

## Sociodemographic aspects and functional capacity associated with physical violence in hospitalized elderly people

Aspectos sociodemográficos e capacidade funcional associados à violência física em pessoas idosas hospitalizadas

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### ABSTRACT

**Objective:** to analyze the association of sociodemographic aspects and functional capacity with physical violence in hospitalized elderly people. **Methods:** this was a multi-center, cross-sectional study of 323 elderly people treated at two university hospitals. The Conflict Tactics Scales, the scales for assessing basic and instrumental activities of daily living and a questionnaire adapted for assessing advanced activities of daily living were used. The data was analyzed using descriptive and inferential statistics. **Results:** individual activities of daily living were associated with major physical violence, indicating an inversely proportional relationship between the variables, and independent elderly people for these activities are those who do not experience major physical violence ( $p=0.037$ ). **Conclusion:** the functional independence for instrumental activities of elderly inpatients is related to a lower probability of being a victim of physical violence. **Contributions to practice:** the study points to unique findings in the relationship between physical violence and functional capacity, so that each type of activity of daily living can result in a different outcome for physical violence. It also confirms the importance of individual and contextualized assessments in the hospital environment, which can influence the conditioning factors for this condition.

**Descriptors:** Violence; Aged; Activities of Daily Living; Forensic Nursing.

### RESUMO

**Objetivo:** analisar a associação dos aspectos sociodemográficos e capacidade funcional com a violência física em pessoas idosas hospitalizadas. **Métodos:** estudo multicêntrico, transversal, com 323 pessoas idosas atendidas em dois hospitais universitários. Foram utilizados o *Conflict Tactics Scales*, as escalas para avaliação das atividades básicas e instrumentais de vida diária e um questionário adaptado para avaliação de atividades avançadas de vida diária. Os dados foram analisados por estatística descritiva e inferencial. **Resultados:** as atividades individuais de vida diária estiveram associadas à violência física maior, apontando haver uma relação inversamente proporcional entre as variáveis, e pessoas idosas independentes para essas atividades são aquelas que não vivenciam violência física maior ( $p=0,037$ ). **Conclusão:** a independência funcional para as atividades instrumentais de pessoas idosas internadas apresenta relação com menor probabilidade de ser vítima de violência física. **Contribuições para a prática:** o estudo aponta achados singulares na relação entre violência física e a capacidade funcional, de modo que cada tipo de atividade de vida diária pode resultar em um desfecho diferente para a violência física. Outrossim, ratifica-se a relevância de avaliações individuais e contextualizadas no ambiente hospitalar, o qual pode influenciar os fatores condicionantes a esse agravo.

**Descritores:** Violência; Idoso; Atividades Cotidianas; Enfermagem Forense.

## Introduction

Violence Against the Elderly Person (VAEP) is a violation of rights and is associated with a multiaxial phenomenon with consequences in the social, economic, political and health spheres<sup>(1)</sup>. Among the various definitions of this event, the most widely used is that issued in the Toronto Declaration by the World Health Organization (WHO), which establishes VAEP as “any single or repeated action, or omission of appropriate action, occurring in a relationship in which there is an expectation of trust, which causes harm or distress to an older person”<sup>(2:332)</sup>. VAEP becomes dynamic due to the different circumstances and social determinants that permeate the lives of these older people. In terms of typology, violence can take the following forms: physical, psychological, sexual, financial, neglect, self-inflicted and abandonment<sup>(2)</sup>.

Of these, physical violence stands out for its high visibility, according to an analysis of the time trend between 2009 and 2019, in which 332 (20.2%) elderly people suffered this type of harm, which showed a significant increase in elderly people compared to the other types. This result is also consistent with the analysis of records issued in official documents, such as compulsory notifications, police reports and criminal complaints<sup>(3)</sup>.

Physical violence can be defined as the intentional use of force to injure or cause pain and suffering, with or without obvious marks on the victim's body<sup>(4)</sup>. In the Brazilian context, from 2011 to 2018, this type of violence in the elderly population resulted in 1,084 notifications, mainly affecting females in the 60-69 age group<sup>(5)</sup>. In countries like India and South Africa, the prevalence of physical violence was 16.6% and 9.0% respectively<sup>(6-7)</sup>. Regardless of the motivation, physical violence is especially prevalent in the intra-family environment and causes suffering, depressive and anxiety disorders, and damage to the physical health of the elderly, including cognitive decline and frailty<sup>(4)</sup>.

