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RESEARCH ARTICLE

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PREVALENCE OF DEMENTIA AND ASSOCIATED FACTORS IN INSTITUTIONALIZED

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ABSTRACT

In view of the population aging process, there is an increase in the prevalence of chronic degenerative diseases, such as dementia. This pathology is characterized by cognitive and functional decline, which can result in incapability of carrying out activities of daily living, being the main cause for institutionalization among the elderly. **Objective:** To evaluate the prevalence of dementia and associated factors in institutionalized elderly. Materials and methods: This is a cross-sectional population-based cohort study, carried out with 474 individuals aged 60 years or older, living in Long-Stay Institutions for the Elderly. Clinical examinations and a structured questionnaire were applied. For statistical analysis, the Poisson Regression test with robust variance and descriptive analysis were used, considering $p \leq 0.05$ as significant. **Results:** A large portion of the sample was identified as female (71.5%) with a mean age of $80.27\% \pm 9.75$ years. The prevalence of dementia was 49.78% in institutionalized elderly, and the factors associated with the dependent variable were living in a private LSIE, not receiving visits from family members, having a brain stroke, having fecal incontinence, dysphagia, low score on the Mini Mental State Examination and functional dependency ($p \leq 0.05$). **Conclusion:** The prevalence of dementia in institutionalized elderly people is high, especially in those who live in private institutions, do not receive visits from family members, have had brain stroke, fecal incontinence, dysphagia, low score on the Mini Mental State Examination and functional dependency.

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INTRODUCTION

Brazil is currently going thru a transition process inside its age pyramid, initially attributed to its mortality rate reduction followed by a fertility rate decrease promoting a decline in the juvenile age group and, therefore, causing what is called aging by the base of the pyramid (MIRANDA; MENDES; SILVA, 2016). This population aging also results in several health issues that can reduce the cognitive and functional capability and increase the risk of hospitalizations, institutionalization and deaths among the elderly (MIRANDA; MENDES; SILVA, 2016; SILVA *et al.*, 2018). In 2016, non-transmissible chronic diseases were responsible for 56% of total deaths that occurred in Brazil (MINISTÉRIO DA SAÚDE, 2018),

besides causing a series of frailties and disabilities to execute basic activities of daily living, affecting the individuals quality of life and well-being (REIS; BARBOSA; PIMENTEL, 2016). Certain non-transmissible chronic diseases can change the brains organic function compromising its cognitive capacities and increasing its predisposition for neurodegenerative diseases, such as dementia (HERNANDORENA *et al.*, 2017). Dementias are complex clinic complications involving multiple biopsychosocial needs that marks them as a significant public healthcare problem (SANCHO, 2015). Projections indicate that by 2050 the number of people with dementia can triple, growing from 50 million to 152 million of people worldwide (ORGANIZAÇÃO MUNDIAL DA SAÚDE, 2017). Among the several types of dementia that can be developed by the elderly population, the Alzheimer's Disease (AD) is the most

common one, followed by vascular dementia, the Lewy Body Dementia and in smaller proportions by frontotemporal dementia that is caused by drugs and/or alcohol abuse, dementia caused by infections and dementia caused by tumors (CORNELIS *et al.*, 2017). These diseases are characterized by behavioral and psychological frameworks that presents feeding alterations, memory loss, delusion periods and signs of agitation or apathy, causing a progressive decline in the individual's functional capabilities (SILVA *et al.*, 2018). This progressive framework at times can contribute to the family decision of institutionalization for the elderly affects by the disease (DUTRA *et al.*, 2016; NASS *et al.*, 2016). The prevalence of dementia in the Long-Stay Institutions for the Elderly (LSIE) is variable, reporting values from 23,3 % to 82,3%, according to literature (CHEN; LIN, 2015; SILVA; MAGALHÃES; ABREU, 2015). The advanced age, complications due to cognitive decline and functional dependency increases the risk of institutionalization whom contrasts with community-dwelling seniors that primarily report better health conditions (LINI; PORTELLA; DORING, 2016). On account of the global projections and perspectives regarding the increase of the number of seniors with dementia in LSIEs, the aim of the present study was to evaluate the prevalence of dementia and associated factors in institutionalized elderly.

