

Level of assistance complexity of the elderly interned: Care profile in clinics a university hospital

RESUMO | Objetivo: Conhecer o nível de complexidade assistencial de idosos internados. Métodos: Trata-se de um estudo retrospectivo, descritivo realizado em fichas de 161 idosos internados em um Hospital Universitário, entre janeiro a abril de 2018. Investigou-se dados sociodemográficos, clínicos, estilo de vida e sistema de classificação de pacientes proposto por Fugulin e colaboradores. A pesquisa consta aprovação do Comitê de Ética em Pesquisa do HUUFMA nº 2.306.474. Resultados: O perfil encontrado foi: sexo feminino (64,59%), com média de idade 70,1 (\pm 6,8), baixa escolaridade (59,01%) e baixa renda (72,67%), sedentário (67,70%), níveis pressóricos alterados (54,03%) e pré-sarcopênicos (39,13). Doenças cardiovasculares (31,0%) como causa de internação. O nível de complexidade assistencial era de cuidados mínimos (63,4%) e as áreas de cuidados mais afetadas foram sinais vitais, alimentação, cuidado corporal e terapêutica. Conclusão: Os idosos requeriam cuidados mínimos da enfermagem, mesmo com diagnóstico de doença cardíaca e condições sociodemográficas e clínicas desfavoráveis.

Descritores: Classificação; Cuidados de Enfermagem; Hospitalização; Idoso.

ABSTRACT | Objective: To know the level of care complexity of hospitalized elderly. Methods: This is a retrospective, descriptive study carried out on files of 161 elderly people admitted to a University Hospital, between January and April 2018. Sociodemographic, clinical, lifestyle and patient classification system proposed by Fugulin were investigated. and collaborators. The research is approved by the Research Ethics Committee of HUUFMA nº 2.306.474. Results: The profile found was: female (64.59%), with a mean age of 70.1 (\pm 6.8), low education (59.01%) and low income (72.67%), sedentary (67.70%), altered blood pressure levels (54.03%) and pre-sarcopenic (39.13%). Cardiovascular diseases (31.0%) as a cause of hospitalization. The level of care complexity was minimal care (63.4%) and the most affected care areas were vital signs, food, body care and therapy. Conclusion: The elderly required minimal nursing care, even with a diagnosis of heart disease and unfavorable sociodemographic and clinical conditions.

Keywords: Classification; Nursing care; Hospitalization; Elderly.

RESUMEN | Objetivo: Conocer el nivel de complejidad asistencial del anciano hospitalizado. Métodos: Se trata de un estudio retrospectivo, descriptivo, realizado en expedientes de 161 adultos mayores ingresados en un Hospital Universitario, entre enero y abril de 2018. Se investigó sociodemográfica, clínica, estilo de vida y sistema de clasificación de pacientes propuesto por Fugulin y colaboradores. La investigación está aprobada por el Comité de Ética en Investigación del HUUFMA nº 2.306.474. Resultados: El perfil encontrado fue: femenino (64,59%), con edad media de 70,1 (\pm 6,8), baja escolaridad (59,01%) y bajos ingresos (72,67%), sedentario (67,70%), presión arterial alterada (54,03 %) y presarcopénica (39,13%). Las enfermedades cardiovasculares (31,0%) como causa de hospitalización. El nivel de complejidad asistencial fue atención mínima (63,4%) y las áreas asistenciales más afectadas fueron signos vitales, alimentación, cuidado corporal y terapia. Conclusión: Los ancianos requieren cuidados de enfermería mínimos, incluso con diagnóstico de cardiopatía y condiciones sociodemográficas y clínicas desfavorables.

Palabras claves: Clasificación; Cuidado de enfermera; Hospitalización; Anciano.

