low weight for their age. As described in the table below:

Table 03. Stratification of the WEIGHT x AGE index of children in home care. Fortaleza, CE, 2024

Weight Adequacy	N°	%
Very Low Weight for Age	3	10,71%
Underweight for age	2	7,15%
Appropriate Weight for age	23	82,14%
High Weight for age	-	-

Source: prepared by the authors, 2024.

DISCUSSION

Hospital malnutrition is an evident problem that has been frequently occurring in the literature in recent years. However, the implications of this nutritional status after hospitalization may have repercussions on *the* functional and clinical status of patients when they are already at home, thus hindering weight adjustment and increasing the risk of complications associated with malnutrition¹⁴.

In the study by Fernandes¹⁵, it was described that, at the time of nutritional guidance, during the arrival at home of cancer patients using enteral nutrition, there was a higher prevalence of underweight by BMI (49.2%) and a higher percentage of weight loss during follow-up (39.7%), even though most patients had higher nutritional goals (30-35 kcal/k/day and 1.2-1.5 ptn/kg/day). The authors point out that both patients and their caregivers may have difficulties in the management of home enteral tubes, which in turn can lead to complications such as adherence to the most appropriate nutritional therapy, thus leading to weight loss and changes in nutritional status¹⁵.

Based on Campos¹⁶, in his study with elderly patients in home care, it was possible to observe that the application of the nutritional mini-assessment proved to be more

specific for screening nutritional risk (40%) when compared to the measurement of AC (10%) and BMI (8%) for screening for malnutrition. This data differs from our results, which showed the presence of malnutrition in this population in different ways. The literature points out the limitations of anthropometric assessment and the superiority of screening by nutritional screening, and its recommendation in the hospital environment is mandatory. However, few studies reinforce its use at home, and the recommendations of this practice are not recurrent¹⁷.

A relevant finding in the study by Lindenau¹⁸ was that, in addition to the presence of malnutrition observed by the subjective global assessment (SGA) (95.5%), almost 40% of the patients had food intake lower than usual and 56.5% had some type of reduction in food intake. Often, the regularity of intake is not monitored, and this care should be transferred to the family or responsible caregiver in order to avoid further losses in nutritional status and the onset of malnutrition in home patients¹⁸.

Guerreiro¹⁹, in his study with cancer patients treated at a nutrition outpatient clinic, used different methods, such as BMI, AC and SGA, to perform the nutritional diagnosis. When BMI was assessed alone, this indicator did not show sensitivity for screening for malnutrition, unlike BC (which alone can be used as a predictor of nutritional status) and SGA, which was more sensitive. Thus, it is possible to infer that the use of other parameters, in addition to BMI, in patients followed at home can be an effective strategy for this screening¹⁹.

Ruggeri²⁰ pointed out in his study, with 969 of cancer patients in home care receiving enteral or parenteral nutrition, that patients with cachexia and refractory cachexia at the time of admission to home care were associated with reduced survival and a low life expectancy at 6 weeks.

Cavagnari¹⁴ showed in his study that the most frequent feeding route was the oral route (45.8%), followed by the enteral route (41.7%), data that, unlike this and other studies in the literature, indicate a higher prevalence of use of exclusive enteral nutritional therapy²¹. Due to the clinical conditions of the patients at the time of transition to home, for safety, minimizing the risks of bronchoaspiration and respecting the functional status of the individual, many patients end up going with an alternative feeding route and being followed up by home services to perform, among many things, weaning from the tube²¹.

Few studies provide an accurate nutritional assessment in pediatric patients in home care. In the study by Sousa²², conducted with children treated at a special patient outpatient clinic of a teaching hospital, it was observed that, even at home, pediatric patients had adequate weight for age (59%) and 39% had low weight for age. Another study²³ also found a higher prevalence of eutrophy (73.6%) in a pediatric population assisted at home. It is known that malnutrition rates in this population are higher when hospitalized and that recovery of nutritional status can occur at home when the patient is adequately assisted by the interdisciplinary care team²⁴.

Dipasquale²⁵ brought some recommendations for nutritional care in children using enteral nutrition at home. Among them, accurate assessment of nutritional status is mandatory in this population, given the risk of malnutrition and changes in energy needs during follow-up. Attention should be redoubled for children with neurological impairment, given the need to use specific body assessment measures and formulas for

age and condition. The evaluation of body composition and differentiation between muscle and fat should also be performed in this population²⁵.

It was possible to identify a low percentage of patients under palliative care, thus differing from the results found in the studies by Cavagnari *et al.*¹⁴ and Amano *et al.*²⁶, who found in their studies a considerable sample of patients on palliation using home enteral nutrition. The reality of home care in this population is great. We believe that in this study, the collection period may have influenced this result, given the high prevalence of palliation patients.

It is a fact that, as a measure proportional to comfort, this patient is often discharged so that care can take place in the warmth of home. However, the reality of chronic patients with high rehabilitation capacity is sometimes confused with patients in palliative care, interfering with their therapeutic plan or in the late indication of this patient to this type of care²⁶.

When the presence of pressure ulcers was assessed, a low percentage of participants with this complication was observed. Divergent results were reported by Venâncio *et al.*²⁷, who found that 75% of the study population had PPL. It is worth noting that immobility in bed, failure to perform decubitus changes, and inadequate nutrition are contributing factors to the onset of these changes.

One of the limitations of this study was the absence of other parameters such as the use of nutritional screening, other measurements such as calf circumference or adductor pollicis muscle to assess muscle mass depletion, making anthropometric assessment more accurate for better determination of nutritional status.

CONCLUSÃO

The participants in this study presented alterations in their nutritional status, mainly evidencing the existence of malnutrition, which could be identified by AC and BMI upon arrival at home. It is possible to infer that these patients end up losing weight in the hospital environment and it is often necessary to pay greater attention to ensuring the nutritional supply adequate to the reality of the home, in order to meet the individual nutritional needs of each patient.

BMI, WC and weight-for-age index are simple indices and, even though they are not considered the gold standard, they should be part, along with other parameters, of the nutritional therapy routine of home patients, aiming at screening for malnutrition and early interventions in the recovery of the nutritional status of this population.

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