MATERIALS AND METHODS

A population-based cross-sectional cohort study was carried out as a fraction of a bigger study entitled "Aging Patterns and Longevity: Biologic, Educational and Psychosocial Aspects of Institutionalized Elderly", developed in association with the UNICAMP Gerontology Post-Graduation Program, the Brasilia Catholic University's Gerontology Post-Graduation Program and the Passo Fundo University Human Aging Post-Graduation Program linked to the Academic Cooperation National Program PROCAD/CAPEs, Statute n° 71/2013. This study was performed with 479 residents (with ages of 60 years or older) of 19 Long-Stay Institutions for the elderly in the cities of Bento Gonçalves, Carazinho and Passo Fundo/RS. Were included in the study individuals with ages of 60 years or older, of both genders, that lived full-time inside the LSIEs. The participant was excluded if it refused to participate in the study, reported infectious diseases in acute state, was hospitalized in the day of the meeting and the absent ones after three attempts from the interviewers (even after alternated times and days). The sample size was determined by the calculation " $n=Z^2 \cdot p \cdot (1-p)/e^2$ ". The letter "n" refers to the desired sample size, the letter "Z" refers to the deviation of the acceptable mean value to reach the desired reliability level (the value 1,96 was adopted), the letter "p" refers to the expected proportion (the value 7,9% was adopted taking in consideration the results from the Burlá *et al.*, 2013 study) and the letter "e" refers to the admitted margin of error (a value of 0,05 was adopted). Therefore, a minimum of 112 institutionalized individuals was needed to participate in this study. Data collection was initiated after receiving permission from the LSIEs to perform the study and the approval from the Passo Fundo University Research Ethics Committee, protocol n° 2.097.278, in agreement with the National Health Council. All of the participants filled the study's inclusion criteria and signed the Informed Consent Form.

Data were collected by master's degree students, graduation students and scholarship holders at the Passo Fundo University and Cenecista College from Bento Gonçalves Center. The evaluators received trainings, orientations and instructions to apply the assessment instruments and were accompanied by at least one of the research professors from the team. The questionnaire was composed by blocks from A to W with specific evaluation tests and protocols with validated scales for the elderly population. The blocks A, B, C, G and J were used for this study. The interviews were previously scheduled with the LSIEs board respecting the time and days planned according to the possibilities proposed by the institution. Four to six visits in alternate days were carried out with a predicted duration of one hour each and could be extended to 30 more minutes.

The identification data (A Block), such as name, LSIE address and contact; and sociodemographics (B Block), such as sex, age, ethnicity, marital status, education and family visits. This data was collected by the hospitalization handbook at the LSIEs with the responsible nursing team. For the cognitive evaluation (C Block) the Mini Mental State Examination (MMSE) was applied. This instrument is composed by 30 questions aiming to evaluate spatial and temporal orientation, attention, calculation resolution, memory, language and viso-constructive (Folstein; Folstein; Mchugh, 1975). The scores considered the patient's educational level, with cut points of 13 points for illiterate patients, 18 points for patients with 1 to 8 years of education and 26 points for patients with 9 years or more of education (Melo; Barbosa, 2015). The elderly health conditions (G Block) were collected thru their medical records, with several informations including the dependent variable diagnosis, dementia. Besides this informations, several relevant aspects of the patients were collected such as the diagnosis of other chronic diseases (brain stroke, Parkinson's Disease, depression), health problems (urinary incontinence, fecal incontinence and dysphagia) and the use of medication (amount and medication type, polypharmacy and potentially inappropriate medication). The functional capability was evaluated by the Katz Index (J Block). This scale evaluate activities that are vital for self-maintenance, such as dressing showering, going to the bathroom, sphincter incontinence and feeding unaided (Katz *et al.*, 1963). The final score considered the Hartford Institute for Geriatric Nursing proposals classifying the elderly with complete dependency (six points), mild dependency (three, four or five points) and severe dependency (less than three points) (Wallace; Shelkey, 2007).

Data Analysis: Data collected were coded and stored in a statistical software database. The descriptive analysis was executed in order to present the continuous variables of mean and standard deviation and the categorical variables of count and percentages. For the multivariate analysis the Poisson Regression test with robust variation was used estimating the adjusted and gross prevalence and calculating the respective confidence intervals of 95%. Within the multiple model the variables considered were the ones with a value of $p \leq 0,20$ in the bivariate analysis and remained in the model the ones with $p \leq 0,05$. The associated factors were determined by the use of the Poisson Regression test with robust variation with the variable dementia as outcome. The gross analysis was used to identify the dementia predictors, considering significant the independent variables with $p \leq 0,20$. Furthermore, an adjusted analysis was performed to determine the best combination of predictive factors for dementia considering significant the independent variables with $p \leq 0,05$.

RESULTS

The sample was composed by 474 institutionalized elderly (80,27±9,75 years; 71,5% female). Five subjects did not fit the inclusion criteria. The prevalence of dementia was 49,78% in the institutionalized elderly, with the majority of seniors with dementia presenting more advanced age, female predominance, residing in private LSIEs, white, widowers, had no family visits, urinary and fecal incontinency, presenting dysphagia and reporting cognitive decline and functional dependency ($p < 0,05$). Characteristics of institutionalized elderly related to dementia (Table 1). The analysis of independent variables within the Poisson's Regression test with gross variation when related to dementia identified eleven variables: living in a private LSIE, illiteracy, no family visits, brain stroke, depression, Parkinson's Disease, fecal incontinency, dysphagia, polypharmacy, cognitive decline and functional dependency. After adjustments, remained as associated factors: living in a private LSIE (PR: 1,224; CI95%: 1,031 – 1,453; $p=0,021$), no family visits (PR: 1,856; CI95%: 1,177 – 2,926; $p=0,008$), brain stroke (PR: 1,356; CI95%: 1,078 – 1,705; $p=0,009$), fecal incontinency (PR: 1,253; CI95%: 1,028 – 1,526; $p=0,025$), dysphagia (PR: 1,207; CI95%: 1,020 – 1,429; $p=0,029$), cognitive decline (PR: 3,787; CI95%: 2,306 – 6,218;

