

# RIASE

REVISTA IBERO-AMERICANA DE SAÚDE E ENVELHECIMENTO  
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## **FUNCTIONAL DEPENDENCE IN INSTITUTIONALIZED ELDERLY PEOPLE AND MEMORY DEFICIT**

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## ABSTRACT

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**Objective:** To identify the factors associated with functional dependence in institutionalized elderly. **Methods:** The quantitative, descriptive, exploratory method was used. Data collection took place in the period from August 2011 to January 2012 in four Long Stay Institutions for the Elderly, with 171 people aged 60 years or over. The Basic Activities of Daily Living Scale was used to determine the state of functional dependence; a questionnaire for the survey of sociodemographic data and the state of lucidity and use of a wheelchair, using, for the last two investigations, dichotomous questions. The Chi-square test and ANOVA were used to analyze the association of the dependent variable: functional dependency to the independent variables; state of lucidity and use of wheelchairs. **Results:** 53.2% male elderly; mean age of 77 years; 68.4% with schooling less than or equal to one year of study; 56.2% retired; average institutionalization time of 6.5 years; 50.3% had a deficit of lucidity and 53.7% of the dependents used a wheelchair. **Conclusion:** Simple daily activities were associated with poorer lucidity in the institutionalized elderly. This health condition demands political and institutional actions that contemplate the promotion of active and healthy aging, an important indicator of health.

**Keywords:** Elderly; institutionalization; functionality; institution of long stay for the elderly.

## INTRODUCTION

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Across the world, human aging is accelerated in such a way that it produces phenomena that interfere from the spatial demographic distribution to the reorientation of health care policies. In addition, this growth trend is expected to continue.

By 2050, there will be two billion elderly people on the planet, 22% of the entire population. In developing countries, such as Brazil, this percentage will be even higher, since, ten years earlier than in the rest of the world, 27% of all Brazilians will be over 60 years old<sup>(1-2)</sup>.

Therefore, there are important differences in this growth rate, which, despite improvements in health, socioeconomic and epidemiological conditions, have a complex impact on the growth of the country, the supply and availability of human, financial and technological resources necessary to maintain the quality of life of the elderly.

Longevity has been accompanied by significant changes in morbidity and mortality patterns, since 22.6% of the deaths were due to infectious diseases and 63% of deaths are due to chronic diseases, with a higher prevalence in Europe. Was 90.3 deaths per ten thousand inhabitants. Meanwhile, in Brazil, this increase has been due to neoplasias, compromising 20% of the elderly<sup>(3)</sup>.

Non-communicable chronic diseases (NCDs) are therefore considered to be a public health problem, with global consequences, such as the need for continuous care, requiring permanent efforts by the family to maintain the quality of life of the elderly Assisted. With the advancement of age, the physical, functional and cognitive limitations of the aging process are added, culminating in functional incapacity and a greater degree of dependence<sup>(4)</sup>.

The possibility of maintaining continuous care for elderly people suffering from multiple chronic illnesses and the unavailability of sufficient financial resources to meet these needs, in addition to the reduction of family size, inadequate housing, barriers and structures that favor accidents such as falls; cost increase and precariousness of home care; besides the evident growth of urban and domestic violence, reveals the great vulnerability to which this population is exposed. All these conditions, when analyzed together, potentiate functional incapacity and the institutionalization itself<sup>(5-6)</sup>.

This reality is added to the context of inequality in which the institutionalized elderly are inserted, both at the national level and in the local reality, such as: low level of schooling, poverty, lack of professional occupation prior to institutionalization, and weakened family life<sup>(7)</sup>.

In relation to the spatial distribution of the elderly in Brazil, it is observed that in the urban areas where most of this population is concentrated, living in realities that are very close to the one reported. In the Northeast, this percentage has been increasing, reaching 71.7% of the population aged 60 or over. In the state of Piauí, 311,877 (10.6%) of the elderly population are concentrated in the capital<sup>(8)</sup>.