It is important to note that violence is associated with the prevalence of chronic non-communicable diseases, and can intensify negative repercussions such as injuries, other diseases, low productivity, isolation, hospital admissions, functional dependence, and mortality<sup>(8-9)</sup>. Functional dependence can be defined as the impairment of functional capacity, which represents the skills related to carrying out daily activities with independence and autonomy<sup>(10)</sup>, namely the person's ability to take care of themselves, carry out basic, instrumental, and advanced activities of daily living, and can determine important outcomes, such as the occurrence of VAEP, reduced social activities, risk of hospitalization and institutionalization<sup>(11)</sup>.

From this perspective, the hospitalization process can be a serious factor in VAEP, due to the omission of cases, delays in reporting by the elderly themselves, and late detection in Primary Care, as well as a protective factor, given the possibility that hospital care is not related to VAEP; however, it should be appreciated by health professionals to capture and deal with cases in a timely manner. In addition, there is an urgent need to investigate the association of functional variables in the cycle of violence against older people in the national hospital setting to track the opportunity and/or occurrence of violence; as well as to analyze the possible degrees of functional impairment resulting or not from this problem, to include this aspect of senescence in the detection of cases and direct care that is convergent with the needs of older people.

The justification for the study is based on the need to identify cases of family violence in the hospital environment, to increase visibility of this phenomenon, including trying to understand whether the variability of functional dependence, such as those for basic, instrumental, and advanced activities, are equal to the occurrence of violence.

Considering the above, the aim of this study was to analyze the association of sociodemographic aspects and functional capacity with physical violence in hospitalized elderly people.

## Methods

This was a multi-centric, quantitative, cross-sectional study involving elderly people admitted to the Lauro Wanderley University Hospital of the Federal University of Paraíba and the Alcides Carneiro University Hospital of the Federal University of Campina Grande. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guide was used to ensure the quality of observational studies<sup>(12)</sup>.

The inclusion criteria were elderly people in hospital care, regardless of the reason for admission, in the Medical Clinic (n=107), Surgical Clinic (n=148), Infectious and Parasitic Disease Unit (n=29), and Geriatrics (n=391) and Psychogeriatrics (n=99) outpatient clinics of the Lauro Wanderley University Hospital of the Federal University of Paraíba, totaling 774 elderly people. At the Alcides Carneiro University Hospital of the Federal University of Campina Grande, data was collected from surgical ward A (n=333), from pneumology ward B (n=45) and from female and male wards C and D of the Medical Clinic (n=107), totaling 485 elderly people. The justification for the age criterion was in accordance with the definition established in the Statute of the Elderly and the National Health Policy for the Elderly; the choice of the above-mentioned sectors was due to the predominance of elderly people compared to the other sectors of these institutions.

A total of 46 elderly people were included in the sample, of which 23 were terminally ill, 12 had severe communication deficits, ten had advanced clinical conditions and one had a compromised cognitive state. The exclusion factors were assessed through clinical observation by the evaluators, in accordance with the guidelines obtained in the data collection training; prior application of the Mini Mental State Examination instrument to assess cognitive status, and in communication with the professionals in the sector, who scored the conditions according to the information contained in the medical records.

Data collection training was carried out with 38 participants, including four undergraduates, nine postgraduate nursing students and five nurses. Three meetings lasting four hours each were needed to prepare the team.

The sample calculation was based on the number of elderly people admitted to the sectors between July, August, and September 2018, at the Lauro Wanderley University Hospital of the Federal University of Paraíba, and in October, November, and December of the same year at the Alcides Carneiro University Hospital of the Federal University of Campina Grande, with a total of 1,259 elderly people. The choice of the period for the calculation coincided with the planning for data collection in the following year.