Table 1. Characteristics of institutionalized elderly related to dementia

	Total (n=474)	Without Dementia (n=238)	With Dementia (n=236)	p-value
Sociodemographic Variables				
Age (years) †	80,27 ± 9,75	78,26 ± 10,25	82,29 ± 8,79	0,000
Sex				0,000
Female	339 (71,5%)	150 (44,2%)	189 (55,8%)	
Male	135 (28,5%)	88 (65,2%)	47 (34,8%)	
Length of Stay (months) ‡	80,27 ± 9,75	59,02 ± 89,97	42,22 ± 50,98	0,349
LSIE type				0,000
Private	203 (42,8%)	80 (39,4%)	123 (60,6%)	
Philanthropic	271 (57,2%)	158 (58,3%)	113 (41,7%)	
Color/Race				0,034
White	425 (89,7%)	206 (48,5%)	219 (51,5%)	
Black/Brown	49 (10,3%)	32 (65,3%)	17 (34,7%)	
Educational Level ^a				0,238
Illiterate	75 (15,8%)	45 (60,0%)	30 (40,0%)	
1 to 8 years of education	334 (70,5%)	167 (50,0%)	167 (50,0%)	
9 or more years of education	49 (10,3%)	23 (46,9%)	26 (53,1%)	
Marital Status ^a				0,007
Married	29 (6,1%)	15 (51,7%)	14 (48,3%)	
Single	136 (28,7%)	75 (55,1%)	61 (44,9%)	
Divorced	70 (14,85)	45 (64,3%)	25 (35,7%)	
Widower	236 (49,8%)	101 (42,8%)	135 (57,2%)	
	Total (n=474)	Without Dementia (n=238)	With Dementia (n=236)	p-value
Family Visits ^a				0,001
Yes	407 (85,9%)	191 (46,9%)	216 (53,1%)	
No	59 (12,4%)	41 (69,5%)	18 (30,5%)	
Comorbidities				
Brain Stroke	102 (21,5%)	56 (54,9%)	46 (45,1%)	0,315
Depression	175 (36,9%)	81 (46,3%)	94 (53,7%)	0,175
Parkinson's Disease	43 (9,1%)	18 (41,9%)	25 (58,1%)	0,266
Urinary Incontinency	308 (65,0%)	126 (40,9%)	182 (59,1%)	0,000
Fecal Incontinency	220 (46,4%)	71 (32,3%)	149 (67,7%)	0,000
Dysphagia	161 (34,0%)	63 (39,1%)	98 (60,9%)	0,000
Polypharmacy	358 (75,5%)	177 (49,4%)	181 (50,6%)	1,000
Potentially Inappropriate Medication	158 (35,3%)	74 (46,8%)	84 (53,2%)	0,138
Wide Geriatric Evaluations				
Cognitive State (MMSE)				0,000
Without cognitive decline	127 (26,8%)	109 (85,8%)	18 (14,2%)	
With cognitive decline	347 (73,2%)	129 (37,2%)	218 (62,8%)	
Functional Capability (Katz Index) ^a				0,000
Independency	68 (14,8%)	59 (86,6%)	09 (13,2%)	
Mild Dependency	131 (28,5%)	90 (68,7%)	41 (31,3%)	
Severe Dependency	260 (56,6%)	82 (31,5%)	178 (68,5%)	

Subtitle: bold ($p \leq 0,05$); a (accounted for only the valid values) † (independent samples t test), ‡ (Mann-Whitney test).

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$p=0,000$) and functional dependency (PR: 1,253; CI95%: 1,028 – 1,526; $p=0,036$). Gross and adjusted Poisson's Regression test of the factors associated with dementia in institutionalized elderly (Table 2).

DISCUSSION

This study reported that the prevalence of institutionalized elderly with dementia was 49,78% and when compared with international studies this values ranged between 58,33% to 82,36% (CAMERON *et al.*, 2018; CHEN; LIN, 2015; KOWALSKA; MAZUREK; RYMASZEWSKA, 2019; ZAHIROVIC *et al.*, 2018), as well as observed in national literature were this values ranged from 30% to 50% (BAIXINHO *et al.*, 2019; FERREIRA *et al.*, 2014). This findings can be explained by the complexity of establishing such indexes due to the wide variety of diagnosis and the methodology used by studies, even with guidelines predetermined to notify dementia cases (GBD 2016 Dementia collaborators, 2018).

