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Cognitive impairment and physical frailty in older adults in secondary health care

Alteração cognitiva e fragilidade física em idosos da atenção secundária à saúde

Deterioro cognitivo y fragilidad física en ancianos en atención secundaria de salud

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ABSTRACT

Objective: To analyze the association between cognitive impairment and physical frailty in older adults in secondary health care. **Method:** This is a cross-sectional study carried out with people aged ≥ 60 years, assisted at a geriatric and gerontology outpatient clinic. For cognitive screening, the Mini Mental State Examination, the semantic verbal fluency test, and frailty assessment using the physical frailty phenotype were used. The likelihood ratio test was applied to the predictive model. **Results:** 407 older adults participated in the study. Cognitive impairment was observed in 58.5% (n=238) of the sample, being higher in frail (n=66; 75%). A change in the semantic verbal fluency test was identified in 22% (n=90), with a higher prevalence in pre-frail patients (55.5%; n=226). It was identified 2.5 times more chance of a frail older person, when compared to a non-frail one, to have cognitive impairment (95% CI, +0.947 - 0.322). The chance for alteration in the semantic verbal fluency test was 5.4 times higher in frail compared to non-frail ones (95% CI, 1.68 - 0.38). **Conclusion:** A relationship was observed between cognitive impairment and physical frailty. Screening for frailty in geriatric nursing practice and the implementation of specific care is recommended.

DESCRIPTORS

Frail Elderly; Cognition; Mental Status and Dementia Tests; Health Services for the Aged; Geriatric Nursing.

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INTRODUCTION

Developing countries have experienced an accelerating progress of population aging. In Latin America, there is an aging population structure, with an estimate that the number of older adults exceeds the number of individuals up to 15 years old in 2036[1]. In this context, Brazil stands out for its speed of population aging above developing countries, where older adults (≥ 65 years old) will correspond to a quarter of the population (25.5%) in 2060 (IBGE, 2018)[2].

This transformation in the population profile puts pressure on the implementation of health care policies and services aiming at promoting active aging capable of minimizing functional decline, since several are the factors that predispose older adults to functional decline, which results in dependence and loss of autonomy. These losses have a negative impact on older adults, their families and public health services, particularly in an environment of limited financial resources[3].

Cognitive impairment is among the factors that play an important role in older adults' functional decline and dependence. Cognition is defined as a set of mental activities that involve knowledge acquisition, retention, transformation, and use[4], composed of executive functions, complex attention, language, learning, memory, and social cognition. In normal cognitive aging, a decrease in performance in some cognitive functions is expected; however, cognitive changes can progress to mild neurocognitive disorder, Alzheimer's disease and other types of dementia[5].

Among cognitive functions, verbal fluency stands out for its relationship with executive functions, necessary for maintaining older adults' functional capacity. Semantic verbal fluency is the result of the interaction between semantic memory, working memory and executive functions[6]. Executive functions stand out due to their role in task planning and involve the inhibitory control, working memory, and cognitive flexibility subdomains[6].

Risk factors can negatively interfere with the path of normal cognitive aging. Among them, physical frailty that has been shown to be a predictor of cognitive impairment in older adults[7]. Physical frailty is considered a medical syndrome, with several causes and determining factors, characterized by decreased strength, resistance and decreased physiological functions, which increase the vulnerability of individuals and the development of dependence and/or death[8].

The present study responds to a gap in literature related to nursing practices with a focus on frailty and cognitive impairment, with the main innovation being outpatient research. The study enables identifying characteristics associated with these conditions, which provides subsidies for programs to prevent cognitive decline in older adults, with emphasis on disability and functional decline prevention. The possibility of intervention in risk factors for frailty and cognitive impairment provides early intervention, minimizing the negative effects on health status, financial and structural impact on the health system.

Considering the significant population aging in developing countries and the consequent demand for preventive care for older adults' functional and cognitive decline in outpatient care, this study aims to analyze the association between cognitive impairment and physical frailty in older adults in secondary health care.

METHOD

Type of study

This is a quantitative cross-sectional study.

Setting

This study was carried out at a geriatrics and gerontology outpatient clinic (GGC) in the city of São José dos Pinhais, metropolitan region of the capital of Paraná State, Curitiba, Brazil.