Thus, the equation for defining the sample size for a proportion study in a finite population was used, with a 95% confidence level, a 5% sampling error and a 60% frequency of the phenomenon (as this is not a defined phenomenon, this percentage was estimated according to a previous study)<sup>(13)</sup>. This frequency was used because the study was part of a pilot project that estimated the risk of violence, so it includes the phenomenon of violence because it shows a higher probability of the elderly being exposed to this event. The value obtained from this formula was 285 elderly people, to which 13% of possible losses were added, resulting in a final sample of 323 participants. In addition, the non-probabilistic quota sample criterion was characterized by the strata of the population served in each sector through its classification, definition of proportion and setting of quotas in accordance with the proportion of the classes considered. Thus, this technique was used, considering the classification by age group (elderly people) and the proportional distribution of these people hospitalized in the sectors.

Data collection took place between June 2019 and February 2020, using a questionnaire that included sociodemographic variables developed by the researcher, such as gender, age, literacy, marital status, living arrangement and income; and the following na-

tionally validated scales: Conflict Tactics Scales Form R (CTS-1), for screening physical and psychological violence<sup>(14)</sup>; the index for basic activities of daily living (BADL)<sup>(15)</sup>; and a scale for assessing instrumental activities of daily living (IADL)<sup>(16)</sup>. In addition, the authors applied an invalidated questionnaire, which was adapted by the Fragility in Brazilian Elderly (FI-BRA) network for advanced activities of daily living (AADL)<sup>(17)</sup>. It took an average of thirty minutes to complete.

The CTS-1 was developed to identify situations of physical and psychological violence in the elderly. This scale consists of 19 questions and is subdivided into three groups, which correspond to the methods of coping with violence: argumentation (items a-c), verbal violence (items d-f and h-j) and physical violence (items k-s). The items have answers that vary between it didn't happen, it happened a few times in the last 12 months, and it happened several times in the last 12 months<sup>(14)</sup>.

Physical violence, established as the study's dependent variable, is divided into minor physical violence through the identification of acts such as pushing, slapping, hair pulling, grabbing, throwing objects, or twisting the arm, and more severe physical violence, with more serious actions of the instrument, such as burns, injuries by white weapon or fire, physical aggression (punches, punches, kicks). The presence of violence was defined according to the affirmative answer to one of the items mentioned. This classification was adopted according to the authors of the instrument for the purposes of this analysis<sup>(14)</sup>.

The index assessing basic activities of daily living was analyzed according to hierarchical complexity, namely: eating; sphincter control; personal hygiene; and the ability to dress, bathe and move around. The variable was dichotomized into dependent, for those who needed help with more than one activity, and independent, for elderly people who did not need help with any activity<sup>(15)</sup>.

Instrumental activities of daily living corres-

pond to intermediate activities carried out by elderly people in their own daily environment, such as using the telephone, doing household chores, using transport, shopping, preparing meals, using medication and handling money<sup>(16)</sup>. The same analysis criteria used for the BADL assessment index was adopted for this instrument.

The AADL scale reaches the maximum complexity of the elderly person's functional capacity, with activities divided into civic, leisure, educational and religious domains<sup>(17)</sup>. Those who performed three or fewer activities were classified as less active, while those who performed four or more activities were classified as more active. These measures were adopted as used in this other study, to allow later comparisons using the same cut-off point<sup>(17)</sup>.

The data collected was tabulated and analyzed using SPSS version 25.0 statistical software, using descriptive statistics (absolute and percentage frequency) and inferential statistics (Pearson's Chi-square and Poisson regression). For the Poisson Regression Model with robust variance, the entry criterion was determined for variables with  $p < 0.2$  in Pearson's Chi-squared test, however, in the final analysis the significant result was according to  $p \leq 0.05$ . Prevalence ratios are shown in all the tables, with a 95% confidence interval and 5% significance ( $p < 0.05$ ).

This study is part of the project "Instrumentalization of Forensic Nursing in the care of hospitalized elderly people", approved by the Research Ethics Committee, in accordance with Resolution 466/2012, under the opinion of the Lauro Wanderley University Hospital of the Federal University of Paraíba under number 3,709,600/2019, Certificate of Submission for Ethical Appraisal number 10179719.9.0000.5183, opinion number 3,594,339/2019 and Certificate of Submission for Ethical Appraisal 10179719.9.3001.5182 from the Alcides Carneiro University Hospital. Participants were invited and advised of their consent to take part by signing the Free and Informed Consent Form.