This values have shown to be higher than the ones found in community-dwelling seniors. According to a systematic review study that verified the prevalence of dementia in brazilian community-dwelling elderly, values of 5,1% to 17,5% were found (BOFF; SEKYIA; BOTTINO, 2015). We believe that this results could be due to the tendency that in Brazil institutionalization seems to be associated with a need by the elderly regarding better care related to an increase in functional incapacity. Our results over the prevalence of dementia in seniors respond to a study carried out in a countryside city in Rio Grande do Sul about the cognitive profile of institutionalized elderly that observed a cognitive deficit of 40% of the sample that significantly contributed for the development of dementia (SILVA *et al.*, 2011), since some types of dementia, such as the Alzheimer's Disease are related to a decreased cognitive processing speed (PEDROSO *et al.*, 2018). Another study with urban elderly from latin-american countries as Brazil, Colombia, Cuba, Ecuador, Mexico, Peru, Dominican Republic and Venezuela identified a prevalence of dementia ranging from 0,2% to 39,4% with

Table 2: Gross and adjusted Poisson's Regression test of the factors associated with dementia in institutionalized elderly.

	Gross Analysis		Adjusted Analysis	
Variables	PR (CI 95%)	p-value	PR (CI 95%)	p-value
60-79 years	1 (ref.)			
80 years or older	1,121 (0,927 – 1,357)	0,239		
Male	1 (ref.)			
Female	1,160 (0,916 – 1,470)	0,218		
Philanthropic LSIE	1 (ref.)		1 (ref.)	
Private LSIE	0,839 (0,700 – 1,006)	0,059	1,224 (1,031 – 1,453)	0,021
Black or Brown Color	1 (ref.)			
White Color	1,200 (0,833 – 1,730)	0,328		
One or more of education	1 (ref.)			
Illiterate	0,824 (0,636 – 1,068)	0,144		
Married, Single or Divorced	1 (ref.)			
Widower	1,079 (0,900 – 1,293)	0,413		
Family visits	1 (ref.)		1 (ref.)	
No family visits	1,776 (1,134 – 2,782)	0,012	1,856 (1,177 – 2,926)	0,008
	Gross Analysis		Adjusted Analysis	
Variables	PR (CI 95%)	p-value	PR (CI 95%)	p-value
Brain Stroke	0,793 (0,629 – 1,001)	0,050	1,356 (1,078 – 1,705)	0,009
Depression	1,122 (0,946 – 1,329)	0,186		
Parkinson's Disease	1,262 (0,977 – 1,631)	0,075		
Urinary Incontinency	1,039 (0,758 – 1,423)	0,813		
Fecal Incontinency	1,211 (0,939 – 1,586)	0,136	1,253 (1,028– 1,526)	0,025
Dysphagia	1,217 (1,025 – 1,444)	0,025	1,207 (1,020 – 1,429)	0,029
Polypharmacy	0,864 (0,695 – 1,074)	0,187		
Potentially Inappropriate Medication	0,935 (0,765 – 1,142)	0,509		
Without cognitive decline	1 (ref.)		1 (ref.)	
With cognitive decline	3,800 (2,328 – 6,203)	0,000	3,787 (2,306 – 6,218)	0,000
Functional Independency	1 (ref.)		1 (ref.)	
Functional Dependency ^a	1,911 (0,969 – 3,770)	0,062	1,253 (1,028 – 1,526)	0,036

Subtitle: PR (Prevalence Ratio); CI (Confidence Interval); a(mild or severe dependency); bold (variables included within the gross and adjusted models)

seniors with ages above 60 years old reporting a general mean of prevalence of dementia of 11% (ZURIQUE SÁNCHEZ *et al.*, 2019). Such findings face one study that compared the prevalence of dementia in elderly that were institutionalized and living in LSIEs (LINI; PORTELLA; DORING, 2016). In the present study we found as factors associated to dementia in institutionalized elderly: living in a private LSIE, no family visits, reported brain stroke, fecal incontinency, dysphagia, low MMSE score and functional dependency. Literature has shown that institutionalized elderly with 80 years or older are more affected by dementia (AGRINIER *et al.*, 2018; LINI *et al.*, 2014). Although we observed that the group of seniors with dementia presented more advanced ages sometimes superior to 80 years old when compared to seniors without dementia, this variable did not seemed to be an associated factor to dementia within our sample. This illustrates that, regardless of age, institutionalized elderly have higher risk of developing dementia. The majority of studies report the predominance of women in LSIEs with values that can reach 73,5% to 76,6% in national literature

(ANDRADE *et al.*, 2017; BAIXINHO *et al.*, 2019) and 70% to 85,9% in international literature (CHEN *et al.*, 2018; KUTSCHER *et al.*, 2017; ZAHIROVIC *et al.*, 2018), supporting our findings. This can be explained due to some factors such as the loss of a companion, a state of social vulnerability, the feminization of aging by the aging process itself, the decline of health conditions and functional capability. In return, the male sex presents a greater advantage of being taken care of by women (spouse or daughter) being able to stay inside the familiar home longer (CAMARANO; BARBOSA, 2016). We observed that living in a private LSIE was a factor associated with dementia. Such findings can be explained since the offer of health services inside the private LSIEs causes a higher demand for this services that comes from seniors with dementia (up to 63,5%), while the philanthropic and public LSIEs have a number of residents with lower dependency levels (58,6%). Furthermore, private institutions presents an expressive amount of elderly with functional dependency that could overwhelm the family.