Population

The target population consisted of older adults aged ≥60 years old, referred from Primary Health Care for care at GGC, according to older adults' health guidelines criteria in Paraná.

Older adults aged ≥60 years and who attended the scheduled appointment at GGC were included. Older adults who had severe sequelae from stroke and localized loss of muscle strength and aphasia, neurological diseases (which prevent tests), severe hearing or vision deficits (which severely hinder communication), physical problems (which prevent proposed tests) and/or upper or lower limb amputations were excluded. This information was extracted from medical record and/or medical consultation.

Sample definition

The sample was determined based on the population of older adults in the city of São José dos Pinhais in 2015. A 95% confidence index and a 5% significance level (α=0.05) were considered. An 8% margin was included considering possible losses and refusals, resulting in a sample plan of 411 older adults. Of these, one (1) refused to perform the proposed tests and three participants were excluded due to incomplete filling in of the instruments.

Data collection

The team of examiners participating in data collection was composed of three students from a master's course and two students from an undergraduate nursing course. Training was carried out for the examiners, with the objective of standardizing test collection and application. The first training was held in August 2016, and the second in September 2016, by PhD students in the research group. A pilot study (n=10) was carried out to verify and adapt the data collection instruments. There was no need for adjustments, and the older adults participating were included in the final sample. Data collection was carried out from September 2016 to March 2017.

For data collection, a sociodemographic questionnaire, Mini Mental State Examination[9], Semantic Verbal Fluency test, animals category[10] and frailty phenotype tests (handgrip

strength, gait speed, weight loss, fatigue/tiredness and level of physical activity) were applied[11]. The sociodemographic questionnaire was structured with closed questions and consisted of sex, marital status, age, education, race, and family income. The Mini-Mental State Examination (MMSE) was used to screen for cognitive impairment, an instrument translated and validated for Brazilian Portuguese[9]. The MMSE assesses orientation, immediate memory, attention and calculation, memory recall and language, allowing global cognition analysis. Alteration was identified by the following cut-off points: illiterate <20 points; one to four years of study, <25 points; five to eight years of study, <26 points; nine to eleven years of study, <28 points; eleven or more years of study, <29 points[9]. Older adults who had a lower than expected score for education were classified with cognitive impairment. To complement cognitive assessment, the Semantic Verbal Fluency test (SVF), category animals, was used, translated and validated for Brazilian Portuguese by Brucki[10]. SVF deficit considered <9 points for illiterates and <13 points for individuals with low, mean and high education[10]. The test was applied and analyzed independently to the MMSE.

Frailty phenotype assessments[11] were initiated by the handgrip strength (HGS) component, which was measured in kilogram/strength (Kgs) using a Jamar® hydraulic dynamometer and following the American Society of Hand Therapists (ASHT) recommendations. Older adults were instructed to remain seated with feet flat on the floor, elbow flexed at 90 degrees, with firm arm against the trunk and wrist in a neutral position. After command, three grips were performed, always alternated within one minute to return the strength; then, the three values were recorded and the mean was calculated. For each older adult, HGS values were adjusted according to sex and Body Mass Index (BMI). Values that included the lowest quintile were considered to be frailty markers. To assess gait speed (m/s), older adults were instructed to walk for six meters as usual, on a flat surface, signaled by two adhesive tapes four meters apart. One sought to reduce the effects of acceleration and deceleration; therefore, the first and last meter of the walk was not timed. Time was measured in seconds with the aid of a digital timer (INCOTERM®). Three walks were carried out, and each route was timed. At this stage, walking aids were allowed. After adjusting for sex and height median, values in the lowest quintile were frailty markers.