## Results

Regarding the sociodemographic characteristics of the sample, there was a predominance of elderly people aged between 60 and 70 (52.6%; n=170), literate (67.8%; n=219), female (60.7%; n=196), with partners (51.7%; n=167), living with someone (89.2%; n=288), and with an income of up to one minimum wage (57.9%; n=187).

Table 1 shows the statistical association between these characteristics and major and minor physical

violence derived from the CTS-1 scale, with a significant association only between income and minor physical violence (p=0.028), and a prevalence ratio of 34.0% (95% Confidence Interval: 0.12-0.93). There was no association between major and minor physical violence and the other variables studied.

Table 2 shows the statistical association between functional capacity and physical violence. There was a significant association only between IADLs and major physical violence (p=0.023).

**Table 1** – Association between sociodemographic characteristics and physical violence (n=323). João Pessoa and Campina Grande, PB, Brazil, 2019-2020

Variables	Major physical violence		PR[CI]	Minor physical violence		PR[CI]
	Yes	No		Yes	No	
Gender						
Male	9 (7.1)	118 (92.9)	1.01 [0.42-2.40]	5 (3.9)	122 (96.1)	2.62 [0.95-7.20]
Female	14 (7.1)	182 (92.9)		19 (9.7)	177 (90.3)	
p-value*	0.985			0.054		
Age (years)						
60 † 70	14 (8.2)	156 (91.8)	0.70 [0.29-1.66]	14 (8.2)	156 (91.8)	0.78 [0.34-1.81]
> 70	9 (5.9)	144 (94.1)		10 (6.5)	143 (93.5)	
p-value	0.412			0.561		
Literacy						
Yes	14 (6.4)	205 (93.6)	1.39 [0.58-3.32]	4 (6.4)	205 (93.6)	1.56 [0.67-3.63]
No	9 (8.7)	95 (91.3)		10 (9.6)	94 (90.4)	
p-value	0.460			0.302		
Marital Status						
Without partner	12 (7.7)	143 (92.3)	0.84 [0.36-1.96]	16 (10.3)	139 (89.7)	0.44 [0.18-1.05]
With partner	11 (6.6)	156 (93.4)		8 (4.8)	159 (95.2)	
p-value	0.688			0.059		
Living arrangement						
Lives alone	3 (8.6)	32 (91.4)	0.80 [0.22-2.83]	4 (11.4)	31 (88.6)	0.58 [0.19-1.80]
Lives with someone	20 (6.9)	268 (93.1)		20 (6.9)	268 (93.1)	
p-value	0.724			0.340		
Income (minimum wage)						
Up to 1	17 (9.1)	170 (90.9)	0.46 [0.18-1.20]	19 (10.2)	168 (89.8)	0.34 [0.12-0.93]
>1	6 (4.4)	130 (95.6)		5 (3.7)	131 (96.3)	
p-value	0.106			0.028		

\*Pearson's Chi-square test; PR: Prevalence Ratio; CI: Confidence Interval

**Table 2** – Association between functional capacity and physical violence (n=323). João Pessoa and Campina Grande, PB, Brazil. 2019-2020

Variables	Major physical violence		PR[CI]	Minor physical violence		PR[CI]
	Yes	No		Yes	No	
BADL						
Independent	10 (5.0)	191 (95.0)		14 (7.0)	187 (93.0)	
Dependent	13(10.7)	108 (89.3)	2.30 [0.98–5.42]	10 (8.3)	111 (91.7)	1.20 [0.52–2.80]
p-value*	0.052			0.667		
IADL						
Independent	3 (2.7)	109 (97.3)		10 (8.9)	102 (91.1)	
Dependent	20 (9.5)	190 (90.5)	3.82 [1.11-13.16]	14 (6.7)	196 (93.3)	0.73 [0.31-1.70]
p-value	0.023			0.462		
AADL						
More active	14 (6.5)	200 (93.5)		16 (7.5)	198 (92.5)	
Less active	9 (9.3)	88 (90.7)	1.46 [0.61-3.50]	8 (8.2)	89 (91.8)	1.11 [0.46-2.70]
p-value	0.393			0.813		