Lucas Antônio de Oliveira Cantanhede

Specialist in Medical and Surgical Clinics. Nurse, Intensive Care Hospital (HCI). São Luís – MA, Brazil.
ORCID: 0000-0002-8626-7982

Andréa Cristina Oliveira Silva

PhD in Science. Professor, Federal University of Maranhão. São Luís – MA, Brazil.
ORCID: 0000-0003-1154-6394

Maria Lúcia Holanda Lopes

PhD in Public Health. Professor, Federal

University of Maranhão. São Luís – MA, Brazil
ORCID: 0000-0002-8189-0935

Poliana Pereira Costa Rabelo

PhD in Science. Professor, Federal University of Maranhão. São Luís – MA, Brazil.
ORCID: 0000-0003-0161-1359

Rafael de Abreu Lima

Master in Collective Health. Professor, Federal University of Maranhão. São Luís – MA, Brazil.
ORCID: 0000-0002-7945-7614

Ana Karoline Moreira

Student, Federal University of Maranhão. São Luís – MA, Brazil.
ORCID: 0000-0003-3308-5138

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INTRODUÇÃO

The process of hospitalization of the elderly person is very peculiar, because, in relation to the hospitalization of the adult person, a

series of issues are observed, such as: greater presence of multimorbidities, less potential for cure and rehabilitation, greater risk of infections and days of hospitalization leading to higher hospital costs.¹

To Gutierrez et al (2020)², the group of elderly people most vulnerable to adverse health events are those with older age, with uncontrolled chronic diseases, difficulty in self-care and with frailties, sarcopenia and dependents with regard to Basic Activities of Daily Living (BADL), thus leading to factors that predispose to difficulties in accessing health services, adherence to treatments and health guidelines and exacerbations of their chronic conditions. In view of this, in an increasingly common scenario, elderly hospitalized with multimorbidities and polypharmacy, clinical support must be carried out in a complex and comprehensive way, resulting in a greater demand for health services for this population and global economic instability due to spending.¹

After being inserted in the hospital context, the elderly become dependent on care, which makes the members of the nursing team fundamental elements in health care. This assistance must be individualized, comprehensive and systematized, starting from a rigorous clinical examination to classify the degree of dependence and the level of care complexity to the patient in relation to the care provided. Therefore, a patient classification system (PCS) that equalizes the demand (patient) and care supply (nursing staff) relationship becomes useful, so that care is offered according to the client's needs, without overloading the worker.³

It is known that the PCS is an instrument that has been used since Florence Nightingale's time, when the most critically ill patients were close to the nurses, which allowed and fa-



In Brazil, the Federal Nursing Council (COFEN - Conselho Federal de Enfermagem)⁵, recognized the importance of implementing PCS in professional practice through Resolution 543/17, which establishes the minimum parameters for the dimensioning of the nursing team.



cilitated the identification and classification of patients into care groups (or categories), and quantification of these as a measure of required nursing efforts. Considering the different degrees of care complexity in inpatient units contributes to the adequacy of resources in a critical, reflective way and within the reality of health service providers, generating an improvement in the quality of nursing care.⁴

In Brazil, the Federal Nursing Council (COFEN - Conselho Federal de Enfermagem)⁵, recognized the importance of implementing PCS in professional practice through Resolution 543/17, which establishes the minimum parameters for the dimensioning of the nursing team. Based on these data, nurses can also characterize the care profile of patients and re-adjust their allocations in the units.⁶

Among the instruments for classifying patients in Brazil, we highlight the PCS proposed by Fugulin.⁷ Such a system establishes twelve areas of care: mental status, oxygenation, vital signs, mobility, ambulation, feeding, body care, elimination, therapy, mucosal skin integrity/tissue involvement, use of dressings and time spent in performing them. The evaluation process of these areas makes it possible to classify the patient into categories of care: intensive, semi-intensive, high dependency, intermediate and minimal.⁸

Thus, the present work is justified by the need to know which items on the Fugulin PCS scale are most compromised in hospitalized elderly, determining the level of care complexity developed by nurses. This need has become essential because, based on these data, it is possible to foresee several aspects related to the care process, as well as to ensure the quality of the nursing service in the provision of care. The general objective of this work is to know the level of care com-

plexity of hospitalized elderly users. Among the specific objectives are: to characterize hospitalized elderly users with regard to sociodemographic, life habits, anthropometric and clinical aspects; classify hospitalized elderly users according to the Patient Classification System proposed by Fugulin and identify the categories of care, according to the PCS, most affected in hospitalized elderly.

