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ASPECTS ASSOCIATED WITH HEALTH VULNERABILITY IN ELDERLY INDIVIDUALS ATTENDED IN PRIMARY HEALTH CARE

ASPECTOS ASSOCIADOS À VULNERABILIDADE EM SAÚDE EM PESSOAS IDOSAS ATENDIDAS NA ATENÇÃO PRIMÁRIA À SAÚDE

ASPECTOS ASOCIADOS A LA VULNERABILIDAD EN SALUD EN PERSONAS MAYORES ATENDIDAS EN LA ATENCIÓN PRIMARIA DE SALUD

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ABSTRACT

Introduction: Vulnerability presents diverse conceptual models and in older adults is related to biopsychosocial, economic, cultural, emotional, and relational factors.

Objective: To assess aspects associated with vulnerability presence in older adults attending Primary Health Care.

Methods: A cross-sectional, quantitative, and observational study with a sample of 200 participants, aged ≥ 60 years, community residents, conducted in 2024, in Brazil. The instruments applied were the Elderly Health Booklet, MMSE, Edmonton Frail Scale, Downton Falls Risk Scale, VES-13, Functionality Scales (Barthel and Lawton), PRISMA 7, SARC-F, GDS-15, SF 36, Mini Nutritional Assessment, HS-EAST, and CTS-1.

Results: Vulnerability presence in older adults was mainly associated with statistically relevant data in age group (p = 0.006), dependence on IADL (p = 0.031), quality of life (p = 0.010), frailty (p = 0.035), functional decline risk (p = 0.004), and depression (p = 0.001).

Conclusions: Older adults residing in the community showed positivity for vulnerability presence, but when associated with most clinical and sociodemographic aspects of the study, little inference was found, indicating the need for further exploration of vulnerability-related data.

Keywords: Health Services for the Aged; Health Vulnerability; Primary Health Care; Nursing.

RESUMO

Introdução: A vulnerabilidade apresenta modelos conceituais diversos e na pessoa idosa está relacionada a fatores biopsicossociais, econômicos, culturais, emocionais e relacionais.

Objetivo: Avaliar os aspetos associados à presença de vulnerabilidade em pessoas idosas atendidas na Atenção Primária à Saúde.

Métodos: Estudo transversal, com abordagem quantitativa e observacional, com uma amostra de 200 participantes, com idade ≥ 60 anos, residentes da comunidade, realizada em 2024, no Brasil. Foram aplicados os instrumentos Caderneta de Saúde da Pessoa Idosa, MEEM, Escala de Fragilidade de Edmonton, Escala de Risco de quedas de Downton, VES-13, Escalas de Funcionalidade (Barthel e Lawton), PRISMA 7, SARC-F, GDS-15, SF 36, Mini Avaliação Nutricional, HS-EAST e CTS-1.

Resultados: A presença de vulnerabilidade em pessoas idosas esteve principalmente associada aos dados de relevância estatística em faixa etária (p = 0,006), dependente de AIVD (p = 0,031), qualidade de vida (p = 0,010), fragilidade (p = 0,035), risco de declínio funcional (p = 0,004) e depressão (p = 0,001).

Conclusão: A pessoa idosa que reside na comunidade apresentou positividade para a presença de vulnerabilidades, porém quando associada com a maioria dos aspetos clínicos e sociodemográficos do estudo, constatou-se pouca inferência dos mesmos, indicando a necessidade de explorar mais os dados referentes à vulnerabilidade.
Palavras-chave: Atenção Primária à Saúde; Enfermagem; Serviços de Saúde para Idosos; Vulnerabilidade em Saúde.

RESUMEN

Introducción: La vulnerabilidad presenta diversos modelos conceptuales y en las personas mayores está relacionada con factores biopsicosociales, económicos, culturales, emocionales y relacionales.

Objetivo: Evaluar los aspectos asociados a la presencia de vulnerabilidad en personas mayores atendidas en Atención Primaria de Salud.

Métodos: Estudio transversal, con enfoque cuantitativo y observacional, con una muestra de 200 participantes, con edad ≥ 60 años, residentes de la comunidad, realizado en 2024, en Brasil. Se aplicaron los instrumentos Cartilla de Salud de la Persona Mayor, MMSE, Escala de Fragilidad de Edmonton, Escala de Riesgo de Caídas de Downton, VES-13, Escalas de Funcionalidad (Barthel y Lawton), PRISMA-7, SARC-F, GDS-15, SF 36, Mini Evaluación Nutricional, HS-EAST y CTS-1.

