IMPACTO CIENTÍFICO EDITORA

CLINICAL AND FUNCTIONAL VULNERABILITY IN ELDERLY PEOPLE CARED FOR BY THE UNIFIED HEALTH SYSTEM

VULNERABILIDADE CLÍNICO-FUNCIONAL EM PESSOAS IDOSAS ASSISTIDAS NO SISTEMA ÚNICO DE SAÚDE

VULNERABILIDAD CLÍNICO-FUNCIONAL EN PERSONAS MAYORES ATENDIDAS EN EL SISTEMA ÚNICO DE SALUD

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ABSTRACT

Considering that clinical and functional vulnerability in older adults results from the interaction between health conditions, functional limitations, and psychosocial factors, and that its aggravation in the outpatient setting is influenced by socioeconomic aspects and inadequate lifestyle practices, a multidimensional approach to care is imperative. The objective is to analyze the clinical-functional vulnerability of elderly people assisted by the Unified Health System, with an emphasis on secondary care. To this end, a cross-sectional study was conducted between January and September 2024 with 120 elderly people, using the Clinical-Functional Vulnerability Index and the Elderly Person's Health Booklet as instruments. The results showed a high level of vulnerability among older participants, with a prevalence of hypertension, diabetes mellitus, cognitive impairment, and risk behaviors such as physical inactivity, smoking, and alcohol use. This reinforces the urgency of effective public policies that prioritize health promotion, disease prevention, and comprehensive care, which are

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fundamental to improving the quality of care for the elderly population in the Unified Health System.

Keywords: Vulnerability. Elderly People. Unified Health System. Health Promotion.

RESUMO
Considerando que a vulnerabilidade clínico-funcional em pessoas idosas resulta da interação entre condições de saúde, limitações funcionais e fatores psicossociais, e que seu agravamento no contexto ambulatorial é influenciado por aspectos socioeconômicos e práticas de vida inadequadas, torna-se imperiosa uma abordagem multidimensional para o cuidado. Objetiva-se analisar a condição de vulnerabilidade clínico-funcional de pessoas idosas assistidas no Sistema Único de Saúde, com ênfase na atenção secundária. Para tanto, procede-se à realização de um estudo transversal, entre janeiro e setembro de 2024, com 120 pessoas idosas, utilizando como instrumentos o Índice de Vulnerabilidade Clínico-Funcional e a Caderneta de Saúde da Pessoa Idosa. Desse modo, observa-se que os resultados apontaram um alto nível de vulnerabilidade entre os participantes com idade mais avançada, com prevalência de hipertensão arterial, diabetes mellitus, prejuízo cognitivo e comportamentos de risco, como inatividade física, tabagismo e uso de álcool, o que permite concluir que a investigação reforça a urgência de políticas públicas efetivas que priorizem a promoção da saúde, a prevenção de doenças e o cuidado integral, fundamentais para a qualificação da atenção à população idosa no Sistema Único de Saúde.

Palavras-chave: Vulnerabilidade. Pessoas Idosas. Sistema Único de Saúde. Promoção da Saúde.

RESUMEN
Considerando que la vulnerabilidad clínico-funcional en las personas mayores es el resultado de la interacción entre las condiciones de salud, las limitaciones funcionales y los factores psicosociales, y que su agravamiento en el contexto ambulatorio está influenciado por aspectos socioeconómicos y prácticas de vida inadecuadas, es imperativo adoptar un enfoque multidimensional para la atención. El objetivo es analizar la condición de vulnerabilidad clínico-funcional de las personas mayores atendidas en el Sistema Único de Salud, con énfasis en la atención secundaria. Para ello, se llevó a cabo un estudio transversal, entre enero y septiembre de 2024, con 120 personas mayores, utilizando como instrumentos el Índice de Vulnerabilidad Clínico-Funcional y la Cartilla de Salud de la Persona Mayor. De este modo, se observa que los resultados apuntaron a un alto nivel de vulnerabilidad entre los participantes de mayor edad, con prevalencia de hipertensión arterial, diabetes mellitus, deterioro cognitivo y comportamientos de riesgo, como inactividad física, tabaquismo y consumo de alcohol, lo que permite concluir que la investigación refuerza la urgencia de políticas públicas efectivas que prioricen la promoción de la salud, la prevención de enfermedades y la atención integral, fundamentales para la cualificación de la atención a la población anciana en el Sistema Único de Salud.