METHOD

This is a retrospective and descriptive study with a quantitative approach carried out at the University Hospital of the Federal University of Maranhão - HUUFMA, which is an organ of the Federal Public Administration that aims to encompass assistance, teaching, research and extension in the area of health and related areas.

The sample included 161 records of hospitalized elderly users aged 60 years or over, of both sexes, hospitalized in medical and surgical clinics regardless of medical diagnosis and type of treatment, who did not present cognitive impairment according to the Mini Mental State Examination (MMSE) assessment, and who agreed to participate in the research.

To select the samples, the research database was accessed from August to September 2021. The user files contained information regarding: Sociodemographic data (age, sex, skin color, time of study, profession/occupation, origin, marital status, religion, economic status, monthly and family income, number of people who live with and with whom they live) life habits (smoking, alcohol consumption and physical activity), anthropometric (current weight and height to calculate body mass index - BMI, left calf circumference, vital signs (blood pressure and capillary glycemia), clinical data, cause of hospitalization

by medical specialty and underlying diseases.

For the lifestyle of the respondents, all elderly people who smoked or had stopped smoking were considered smokers, and those who, during the interview period, reported using alcohol, regardless of quantity and frequency, were considered alcoholics. The level of physical activity was established as sedentary (any research subject who does not perform physical activity or performs it sporadically = 1x/week, for less than 30 minutes) and active (any research subject who performs physical activity twice or more times a week, with a time greater than or equal to 30 minutes), based on the IPAQ (The International Physical Activity Questionnaire).⁹

Anthropometric data, weight in kilograms and height in centimeters to calculate BMI and left calf perimeter (PPE) were collected from data recorded in medical records and each classification according to the MS proposal (cad.19). Body weight was collected using a platform-type electronic scale with a capacity of 150kg and graduation in 100g (CAUMAQ® EB 1003). For height, the stadiometer (SECA), with a scale in millimeters, fixed to the scale.

The Body Mass Index (BMI) was calculated by dividing the body mass and the squared height of each individual. BMI values were categorized by nutritional status for the elderly, using the following cutoff points and elderly as criteria (low weight: > 22 kg/m², adequate weight: between 22 and 27 kg/m² and overweight: over 27 kg/m²). The PPE values have the cut-off points where below 35 cm requires routine monitoring, between 31-34 cm attention and below 31 cm requires actions to improve sarcopenia, as it is usually linked to decreased muscle strength and functional dependence.¹⁰

Regarding vital signs, blood pressure measurement in the left upper limb was determined using a digital sphygmomanometer (Omron®), by indirect method with the patient at rest in a sitting or lying position, according to the need and clinical situation of the elderly and classification according to the 7th Brazilian Guidelines on Arterial Hypertension (2016).¹¹ The glycemic level was verified in the medical records or was measured with a glucometer (ACCU-CHEK ACTIVE®), which determines glucose in fresh capillary blood by reflectance photometry. This device is capable of detecting blood glucose levels between 10 mg/dl and 600 mg/dl. And the classification occurred according to the Guidelines of the Brazilian Society of Diabetes 2015-2016.¹¹ To better meet the needs of the study, the variables SAH and DM were reclassified into "altered" and "controlled".

The second instrument was the Patient Classification System (PCS) proposed by Fugulin et al. (2005) and adapted by Santos (2007)¹² (Annex B), which assesses the level of care complexity, covering the areas of care: mental status, oxygenation, vital signs, mobility, ambulation, food, body care, elimination, therapy, mucosal skin integrity/tissue involvement, use of dressings and time used to perform them.

Each of these areas receives a score of one to four points and the sum of these points can vary from 12 to 48, indicating, in an increasing way, the care complexity of the patient, which corresponds to: minimal care (12 to 17 points), intermediate care (18 to 22 points); high dependence (23 to 28 points); semi-intensive care (29-34 points) and intensive care (34-48 points).

The collected data were stored in a specific database created in the Microsoft EXCEL® program. Quantitative variables were described as

mean and standard deviation (mean \pm SD) and qualitative variables as frequencies and percentages. Data were analyzed using the STATA 12.0® program.

All guidelines of Resolution No. 466/12 of the National Health Council 13 were considered and met. The research is approved by the Research Ethics Committee of HUUFMA nº 2.306.474.

