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RESEARCH

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Social participation and physical frailty in hospitalized older adults: cross-sectional study

Participação social e condição de fragilidade física em idosos hospitalizados: estudo transversal

Participación social y estado de fragilidad física en adultos mayores hospitalizados: estudio transversal

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ABSTRACT

Objective: to analyze the relationship between social participation and physical frailty condition of hospitalized older adults. **Method:** analytical cross-sectional study, developed in a public hospital in southern Brazil. Data collection took place from March to May 2023, using sociodemographic and clinical questionnaires, an activity inventory and physical frailty phenotype testing. Descriptive analyses, the Kruskal-Wallis test and Dunn's multiple comparisons were used. **Results:** of the 124 older people evaluated, 54.8% were male, 14.5% non-frail, 39.5% pre-frail, 46% frail. There was a growing increase in the status of non-frail, pre-frail and frail in the domains, never has contact with other people through letters or e-mail (22.2%; 40.8%; 61.4%), never provides assistance to other people (27.8%; 40.8%; 80.7%), never performs voluntary work (77.8%; 77.6%; 98.2%), never travels (33.3%; 53.1%; 84.2%), never goes out with people for leisure activities (16.7%; 28.6%; 56.1%), never participates in social activities (38.9%, 44.9%; 75.4%), never drives vehicles (66.7%, 63.3%; 94%). **Conclusion:** older adults who never practice social participation activities are at greater risk of transitioning to physical frailty. **Implication for practice:** the domains of social participation should be included in the care plan in the hospital context, as further support to prevent and/or reverse frailty in the older population.

Keywords: Frailty; Hospitalization; Older Adults; Social Participation; Prevalence.

RESUMO

Objetivo: analisar a relação entre a participação social e a condição de fragilidade física de idosos hospitalizados. **Método:** estudo transversal analítico, desenvolvido em um hospital público no sul do Brasil. Utilizou-se questionários sociodemográficos e clínicos, inventário de atividades e teste do fenótipo de fragilidade. Empregaram-se análises descritivas, teste de Kruskal-Wallis e comparações múltiplas de Dunn. **Resultados:** dos 124 idosos avaliados, 54,8% eram do sexo masculino, 46% casados, 14,5% não frágeis, 39,5% pré-frágeis, 46% frágeis. Houve aumento crescente da condição de não frágil, pré-frágil e frágil nos domínios, nunca tem contato por meio de cartas ou e-mail (22,2%; 40,8%; 61,4%), nunca presta assistência a outras pessoas (27,8%; 40,8%; 80,7%), nunca realiza trabalho voluntário (77,8%; 77,6%; 98,2%), nunca viaja (33,3%; 53,1%; 84,2%), nunca sai com pessoas para atividades de lazer (16,7%; 28,6%; 56,1%), nunca participa de atividades sociais (38,9%, 44,9%; 75,4%), nunca faz uso de computador e internet (50%, 55,1%; 86%) e nunca dirige veículos (66,7%, 63,3%; 94%). **Conclusão:** idosos com menor participação social apresentam maior risco de transição para fragilidade física. **Implicações para a prática:** os domínios de participação social devem ser incluídos no plano de cuidados no contexto hospitalar, como uma estratégia para prevenir e/ou reverter a condição de fragilidade em idosos.

Palavras-chave: Fragilidade; Hospitalização; Idoso; Participação Social; Prevalência.

RESUMEN

Objetivo: analizar la relación entre participación social y condición de fragilidad física de adultos mayores hospitalizados. **Método:** estudio transversal, desarrollado en un hospital público del sur de Brasil. La recolección de datos se realizó de marzo a mayo de 2023, mediante cuestionarios sociodemográficos y clínicos, inventario de actividad y pruebas de fenotipo de fragilidad física. Se utilizaron análisis descriptivos, la prueba de Kruskal-Wallis y comparaciones múltiples de Dunn. **Resultados:** de los 124 adultos mayores evaluados, 14,5% eran no frágiles, 39,5% prefrágiles y 46% frágiles. Hubo un aumento creciente en el estatus de no frágil, prefrágil y frágil en los dominios, nunca tiene contacto con otras personas a través de cartas o correo electrónico (22,2%; 40,8%; 61,4%), nunca realiza trabajo voluntario (77,8%; 77,6%; 98,2%), nunca viaja (33,3%; 53,1%; 84,2%), nunca sale para actividades de ocio (16,7%; 28,6%; 56,1%), nunca participa en actividades sociales (38,9%, 44,9%; 75,4%), nunca conduce vehículos (66,7%, 63,3%; 94%). **Conclusión:** las personas mayores que nunca practican actividades de participación social tienen mayor riesgo de transición a la fragilidad física. **Implicación para la práctica:** los dominios de participación social deben ser incluidos en el plan de atención en el contexto hospitalario, como apoyo adicional para prevenir y/o revertir la fragilidad en adultos mayores.

Palabras clave: Fragilidad; Hospitalización; Adulto Mayor; Participación Social; Prevalencia.