\*Pearson’s Chi-square test; PR: Prevalence Ratio; CI: Confidence Interval; BADL: basic activities of daily living; IADL: instrumental activities of daily living; AADL: advanced activities of daily living

In the Poisson Regression Model for major physical violence, the variables with  $p < 0.2$  described in tables 1 and 2 (income, BADLs and IADLs) were included. However, only functional capacity for IADLs remained significant in the final model, allowing us to infer that, according to the Prevalence Ratio, the model can explain 2.81% of situations in which independence for IADLs is associated with major physical violence ( $p=0.037$ ;  $CI=0.085-0.926$ ), and, according to the beta value ( $B= -1.269$ ), this relationship is inversely proportional, i.e. independent older people are those who do not suffer major physical violence (Table 3).

**Table 3** – Variables associated with major physical violence using adjusted Poisson regression (n=323). João Pessoa and Campina Grande, PB, Brazil. 2019-2020

Variables	B	Prevalence Ratio	Confidence Interval	p-value*
IADL				
Independent	-1.269	0.281	[0.085 - 0.926]	0.037
Dependent	-	1.000	-	-

\*Significance of the test; IADL: instrumental activities of daily living; B: beta value

## Discussion

Functional capacity is part of the multidimensional assessment of the elderly, representing the abilities related to carrying out daily activities with independence and autonomy<sup>(10)</sup>. Functional capacity is assessed in terms of basic, instrumental, and advanced activities of daily living. Considering this, the impairment of these actions determines important outcomes, such as the occurrence of violence against the elderly, reduced social activities, risk of hospitalization and institutionalization<sup>(11)</sup>. As is well known, in addition to violence, capacity can be affected by frailty syndrome, multimorbidities, impaired mobility and drug iatrogenesis<sup>(3)</sup>.

Functional dependence is a risk factor for violence against the elderly<sup>(6,18)</sup>. Considering that physical aggression is the result of pushing, slapping, burns, injuries from white weapons and firearms, the repercussions of these actions can lead to hospital admissions and a decline in the functional capacity and quality of life of the elderly<sup>(19)</sup>.

Regarding the relationship between violence

ce and functional capacity, dependence on basic activities was found in both major and minor physical violence. This observation reflects the fact that the limitation of basic activities directly interferes with the independence, autonomy, and well-being of the elderly, generating stress in the domestic environment and requiring care from other family members, thus increasing the risk of violence<sup>(11)</sup>.

Regarding instrumental activities, the significant association between this variable and greater physical violence shows a correlation according to complexity since losses in IADLs usually occur first due to the greater demand on physical and cognitive performance<sup>(20)</sup>. Furthermore, the functional decline of these activities, associated with hospitalization, should be noted, since the elderly person is unable to carry out actions such as preparing meals, using public transport, shopping, managing finances and making correct use of medication because they are hospitalized and some of these activities are managed by the healthcare team and family members<sup>(21)</sup>.

The independent social participation of older people is another aspect that is limited by dependence on IADLs. The restriction of these individuals in the home and the interruption of social relationships favors the maintenance of the cycle of violence by family members, making it impossible for victims to access health services and specialized services to deal with violence<sup>(4)</sup>.

However, when verifying the association between minor physical violence and instrumental activities, its occurrence was prevalent in independent elderly people. Therefore, in the regression analysis, greater physical violence was inversely proportional to the independence of the elderly person. Corroborating the latter finding, a cross-sectional study indicated that elderly people with no limitations in instrumental activities had a lower prevalence of abuse at 6.4%, rising to 11% in elderly people with more than two dependencies for these activities. Furthermore, for those individuals who were dependent on IADLs and had a disability, the likelihood of suffering violence

was twice as high<sup>(19)</sup>. This is a unique piece of information, which calls for future research to be carried out to demonstrate justifications for this relationship in the bidirectional sense of cause and effect.