Even though the number of long stay institutions (LSI) in Brazil is known, it is known that 700 (65.2%) of them are of a philanthropic nature, intended for housing and social assistance to the needy elderly, whose caregivers are people who volunteer or are assigned by the public service, or even by universities, which occupy these care spaces on a provisional basis in the form of field practice for the students<sup>(9)</sup>.

These functional characteristics point to the needs of qualified human resources that consider the multidimensional perspective of care and that are based on the identification of the factors associated with functional incapacity, showing that the problem here is not

restricted to a national concern, but to the relevant issues that cross the intercontinental dimensions<sup>(10)</sup>.

In view of this emergency and necessary reality, the purpose of this study was to identify the factors associated with functional disability in institutionalized elderly in Teresina/PI.

## METHOD

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This is a quantitative, descriptive and cross-sectional study, with the population census of institutionalized elderly people in the four LSIs in Teresina / PI, totaling 171 people, which occurred in the period from August / 2011 to January / 2012. LSIs were identified by letters in alphabetical order, with LSI A, of public administration, and the others, B, C and D, are philanthropic. The following inclusion criteria were chosen: residents aged 60 and over, with a minimum of one month in the LSI.

The instruments used to collect the data were: a) a questionnaire of social, economic and demographic identification, lucidity status and mobility conditions; B) the Basic Daily Life Activities Scale (BDLAS), known as the Katz Index, for the evaluation of the ability to bathe, dress, use the toilet, move, sphincter control and ability to feed<sup>(11)</sup>.

The degree of dependence assessed to perform the BDLAS following the scoring scale: independent - one that was able to perform five or more activities; dependent group - those who performed three or four activities and were totally dependent - those who could not do two or less<sup>(12)</sup>.

Due to the impossibility of using the Mini Mental State Examination (MMSE), since most of the elderly had a deficit of attention, communication and schooling, compromising the achievement of a minimum score of 19 points for illiterates; 23 for those with one to three years of schooling; 24 points from four to seven years of study and 28 from those with more than seven years of schooling<sup>(13)</sup>.

Thus, due to the impossibility of using a measurable instrument to evaluate the cognitive and lucid state in the elderly of this investigation, and considering its importance to ensure, in an independent way, independent and active aging, the field diary, direct observation and, complementarily, the information of the effective caregivers on issues related to the maintenance of the orientation, communication and logical reasoning.

Socioeconomic and clinical data were collected in the records and registers of the residents of each institution, after the consent of the coordinators and/or directors of the LSIs, as well as the elderly, who declared themselves self-conscious and oriented about the research objectives.

The study complied with the recommendations of the Declaration of Helsinki and Resolution 466/2012 of the National Health Council<sup>(14)</sup>, obtaining approval by the Research Ethics Committee (REC) of the Federal University of Piauí with CAAE 02120045000-11. All the directors of the LSIs signed the Free and Informed Consent Form (FICF) for each individual, considering that the study population belonged to the vulnerable group.

Data was tabulated in the Statistical Package for Social Sciences (SPSS) software, version 20.0. In the univariate analysis, descriptive statistics were used, with absolute and relative frequencies indicated. For the bivariate, the Post-Hoc-Turkey parametric test was used for the multiple comparisons between the means found by LSIs, demonstrated by Variance Analysis (ANOVA)<sup>(15)</sup>.

In the analysis of the association between age, clinical conditions of morbidity, lucidity, wheelchair use and degree of functional dependence, the Pearson Chi-square association test ( $X^2$ ) was used. When an association was identified, the relative risk - Odds Ratio (OR) was applied to measure the strength of the association. Statistical significance was established, the level of significance of 5% when the value of  $p < 0.05$ <sup>(15)</sup>.