RESULTS

A total of 161 records of elderly people admitted to the medical and surgical clinics of the University Hospital of the Federal University of Maranhão participated in the study.

Table 1 shows us the following characteristics: predominance of female elderly (64.59%), in the age group between 60 and 74 years (61.49%) and with a mean age of 70.1 (\pm 6.8), self-reported as black/brown (68.94%), with a steady partner (55.27%), with less than 4 years of study time (59.01%) and an average of 4.5 (\pm 2.8) years. Monthly income \geq one minimum wage (72.67%) with an average of 1.5 (\pm 1.5) minimum wages. Regarding lifestyle habits, we noticed the sample with non-smoking habits (80.74%), non-alcoholic (63.35%), but sedentary (67.70%).

Table 2 shows the clinical aspects of the elderly, who had altered blood pressure levels (54.03%), controlled blood glucose levels (73.91%), with adequate weight according to BMI (63.97%), however, pre-sarcopenic (39.13%) and sarcopenic (31.05%). We also observed that the main reasons for hospitalization were cardiovascular (31.0%), gastrointestinal (21.7%) and neurological (15.5%) diseases.

Table 3 classifies the elderly according to the level of care complexity, proposed by Fugulin et al. (2005)

Table 1 - Sociodemographic characteristics and lifestyle of elderly patients admitted to the medical and surgical clinics of HUUFMA in São Luís - MA - Brazil, from January to April 2018.

Variables (n=161)	N	%
Gender		
Female	104	64,59
Male	57	35,40
Age group		
60 to 74 years	99	61,49
\geq 75 years	62	38,50
Ethnicity		
White	50	31,05
Black and Brown	111	68,94
Marital Status		
With partner	89	55,27
Without partner	72	44,72
Study duration		
\leq 4 years	95	59,01 - 70,1 (\pm 6,8)
\geq 5 years	66	40,99
Family income *		
\leq 1 minimum wage	117	72,67
2 to 4 minimum wages	27	16,77
\geq 5 minimum wages	17	10,55
Smoking		
Yes	31	19,5
No	130	80,74
Alcohol drinking		
Yes	102	63,35
No	59	36,64
Physical activity		
Sedentary	109	67,70
Actives	52	32,30

*Minimum wage of BRL 954.00
Source: CANTANHEIDE, LAO; LIMA RA, 2022.

and adapted by Santos (2007), where most of the hospitalized elderly needed minimal care from the nursing staff (63.4%), 15.0% of intermediate care and 14.2% had high dependence. Patients classified as semi-intensive (5.6%) and intensive (1.8%) care were not as expressive.

The 12 care areas of Fugulin's SCP and the level of care complexity of each are described in Chart 1. All 12 care areas of the SCP used in the study had a higher prevalence of minimal care in relation to the level of care complexity. This means that the profile found was of the elderly with guidance (63.4%), eupneic in room air (64.6%), with control of vital signs every 8 hours (62.2%), moving all body segments (65.2%), walking without assistance (77.7%), eating orally (87.0%), taking care of their body hygiene (68.3%) and going to the bathroom without assistance (74.0%), using intramuscular or oral medications (55.9%), with intact skin (70.8%) and without dressings (63.4%).

However, 13% of the hospitalized elderly depended on highly dependent care for the Therapeutic category, where they had continuous intravenous therapy or use of a nasogastric tube. The same category also stood out for the elderly with semi-intensive care (8.1%). The Vital Signs, Food, Body Care and Therapeutics areas had the highest percentage of intensive care (1.9%), with 03 cases in each, where these elderly people had control of vital signs for a time equal to or less than two hours, fed through central venous catheters, bathed in bed and used vasoactive drugs to maintain blood pressure.

DISCUSSION

The need to classify the degree of dependence of patients has become

Tabela 2 - Características clínicas dos idosos internados nas clínicas médica e cirúrgica do HUUFMA em São Luís – MA - Brasil, no período de outubro de 2017 a abril de 2018.