In public and mixed institutions its residents seems to have some independence while performing functional activities (CAMARANO; KANSO, 2010). Seniors that live in LSIEs are more lonely and live away from their families which can be reverted depending on how often the family visits occur (GAMAGE; HEWAGE; PATHIRANA, 2019). This familiar relationship is fundamental since social isolation is considered one of the risk factors related to dementia (LIVINGSTON *et al.*, 2020). As well as in our study, literature regarding this topic identified that the majority of institutionalized elderly received family visits with values varying between 57% (GAMAGE; HEWAGE; PATHIRANA, 2019) to 64% (FARIA; ANTONIO; EBISUI, 2014) with the main visitor being their children (60%) (CATANEO; CARDOZO; AYALA, 2019). Although we identified in our study that the majority of subjects were receiving family visits, the fact of not receiving them became a factor associated with dementia in this sample. Frequently, the brain stroke (BS) and dementia are two pathologies that can coexist (SUBIC *et al.*, 2017). That can be explained since individuals that had BS presented higher susceptibility in developing dementia because of brain injuries in the central nervous system (LEVINE *et al.*, 2015). It was observed in a study that 20% of seniors that had BS developed dementia one year after the incident with higher incidence in the ones with recurrent BS and lower with the ones that had BS for the first time. The authors also concluded that in every ten patients that had BS, in the first time at least one presented dementia at the beginning of the event and that the severe BS anticipates dementia up to 25 years when compared to a minor BS (four years) and to transient ischemic attack (two years) (PENDLEBURY; ROTHWELL, 2019). Thus, it is reasonable to include the BS as one of the dementia associated factors in the institutionalized elderly participating in this research.

Another relationship that should be considered is the fecal incontinency that is hidden sometimes with its signs and symptoms neglected by the individual. With the evolution of the dementia condition and the loss of physiological functions the fecal incontinency may advance the quality of life decline, causing anxiety and depression in many cases (NÓBREGA *et al.*, 2015; RIBEIRO; CAMPOS; TUNICE, 2016; SANTOS *et al.*, 2017). Our findings support another study that found that the severity of dementia was associated with fecal incontinency reporting indexes of 57,1% in institutionalized elderly (IHNÁT *et al.*, 2016). We also found an association between dementia and dysphagia that can be justified by the prejudice in the integrity of the central nervous system and other structures involved in deglutition caused by the evolution in the individuals dementia state (MELGAARD *et al.*, 2017). Previous studies documented the association between this variables (PARK *et al.*, 2013; SARABIA-COBO *et al.*, 2016), also supporting our findings. Moreover, as the severity of the dementia state increases, the chances of developing dysphagia also increases with numbers raising from 6,3% in mild cases to 83,2% in more severe cases (PARK *et al.*, 2013). The cognitive decline is described as a series of disorders as personality changes, memory loss and intellectual decline that characterize dementia. Its progressions affects functionality and impair daily living activities leading to incapacities that include several language, reasoning, planning and organizational disorders, gesture coordination, judgment and visual disorders. Currently, the MMSE is one of the most applied tools to evaluated cognitive decline and its relationship with dementia (NAZARIO *et al.*, 2018), including inside the LSIEs (FERREIRA *et al.*, 2014). For that reason it was observed that institutionalized elderly reported lower scores in the MMSE. The cognitive decline promotes changes in the seniors quality of life, and may cause a functional deficit with reduction and/or loss of skills needed for activities of daily living. Thus, a study that analyzed the prevalence of cognitive decline in elderly with moderate or severe incapacity presented values of 21,1% and 62,5%, respectively (ANDRADE *et al.*, 2017). That supports our findings since the functional capacity was found as one of the factors associated with dementia in institutionalized elderly. Several alterations can happen inside this individuals metabolism and body that can be responsible for reducing the performance while doing activities of daily living and negatively impacting the motor function and general health state (FRANCISCO *et al.*, 2018).