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INTRODUCTION

Social Participation is considered to be involvement in social activities that include interactions with other people. Its purpose is to participate in leisure, task-oriented, voluntary and productive activities.[1] These interactions must evolve over time, based on the resources available, the social context and what individuals want and what is meaningful to them.[2]

The idea of social participation can be classified as collective, productive and political. In collective participation, people share activities and spend time together, using games, music and other group activities; in productive participation, they use their skills for the benefit of others, such as reading books to children or photographs;[3] in political participation, they use their time, knowledge and skills for social and political causes.[1]

The inclusion of older adults in group socialization activities has been strengthened in Primary Health Care, since this space allows for different activities and integrations, both in their environment and outside of it.[4] Older adults in hospital, on the other hand, lose their routine and suffer an impact on their social relationships due to environmental barriers, which can lead to negative outcomes in terms of physical and psychological health and social support. Worsening health conditions, isolation, social disengagement and socio-emotional selectivity often trigger physical and mental damage, including physical frailty.[5]

Adverse outcomes are prevalent in frail hospitalized older adults. A systematic review and meta-analysis included 9,655 hospitalized older adults and investigated frailty and its outcomes. The frail had an increased risk of hospital mortality in the medium and long term compared to the non-frail and pre-frail.[6]

The isolation caused by hospitalization has an impact on locomotor functions, so it is considered that movement and displacement are important tools in determining care.[7] Similarly, physical frailty is one of the main contributors to functional decline in the older adults. It can be defined as a clinical state characterized by increased vulnerability in the individual when exposed to internal and external stressors, a condition that contributes to functional decline and early mortality in older people.[8]

Physical frailty is also related to social aspects, including isolation and loneliness in the older adults. These aspects were highlighted in a longitudinal study carried out in Singapore with 606 older adults from the community. There was an association between increased social participation and a lower frailty level (OR 0.96; 95%CI 0.93-0.99), and an association between feeling lonely and a higher frailty level (OR 2.90; 95%CI 1.44-5.84).[9]

Some studies have shown a significant association between lack of social participation and negative health outcomes for the older adult, such as functional incapacity and cognitive impairment.[10,11] On the other hand, effective social participation leads to an improvement in subjective well-being, a reduction in the risk of depression and a sense of belonging that relieves the feeling of loneliness.[12,13]

Researchers on the subject of "social participation" emphasize that it can be an effective measure to reduce the risks of physical frailty. Among social activities, scholars highlight: interacting with friends, playing chess and cards, visiting community clubs, dancing, practicing physical activities, participating in community-related organizations, doing volunteer work and using the Internet.[14]

The evidence on the relationship between the lack of social participation in the older adults and physical frailty is provided by studies carried out with older people in the community, and in view of this, there is a significant lack of research carried out with this hospitalized segment. This study aims to analyze the relationship between social participation and the physical frailty of hospitalized older adults.

METHOD

For the systematic construction of the analytical cross-sectional study, the recommendations of STrengthening the Reporting of OBservational studies in Epidemiology (STROBE) were used.[15]

Study design and location

This is a quantitative, cross-sectional, analytical study, a sub-project of the parent study entitled "Physical frailty and clinical, functional, psychosocial, nutritional outcomes and the demand for care in hospitalized older adults", carried out in a public hospital in southern Brazil that is a reference in the care of older people.

Population, inclusion and exclusion criteria

Older adults (≥60 years of age) made up the study population. The inclusion criteria were: being aged ≥ 60 years; being hospitalized for clinical or surgical treatment and having been hospitalized for less than 48 hours.

Exclusion criteria: presenting a critical condition that made it impossible to perform the tests and being under droplet or aerosol precautions. If the older adult did not have the cognitive capacity to answer the questions, as identified by the Mini-Mental State Examination (MMSE), the companion was invited to take part in the research by answering the questionnaires. For this study, the companion had to know the older adult in such a way as to be able to answer questions related to their physical and mental health. The inclusion criteria for caregivers were: being aged 18 or over; being a caregiver and accompanying the older person for at least three months; and having sufficient cognitive ability based on the MMSE, according to the cut-off points adopted according to education level, if they were aged ≥ 60 years.

Sample and data collection

The sampling method was simple random, collecting data from older adults hospitalized between March and May 2023, in clinical and surgical wards. The list of patients admitted in the last 48 hours was obtained from a report generated by the hospital's electronic medical record and, after excluding patients aged <60, those included were represented by numbers recorded on closed papers arranged in a box. A draw was then made and those selected were invited to take part in the study.

Data collection consisted of a sociodemographic questionnaire with the following variables of interest (gender, age, color, marital status, education and financial situation) and clinical questions

(morbidities, medication use and reports of falls and dizziness in the last year). Frailty was classified using the markers of the physical frailty phenotype, namely: reduced handgrip strength; reduced gait speed; self-reported fatigue/exhaustion; unintentional weight loss and reduced physical activity levels.[16]

Based on the measurement of the five components that make up the physical frailty phenotype, the older adults were classified into three conditions: frail, when three or more of these characteristics were present; pre-frail, when one or two criteria were identified; and non-frail, when none of the markers were detected.[16]

To assess social participation, the Activities Inventory was used,[17] which measures social participation through the social, productive and physical/leisure domains. The score is given using a five-level Likert scale, ranging from "never" (5) to "always" (1) (Chart 1).

In order to minimize the risk of bias, all researchers were trained in the use of the measuring equipment and questionnaires and the equipment was calibrated before data collection began.

Data analysis and treatment

The data was analyzed using the R software version 4.2.3, from the perspective of descriptive statistics, with absolute and relative frequency distribution. As for comparisons between the groups of frail, pre-frail and non-frail patients, median and interquartile range were used for numerical variables and absolute and relative frequency for categorical variables. The Kruskal-Wallis test was used, followed by Dunn's multiple comparison test. A p-value below 5% was considered statistically significant.