Palabras clave: Vulnerabilidad. Ancianos. Sistema Único de Salud. Promoción de la Salud.

1 INTRODUCTION

Clinical-functional vulnerability in older people refers to the interaction between health conditions, functional limitations, and psychosocial factors that directly influence the well-being of this population (Oliveira et al., 2020). This perspective aims to understand the specific needs of older people, recognizing that these dimensions significantly affect their quality of life and the way they relate to health services.

In the outpatient setting, several elements contribute to the increase in this vulnerability, which requires a multidimensional and individual-centered approach (Pereira et al., 2025). Socioeconomic aspects, such as restricted access to health services, social isolation and the fragility of support networks, intensify this condition. In addition, poor lifestyle practices, such as unbalanced diet and sedentary lifestyle, negatively impact the physical and functional health of older people (Sanglard et al., 2023).

In view of this, it is essential that health professionals adopt a broader view during the clinical evaluation of older people, considering all these risk factors. This approach enables the implementation of more effective strategies, promoting better clinical outcomes and increasing the quality of care provided in the outpatient units of the Unified Health System.

Performing clinical-functional vulnerability assessment in secondary-level outpatient settings is crucial, as it allows for early identification of signs of functional decline. This early detection enables timely interventions, which have direct implications for public policies aimed at healthy aging. In addition, understanding the multiple dimensions that make up vulnerability — including biological, psychological, and social factors — is essential for formulating more appropriate responses to the demands of this population.

Understanding the psychosocial and functional dimensions of vulnerability in this population is essential for the provision of effective geriatric care. In this context, the interdisciplinary work of health professionals is extremely important, especially in primary care, where the first contact with this population occurs. These professionals play a strategic role in identifying early signs of clinical and functional decline through careful and targeted anamnesis.

Early recognition of these alterations allows for the appropriate indication of low, medium or high complexity actions, enabling more accurate referrals to specialized services. This process must consider not only the physical state, but also the emotional and mental aspects, with the expectation that, after interventions and continuous monitoring, there will be a significant improvement in the overall health of older people. Humanized care, in this sense, becomes a fundamental pillar, especially in view of the need for effective inclusion of this population in public health policies.

Through the work of interdisciplinary teams, it is possible to adopt a comprehensive approach to the assessment of clinical-functional vulnerability, promoting more qualified support and more satisfactory results. The active participation of these professionals in the tracking and monitoring processes is crucial to meet the complex demands of aging, contributing to a more prepared and resilient health system.

In view of the above, the present study aims to analyze the clinical-functional vulnerability of elderly people treated in the Unified Health System, with an emphasis on secondary care, aiming to generate subsidies that guide more effective care strategies that are sensitive to the specificities of this population.

2 METHODOLOGY

2.1 STUDY DESIGN

This is an observational, descriptive, cross-sectional study with a quantitative approach. The report of the research was guided by the STROBE Checklist (STrengthening the Reporting of Observational studies in Epidemiology), which contains 22 items to ensure adequate reporting of observational studies.

2.2 SCENARIO AND PARTICIPANTS

This cross-sectional study was conducted in a secondary outpatient clinic of the public network in Manaus. Data collection took place from January to September 2024, with a convenience sample composed of 120 elderly people (age ≥ 60 years), recruited from among those assisted in the morning shift. The reference population consisted of 858 elderly individuals registered at the outpatient clinic, and the sample size was defined as a 95% confidence interval.

2.3 ELIGIBILITY CRITERIA

To compose the sample, the following criteria were established:

- Inclusion Criteria: Elderly individuals (≥ 60 years old), of both sexes, registered and with an appointment scheduled at the outpatient clinic during the data collection period, were eligible for the study.
- Exclusion Criteria: elderly people who had any impairment that hindered verbal communication, since the methodology depended on the application of questionnaires.

2.4 INSTRUMENTS AND VARIABLES

For data collection, two main instruments were used. The first was the Clinical-Functional Vulnerability Index (IVCF-20) (Moraes et al., 2016), a questionnaire validated in Brazil that evaluates eight domains: age, self-perception of health, activities of daily living, cognition, mood, mobility, communication, and comorbidities.

The total score, which can vary up to 40 points, categorizes elderly individuals as: low vulnerability (<7 points, robust), moderate vulnerability (7 to 14 points, at risk of frailty) or high vulnerability (≥ 15 points, frail). From this instrument, variables related to clinical-functional status were derived.