Therefore, functional capability can be affected by cognition presenting a relationship with a higher morbimortality index, dependency and frailty in elderly with resulting disturbance in their quality of life and physical fitness (BARROS, *et al.*, 2016). All of the above seems to be connected, since institutionalized elderly presents lower cognitive and functional performance, higher risk of falls, higher dependency in activities of daily living, obesity and higher risk of developing chronic diseases and inactivity (FERREIRA *et al.*, 2016). According to a coorte study carried out with seniors living in LSIEs during a period of 10 years, it was observed a change in the population profile in which as the age increased the presence of mental disorders (depression and dementia) and the use of wheelchair also increased, reflecting the loss of functionality and resulting in a dependency to perform regular activities (SOUZA; MARTINS, 2016). Therefore, we can confirm a correlation between the dementia stage and the capacity to perform activities of daily living even in the early stages of the disease (TALMELLI *et al.*, 2013). Thus, the increase of dependency in seniors living in LSIEs creates a necessity to change not only the physical, administrative or financial infrastructure, but also to understand the need to idealize more humane places that can provide physical, mental and spiritual well-being with therapeutic care programs allowing the residents to live well even with functional incapability (CHIANCA; LISBOA, 2012). This study had limitations. Due to being a multicenter study it was necessary more than one interviewer to apply the same questionnaire with the subjects which could result in different ways of application. However, in an attempt to minimize possible inconsistencies all of the researchers were trained by the same questionnaire application coordinator to ensure consistency and data validation.

CONCLUSION

The prevalence of dementia in institutionalized elderly is high, especially in those residing in private institutions, do not receive family visits, report brain stroke, fecal incontinency, dysphagia, low Mini Mental State Examination score and functional dependency.

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REFERENCES

- Agrinier N, Elperding ML, Labat C, Gautier S, Guillemin F, Benetos A. 2018. Prognostic Association of Major Frailty Domain Trajectories With 5-Year Mortality in Very Old Adults: Results From the PARTAGE Cohort Study. *American Journal of Epidemiology*, v.187, n. 8, p.1678-1685
- Andrade FLJP, Lima JMR, Fidelis KLM, Jerez-Roig J, Lima KC. 2017. Incapacidade cognitiva e fatores associados em idosos institucionalizados em Natal, RN, Brasil. *Revista Brasileira de Geriatria e Gerontologia*, Rio de Janeiro, v. 20, n. 2, p. 186-196.
- Baixinho CL, Dixie MA, Madeira C, Alves S, Henriques MD Falls in institutionalized elderly with and without cognitive decline. *Dementia & Neuropsychology*, 2019 São Paulo v.13, n.1, p.16-121.
- Barros TVP. 2016. Functional capacity of institutionalized elderly people: an integrative review. *ABCS Health Sciences.*, 41(3).
- Bertolucci PHF, Bruck S, Campacci SR, Juliano Y. 1994. O minixame do estado mental em uma população geral. Impacto da escolaridade. *Arq Neuropsiquiatr.*, 52(1): 1-7.
- Boff MS, Sekya F, Bottino C. 2015. Revisão sistemática sobre prevalência de demência entre a população brasileira. *Revista De Medicina.*, 94(3):154-61.
- Burlá, C. et al., 2013. Panorama prospectivo das demências no Brasil: um enfoque demográfico. *Ciência e Saúde Coletiva*, v. 18, n. 10, p. 2949-2956.