Resultados: La presencia de vulnerabilidad en personas mayores estuvo principalmente asociada a datos estadísticamente relevantes en el grupo de edad (p = 0,006), dependencia en AVD (p = 0,031), calidad de vida (p = 0,010), fragilidad (p = 0,035), riesgo de declive funcional (p = 0,004) y depresión (p = 0,001).

Conclusiones: Las personas mayores que residen en la comunidad mostraron positividad para la presencia de vulnerabilidad, pero cuando se asociaron con la mayoría de los aspectos clínicos y sociodemográficos del estudio, se encontró poca inferencia, lo que indica la necesidad de explorar más los datos relacionados con la vulnerabilidad.
Descriptores: Atención Primaria de Salud; Enfermería; Servicios de Salud para Ancianos; Vulnerabilidad en Salud.

INTRODUCTION

Findings in the literature highlight that vulnerability is strongly linked to the social determinants and conditions of health, surpassing the logic of the hegemonic paradigm on the health-disease process. It is not merely associated with biological aspects or exposure to potential health risks. This new perspective encompasses the multiple dimensions in which the concept of vulnerability unfolds[1].

Concerning vulnerability and its relationship with aging, studies emphasize the importance of understanding the daily lives of individuals, the fragility of their socio-affective relationships, the precariousness of income access, inequalities in access to public goods and services, and the insecurity regarding social justice. These factors transcend the condition posed by bioethics, which often frames vulnerability as a natural human condition where individuals inherently require assistance. This perspective assumes that individuals lack mechanisms of resilience or the ability to create change through the support of networks, advocacy for rights, and the reduction of inequalities—especially relevant given the inherent fragility accompanying aging[1-2].

From a clinical standpoint, the decline in various human functions resulting from physiological, psychological, biochemical, and morphological changes intrinsic to the aging process makes individuals increasingly vulnerable over time. This is due to reduced abilities to adapt to diverse contexts[2]. Therefore, identifying vulnerable groups among older adults enables the development of targeted health policies and strategies to prevent undesirable outcomes and recover from existing disabilities[3].

The 2023 World Population Situation Report highlights the global trend of aging, describing it as a defining phenomenon of the current era. While this trend progresses worldwide, its pace varies, with better indicators observed in developing countries[4]. The United Nations (UN) estimates that the global older population will double, noting that in 2021, approximately 761 million older adults were recorded. By 2050, this number is projected to reach 1.6 billion[5].

In Brazil, the recently updated 2022 Demographic Census revealed a 56% increase in the elderly population compared to the 2010 census. This group now accounts for 32,113,490 individuals, comprising 17,887,737 (55.7%) older women and 14,225,753 (44.3%) older men[6].

These demographic and epidemiological changes present challenges for policymakers, healthcare professionals, and society. Addressing these requires a robust assistance network to support this specific population, emphasizing the urgent need for innovative approaches in care, organization, and monitoring processes aimed at reducing vulnerabilities[7]. Consequently, territorial, decentralized, and regionalized actions play a strategic role within Brazil's Unified Health System (SUS). Primary Health Care (PHC) serves as a pivotal mechanism for strengthening protective factors within older adults and their communities[8-9].

Given the significant impacts of vulnerability on older adults' daily lives, healthcare providers must adopt approaches based on building and strengthening bonds. It is crucial to organize effective actions by evaluating potential variables that influence or exacerbate vulnerability through screening tools, such as the Vulnerable Elders Survey (VES-13). This tool measures fragility and the risk of health deterioration among vulnerable older adults based on self-reported factors such as age, self-assessment of health, physical performance, and functional status[10].

In this context, to better understand this phenomenon, the present study aims to evaluate aspects associated with vulnerability among older adults receiving primary healthcare.

MATERIALS AND METHODS

This is a cross-sectional, quantitative study, part of a longitudinal, multicenter project of the International Research Network on Vulnerability, Health, Safety, and Quality of Life of Older Adults, involving Brazil, Portugal, Spain, and France.