Variables (n=161)	n	%
Pressure levels		
Controlled	74	45,96
Altered	87	54,03
Glycemic Levels		
Controlled	119	73,91
Altered	42	26,08
BMI – Body Mass Index		
Appropriate Weight	103	63,97
Low weight	14	8,69
Overweight	44	27,32
Left Calf Perimeter		
Eutrophic	48	29,81
Pre-sarcopenia	63	39,13
Sarcopenia	50	31,05
Reason for Hospitalization / Morbidities		
Cardiovascular	50	31,0
Gastrointestinal	35	21,7
Neurology	25	15,5
Orthopedics	14	8,7
Endocrinology	13	8,0
Rheumatology	9	5,6
Pneumology	7	4,3
Proctology - Urology	5	3,3
Nephrology	3	1,9

Source: CANTANHEIDE, LAO ; LIMA RA, 2022.

Table 3 – Description of the Care Complexity Level of the elderly hospitalized in the medical and surgical clinics of HUUFMA in São Luís - MA - Brazil, from October 2017 to April 2018.

Patient Classification System	n	%
Minimum Care	102	63,4
Intermediate Care	24	15,0
High Dependency	23	14,2
Semi Intensive	09	5,6
Intensive	03	1,8

Source: CANTANHEIDE, LAO; LIMA RA, 2022.

Chart 1 – Level of care complexity and area of care more developed for the elderly hospitalized in the medical and surgical clinics of HUUFMA in São Luís - MA - Brazil, from October 2017 to April 2018.

Care Area	Assistance Complexity Level										
	Minimum		Intermediary		High Dependency		Semi- Intensive		Intensive		Total
	n	%	n	%	n	%	n	%	n	%	n
Mental state	102	63,4	59	36,6	00	0,0	00	0,0	00	0,0	161
Oxygenation	104	64,6	56	34,8	01	0,6	00	0,0	00	0,0	161
Vital signs	100	62,2	53	33,0	03	1,8	02	1,2	03	1,9	161
Mobility	105	65,2	52	32,3	04	2,5	00	0,0	00	0,0	161
Deambulation	125	77,7	29	18,0	05	3,1	01	0,6	01	0,6	161
Feed	140	87,0	13	8,1	04	2,5	01	0,5	03	1,9	161
Body care	110	68,3	40	24,8	05	3,1	03	1,9	03	1,9	161
Eliminations	119	74,0	25	15,5	15	9,3	02	1,2	00	0,0	161
Therapy	90	55,9	34	21,1	21	13,0	13	8,1	03	1,9	161
Skin Integrity	114	70,8	37	23,0	08	5,0	00	0,0	02	1,2	161
Dressing	102	63,4	54	33,5	05	3,1	00	0,0	00	0,0	161
Dressing time	102	63,4	54	33,5	05	3,1	00	0,0	00	0,0	161

Source: CANTANHEIDE, LAO; LIMA RA, 2022.

a priority, because classifying patients allows identifying their real individual needs, being fundamental for the organization of care, thus enabling the provision of systematized and adequate care, with a fair and necessary dimensioning of nursing professionals so that there is no work overload. ⁷ We also reiterate that a patient classification system aims to equalize the demand (patient) and care supply (nursing workers) relationship, ensuring that care is provided in an integral way and free of charge for both parties. ¹⁴

It was identified in our study that the elderly hospitalized in the clinics were classified according to the level of care complexity as minimal care, corroborating the research by Bran-

ção et al (2019). ³ It is worth mentioning that the elderly population is characterized by having episodes of exacerbation of chronic conditions and loss of functionality, therefore, the degree of dependence and the level of care complexity tend to have constant changes. ³ It is also justified that the use of a Patient Classification System, which checks the degree of care complexity of the assisted patients, makes it possible to identify the most affected care areas and that depend on interventions.