Ethical aspects

In relation to ethical aspects, the matrix project received a favorable opinion from the Human Research Ethics Committee of the Health Sciences Sector of the Federal University of Paraná (No. 6.569.208) and from the Human Research Ethics Committee of the Curitiba Municipal Health Department (No. 6.667.157). The ethical principles of voluntary and consensual participation of the older adults and their companions were respected by signing the Informed Consent Form (ICF), in accordance with the recommendations contained in Resolution No. 466/2012 and No. 510/2016 of the National Health Council.[18]

RESULTS

From the sample of 124 hospitalized older adults, the following sociodemographic characteristics were observed: mean age 75.5 years, predominantly male (54.8%), white (68.5%), married (46%), income between 1.1 and 3 minimum wages (54%) and low education level (up to four years of study) (63%). In terms of clinical characteristics, there was a predominance of hypertension (76.6%), dyslipidemia (48.4%) and diabetes *melittus* (37.9%). As for frailty, 14.5% were non-frail, 39.5% pre-frail and 46% frail (Table 1).

Table 2 shows the frequency distribution of social participation and the classification of older adults' physical frailty. There was a growing increase in the "non-frail", "pre-frail" and "frail" frailty status related, respectively, to the following activities: never has contact with other people through letters or e-mail (22.2%; 40.8%; 61.4%), never provides assistance to other people (27.8%; 40.8%; 80.7%), never does voluntary work outside the home (77.8%; 77.6%; 98.2%), never travels out of town (33.3%; 53.1%; 84.2%), never goes out with people for leisure activities away from home (16.7%; 28.6%; 56.1%), never takes part in social activities organized by the community (38.9%, 44.9%; 75.4%), never uses a computer or the internet (50%, 55.1%; 86%), never drives a car (66.7%, 63.3%; 94%).

Chart 1. Activity inventory applied to the study population. Curitiba, Paraná, 2023.

Social, productive and physical/leisure domains	Score (1 to 5)
Contact with other people by letter, telephone or e-mail.	
Visits friends and family in their homes.	
Care or assistance to other people (including personal care, transportation, shopping for family or friends).	
Never does volunteer work outside the home.	
Travel out of the city for at least one night.	
Participation in a regular exercise program (e.g. sports, physical exercise, walking and body practice groups).	
Invite people to your home for meals or leisure.	
Going out with other people to public places like restaurants or the cinema.	
Carrying out some manual activity, crafts or artistic activities.	
Participation in organized social activities (clubs, community or religious groups, old people's centers, bingo).	
Uses a computer, including the internet.	
Drives motor vehicles.	

Note: Scale score: 1 always, 2 often, 3 occasionally, 4 rarely and 5 never.
Source: Dias et al., 2015[17]

Table 1. Distribution of sociodemographic and clinical characteristics of hospitalized older adults. Curitiba, Paraná, Brazil, 2024.

Characteristics	n=124
Gender	
Female	56 (45.2%)
Male	68 (54.8%)
Age (years old)	75.5 (68 – 83)
Marital status	
Married	57 (46%)
Divorced	17 (13.7%)
Single	6 (4.8%)
Widower/Widow	44 (35.5%)
Color	
White	85 (68.5%)
Indigenous	1 (0.8%)
Black/Brown	38 (30,7%)
Education	
Illiterate	25 (20.2%)
Reads, writes, but has never been to school	1 (0.8%)
Incomplete 1st-4th grade	29 (23%)
Complete 1st-4th grade	24 (19%)
Incomplete 5th-8th grade	11 (8.9%)
Complete 5th-8th grade	8 (6.5%)
Incomplete High School	2 (1.6%)
Complete High School	11 (8.9%)
Incomplete Higher Education	5 (4%)
Complete Higher Education	8 (6.5%)
Income	
No income	6 (4.8%)
0-1 minimum wage	16 (12.9%)
1.1 to 3 minimum wages	67 (54%)
3.1 to 5 minimum wages	29 (23.4%)
5.1 to 10 minimum wages	0 (0.0%)
>10 minimum wages	1 (0.8%)
Doesn't want to inform	5 (4.0%)
Number of home-use medications	4.0 (3.0 – 6.3)
Has fallen in the last 12 months	57 (46%)
Dizziness, fainting or vertigo in the last 12 months	43 (34.7%)
Chronic Non-Communicable Diseases	
Hypertension	95 (76.6%)
Dyslipidemia	60 (48.4%)
Diabetes	47 (37.9%)
Dementia	35 (28.2%)
Chronic kidney disease	33 (26.6%)
Stroke	30 (24.2%)
Depression	26 (21.0%)
Benign prostatic hyperplasia	23 (18.7%)
Ischemic heart disease	19 (15.3%)
Cardiac insufficiency	19 (15.3%)
Chronic obstructive pulmonary disease	18 (14.5%)
Hypothyroidism	14 (11.3%)
Physical frailty	
Not frail	18 (14.5%)
Pre-frail	49 (39.5%)
Frail	57 (46%)

Source: The authors (2024)

In some activities, however, the same ascending order is observed only between "pre-frail" and "frail", respectively: they have never participated in regular exercise groups or sports (65.3%; 87.7%), they never invite people to visit them at home (14.3%; 38.6%), they never do manual activities such as handicrafts and art (53.2%; 75.4%).