The study was conducted with older adults receiving Primary Health Care (PHC) services, encompassing individuals residing in the community of Santa Cruz, located in the interior of Rio Grande do Norte, Brazil.

The sampling process was probabilistic, using a calculation for finite populations of older adults attending PHC. The sample size was determined with a 95% confidence level (Z = 1.96), a margin of error of 5% (e = 0.05), an estimated success proportion (P) of 50%, and an error proportion (Q) of 50%, resulting in a sample size of 200 older adults.

Participants were included if they were aged 60 years or older and registered or users of a PHC unit. Older adults with clinical characteristics that impeded participation (e.g., altered cognitive status), as assessed by the researchers or PHC professionals, were excluded.

The study utilized the following tools: Older Adults' Health Booklet for sociodemographic and health data[11], Mini-Mental State Examination (MMSE) to assess cognitive functions[12], Edmonton Frail Scale (EFS) to assess frailty[13], Downton Fall Risk Scale to analyze fall risk[14], VES-13 for identifying vulnerable older adults[15], Barthel and Lawton Scales to evaluate independence in performing Basic Activities of Daily Living (BADL) (Barthel) and Instrumental Activities of Daily Living (IADL) (Lawton)[16-17], PRISMA-7 to assess functional decline[18], SARC-F to identify sarcopenia risk[19], Geriatric Depression Scale (GDS-15) to evaluate depressive symptoms[20], Quality of Life (SF-36) for assessing participants' quality of life[21], Mini Nutritional Assessment (MNA) to evaluate nutritional risk or malnutrition[22], Hwalek-Sengstock Elder Abuse Screening Test (HS-EAST) to assess the risk of violence[23], and Conflict Tactics Scale (CTS) to identify older adults experiencing violence [24].

Data collection occurred between July and December 2023 by a trained multidisciplinary team.

Participants meeting inclusion criteria and agreeing to participate were informed about the study and invited to sign an Informed Consent Form (ICF). The multicenter project was approved by the Research Ethics Committee of Onofre Lopes University Hospital, Federal University of Rio Grande do Norte (approval number 4267762; CAAE: 36278120.0.1001.5292).

Data were processed using the Statistical Package for the Social Sciences (SPSS), version 23.0. Descriptive analysis included absolute and relative frequency distributions for categorical variables. Pearson's chi-square test was used to assess correlations between the sociodemographic and clinical variables and vulnerability. A significance level of 5% ($p < 0.05$) and 95% confidence intervals were adopted for all analyses.

RESULTS

The participants in this study comprised a sample of 200 elderly people treated at the PHC. Table 1↗ shows that the majority were female (68.0%), aged between 60 and 74 (54.0%), non-white (61.0%) and literate (75.0%).

When cross-referencing the data with the vulnerability variable, there was a predominance of women (50.5%), aged 60 to 74 (37%), non-white (44%) and literate (57.5%) who did not express vulnerability, a profile like that found in the total analysis of participants and demonstrating that fewer elderly people are vulnerable in PHC. In contrast to this percentage, 26% of the elderly were vulnerable, with a predominance of females (17.5%). Still discussing the crossing of variables, the age group item (p = 0.006) showed a statistically significant value associated with vulnerability (Table 1↗).

In the analysis of the behavior of the clinical variables found in Table 2↗, similarly to what has already been discussed, there is a greater presence of people in vulnerability and, in the result of crossing them, there is a statistically significant value for the items: IADL dependent (p = 0.031), Quality of life (p = 0.010), Frailty (p = 0.035), Risk of functional decline (p = 0.004) and Depression (p = 0.001).

The clinical variables that proved to be related to the vulnerability of elderly people in PHC, those who are vulnerable, showed higher percentages in dependence on instrumental activities of daily living – IADL – (53%), falls (49.5%) and poorer quality of life (43.5%) (Table 2↗).

In contrast to the aforementioned analysis, the isolated assessment of each clinical variable, when crossed with vulnerability, is seen in the data from the study participants who were positive for vulnerability, thus showing little relationship with most of the clinical characteristics, pointing to the association that they are vulnerable for this specific population and for the study region, is not necessarily indicative of being in a situation of violence (68%), cognitive decline (67%), depressive symptoms (60%), being at risk of sarcopenia (49%), falls (50.5%), nutrition (49%), functional decline (45%) or violence (47.5%), frailty (40.5%) or being dependent on basic activities of daily living – BADL – (45%) (Table 2↗).