- Camarano AA, Barbosa P. 2016. Instituições de Longa Permanência para Idosos no Brasil: do que se está falando. In: Alcântara, A. O.; Camarano, A. A.; Giacomini, K. C. (Eds.). Política Nacional do Idoso: velhas e novas questões. Rio de Janeiro: Ipea, 479–514.
- Camarano AA, Kanso S. 2010. Como as famílias brasileiras estão lidando com idosos que demandam cuidados e quais as perspectivas futuras? A visão mostrada pelas PNADS. In: CAMARANO, A. A. (Org.). Cuidados de longa duração para a população idosa: um novo risco social a ser assumido?. Rio de Janeiro: Ipea.
- Cameron EJ, Bowles SK, Marshall EG, Andrew MK. 2018. Falls and long-term care: a report from the care by design observational cohort study. *BMC Family Practice.*, 19(1):73-5.
- Cataneo FM, Cardozo TM, Ayala ALM. 2019. Idosos Em Instituição De Longa Permanência E Relações Familiares. *Revista Atenção à Saúde.*, 17(60):28-36.
- Chen L, Xu S, Jin X, Lu X, Liu L. et al. 2018. A comparison of six clock-drawing test scoring methods in a nursing home. *Aging clinical and experimental research.*, 30(7):775-81.
- Chen YH, Lin LC. 2015. The Credibility of Self-reported Pain Among Institutional Older People with Different Degrees of Cognitive Function in Taiwan. Pain management nursing: *official journal of the American Society of Pain Management Nurses.*, 16(3):163-72.
- Chianca TCM, Lisboa CR. 2012. Perfil epidemiológico, clínico e de independência funcional de uma população idosa institucionalizada. *Rev. bras. Enferm.*, 65(3):482-7.
- Cornelis E, Gorus E, Beyer I, Bautmans I, Vriend P. 2017. Early diagnosis of mild cognitive impairment and mild dementia through basic and instrumental activities of daily living: Development of a new evaluation tool. *PLOS Medicine* 14(3): e100250.
- Dutra RS, Vargas, SC, Tornquist L, Tornquist D, Martins VA, Krug SF. et al., 2016. Reflecting on the process of institutionalization of the elderly. *Journal of Epidemiology and Infection Control.*, Supp 1: 214-223.
- Faria AC., Antônio SAE, Ebisui CTN. 2014. A Realidade do Idoso Institucionalizado Frente à Visita Familiar: Um Estudo Quantitativo. *Revista Uniará*, 17(2):117-24.
- Ferreira LMBM, Jerez-Roig J, Andrade FLJP, Oliveira NPD, Araújo JRT. 2016. Prevalência de quedas e avaliação da mobilidade em idosos institucionalizados. *Revista Brasileira Geriatria Gerontologia* 19(6):995-1003.
- Ferreira LS, Pinho MSP, Pereira MWM, Ferreira AP. 2014. Perfil cognitivo de idosos residentes em Instituições de Longa Permanência de Brasília-DF. *Revista Brasileira Enfermagem.*, 67(2):247-51.
- Folstein MF, Folstein SE, McHugh PR. 1975. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *Journal of Psychiatric Research.*, 12(3):189-98.
- Francisco, PMSB, Marques PP, Borim FSA, Torres SF, Neri AL. 2018. Disability relating to instrumental activities of daily living in the elderly with rheumatic diseases. *Rev bras geriatragerontol.*, 21(5):570-78.
- Gamage MWK, Hewage C, Pathirana K.D. 2019. Associated factors for cognition of physically independent elderly people living in residential care facilities for the aged in Sri Lanka. *BMC Psychiatry.*, 19(10).
- Hernandorena I, Duron E, Vidal JS, Hanon O. 2017. Treatment options and considerations for hypertensive patients to prevent dementia. *Expert Opin Pharmacother.*, Jul;18(10):989-1000.
- Inhat P, Kozáková R, Rudinská LI, Peteja M, Vávra P, Zonča P. Fecal incontinence among nursing home residents: Is it still a problem? *Archives of gerontology and geriatrics* 2016;65(1):79-84.
- Katz S, Ford AB, Roland MW. 1963. Studies of illness in the aged — The index of ADL: a standardized measure of biological and psychosocial functions. *JAMA* 185(12):914-9.
- Kowalska J, Mazurek J, Rymaszewska J. 2019. Analysis of the degree of acceptance of illness among older adults living in a nursing home undergoing rehabilitation – an observational study. *Clinical interventions in aging.*, 14(1):925-33.
- Kutschar, P, Bauer Z, Gnass I, Osterbrink J. 2017. Does item overlap render measured relationships between pain and challenging behaviour trivial? Results from a multicentre cross-sectional study in 13 German nursing homes. *Nursing Inquiry.*, 24(3).
- Levine DA, Galecki AT, Langa KM, Unverzagt FW, Kabeto MU, Giordani B. et al. Trajectory of Cognitive Decline After Incident Stroke. *JAMA* 2015;314(1):41-51.
- Lini EV, Doring M, Machado VLM, Portella MR. Idosos institucionalizados: prevalência de demências, características demográficas, clínicas e motivos da institucionalização. *Revista Brasileira De Ciências Do Envelhecimento Humano* 2014;11(3):267-75.
- Lini EV, Portella MR, Doring M. Fatores associados à institucionalização de idosos: estudo caso-controle. *Revista Brasileira Geriatria e Gerontologia* 2016;19(6):1004-15.
- Livingston G, Sommerlad A, Orgeta V, Costafreda SG, Huntley J, Ames D, Ballard C. et al. Dementia prevention, intervention, and care. *Lancet* 2017; 390(10113):2673-2734.
- Melgaard D, Baandrup U, Bøgsted M, Bendtsen MD, Hansen T. The Prevalence of Oropharyngeal Dysphagia in Danish Patients Hospitalised with Community-Acquired Pneumonia. *Dysphagia* 2017;32(3):383–392.
- Melo DM., Barbosa AJG. Use of the Mini-Mental State Examination in research on the elderly in Brazil: a systematic review. *Ciênc. saúde coletiva* 2015;20(12):3865-76.
- Ministério da saúde. 2018. Disponível em: <http://portal.arquivos2.saude.gov.br/images/pdf/2018/novembro/23/Nota-informativa-n-final.pdf>. Acesso em :23 de maio de 2020.
- Miranda GMD, Mendes ACG, Silva ALA. O envelhecimento populacional brasileiro: desafios e consequências sociais atuais e futuras. *Revista Brasileira Geriatria e Gerontologia* 2016; 19(3):507-19.
- Nass EMA, Teston EF, Peruzzo HE, Mincoff RCL, Marcon SS. A institucionalização do idoso com alzheimer como consequência da dificuldade no trato com o idoso. *Revista de Enfermagem (UFPE)* 2016;10(11):4090-96.
- Nazario MPS, Silva VHT, Martinho ACDO, Bergamin JSSP. Cognitive Deficit in Hospitalized Elderly According to Mini Mental State Examination (MMSE): Narrative Review. *Journal Health Sciences* 2018;20(2).
- Nichols E, GBD colaboradores et al. Dementia Collaborators. Global, regional, and national burden of Alzheimer's disease and other dementias, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet Neurology* 2018;18(1):88-106.
- Nóbrega IRAP, Leal MCC, Marques APO, Vieira JCM. Fatores associados à depressão em idosos institucionalizados: revisão integrativa. *Saúde Debate* 2015;39(105):536-50.
- Organização Mundial Da Saúde . População mundial deve chegar a 9,7 bilhões de pessoas em 2050, diz relatório da ONU. 2017 Disponível em :<<https://nacoesunidas.org/populacao-mundial-deve-chegar-a-97-bilhoes-de-pessoas-em-2050-diz-relatorio-da-onu>>. Acesso em : 05/07/2020.
- Park YH, Han HR, Oh BM, Lee J, Park JA, Jeong S. et al. Prevalence and associated factors of dysphagia in nursing home residents. *Geriatric Nursing* 2013;34(2013):212-7.
- Pedroso RV, Corazza DI, Andreatto CAA, Silva TMV, Costa JLR, Santos-Galduróz RF. Cognitive, functional and physical activity impairment in elderly with Alzheimer's disease. *Dement Neuropsychol* 2018;12(1):28-34.
- Pendlebury ST, Rotweel PM. Incidence and prevalence of dementia associated with transient ischaemic attack and stroke: analysis of the population-based Oxford Vascular Study for the Oxford Vascular Study. *Lancet Neurology* 2019;18(1):248-58.
- Reis C; Barbosa LMLH, Pimentel VP. O desafio do envelhecimento populacional na perspectiva sistêmica da saúde. *BNDES Setorial* 2016; 44(1):87-124.
- Ribeiro WFP, Campos SMC, Tunice MM. Identificação de risco da pessoa idosa em uma instituição de longa permanência para idosos. *Enfermagem Brasil* 2016;15(4):174-80.