Weight loss was verified by older adults' self-reports in response to two questions: have you lost weight in the last few months? How many kilograms? Older adults who declared weight loss greater than or equal to 4.5 kg in the last twelve months were considered to be frail for this marker, unintentionally[11]. Fatigue/tiredness was assessed by self-report, according to the participant's response to items 7 (I felt that everything I did was an effort) and 20 (I could not get "going") of the Center for Epidemiological Scale – Depression (CES-D), validated for older Brazilian adults[12]. Older adults who answered 2 (moderate amount of time/3 to 4 days a week) or 3 (most of the time) to any of the questions were categorized as frail for this marker. For the level of physical activity marker, the Minnesota Leisure Activity Questionnaire was applied, validated for older Brazilian adults by Lustosa[13], with questions related to frequency and time of activities performed in the last year. The annual energy expenditure of each older adult was calculated, the energy expenditure in METs for each activity, following the Compendium of Physical Activities recommendations. To obtain the value in kilocalories, one used the multiplication of I by the constant 0.0175 and the individual's weight in kilograms. After adjusting for sex, the values in the lowest quintile were markers of frailty[11]. Older adults who presented three or more of the markers were considered frail; one or two markers as pre-frail; those who did not present any of the markers were classified as non-frail.

Data analysis and treatment

Data were organized using Microsoft Excel® 2007 and analyzed using R® 3.3.3. Descriptive analyzes of discrete variables were performed, identifying the distribution of absolute, percentage and numerical frequency with calculation of mean, median and standard deviation. For associations between categorical variables, the chi-square test was used. Numerical variables were subjected to the Kruskal-Wallis test. A level of statistical significance was considered $p \leq 0.05$. The chances of each independent variable being related to cognitive impairment were analyzed by Odds Ratio taking into account a 95% confidence interval. The likelihood ratio test (LRT) supported the logistic regression model, considering the significance level equal to 5%.

Ethical aspects

The research project received approval from the Human Research Ethics Committee of the Health Sciences Sector of Universidade Federal do Paraná, under Opinion CEP/SD 1.755.394/16, in accordance with Resolution 466/12 of the Brazilian National Health Council. Older adults who agreed to participate in the study signed the Informed Consent Form (ICF).

RESULTS

Thus, 407 older adults participated in the study. In the sample (n=407) a mean of 70.9 ± 7.6 years of age and homogeneous distribution in relation to male (n=204, 50.1%) and female (n=203, 49.9%) were obtained. There was a predominance of older white adults (n=334, 82.1%), married (n=263, 64.6%), with 1 to 4 years of study (n=224, 55%), and family income up to two minimum wages (n=351, 86.2%).

Table 1 shows cognitive impairment prevailing in 238 (58.5%) older adults, being higher in frail ones (n=66; 75%). The frequency was 93 (22.9%) for non-frailty condition, 226 (55.5%) for pre-frail and 88 (21.6%) for frailty.

Frailty was significantly associated with cognitive performance (p=0.002). As for the markers, there was a predominance of decreased gait speed in 202 (49.6%) of older adults, followed by a decrease in the level of physical activity (n=166, 40.7%), fatigue/tiredness (n=110, 27%), decreased handgrip strength (n=84, 20.6%) and unintentional weight loss (n=69, 16.9%).

Table 1 – Association between cognitive impairment and condition and markers of physical frailty in older adults – São José dos Pinhais, PR, Brazil, 2017.

Variable		Cognitive impairment 238 (58.5%)		Preserved cognition 169 (41.5%)		Total sample 407	*p* value*
Non-frail		50 (53.8%)		43 (46.2%)		93 (22.9%)	
Pre-frail		122 (54.0%)		104 (46.0%)		226 (55.5%)	0.002
Frail		66 (75.0%)		22 (25.0%)		88 (21.6%)	
Decreased handgrip strength	Yes No	57 (23.9%) 181 (76.1%)	Yes No	27 (16.0%) 142 (84.0%)	Yes No	84 (20.6%) 323 (79.4%)	0.032
Decreased gait speed	Yes No	133 (56.0%) 105 (44.0%)	Yes No	69 (40.8%) 100 (59.2%)	Yes No	202 (49.6%) 205 (50.4%)	0.002
Unintentional weight loss	Yes No	45 (18.9%) 193 (81.1%)	Yes No	24 (14.2%) 145 (85.8%)	Yes No	69 (17.0%) 338 (83.0%)	0.133
Fatigue/tiredness self-report	Yes No	80 (33.6%) 158 (66.4%)	Yes No	30 (17.8%) 139 (82.2%)	Yes No	110 (27.0%) 297 (73.0%)	0.000
Decreased physical activity level	Yes No	101 (42.4%) 137 (57.6%)	Yes No	65 (38.5%) 104 (61.5%)	Yes No	166 (40.8%) 241 (59.2%)	0.242

*p value ≤ 0.05 regarding the chi-square test calculation.