DISCUSSION

Contributing to the debate on the profile observed in the association with sociodemographic variables, this study identified that older non-white women, within the first ten years of the older age range and with some level of education, predominated among the results, especially in the non-vulnerable group.

The significant proportion of older women who are not in a situation of vulnerability and who receive care in Primary Health Care (PHC) highlights the importance of social and community-based support systems in their daily lives. These systems promote participation in health services, improve quality of life, enhance access to information and health awareness, and reduce perceived stress and vulnerability-related aspects. This suggests an increase in the active participation of older women in care scenarios, strengthening their resilience in the aging process[25-26].

However, even though vulnerability was less frequent among non-white older women, this demographic continues to face challenges related to vulnerability. The literature underscores the historical and critical debate on gender issues in aging, noting the "feminization of aging" and how gender inequalities remain more pronounced in older women. These include greater exposure to discrimination, violence, domestic labor, and professional challenges[25].

The analysis of clinical variables revealed a different trend compared to sociodemographic data. A greater prevalence of vulnerability was observed among older adults with dependency in Instrumental Activities of Daily Living (IADL), a history of falls, and poorer quality of life.

A study conducted in three cities in Colombia involving 1,514 older adults demonstrated a strong association between vulnerability, poor quality of life, and dependence on others for instrumental daily activities[27]. Similarly, a study in the Midwest region of Brazil found that 62.3% of vulnerable older adults were dependent on IADL, while most were independent in Basic Activities of Daily Living (BADL)[28]. These findings align with the results of the present study.

Regarding falls, research conducted in Southeast Brazil with 261 older adults indicated that falls may exacerbate vulnerability by increasing frailty and leading to complications such as functional decline, injuries, fractures, hospitalizations, and even mortality[29]. Another study in the same region identified vulnerability as a contributing factor to the higher incidence of falls and poorer quality of life among older adults[30].

The cross-sectional evaluation of variables revealed that while a significant number of older adults in the study location (Santa Cruz/RN) were classified as vulnerable, most clinical variables did not show strong associations with vulnerability. This finding underscores the complexity and heterogeneity of vulnerable older adults, emphasizing the need for healthcare professionals to adopt a nuanced understanding of the multifaceted nature of aging-related phenomena[31].

Although this study found limited associations between vulnerability and clinical characteristics such as violence, cognitive decline, depressive symptoms, sarcopenia risk, falls, nutritional risk, functional decline, and frailty, previous literature has established connections between vulnerability and these aspects[25,28-29]. This discrepancy highlights the need for further exploration of vulnerability in community contexts.

A study conducted in China highlighted the role of integrated care in maintaining healthy aging, reinforcing the stability of intrinsic capacity—defined as the combination of an individual's physical and mental capabilities. The study recommended simple care and management strategies in primary health contexts to support older adults[32].

The findings of this study highlight the importance of improving care conditions and services, which can contribute to the development of health indicators. These indicators serve as management tools for the formulation of public policies and the design of targeted interventions. For instance, the *Sistema de Indicadores para Acompanhamento de Políticas de Saúde do Idoso* (SISAP-*Idoso*) in Brazil demonstrates how targeted metrics can enhance health system effectiveness, efficiency, and resource allocation, supporting efforts to reduce vulnerabilities among older adults[7].

The study acknowledges the diversity of its findings, which demonstrated weaker associations between certain variables and vulnerability compared to national and international literature. This indicates the need to explore alternative methodological approaches and refine data collection processes. Future research should examine additional impactful variables to provide broader and more representative results.

CONCLUSION

The results of this study aligned with its objectives, identifying the presence of vulnerability among older adults in PHC and its association with certain clinical aspects. Regarding sociodemographic characteristics, non-vulnerable older adults were more prevalent in the study population.

These findings underscore the importance of understanding vulnerability in older adults as a means of preventing risks and adverse outcomes. Despite some relevant aspects showing limited influence among vulnerable older adults, the study revealed statistically significant associations between vulnerability and the following variables: age group, IADL dependence, quality of life, frailty, functional decline risk, and depression.

Finally, as a strategic opportunity within primary health care, this study recommends developing gerontological intervention plans to identify vulnerable older adults in the community. It also advocates for the implementation of multiprofessional geriatric assessments to address the causes of vulnerability and provide protective or preventive interventions to mitigate associated declines.