Table 3 shows the relationship between social participation scores and "non-frail" vs "frail" older people and "pre-frail" vs "frail" older people in the following areas: making contact with other people through letters or e-mail (p=0.002), visiting friends and family in their homes (p<0.001), providing care or assistance to other people (p<0.001), never does volunteer work outside the home (p=0.003), travelling out of town (p<0.001), going out with other people for leisure activities (p<0.001), taking part in social activities organized by the community (p=0.002), using computers and the internet (p<0.001) and driving vehicles (p<0.001).

As for some activities, the relationship was observed only between "pre-frail" and "frail", respectively: they never took part in regular exercise groups or sports (p=0.021), they never invite people to visit them at home (p=0.013) and they never do manual activities such as handicrafts and art (p=0.019).

DISCUSSION

From the sample of hospitalized older adults, the data points to a predominance of white, married men with low levels of education and an income of up to 3 minimum wages. The predominance of hospitalized older males differs from the systematic review study, which included 45 cohorts (n=39,041,266) and assessed the prevalence of frailty and outcomes in unplanned hospital admissions. In this review, women predominated in 39 of the 45 studies (86.6%).[19] In this study, the male predominance is associated with the high prevalence of older adults whose reason for hospitalization was benign prostatic hyperplasia (n=23; 18.7%).

The high use of medication, a median of 4.0 (3 - 6.3), is worrying, as are the high percentages of morbidity (hypertension 76.6%, dyslipidemia 48.4% and diabetes mellitus 37.9%). This high percentage of Chronic Non-Communicable Diseases (CNCDs) has worried health professionals for some time, both nationally and internationally. These data are corroborated by a prospective cohort study by the Korean National Health Insurance Service (NHIS), made up of a sample of 3,007,620 older adults aged 65 and over. The study aimed to examine the association between polypharmacy and the risk of hospitalization and mortality. The number of daily medications was 4.0 (2.0-7.0), a mean of 4.9 (3.2), and high percentages of hypertension (79.5%), diabetes (36.9%) and peptic ulcers (34.7%) were observed.[20]

The high prevalence of CNCDs in older adults results in the concomitant use of more than four medications, known as polypharmacy, an increasingly common condition in this population. In the Amsterdam Geriatric Emergency Medicine (AmsterGEM) prospective cohort study, a total of 881 patients were analyzed, of whom 832 (94%) had data available at the 3-month follow-up. Polypharmacy was identified in 43% of older people and was associated with an increased risk of mortality

Table 2. Frequency distribution of the sample's social participation and physical frailty. Curitiba, Paraná, Brazil, 2024.

Characteristics	Not fragile	Pre-frail	Frail
	n=18	n=49	n=57
Make contact with other people via letters or e-mail			
Always	7 (38.9%)	15 (30.6%)	7 (12.3%)
Frequently	3 (16.7%)	10 (20.4%)	6 (10.5%)
Occasionally	3 (16.7%)	3 (6.1%)	2 (3.5%)
Rarely	1 (5.6%)	1 (2.0%)	7 (12.3%)
Never	4 (22.2%)	20 (40.8%)	35 (61.4%)
Visiting friends and family in their homes			
Always	4 (22.2%)	8 (16.3%)	2 (3.5%)
Frequently	1 (5.6%)	17 (34.7%)	6 (10.5%)
Occasionally	8 (44.4%)	10 (20.4%)	4 (7.0%)
Rarely	4 (22.2%)	9 (18.4%)	11 (19.3%)
Never	1 (5.6%)	5 (10.2%)	34 (59.6%)
Provides care or assistance to other people			
Always	7 (38.9%)	13 (26.5%)	2 (7.0%)
Frequently	1 (5.6%)	13 (26.5%)	6 (3.5%)
Occasionally	4 (22.2%)	0 (0.0%)	4 (1.8%)
Rarely	1 (5.6%)	3 (6.1%)	11 (7.0%)
Never	5 (27.8%)	20 (40.8%)	34 (80.7%)
Does volunteer work outside the home			
Always	0 (0.0%)	0 (0.0%)	0 (0.0%)
Frequently	4 (22.2%)	3 (6.1%)	0 (0.0%)
Occasionally	0 (0.0%)	3 (6.1%)	1 (1.8%)
Rarely	0 (0.0%)	5 (10.2%)	0 (0.0%)
Never	14 (77.8%)	38 (77.6%)	56 (98.2%)
Travel out of town			
Always	3 (16.7%)	3 (6.1%)	1 (1.8%)
Frequently	1 (5.6%)	3 (6.1%)	3 (5.3%)
Occasionally	1 (5.6%)	8 (16.3%)	2 (3.5%)
Rarely	7 (38.9%)	9 (18.4%)	3 (5.3%)
Never	6 (33.3%)	26 (53.1%)	48 (84.2%)
Participates regularly in exercise or sports groups			
Always	2 (11.1%)	4 (8.2%)	1 (1.8%)
Frequently	0 (0.0%)	3 (6.1%)	3 (5.3%)
Occasionally	0 (0.0%)	7 (14.3%)	1 (1.8%)
Rarely	1 (5.6%)	3 (6.1%)	2 (3.5%)
Never	15 (83.3%)	32 (65.3%)	50 (87.7%)
Invites people to visit him at his home			
Always	4 (22.2%)	8 (16.3%)	5 (8.8%)
Frequently	4 (22.2%)	17 (34.7%)	11 (19.8%)
Occasionally	5 (27.8%)	10 (20.4%)	13 (22.8%)
Rarely	2 (11.1%)	7 (14.3%)	6 (10.5%)
Never	3 (16.7%)	7 (14.3%)	22 (38.6%)
Going out with other people for leisure activities			
Always	3 (16.7%)	5 (10.2%)	0 (0.0%)
Frequently	6 (33.3%)	13 (26.5%)	8 (14.0%)
Occasionally	4 (22.2%)	8 (16.3%)	7 (12.3%)
Rarely	2 (11.1%)	9 (18.4%)	10 (17.5%)
Never	3 (16.7%)	14 (28.6%)	32 (56.1%)
Performs manual activities such as handicrafts and art			
Always	4 (22.2%)	7 (1.3%)	3 (5.3%)
Frequently	3 (16.7%)	11 (22.4%)	5 (8.8%)
Occasionally	0 (0.0%)	4 (8.2%)	1 (1.8%)
Rarely	1 (5.6%)	1 (2.0%)	5 (8.8%)
Never	10 (55.6%)	26 (53.1%)	43 (75.4%)
Participates in social activities organized by the community			
Always	4 (22.2%)	8 (16.3%)	5 (8.8%)
Frequently	4 (22.2%)	8 (16.3%)	3 (5.3%)
Occasionally	2 (11.1%)	6 (12.2%)	2 (3.5%)
Rarely	1 (5.6%)	5 (10.2%)	4 (7.0%)
Never	7 (38.9%)	22 (44.9%)	43 (75.4%)
Use computers and the internet			
Always	4 (22.2%)	10 (20.4%)	2 (3.5%)
Frequently	2 (11.1%)	8 (16.3%)	4 (7.0%)
Occasionally	1 (5.6%)	3 (6.1%)	2 (3.5%)
Rarely	2 (11.1%)	1 (2.0%)	0 (0.0%)
Never	9 (50.0%)	27 (55.1%)	49 (86.0%)