The second instrument was the Health Handbook for the Elderly (Brasil, 2020), an official document used in the routine of health services. Through it, sociodemoFigureic variables, lifestyle habits and health conditions were collected, allowing a comprehensive overview of the participants' profile.

2.5 DATA COLLECTION PROCEDURES

The collection followed the following steps:

a) Approach and presentation of the research, with a detailed explanation of its objectives;
b) Reading and clarification of doubts about the Informed Consent Form (ICF);
c) After the acceptance and signature of the ICF in two copies (one was with the researcher and the other with the participant), the instruments (IVCF-20 and booklet mirror) were applied in the form of forms;
d) The questionnaires were answered by the elderly person and/or by a accompanying family member, respecting individual limitations and including breaks as needed.

2.6 DATA ANALYSIS

The data were tabulated in spreadsheets and analyzed using descriptive statistics. Continuous variables were summarized with measures of central tendency and dispersion, while categorical variables were presented in absolute and relative frequencies.

2.7 ETHICAL ASPECTS

The project was approved by the Research Ethics Committee of the Federal University of Amazonas (Opinion No. 6.500.007, CAAE: 75230323.3.0000.9167), in accordance with Resolution 466/2012 of the National Health Council and the General Data Protection Law

(LGPD, No. 13.709/2018). The hospital's consent was obtained, and all participants signed the ICF after being duly informed about the risks and benefits of the research.

3 RESULTS AND DISCUSSIONS

There was a predominance of males (63.3%), in the age group between 60 and 74 years (75.0%), who depend exclusively on the SUS (97.5%), literate (85.0%), married marital status (45.8%) and who had attended up to 8 years or more of schooling (40.8%) (Table 1).

Table 1

SociodemoFigureic characterization of older adults assisted at the public service outpatient clinic in Manaus, Amazonas, Brazil, 2024

Variables	N	%
Sex		
Male	76	63,3
Female	44	36,7
Age group		
60 to 74 years old	90	75,0
75 to 84 years old	25	20,8
>85 years old	5	4,2
Health insurance		
Private Plan	3	2,5
Exclusive S.U.S.	117	97,5
Can read and write		
Yes	102	85,0
No	18	15,0
Marital Status		
Single	39	32,5
Divorced/Separated	11	9,2
Married/ Living with partner	55	45,8
Widower	14	11,7
	1	0,8
Schooling		
No	12	10,0
From 1 to 3 years	20	16,6
From 4 to 7 years old	38	31,7
8 years and older	50	41,7

Source: Health Handbook for the Elderly (Brazil, 2020); Survey data (2024).

According to lifestyle habits, 72.5% of the participants do not practice physical activities, 88.3% claim to have at least three meals a day, 31.7% consume sugary drinks and 86.7% deny using large amounts of oil, fats and salt in the preparation of their meals. 91.7% of the participants denied smoking and 88.3% denied drinking alcoholic beverages. (Table 2).

Table 2

Lifestyle habits of elderly people assisted at the public service outpatient clinic in Manaus, Amazonas, Brazil, 2024

Variables	Yes		No	
	n	%	n	%
Physical Activity				
Practice of some type of physical activity, at least three times a week	33	27,5	87	72,5
Feeding				
Do you eat at least three meals a day?	106	88,3	14	11,7
Inclusion of fruits and vegetables in your meals throughout the day	107	89,2	13	10,8
Consumption of meat, fish or eggs	111	92,5	9	7,5
Custom of consuming sugary drinks	38	31,7	82	68,3
Prepare your meals with a large amount of oil, fats, sugar and salt	16	13,3	104	86,7
Inclusion of water intake in the daily routine	94	78,3	26	21,7
Smoker	10	8,3	110	91,7
Alcohol consumption	14	11,7	106	88,3

Source: Health Handbook for the Elderly (Brazil, 2020); Survey data (2024).

The most prevalent diseases in this study were: systemic arterial hypertension (81.6%), diabetes mellitus (33.3%), coronary artery disease (25.8%) and depression (25.8%) (Table 3).