Regarding the outcome identified, a national study found that the chance of elderly people having functional disability in IADLs was 44% higher among those who had suffered violence committed by their children or grandchildren<sup>(22)</sup>. Considering that in the context of intrafamily violence there is a relationship of power and dependence between the perpetrators and the victims, respectively, in the case of the elderly, the inability to perform instrumental activities coincides with the use of assistive devices<sup>(23)</sup> and actions that require time to understand and, consequently, the patience of family members to instruct them, such as the use of smartphones and managing bank transactions. Thus, the greater the independence in these activities, the lower the degree of stressful situations and possibilities of violence within the family.

The manifestation of physical violence in less active elderly people, according to the assessment of AADLs, is in line with a study conducted with 159 community-dwelling elderly people<sup>(24)</sup>. The social domain inherent in advanced activities ratifies this reduction in social interaction during aging and, consequently, can have repercussions in terms of depressive symptoms, disabilities, and social isolation. Thus, since the ability to perform AADLs has been identified as a protective factor for physical and cognitive health<sup>(25)</sup>, it is understood that active engagement in advanced activities, congruent with the stability of basic and instrumental activities, can mitigate the incidence of violence in this segment.

Considering the analysis of the risk of social isolation due to instrumental and advanced activities, the hospital environment can become an opportune place to identify this phenomenon. Social isolation and the potential for mental confusion have a potential for cognitive decline in elderly people admitted to hospital, with a significant effect on functional decline. The nursing process is a potential tool for systemati-

zing all the information and interventions needed to care for victims of violence. Adding the forensic specialty, the professional must have a critical eye when conducting the anamnesis; carry out a thorough physical examination, with the aim of finding injuries, in cases of physical and/or sexual violence; collect evidence and document it, as well as evaluate laboratory and imaging tests with the interdisciplinary team.

Even though forensic nursing care is being consolidated in Brazil, the recognition of multidimensional aspects by nurses in the hospital field reinforces that interventions in the cognitive, functional, and social determinant domains can guarantee subsidies for breaking down violence, given that these are predictive factors for the violation of rights in the elderly population.

These results contribute to expanding the academic and practical scope of nursing, especially in hospitals. In academia, it provides scientific evidence to be discussed in the process of training nursing care for the elderly, integrating the aspects inherent in multidimensional assessment. In nursing care, the perception of predictors of violence against the elderly during the nursing history, such as functional capacity, supports clinical reasoning for prescribing nursing diagnoses pertinent to the context. Furthermore, by using specific instruments to detect violence against the elderly, in addition to the compulsory notification forms, nurses can enhance the care plan to be prescribed in the nursing process, thus becoming more assertive in achieving the proposed objectives.

### **Study limitations**

A limitation of the study is the cross-sectional design, which makes it impossible to measure causal relationships between the variables studied.

### **Contributions to practice**

This study points to unique findings in the relationship between physical violence and the functional capacity of the elderly, so it is necessary to analyze

that each type of activity of daily living can result in a different outcome for physical violence. Since the literature shows that functional dependence is generally a predictor of violence, this study confirms the importance of individual assessments that are contextualized to the hospital environment, which can influence the factors that lead to this condition. In addition, evidence-based care leads to decision-making by nurses so that they can integrate functional capacity assessment tools into all sectors of care for hospitalized elderly people.

### **Conclusion**

The functional independence for instrumental activities of elderly people admitted to hospital is related to a lower probability of being victims of physical violence.

### **Authors' contribution**

Conception and design or analysis and interpretation of data: Brandão BMLS, Araújo-Monteiro GKN, Santos-Rodrigues RC.

Writing of the manuscript or relevant critical revision of the intellectual content: Brandão BMLS, Araújo-Monteiro GKN, Santos-Rodrigues RC, Souto RQ, Gomes ID, Reis IO.

Final approval of the version to be published and agreement to be responsible for all aspects of the manuscript relating to the accuracy or integrity of any part of the manuscript being properly investigated and resolved: Brandão BMLS, Araújo-Monteiro GKN, Santos-Rodrigues RC, Souto RQ, Gomes ID, Reis IO.

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