The mean score in the MMSE was 22.9 ± 4.5 points, with a mean lower in frail older adults (21.0 ± 5.0) when compared to pre-frail (23.9 ± 3.7) and non-frail (24.0 ± 3.6) ones. Figure 1 shows the comparison of global cognitive performance according to frailty condition.

Table 2 shows the MMSE subscore in non-frail, pre-frail and frail older adults. Performance in orientation (p> 0.001), attention and calculation (p=0.001) and language (p> 0.001) subdomains was associated with physical frailty condition.

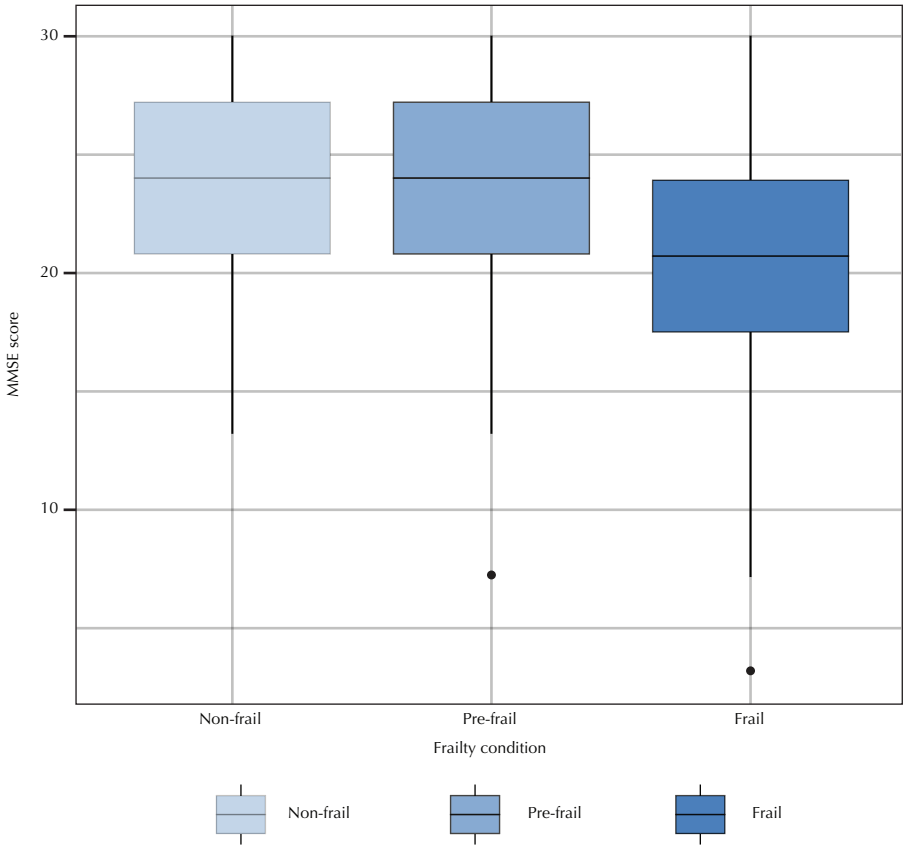

Figure 1 – Comparison of cognitive performance according to physical frailty condition – São José dos Pinhais, PR, Brazil, 2017.

The chance of an older adult showing cognitive impairment did not differ between non-frail and pre-frail. However, it was observed 2.58 times more chance for a frail older adult to have cognitive impairment when compared to non-frail older adult and 2.56 times more likely compared to pre-frail ones (Table 3).

Table 2 – Performance in Mini Mental State Examination subdomains according to older adults' frailty condition – São José dos Pinhais, PR, Brazil, 2017.

Subdomain	Non-frail (mean/ median)	Pre-frail (mean/ median)	Frail (mean/ median)	*p* value*
Orientation	9.14 ±10	8.96 ±10	7.73 ±0.9	**<0.001**
Record	2.88 ± 0.3	2.9 ±0.3	2.75 ±0.3	0.176
Attention and calculation	2.00 ±0.1	2.12 ±0.1	1.42 ±0.1	**0.001**
Memory recall	2.10 ±0.2	1.98 ±0.2	1.67 ±0.2	0.075
Language	7.57 ± 0.8	7.61 ±0.8	6.88 ±0.7	**<0.001**

*Kruskal Wallis test, p ≤ 0.05.