Table 3

Health conditions of older people assisted at the public service outpatient clinic in Manaus, Amazonas State, Brazil, 2024

Variables	YES		NO	
	n	%	n	%
Stroke	10	8,3	110	91,7
Anaemia	21	17,5	99	82,5
Asthma	09	7,5	111	92,5
Diabetes mellitus	40	33,3	80	66,7
Coronary artery disease	31	25,8	89	74,2
Obstructive pulmonary disease	11	9,2	109	90,8
Epilepsy	05	4,2	115	95,8
Systemic arterial hypertension	98	81,5	22	18,3
Heart failure	23	19,2	97	80,3
Gastrointestinal ulcer	04	3,3	116	96,5
Depression	31	25,8	89	74,2
Urinary incontinence	24	20,0	96	80,0
Fecal incontinence	22	18,3	98	81,5

Source: Survey data (2024).

Regarding the Clinical-Functional Vulnerability Index, there was a higher frequency of elderly people shopping (75.0%), controlling their money (79.1%) and bathing alone (84.1%).

Regarding cognitive status, 51.6% of the participants reported forgetfulness, with 55.0% reporting no worsening in the last months and 82.5% without impediment to perform their daily activities. Regarding humor, 66.6% did not lose interest in their daily activities. In terms of mobility, 83.3% are able to raise their arms above the shoulder and 87.5% are able to hold and handle small objects (Table 3).

Only 18.2% of the participants said they had difficulty walking, and 14.1% had one or two falls in the last year. However, in the communication variable, 76.6% reported no vision problems and 88.3% no hearing problems. Regarding multiple comorbidities, polypathology (2.5%), polypharmacy (48.3%), and recent hospitalization in the last six months (5.8%) stood out (Table 4).

Table 4

Clinical-Functional Vulnerability of older adults assisted at the public service outpatient clinic in Manaus, Amazonas, Brazil, 2024

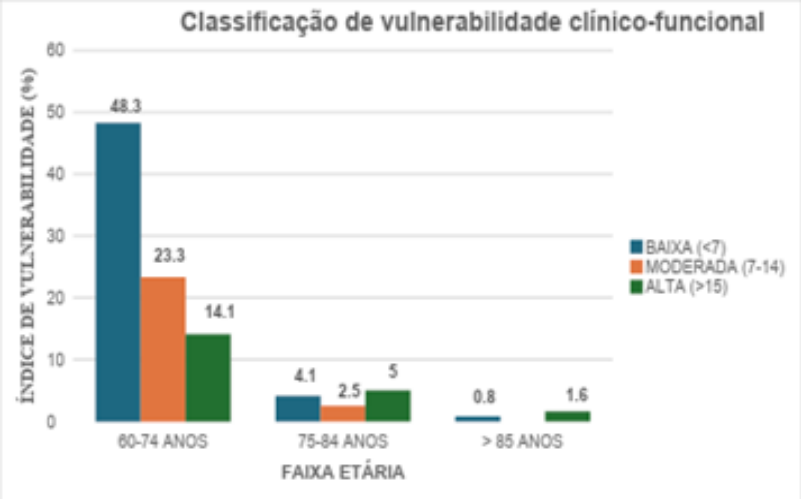
Variables	Yes		No	
	n	%	n	%
Activity of Daily Living Instrumental				
Stopped shopping because of your health or physical condition you	30	25,0	90	75,0
Has ceased to control their money because of their health or physical condition	25	20,8	95	79,2
Basic Life Activity				
Stopped bathing alone because of their health or physical condition	19	15,8	101	84,2
Cognition				
Some family member or friend told you that you are becoming forgetful	62	51,7	58	48,3
This forgetfulness has been getting worse in recent months	54	45,0	66	55,0
This forgetfulness is preventing you from carrying out some activity of your daily life	21	17,5	99	82,50
Mood				
Discouragement, sadness or hopelessness in the last month	17	14,2	103	85,8
Have you lost interest in everyday activities?	40	33,3	80	66,6
Mobility				
Inability to raise the arms above shoulder level	20	16,66	100	83,33
Inability to handle or hold small objects	15	12,50	105	87,50
Difficulty walking that may prevent the performance of some daily activity	22	18,33	98	81,66
One or more falls in the last year	17	14,16	103	85,83
Communication				
Vision problems capable of preventing some daily activity	28	23,33	92	76,66
Hearing problems that can prevent some activity in your daily life	14	11,66	106	88,33
Multiple comorbidities				
Polypathologies - five or more chronic diseases	3	2,50	117	97,50
Polypharmacy - regular use of five or more different medications every day	58	48,33	62	51,66
Recent hospitalization (<6 months)	7	5,83	113	94,16

Source: Clinical-functional vulnerability index-IVCF-20 (27); Survey data (2024).