## RESULTS

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The 171 elderly subjects studied were distributed in the ILPIs as follows: A-62; B-46; (53.2%) men and 80 (46.8%) women, with a mean age of 77 years and a maximum of 108. In relation to schooling, 117 (68.4%) were illiterate or had incomplete elementary education.

Regarding individual income, 155 (90.6%) received a minimum wage, at the time, of R\$545.00. 78 (45.6%) elderly developed informal work prior to institutionalization. There were 96 (56.2%) retired individuals, as shown in table 1. Regarding the time of residence in these institutions, there was a change of one and 360 months, with a mean of 76.16 (SD  $\pm$  78.09) months, approximately 6.5 years. Half the population resided in the institutions for four years.

Table 1 - Socioeconomic and demographic characteristics of institutionalized elderly. Teresina - PI, August to November, 2011. (n = 171).

Characteristics	n	(%)	Average
Gender			
Male	91	53,2	
Female	80	46,8	
Age group (years)			
60-70	46	27,0	77,79
71-80	60	35,0	
81-90	43	25,1	
91-100	17	9,9	
101-108	03	1,8	
No information	02	1,2	
Schooling (in years)			
0-4 years	117	68,4	1,93
5-10 years	13	7,6	
+11 years	8	4,7	
No information	33		
Income in MW *			
No income	12	7,0	0,95
1	155	90,6	
2	4	2,4	
Occupation**			
Formal Work	29	17,0	
Informal Work	78	45,6	
Did not work	16	9,4	
No information	48	28,0	
Social security situation			
Retired	96	56,2	
Recipient***	63	36,8	
No benefit	12	7,0	

Source: Direct Search. \*Minimum Wages (at the time of the research, 1MW = R \$ 545,00). \*\* Prior to institutionalization. \*\*\* Continuous Cash Benefit (CCB).

Despite the high number of chronic non-communicable diseases and other comorbidities associated with the natural process of cell degeneration and other infectious diseases identified in the evaluated elderly, there was no statistical significance with the functional dependency state ( $p < 0.05$ ), especially in elderly people with total dependence. However, functional dependency conditions were segmented according to the degree in: independent, partial and total dependent, as shown in table 2.

Table 2 - Association of chronic non-communicable diseases with functional independence status in institutionalized elderly. Teresina, PI, Brazil, 2011 (n = 171).

Illnesses		Independence	Parcial Dependence	Total Dependence	N	%	P <sup>s</sup> value
DCV*	Yes	38	17	23	78	45,6	0,816
	No	41	21	31	93	54,4	
Mental Disorders	Yes	19	15	20	54	31,6	0,141
	No	60	23	34	117	58,4	
Diabetes mellitus	Yes	12	07	13	32	18,7	0,435
	No	67	31	41	139	81,3	
Stroke †	Yes	12	04	09	25	14,6	0,700
	No	67	34	45	146	85,4	
Other ‡ Illnesses	Yes	21	10	15	46	26,9	0,984
	No	58	28	39	125	73,1	

Source: Direct Search. \* CVD - cardiovascular diseases. †Stroke. ‡Other diseases: tuberculosis, osteo-articular diseases, liver disease, skin cancer, abdomen, breast, prostate, inguinal hernia, asthma, leprosy, chronic renal failure, intestinal disorders. <sup>s</sup> p value obtained from the Pearson Chi-square test, significant p<0.05.

Functional dependence was associated with a deficit in lucidity and in wheelchair use, with a risk of 4.5 and 0.16 times. The fragile status of mental status in institutionalized elderly is therefore an important risk factor for the commitment to perform daily self-care tasks, as shown in table 3.

Table 3 - Factors associated with functional independence in institutionalized elderly. Teresina, PI, Brazil, 2011. (n = 171).