Source: The authors (2024)

Table 2. Continued...

Characteristics	Not fragile n=18	Pre-frail n=49	Frail n=57
Driving vehicles			
Always	4 (22.2%)	11 (22.4%)	0 (0.0%)
Frequently	2 (11.1%)	5 (10.2%)	2 (3.5%)
Occasionally	0 (0.0%)	1 (2.0%)	1 (1.8%)
Rarely	0 (0.0%)	1 (2.0%)	0 (0.0%)
Never	12 (66.7%)	31 (63.3%)	54 (94.7%)

Source: The authors (2024)

Table 3. Relationship between social participation scores and physical frailty classification. Curitiba, PR, Brazil, 2024.

Characteristics	1.Not Fragile n=18	2.Pre-Fragile n=49	3.Fragile n=57	p-value[2]	Significant differences[3]
Make contact with other people via letters or e-mail	2 (1 – 4)	2 (1 – 5)	5 (3 – 5)	0.002	1 – 3, 2 – 3
Visiting friends and family in their homes	3 (2 – 4)	2 (2 – 4)	5 (4 – 5)	<0.001	1 – 3, 2 – 3
Provides care or assistance to other people	3 (1 – 5)	2 (1 – 5)	5 (5 – 5)	<0.001	1 – 3, 2 – 3
Does volunteer work outside the home	5 (5 – 5)	5 (5 – 5)	5 (5 – 5)	0.003	1 – 3, 2 – 3
Travel out of town	4 (3 – 5)	5 (3 – 5)	5 (5 – 5)	<0.001	1 – 3, 2 – 3
Participates regularly in exercise or sports groups	5 (5 – 5)	5 (3 – 5)	5 (5 – 5)	0.021	2 – 3
Invites people to visit him at his home	3 (2 – 4)	2 (2 – 4)	3 (2 – 5)	0.013	2 – 3
Going out with other people for leisure activities	3 (2 – 4)	3 (2 – 5)	5 (3 – 5)	<0.001	1 – 3, 2 – 3
Performs manual activities such as handicrafts and art	5 (2 – 5)	5 (2 – 5)	5 (5 – 5)	0.019	2 – 3
Participates in social activities organized by the community	3 (2 – 5)	4 (2 – 5)	5 (5 – 5)	0.002	1 – 3, 2 – 3
Use computers and the internet	5 (2 – 5)	5 (2 – 5)	5 (5 – 5)	<0.001	1 – 3, 2 – 3
Driving vehicles	5 (2 – 5)	5 (2 – 5)	5 (5 – 5)	<0.001	1 – 3, 2 – 3
Total score	42 (33 – 47)	44 (31 – 50)	56 (48 – 59)	<0.001	1 – 3, 2 – 3

Note: Kruskal-Wallis test,[2] Dunn's test[3]
Source: The authors (2024)

(OR 2.6; 95%CI 1.4 - 4.9) and readmission (OR 1.4; 95%CI 1 - 2) within 3 months.[21] These data indicate the need to improve the quality of prescriptions and carefully review medications for older people, particularly those with frailty.