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GT: Formal analysis, supervision, writing – review and editing, funding acquisition & editing.
All authors have read and agreed with the published version of the manuscript.

Ethical Considerations
Approved by the Research Ethics Committee of the Onofre Lopes University Hospital – UFRN/Brazil [CAAE: 36278120.0.1001.5292 – no. 4267762].

Considerações Éticas
Aprovado pelo Comitê de Ética em Pesquisa do Hospital Universitário Onofre Lopes – UFRN/Brasil [CAAE: 36278120.0.1001.5292 – n.º 4267762].

Ethical Disclosures
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Table 1 – Sociodemographic characteristics of older adults in PHC according to vulnerability. Santa Cruz, 2024.[ᴿᴿ]

Sociodemographic variables		Vulnerability		Total n (%)	p-value*
		Yes n (%)	No n (%)		
Gender	Female	35 (17.5)	101 (50.5)	136 (68.0)	0.911
	Male	16 (8.0)	48 (24.0)	64 (32.0)	
Age Group	60-74 years	34 (17.0)	74 (37.0)	108 (54.0)	**0.006**
	75-84 years	16 (8.0)	45 (22.5)	61 (30.5)	
	≥ 85 years	1 (0.5)	30 (15.0)	31 (15.5)	
Race/Color	White	17 (8.5)	61 (30.5)	78 (39.0)	0.336
	Non-white	34 (17.0)	88 (44.0)	122 (61.0)	
Literacy	Literate	35 (17.5)	115 (57.5)	150 (75.0)	0.223
	Illiterate	16 (8.0)	34 (17.0)	50 (25.0)	

*Pearson's Chi-Square Test.

Table 2 – Clinical characteristics of older adults in PHC according to vulnerability. Santa Cruz, 2024.[^^^]

Clinical variables		Vulnerability		Total n (%)	p-value*
		Yes n (%)	No n (%)		
IADL Dependence	Yes	106 (53.0)	44 (22.0)	150 (75.0)	**0.031**
	No	43 (21.5)	7 (3.5)	50 (25.0)	
Falls	Yes	99 (49.5)	28 (14.0)	127 (63.5)	0.140
	No	50 (25.0)	23 (11.5)	73 (36.5)	
Quality of Life	Poor	87 (43.5)	40 (20.0)	127 (63.5)	**0.01**
	Better	62 (31.0)	11 (5.5)	73 (36.5)	
Frailty	Yes	68 (34.0)	32 (16.0)	100 (50.0)	**0.035**
	No	81 (40.5)	19 (9.5)	100 (50.0)	
Functional Decline Risk	Yes	59 (29.5)	32 (16.0)	91 (45.5)	**0.004**
	No	90 (45.0)	19 (9.5)	109 (54.5)	
ADL Dependence	Yes	59 (29.5)	24 (12.0)	83 (41.5)	0.351
	No	90 (45.0)	27 (13.5)	117 (58.5)	
Violence Risk	Yes	54 (27.0)	23 (11.5)	77 (38.5)	0.262
	No	95 (47.5)	28 (14.0)	123 (61.5)	
Nutritional Risk	Yes	51 (25.5)	23 (11.5)	74 (37.0)	0.165
	No	98 (49.0)	28 (14.0)	126 (63.0)	
Fall Risk	Yes	48 (24.0)	23 (11.5)	71 (35.5)	0.097
	No	101 (50.5)	28 (14.0)	129 (64.5)	
Sarcopenia Risk	Yes	51 (25.5)	19 (9.5)	70 (35.0)	0.696
	No	98 (49.0)	32 (16.0)	130 (65.0)	
Depression	Yes	28 (14.0)	22 (11.0)	50 (25.0)	**0.001**
	No	121 (60.5)	29 (14.5)	150 (75.0)	
Cognitive Decline	Yes	15 (7.5)	8 (4.0)	23 (11.5)	0.278
	No	134 (67.0)	43 (21.5)	177 (88.5)	
Experiencing Violence	Yes	13 (6.5)	7 (3.5)	20 (10.0)	0.304
	No	136 (68.0)	44 (22.0)	180 (90.0)	

*Teste Qui-quadrado de Pearson.