We also emphasize that, for our clientele, we can consider this as a good result, from the point of view of maintaining the autonomy and independence of the elderly, in the same way for the nursing team regarding

the type of care provided during assistance, which is minimal care. We emphasize that minimal care is defined as being a stable patient from a clinical and nursing point of view and self-sufficient in relation to meeting needs. ⁽¹⁵⁾

Even so, almost two thirds of the surveyed elderly were classified as independent to develop self-care and their basic and instrumental activities of daily living, even without measurement, the literature also confirms the importance of encouraging the maintenance of autonomy, which results in shorter hospital stays and improved quality of life. This stimulus should be encouraged for all the elderly, including those classified as intermediate care and high dependency. ¹⁶

Nerdi, Sawada and Santos (2013)¹⁷, state that care, even if classified as minimal, should be focused on maintaining the functional capacity of the elderly, so that they remain independent and autonomous even in a hospital environment. Dependence can be understood as a dynamic process, whose evolution can be modified, prevented or reduced. For this process to happen, qualified professionals committed to the care of the elderly are needed.

In addition, we observe another very common problem in clinical inpatient services, which is the need to assist patients in high dependency, semi-intensive and intensive care in medical or surgical clinic units, where these units often do not have physical, material and human resources to provide care to patients with this profile. However, in daily professional practice, the nursing team is forced to provide care to critically ill and dependent patients outside intensive care units, due to the insufficient number of ICU beds for the demand.¹⁸

Patients, especially the elderly, need more attention from the nursing team, given that they are constantly subjected to various procedures where the most affected care areas in our study were vital signs, food, body care and therapy, also evidenced in the study by Brandão et al (2019).³ Many of these procedures performed require a longer time of assistance from the nursing team, where this situation interferes with the planning of the number of professionals needed to meet the needs of patients at that clinic.¹⁸

This fact makes us reflect that the substantial worsening of these areas, for the elderly, means a worsening of the patient's clinical prognosis, often leading to outcomes such as longer hospital stays, loss of autonomy and often even death.

The sociodemographic and clinical profile found in the study is similar to data from the studies by Furquim et al (2021)¹⁹ and Rodrigues et al (2017).²⁰ Women, especially with partners, end up finding situations of weariness in old age in relation to their health situation, often because they are the caregivers of their spouses or partners. The lack of a partner makes the elderly vulnerable to adverse events such as falls, medication errors, which in turn can lead to loss of autonomy, worsening of cognitive status and health status.¹⁹

The low level of education among hospitalized elderly may be linked to the fact that access to education in the past was more difficult, including for women, whose social role was to maintain the home and care for children.⁽²⁰⁾ It is noteworthy that patients with no education were not included in the research, as reading and writing skills were necessary during data collection.

Cardiovascular diseases are a global public health problem, this fact is explained by the fact that they are responsible for the high numbers of hospital admissions and deaths, especially in the elderly. Knowing this scenario is of fundamental importance so that health professionals and managers can adapt services to meet these demands (GHENO et al, 2021).²¹

Gastrointestinal disorders added to neurological disorders were characterized by 52.7% of the morbidities of hospitalized elderly clients. Gastrointestinal diseases in the elderly cause a lot of negative impact, as they bring suffering, decreased quality of life and discomfort. Studies reveal that 9% of medical consultations in the elderly are for gastrointestinal complaints.²² Neurological diseases generate significant physical impairments, moreover, they are linked to the progressive loss of autonomy,

accompanied by behavioral changes and requiring care of different natures, including material and emotional care.²³

CONCLUSION

The elderly in the study had a prevalent profile of women, with low education and low income, non-smokers, alcohol drinkers, sedentary, with altered blood pressure levels, controlled glycemic levels, adequate weight and pre-sarcopenic. Cardiovascular morbidities were the most common in the present study, followed by gastrointestinal and neurological.

It was identified in this study that the level of care complexity of the elderly hospitalized in the clinics was of minimal care for the PCS items and the items that most demanded services of greater care complexity were vital signs, food, body care and therapy.

The PCS is an extremely important instrument in the hospital context, because through it the nursing professional will be able to identify the care profile of the patients under their care, in addition to proposing a personal dimensioning of the team in an egalitarian way and that does not overload any professional, in addition to providing data that will support the nursing professional in the decision-making process.

There are few studies in the literature about the use of Patient Classification Systems, thus showing a need to produce more research on the subject. An important negative point of the work is the fact that the data collection took place before the new coronavirus pandemic, therefore, it is possible that the level of care complexity, as well as the most affected items of the PCS, may be currently altered in the hospitalized elderly. 🐦

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