Table 3 – Logistic regression model of cognitive impairment according to frailty in older adults – São José dos Pinhais, PR, Brazil, 2017.

Physical frailty condition	Estimate	Standard error	OR†	*p* value‡
Non-frail/Pre-frail	-0.008	0.247	0.991	0.999
Frail/Non-frail	+0.947	0.322	2.58	0.009
Frail/Pre-frail	+0.938	0.280	2.56	0.002

*Kruskal Wallis test, p < 0.05; †OR - Odds Ratio; ‡CI – 95% Confidence Interval.

When considering performance in semantic verbal fluency, there was no significant variation between non-frail and pre-frail older adults. However, it was observed 5.40 times more chances of a frail older adult to present a change in semantic verbal fluency when compared to non-frail. In frail older adults, the chance of having a SVF alteration was 3.17 times greater than in the pre-frail ones (Table 4).

Table 4 – Logistic regression model of alteration in verbal fluency and frailty of older adults – São José dos Pinhais, PR, Brazil, 2017.

Physical frailty condition	Estimate	Standard error	OR*	*p* value
Non-frail/Pre-frail	-0.531	0.363	0.587	0.309
Frail/Non-frail	+1.687	0.386	5.40	0.000
Frail/Pre-frail	+1.156	0.275	3.17	0.000

*OR - Odds Ratio

DISCUSSION

There was a high prevalence of pre-frail and frail older adults; however, the assessment and discussion of this result is limited by the lack of studies in the outpatient context of geriatrics and gerontology. When compared to research with community older adults, the frequencies identified diverge from studies in developed countries, remaining higher than most research carried out in developing countries and with a low Human Development Index (HDI).

In the United States of America (USA), the Cardiovascular Health Study investigated 5,201, identifying 6.9% frail older adults[11]. In Europe, a systematic review including 45 studies with community older adults assessed by the frailty phenotype identified a prevalence of 12% in the meta-analysis (95% CI 10-14)[14]. The China Health and Retirement Longitudinal Study investigated frailty in 5,301 older adults (≥ 60 years) in different provinces of China, detecting 7% frail and 51.2% pre-frail[15]. In Latin America, a study conducted in Bogotá/Colombia assessed 1,442 older adults classifying 9.4% as frail and 52.4% as pre-frail[16]. A study by *Rede Fibra* (Frailty in Brazilian Older adults) developed in Juiz de Fora/Minas Gerais included 461 individuals aged ≥ 65 years[17]. The prevalence of frailty and pre-frailty was 5.2% and 49.9%, respectively. In Curitiba/Paraná, an investigation analyzed 203 older adults from the community. Frail older adults corresponded to 19.2% (n=39), pre-frail, 56.7% (n=115), and non-frail, 24.1% (n=49)[18].

The high prevalence of pre-frail and frail individuals identified in the present study is justified by the characteristics of older adults seen at a GGC. They have low education and family income with the potential to directly interfere in the process of frailty. In addition, referral of older adults to primary health care may result in referring vulnerable users with functional impairment, not representing the general population of older adults.

When analyzing the frailty markers, a predominance of decreased gait speed was found, present in half of older adults, followed by a decrease in the level of physical activity and fatigue/tiredness. The predominance of decreased gait speed, present in half of older adults, followed by a decrease in the level of physical activity and fatigue/tiredness, is justified by the high level of older adults with sedentary lifestyle and low adherence to physical activities, observed by older adults' self-reports. The decreased number of individuals who practice physical exercise can be motivated by physical limitations; however, physical inactivity can originate in a cognitive component, due to the difficulty to plan and perform tasks such as physical exercise.

The variation in the frequency and predominance of the markers can be explained by the physical frailty cycle[11]. This vicious cycle follows a spiral shape, with the potential to start at any point. The movement can be triggered by diseases, sarcopenia, anorexia, energy decline and deregulation in multiple systems. The triggering factor can affect different mechanisms of the frailty cycle and result in different clinical manifestations, i.e., different prevalence of the markers according to the characteristics of the sample[11].