- Sancho, L. G. Atenção à saúde na síndrome demencial: qual será o impacto econômico dessa atenção no Brasil? *Saúde debate*, Rio de Janeiro, v. 39, n. 105, p. 551-560, June 2015.
- Santos AO, Andreotti BC, Freitas VP, Carmo NA, Araújo CM, Reis LA. Qualidade De Vida De Idosos Residentes Em Instituição De Longa Permanência: Uma Revisão Sistemática. *Revista Enfermagem Contemporânea* 2017;6(2):199-210.
- Sarabia-Cobo CM, Pérez V, Lorena P, Domínguez E, Hermsilla C, Nuñez MJ, Vigueiro M. et al. The incidence and prognostic implications of dysphagia in elderly patients institutionalized: A multicenter study in Spain, *Applied Nursing Research* 2016;30:e6–e9.
- Silva AO, Pereira APM, Gonçalves DR, Vieira AS, Medeiros RF, Altermann CDC. et al. Perfil cognitivo de idosos institucionalizados de Uruguaiana/RS. *Rev Contexto & Saúde* 2013;11(20):1185-90.
- Silva ILC, Lima, GS, Storti, LB, Aniceto P, Formigheri FP, Marques S. Sintomas Neuropsiquiátricos De Idosos Com Demência: Repercussões Para O Cuidador Familiar. *Texto Contexto Enfermagem* 2018; 27(3): e3530017.
- Silva TBV, Magalhães CMC, Abreu DCC. Capacidade Funcional De Idosos Acolhidos Em Instituições De Longa Permanência Da Rede Pública Em Uma Capital Da Região Norte. *Estudos Interdisciplinares do Envelhecimento* 2015: 20(2):517-34.
- Souza ACC, Martins KA. Mudança Do Perfil De Idosos De Uma Instituição De Longa Permanência Nos Últimos Dez Anos. *GeriatrGerontol Aging* 2016;10(1):16-22.
- Subic A, Cermakova P, Norrving B, Winblad B, von Euler M, Kramberger MG. et al. Management of acute ischaemic stroke in patients with dementia. *Journal of internal medicine* 2018;283(3):332.
- Talmelli LFS, Vale FAC, Gratão ACM, Kusumota L. Rodrigues RAP. Doença de Alzheimer: Declínio funcional e estágio da demência. *Acta Paul Enferm.* 2013;26(3):219-25.
- Wallace M, Shelkey M. Katz Index of Independence in Activities of Daily Living (ADL). *Urologic Nursing* 2007;27(1):93-4.
- Zahiravic I, Torrison G, Wattmo C, Londos C. Psychotropic and anti-dementia treatment in elderly persons with clinical signs of dementia with Lewy bodies: a cross-sectional study in 40 nursing homes in Sweden. *BMC Geriatric* 2018;18(1):50.
- Zurique Sanchez C, Sanabria C, Oswaldo M, Zurique Sanchez M, López C, Anthony P. et al. 2019. Prevalencia de demencia en adultos mayores de América Latina: revisión sistemática. *Revista Española de Geriatria y Gerontología* 2019;54(6): 346-55.