Studies of older people in the community identify a prevalence of pre-frailty. In Curitiba (Brazil), a study of 1,716 older adults in the community found that 65.3% were pre-frail and 15.8% frail.[22] In the international context, data does not differ on the prevalence of pre-frailty in the community. The study carried out in China investigated the prevalence and factors associated with frailty and pre-frailty in older adults. A total of 208,386 older adults were included in a representative sample of 31 provinces/autonomous regions/municipalities. The results showed a prevalence of pre-frailty (46.1%; 95%CI 45.9-46.3), whereas the percentage of frailty was 9.5% (95%CI 9.4-9.7).[23]

A cross-sectional, analytical study carried out in Okinoshima (Japan) included 616 older adults and assessed the relationship between social participation and pre-frailty. It was observed that 44.3% were pre-frail and only 4.5% frail, with participation in sports activities decreasing as the older adult moved towards frailty (64.2%; 33.4%; 2.4%). In addition to participation in physical activity, the study found participation in neighborhood associations to be a protective factor (OR 0.57; 95%CI 0.37-0.86). These results suggest that increasing the number of social participation activities or involvement in sports clubs/groups and neighborhood associations may be important in preventing physical pre-frailty in the older population.[24]

In this study, the high prevalence of frail older adults (46%) is corroborated in studies carried out in hospital settings. This prevalence was identified in a systematic review that aimed to analyze the prevalence of frailty among hospitalized older adults and examine associations with economic indicators. Of the 96 studies analyzed, with a total sample of 467,779, the prevalence of frailty and pre-frailty was 47.4% (95%CI 43.7-51.1%) and 25.8% (95%CI 22.0-29.6%), respectively.[25]

In this study, as the frailty level increased, there was a reduction in the involvement of older adults in social activities. The total score of the social participation items for "non-frail" was 42 (33-47), "pre-frail" 44 (31-50) and "frail" 56 (48-59), which indicated an association between social participation and the frailty of hospitalized older adults.

This is corroborated by a cross-sectional, analytical study carried out in Minas Gerais (Brazil) with 255 hospitalized older adults. The study aimed to assess the relationship between the quality of life, in terms of social participation, of hospitalized older adults and frailty. It was found that frail older adults had significantly lower social participation scores. The total score for the "frail" was 57 (SD 16.87), for the "pre-frail" 66.08 (SD 15.55) and for the "non-frail" 67.31 (SD 12.04) (p<0.001).[26]

In order to examine the associations between social isolation, social participation, loneliness and frailty, a study was carried out in Singapore (Population Health Index), with annual follow-up for two consecutive years. Social participation reached 9.4%, with an increase being associated with a lower frailty level (OR 0.96; 95%CI 0.93-0.99), and feeling lonely with a higher frailty level (OR 2.90; 95%CI 1.44-5.84). Social isolation was not associated with frailty,[9] but social participation was shown to have a protective effect on frailty.

There was a growing increase in "non-frail", "pre-frail" and "frail" frailty related to the following activities: never going out with other people for leisure activities (16.7%; 28.6%; 56.1%), never visiting friends and family at home (5.6%; 10.2%; 59.6%) and never taking part in social activities organized by the community (38.9%; 44.9%; 75.4%). A cross-sectional, analytical study of 495 older adults in Taipei (Taiwan) assessed the prevalence of frailty and associated factors. In the sample, 45.9% were "non-frail", 45.9% "pre-frail" and 8.3% "frail", and there was less social participation in all activities, which was also identified in this study. These include not doing leisure activities (44.1%; 56.7%; 99.2%, p=0.000), not visiting friends and relatives (45.4%; 58.8%; 95.8%, p=0.038) and not attending meetings (42.7%; 62.2%; 95.1%, p=0.061).[27]

In the aforementioned study, there was a relationship between increasing non-participation in activities and increasing frailty in: not talking to neighbors (47%; 58.4%; 94.5%, p=0.008) and not participating in religious activities (43.5%; 60.3%; 96.2%, p=0.006).[27] Although this study was carried out in a hospital environment and with a predominance of frail older adults, unlike the Taiwanese study which was carried out in the community and with a predominance of non-frail older adults, Brazilian hospitalized older adults showed greater social participation.

In this study, it was observed that the percentage of older adults who never took part in social activities organized by the community (e.g. community halls) increased with the progression of frailty (38.9% of the non-frail, 44.9% of the pre-frail and 75.4% of the frail). With this in mind, Japan made community halls a public policy in 2017, as it considers them important in helping to mitigate the transition to more serious stages of frailty.[28]

In Japan, following the implementation of this public policy, a cross-sectional study was conducted in 2019, with data from the Annual Report on Long-Term Preventive Care Services. This study set out to assess the association between different types of indoor activities (exercise, cognitive strengthening, meals, socializing and hobby/recreational activities) and participation rates per population. Recreation-based indoor activities were associated with higher participation rates (IRR = 1.0029; p<0.001), while meal-based activities were associated with lower participation rates (IRR = 0.9955; p=0.0012). Community halls in which health professionals were involved in running programs had higher participation rates (IRR = 1.3601; p=0.001).[28]

The Health and Retirement longitudinal study carried out in China followed 6,959 non-frail older adults for two years, with the aim of assessing the physical frailty and social participation of older people in the community. It was observed that group games (OR 0.73; 95%CI 0.55-0.96) and taking part in sports club activities are protective factors for frailty (OR 0.54; 95%CI 0.34-0.85).[29]

In view of this, a large part of social participation activities are associated with physical activity, which can contribute to an increase in physical function and mental health. Access to social support networks offers better opportunities for social participation, which can include health information.