The association between frailty and cognitive impairment has been identified in different studies; however, the frequency of cognitive impairment observed in the present study is higher than the investigations carried out in Brazil[19] and in other countries[20-21]. In Brazil, a research conducted in Juiz de Fora/Minas Gerais with community older adults analyzed the association between cognitive and functional performance and the frailty syndrome in older adults (≥ 65 years). Global cognition and measures of functionality explained 47% of the variability of the frailty outcome (F=29.82; p <0.00; R=0.47)[19].

A multicenter cross-sectional study conducted in China analyzed the association between cognitive performance and frailty in 3,202 older adults aged ≥ 60 years, coming from the community. The prevalence of pre-frailty or frailty and cognitive impairment was 5.1%. Frail older adults performed worse in all cognitive domains compared to non-frail and pre-frail people[20]. A study conducted in Sunchang/South Korea, including 104 older adults, identified an association between frailty and global cognitive performance (p=0.015). The prevalence of cognitive impairment was 89.47% (n=17, p=0.006) in frail older adults[21].

The association between frailty and cognitive impairment is the result of multiple pathological processes and the interaction of different risk factors. Mechanisms such as vascular, metabolic, nutritional, inflammatory and sarcopenia alterations may explain the simultaneous presence of frailty and cognitive impairment[22].

In the present study, lower cognitive performance in frail and pre-frail older adults can be seen in global cognition and cognitive subdomains. Orientation, attention and calculation, and language scores were associated with frailty. These subdomains are directly or indirectly linked to executive functions that involve the ability to plan tasks, solve problems and modify behaviors[6]. Evidence has indicated that executive functions may be more sensitive to the negative effects of the condition and markers of physical frailty compared to overall cognitive performance. The decline in these functions is associated with functional impairment and disability, feeding back physical frailty[23].

Physical frailty and pre-frailty proved to be predictors of cognitive impairment according to the logistic regression model. This predictive power has been observed in different cross-sectional studies[24-25]. A cross-sectional study carried out in Singapore, with 1,575 older adults identified 7.26 times more chance (95% CI, 2.89 - 18.2) of cognitive impairment in frail older adults when compared to non-frail people[24]. In the city of Porto Alegre/Brazil, researchers investigated the association between frailty and geriatric syndromes in a sample composed of 521 older adults. Of these, 21.5% were frail and 51.1% were pre-frail, and cognitive impairment was detected in 60.9% of frail older adults. Frail older adults showed 3.41 (OR 3.41, 95% CI, 1.24 - 9.36) more chance of cognitive impairment when compared to non-frail people[25].

Semantic verbal fluency seems to be more sensitive to the negative effects of frailty and pre-frailty when compared to global cognition. Being frail represented twice the chance of compromising semantic verbal fluency in relation to global cognitive impairment. It is noteworthy that verbal fluency is not only related to language, but also to executive functions that involve the ability to plan and execute tasks. The impairment in these cognitive skills can have an impact on functional impairment, limiting older adults' autonomy and decision-making capacity.

The negative effect of frailty on verbal fluency involves multiple factors. Pathophysiological aspects as possible neurocerebral injuries resulting from physical frailty may have affected the verbal fluency of older adults[26]. The frontal and temporal cortex is involved in executive functioning, which is responsible for lexical-semantic recovery[6]. The decrease in the ability to recover words within the semantic criteria (category of animals) may indicate injuries in this brain structure related to Alzheimer's disease[27].

The present study indicates as an advance for health and, mainly, for nursing, the predictive power of physical frailty in cognitive impairment in older adults and in verbal fluency. This result reinforces the importance of screening cognition in frail and pre-frail older adults in gerontological nursing clinical practice. In this practice, the importance of early identification and management of markers and physical frailty condition is highlighted as a way to prevent the negative effects of frailty on cognition[28]. Therefore, it is necessary that nursing care plans are integrated with those of a multidisciplinary team and based on aerobic and resistance physical exercises, caloric and protein support, vitamin D supplementation and decrease of polypharmacy[29-30].

The cross-sectional methodological design stands out as one of the limitations of this study, which does not allow observing the cause/effect relationship between the variables of interest. In assessing the phenotype of physical frailty, using instruments containing self-reports such as unintentional weight loss and fatigue/tiredness is susceptible to bias. Moreover, the Minnesota Leisure Time Activities Questionnaire, although validated for Brazil, refers to activities practiced by American and European individuals, physical activities not practiced in Brazil.