Other Factors	Independence N(%)	Parcial Dependence N(%)	Total Dependence N(%)	N(%)	p*	OR † IC ‡
State of lucidity						4,50
Yes	55 (69,6%)	17 (44,7%)	14 (25,9%)	86 (50,3%)	0,001	(2,23-8,60)
No	24 (30,4%)	21 (55,3%)	40 (74,1%)	85 (49,7%)		
Use of wheelchairs						
Yes	7(9)	6(15,8)	30(53,7)	43(24,7)	0,001	0,16 (0,66-0,38)
No	71(91)	32(84,2)	25(46,3)	128(75,3)		

Source: Direct Search.

## DISCUSSION

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The institutionalization of the aging of this analysis demonstrates a different gender issue than other national studies, since older men are the majority of individuals who go to a LSI. According to men who during their youth assumed aggressive positions with relatives and/or carelessness in their socially constituted role, when they were institutionalized, presented these life histories<sup>(16)</sup>.

Moreover, in the present day, the Brazilian Northeastern culture of migration to the great urban centers persists, in search of better possibilities of survival and sustenance of the family. This situation subjects men to the performance of informal work activities and worse living conditions, marked by insufficient schooling to guarantee specialized professional training, such as that observed in this investigation.

One of the consequences of this social context of socioeconomic and geographical inequality was the facilitated exposure to alcoholic beverages, illnesses and other behaviors considered of risk, favoring the breakdown of family ties<sup>(16)</sup>.

Recent studies indicate that not only the gender issues, but also old age, multiplicity of chronic illnesses, the presence of mental disorders that generate deficits of cognition and attention, altering the state of lucidity, are associated to the functional dependence, as seen in this essay<sup>(17-18)</sup>.

Although there was no statistically significant association between the presence of chronic diseases and functional dependence, it is believed that homogeneity, population size and grouping by categories of dependency (partial and total) may have influenced the result found. Studies performed in the elderly assisted by primary health care services have demonstrated that these diseases are predictive factors for functional dependence<sup>(19)</sup>.

In this study, the causes that led the elderly to suffer from problems in the state of lucidity were not investigated, nor the time that the signs of this alteration began. However, this condition makes it impossible for the elderly to recognize the reality in which they live and to respond satisfactorily to everyday stimuli, generating greater dependence on third parties to maintain self-care.

When the elderly become dependent on long-term care in an LSI, they are then treated as a sick person, therefore, requires more frequent medical care. In this way, medicalization becomes an alternative of care, usually using the polypharmacy<sup>(18)</sup>.



Despite the benefits offered by modern drug therapy, it is emphasized that this is not enough to meet the needs of the elderly, since there is a tendency to use the polypharmacy for the treatment of senile disorders and/or illnesses. The consequence is then harmful, since iatrogenias arise due to drug interaction, sometimes as harmful as pre-existing diseases<sup>(20)</sup>.

The complexity of health care for the institutionalized elderly emphasizes the need to stimulate and maintain, in a continuous and systematic way, active and healthy living conditions, even if the functional capacity is temporarily or permanently compromised. This care should contemplate the elderly in their individual and collective needs and that go beyond medicalization and chronic illness.

It requires, therefore, the inclusion of multiprofessional and interdisciplinary care strategies that may offer, alternatively, an opportunity to maintain and/or stimulate functional and active aging.

## CONCLUSION

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In the institutionalized elderly population, functional dependence was statistically associated to the deficit of lucidity and to the use of a wheelchair. Clinical, demographic, and social conditions, such as multiplicity of chronic diseases, poverty and old age suggest they are related to functional dependence, but in this study, no such evidence was observed.

The feminization of aging and the use of poly-pharmaceuticals are also characteristics that deserve attention in the identification of functional disability. However, in the scenario of the study, the elderly men predominated. Regarding the use of polyparaks, more research is suggested to analyze the adverse effects among the elderly, especially in the relationship of institutionalization.

In addition, it is recommended that interdisciplinary strategies, aimed at preventing mental damage and early identification of senile diseases, be implemented, with a view to improving the prospects of these individuals staying in the institutional environment.

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