Figure 1 shows that elderly people aged 60 to 74 years had a low risk of clinical-functional vulnerability (48.3%), 75 to 84 years (2.5%) considered to be at moderate risk, and >85 years old (1.6%) were highly vulnerable.

Figure 1

Risk classification of clinical-functional vulnerability of elderly people assisted at the public service outpatient clinic in Manaus, Amazonas-2024



Source: Survey data (2024).
Legend: (< 7) Low risk of clinical-functional vulnerability; (7 to 14) Moderate risk of clinical-functional vulnerability; (> 15) High risk of clinical-functional vulnerability.

Individuals over 85 years of age had the highest vulnerability scores, characterizing a picture of marked frailty. Advanced aging is directly related to loss of functionality, evidenced by limitations in mobility, cognition, and activities of daily living (Sanglard et al., 2023).

The investigation included sociodemoFigureic variables (such as age, gender, marital status, and education), lifestyle habits (physical activity, diet, smoking, and alcohol consumption), health conditions, and the degree of clinical-functional vulnerability. Cognitive changes, associated with affective symptoms such as sadness and discouragement, were correlated with decreased autonomy and greater physical dependence. These findings underscore the importance of incorporating neuropsychological assessments and psychosocial strategies into comprehensive care for older adults (Italiano et al., 2023; Sanglard et al., 2023; Pereira, 2025).

Falls, one of the main public health problems among the elderly, stood out as a relevant marker of frailty, especially among the longest-lived. The prevention of this type of event should be considered a priority, and educational actions and environmental modifications aimed at safety and the promotion of mobility are recommended (Pereira, 2025).

It was also observed that most participants did not perform physical activities regularly. A previous study identified that about 55% of older people did not practice any type of exercise, although the frequent practice of physical activity is widely recognized for its benefits, both in the physical and psychological aspects, in addition to acting as a preventive factor for several chronic diseases (Sanglard et al., 2023).

Health-related behaviors, such as sedentary lifestyle and the use of tobacco products, are considered modifiable and should be addressed through actions aimed at promoting health and encouraging active aging (Veras, 2021; Rio Grande do Sul, 2023).

The study also identified a high prevalence of comorbidities, such as hypertension and diabetes mellitus, which are often associated with loss of autonomy and difficulty in performing Activities of Daily Living (ADLs). This highlights the need for preventive strategies and rehabilitation programs aimed at maintaining the functional independence of elderly individuals (Rio Grande do Sul, 2023). It is noteworthy that uncontrolled hypertension can compromise mobility and motor coordination, increasing the risk of falls and declining functional capacity. Research shows that the absence of adequate treatment for this condition can accelerate the physical and cognitive impairment of this population (Souza et al., 2022).

The interaction between chronic diseases – such as hypertension and diabetes – and factors such as aging, functional loss, cognitive changes, lifestyle habits and low education intensifies the frailty picture. This combination increases the risk of dependence, frequent hospitalizations, and early mortality. In addition, educational level directly influences access to information, understanding of health care, and the ability to deal with the challenges of aging (Carneiro et al., 2023).

Both socioeconomic factors and comorbidities should be considered in the assessment of the clinical-functional vulnerability of older adults. Early detection of signs of decline can guide the formulation of more effective public policies aimed at the health of this population and optimize the use of resources in outpatient services. The findings of this study are in line with the current literature and reinforce the need for integrated and personalized interventions.

The research data show several factors associated with clinical-functional vulnerability among elderly people cared for within the scope of the Unified Health System. In view of the above, the importance of adopting a multidimensional approach to geriatric care is emphasized, considering the multiple dimensions that influence the health and well-being of this population (Silva, 2022; Paiva et al., 2024).

4 CONCLUSION

The study demonstrated a high prevalence of vulnerability among older participants, and this condition is influenced by multiple factors, such as aging, functional limitations, cognitive impairment, presence of comorbidities, and inadequate lifestyle habits. These elements contribute significantly to the complexity of the clinical outcomes observed in the

elderly population. The importance of continuing research in the area is highlighted, in order to support strategies for promoting and protecting the health of this growing population, in addition to providing relevant indicators for decision-making by public managers in the context of the Unified Health System.

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