Some limitations were observed in this study, particularly the cross-sectional nature of the study, which only allows data to be evaluated at a single point in time and does not authorize causality analysis. The great diversity of instruments that assess social participation also poses drawbacks, particularly when it comes to comparing results between studies. It is suggested that further studies be carried out to assess the effects of hospitalization on long-term social participation, which could provide new parameters for gerontological care.

CONCLUSION AND IMPLICATIONS FOR THE PRACTICE

The study shows a significant number of frail hospitalized older adults with morbidities and polypharmacy, which is worrying. The same is true of the significant relationship between physical frailty and a reduction in social participation activities, especially interpersonal relationships and leisure activities.

In the hospital context, the implementation of care plans by the health team for the older adult must be based not only on the illness that motivated the hospitalization, but also on the identification of the condition of physical frailty and the domains of social participation. Although social participation

represents collective actions, in the hospital environment it can be developed on an individual basis with cognitive stimulation and socialization activities, as well as through volunteer activities, activity groups and health education actions. The care plan should be based on health education, encouraging healthy habits, greater understanding of the senescence process and maximum optimization of functional capacity, thus leading to better clinical outcomes and quality of life.

Identifying the condition of physical frailty and the domains of social participation are essential for directing care, which makes a difference to the risks and outcomes of the hospitalization process. Furthermore, this identification is considered to be another tool for establishing care management in physical frailty, with the aim of preventing and/or reversing the condition of frailty in older adults.

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AUTHOR'S CONTRIBUTIONS

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Data collection. Clovis Cechinel. João Alberto Martins Rodrigues. Kétlin Simões da Luz.

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Interpretation of the results. Maria Helena Lenardt. Clovis Cechinel. João Alberto Martins Rodrigues. Kétlin Simões da Luz.

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REFERENCES

1. Dehi M, Mohammadi F. Social participation of older adults: a concept analysis. IJCBNM. 2020;8(1):55-72. http://doi.org/10.30476/ijcbnm.2019.82222.1055.
2. Levasseur M, Lussier-Therrien M, Biron ML, Raymond E, Castonguay J, Naud D et al. Scoping study of definitions of social participation: update and co-construction of an interdisciplinary consensual definition. Age Ageing. 2022;51(2):1. http://doi.org/10.1093/ageing/afab215. PMid:35134843.
3. Wanchai A, Phrompayak D. Social participation types and benefits on health outcomes for elder people: a systematic review. Ageing Int. 2019 set;44(3):223-33. http://doi.org/10.1007/s12126-018-9338-6.
4. Organização Pan-Americana da Saúde. Construindo a saúde no curso de vida conceitos, implicações e aplicação em saúde pública [Internet]. Washington, D.C.: OPAS; 2021 [citado 2023 jul 8]. Disponível em: https://iris.paho.org/bitstream/handle/10665.2/53571/9789275723029_por.pdf?sequence=1&isAllowed=y
5. Menec VH, Newall NE, Mackenzie CS, Shooshtari S, Nowicki S. Examining individual and geographic factors associated with social isolation and loneliness using Canadian Longitudinal Study on Aging (CLSA) data. PLoS One. 2019;14(2):e0211143. http://doi.org/10.1371/journal.pone.0211143. PMid:30707719.
6. Cunha AIL, Veronese N, Borges SM, Ricci NA. Frailty as a predictor of adverse outcomes in hospitalized older adults: a systematic review and meta-analysis. Ageing Res Rev. 2019 dez;56:100960. http://doi.org/10.1016/j.arr.2019.100960. PMid:31518686.
7. Koyama S, Komatsu T, Ishiyama D, Suzuki M, Kimura Y, Otobe Y et al. Impact of physical, cognitive, and psychological functions on incident homebound status after discharge among hospitalized older patients: a clinical-based prospective study. Arch Gerontol Geriatr. 2021 jan;92:104258. http://doi.org/10.1016/j.archger.2020.104258. PMid:32992256.
8. Dent E, Morley JE, Cruz-Jentoft AJ, Woodhouse L, Rodríguez-Mañas L, Fried LP et al. Physical frailty: ICFSR international clinical practice guidelines for identification and management. J Nutr Health Aging. 2019 nov 3;23(9):771-87. http://doi.org/10.1007/s12603-019-1273-z. PMid:31641726.
9. Ge L, Yap CW, Heng BH. Associations of social isolation, social participation, and loneliness with frailty in older adults in Singapore: a panel data analysis. BMC Geriatr. 2022 dez;22(1):26. http://doi.org/10.1186/s12877-021-02745-2. PMid:34991493.
10. Gao M, Sa Z, Li Y, Zhang W, Tian D, Zhang S et al. Does social participation reduce the risk of functional disability among older adults in China? A survival analysis using the 2005–2011 waves of the CLHLS data. BMC Geriatr. 2018 dez;18(1):224. http://doi.org/10.1186/s12877-018-0903-3. PMid:30241507.
11. Tomioka K, Kurumatani N, Hosoi H. Social participation and cognitive decline among community-dwelling older adults: a community-based longitudinal study. J Gerontol B Psychol Sci Soc Sci. 2018;73(5):799-806. http://doi.org/10.1093/geronb/gbw059. PMid:27194753.
12. Liu J, Rozelle S, Xu Q, Yu N, Zhou T. Social engagement and elderly health in China: evidence from the China Health and Retirement Longitudinal Survey (CHARLS). Int J Environ Res Public Health. 2019;16(2):278. http://doi.org/10.3390/ijerph16020278. PMid:30669415.
13. Rezaeipandari H, Ravaei J, Bahrevar V, Mirrezaei S, Morowatisharifabad MA. Social participation and loneliness among older adults in Yazd, Iran. Health Soc Care Community. 2020 nov;28(6):2076-85. http://doi.org/10.1111/hsc.13018. PMid:32483925.
14. Sun J, Kong X, Li H, Chen J, Yao Q, Li H et al. Does social participation decrease the risk of frailty? Impacts of diversity in frequency and types of social participation on frailty in middle-aged and older populations. BMC Geriatr. 2022 dez;22(1):553. http://doi.org/10.1186/s12877-022-03219-9. PMid:35778684.