Considering the relevance of the theme, justified by the increase in elderly population, increased life expectancy at birth and physical frailty among Brazilian older adults, it is recommended to conduct longitudinal research. This type of research allows one to monitor the evolution of physical frailty, particularly cognitive impairment, over the years.

CONCLUSION

Cognitive impairment and semantic verbal fluency are associated with the condition of physical frailty in older adults. The predictive model indicated greater sensitivity to the negative effects of frailty and pre-frailty when compared to global cognitive screening. It is recommended to implement instruments for the screening of cognition in frail and pre-frail older adults in gerontological nursing clinical practice. Recognizing and implementing early care plans aimed at physical frailty provide cognitive impairment prevention and semantic verbal fluency in older adults. Considering the results identified by the present study, longitudinal research is recommended to further investigate the cause-effect relationship between cognitive impairment and frailty.

RESUMO

Objetivo: Analisar a associação entre alteração cognitiva e a condição de fragilidade física em idosos na atenção secundária à saúde. **Método:** Estudo de corte transversal, realizado com pessoas com idade ≥ 60 anos, atendidas no ambulatório de geriatria e gerontologia. Para o rastreio cognitivo, empregou-se o Mini Exame do Estado Mental e o Teste de Fluência Verbal Semântica, e avaliação da fragilidade mediante o fenótipo de fragilidade física. O Teste da Razão de Verossimilhança foi aplicado para o modelo preditivo. **Resultados:** Participaram do estudo 407 idosos. A alteração cognitiva foi observada em 58,5% (n=238) da amostra, sendo superior em frágeis (n=66; 75%). Identificou-se alteração no Teste de Fluência Verbal Semântica em 22% (n=90), com maior prevalência em pré-frágeis (55,5%; n=226). Identificou-se 2,5 vezes mais chance de um idoso frágil, quando comparado ao não frágil, apresentar alteração cognitiva (IC 95%, +0,947 - 0,322). A chance para alteração no Teste de Fluência Verbal Semântica foi 5,4 vezes maior em frágeis se comparada a não frágeis (IC 95%, 1,68 - 0,38). **Conclusão:** Observou-se relação entre a alteração cognitiva e fragilidade física. Recomenda-se o rastreio da fragilidade na prática de enfermagem geriátrica e a implementação de cuidados específicos.

DESCRITORES

Idoso Fragilizado; Cognição; Testes de Estado Mental e Demência; Serviços de Saúde para Idosos; Enfermagem Geriátrica.

RESUMEN

Objetivo: Analizar la asociación entre el deterioro cognitivo y la condición de fragilidad física en ancianos en atención secundaria de salud. **Método:** Estudio transversal, realizado con personas ≥ 60 años, atendidas en el ambulatorio de geriatría y gerontología. Para el cribado cognitivo se utilizó el Mini Examen del Estado Mental y el Test de Fluidez Verbal Semántica y la valoración de la fragilidad mediante el fenotipo de fragilidad física. Se aplicó la prueba de razón de verosimilitud al modelo predictivo. **Resultados:** Participaron del estudio 407 ancianos. La alteración cognitiva se observó en el 58,5% (n=238) de la muestra, siendo mayor en frágiles (n=66; 75%). Se identificó un cambio en la prueba de fluidez verbal semántica en el 22% (n=90), con mayor prevalencia en pacientes prefrágiles (55,5%; n=226). Se identificó 2,5 veces más probabilidades de que una persona anciana frágil, en comparación con una no frágil, tuviera deterioro cognitivo (IC del 95%, +0,947 - 0,322). La probabilidad de alteración en la prueba de fluidez verbal semántica fue 5,4 veces mayor en frágiles en comparación con no frágiles (IC del 95%, 1,68 - 0,38). **Conclusión:** Hubo relación entre deterioro cognitivo y fragilidad física. Se recomienda el cribado de la fragilidad en la práctica de enfermería geriátrica y la implementación de cuidados específicos.

DESCRIPTORES

Anciano Frágil; Cognición; Pruebas de Estado Mental y Demencia; Servicios de Salud para Ancianos; Enfermería Geriátrica.

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