15. Cuschieri S. The STROBE guidelines. Saudi J Anaesth. 2019;13(5, Suppl 1):S31. http://doi.org/10.4103/sja.SJA_543_18. PMid:30930717.
16. Fried LP, Tangen CM, Walston J, Newman AB, Hirsch C, Gottdiener J et al. Frailty in older adults: evidence for a phenotype. J Gerontol A Biol Sci Med Sci. 2001 mar 1;56(3):M146-56. http://doi.org/10.1093/gerona/56.3.M146. PMid:11253156.
17. Dias EG, Andrade FBD, Duarte YADO, Santos JLF, Lebrão ML. Atividades avançadas de vida diária e incidência de declínio cognitivo em idosos: estudo SABE. Cad Saude Publica. 2015;31(8):1623-35. http://doi.org/10.1590/0102-311X00125014.
18. Resolução nº 466, de 12 de dezembro de 2012 (BR). Trata de pesquisas e testes em seres humanos. Diário Oficial da União [periódico na internet], Brasília (DF), 13 jun 2013 [citado 2023 jul 8]. Disponível em: https://conselho.saude.gov.br/resolucoes/2012/Reso466.pdf
19. Boucher EL, Gan JM, Rothwell PM, Shepperd S, Pendlebury ST. Prevalence and outcomes of frailty in unplanned hospital admissions: a systematic review and meta-analysis of hospital-wide and general (internal) medicine cohorts. EClinicalMedicine. 2023;59:101947. http://doi.org/10.1016/j.eclinm.2023.101947. PMid:37138587.
20. Chang TI, Park H, Kim DW, Jeon EK, Rhee CM, Kalantar-Zadeh K et al. Polypharmacy, hospitalization, and mortality risk: a nationwide cohort study. Sci Rep. 2020 nov 3;10(1):18964. http://doi.org/10.1038/s41598-020-75888-8. PMid:33144598.
21. van Dam CS, Labuschagne HA, Van Keulen K, Kramers C, Kleipool EE, Hoogendijk EO et al. Polypharmacy, comorbidity and frailty: a complex interplay in older patients at the emergency department. Eur Geriatr Med. 2022;13(4):849-57. http://doi.org/10.1007/s41999-022-00664-y. PMid:35723840.
22. Melo J Fo, Moreira NB, Vojciechowski AS, Biesek S, Bento PCB, Gomes ARS. Frailty prevalence and related factors in older adults from southern Brazil: a cross-sectional observational study. Clinics. 2020;75:e1694. http://doi.org/10.6061/clinics/2020/e1694. PMid:32756821.
23. Zeng XZ, Meng LB, Li YY, Jia N, Shi J, Zhang C et al. Prevalence and factors associated with frailty and pre-frailty in the older adults in China: a national cross-sectional study. Front Public Health. 2023;11:1110648. http://doi.org/10.3389/fpubh.2023.1110648. PMid:37554734.
24. Abe T, Okuyama K, Kamada M, Yano S, Toyama Y, Isomura M et al. Social participation and physical prefrailty in older Japanese adults: the Shimane CoHRE study. PLoS One. 2020;15(12):e0243548. http://doi.org/10.1371/journal.pone.0243548. PMid:33326452.
25. Doody P, Asamane EA, Aunger JA, Swales B, Lord JM, Greig CA et al. The prevalence of frailty and pre-frailty among geriatric hospital inpatients and its association with economic prosperity and healthcare expenditure: a systematic review and meta-analysis of 467,779 geriatric hospital inpatients. Ageing Res Rev. 2022 set;80:101666. http://doi.org/10.1016/j.arr.2022.101666. PMid:35697143.
26. Faria PM, Dias FA, Molina NPFM, Nascimento JS, Tavares DMDS. Qualidade de vida e fragilidade entre idosos hospitalizados. Rev Eletr Enf. 2016;18:e1195. http://doi.org/10.5216/ree.v18.38214.
27. Chen LJ, Chen CY, Lue BH, Tseng MY, Wu SC. Prevalence and associated factors of frailty among elderly people in Taiwan. Int J Gerontol. 2014 set;8(3):114-9. http://doi.org/10.1016/j.ijge.2013.12.002.
28. Nakagawa K, Kawachi I. What types of activities increase participation in community "salons"? Soc Sci Med. 2019 out;238:112484. http://doi.org/10.1016/j.socscimed.2019.112484. PMid:31421351.
29. Xie B, Ma C. Effect of social participation on the development of physical frailty: do type, frequency and diversity matter? Maturitas. 2021 set;151:48-54. http://doi.org/10.1016/j.maturitas.2021.06.015. PMid:34446279.