Cogitare Enfermagem

ORIGINAL ARTICLE

COGNITION AND MOOD/BEHAVIOR IN HOME CARE ELDERLY

HIGHLIGHTS

1. Sociodemographic characterization of the elderly in Home Care.
2. Most frequent comorbidities in the elderly in Home Care.
3. Clinical-functional indicators related to cognition and mood/behavior.

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ABSTRACT

Objectives: to identify the sociodemographic characteristics; and to analyze the association of sociodemographic variables with functional systems related to cognition and mood/ behavior of elderly people linked to Home Care. **Method:** cross-sectional, descriptive research, carried out with the participation of 108 elderly people linked to Home Care in the city of Santa Maria - RS - Brazil. We used a questionnaire of sociodemographic data and the Clinical and Functional Vulnerability Index IVCF-20. The association of the variables was analyzed using the chi-square test and independent samples test. **Results:** predominance of elderly females; mean age 78.7 ± 9.3 years; and low education and family income between 1 and 2 minimum wages. The most frequent morbidity was systemic arterial hypertension. No associations were found between the sociodemographic variables and the functional systems regarding cognition and mood/behavior. **Conclusion:** the importance of planning and interventions in the home environment is highlighted.

DESCRIPTORS: Geriatric Nursing; Aged/Elderly; Cognition; Behavior; Home Care Services.

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INTRODUCTION

Population aging is occurring worldwide in a significant and accelerated way. It is estimated that in the year 2050, the world population over 60 years old will reach the mark of 2 billion people1. In Brazil, it is expected that in that year the elderly aged 65 years or older will represent 21.87% of the population[2].

This demographic transition of the population, characterized by aging and explained by the drop in birth rates and mortality, is accompanied by the epidemiological transition[3]. The aging process results in changes in the characteristics of the population getting sick, showing the predominance of non-transmissible chronic diseases[4]. With the increase in chronic diseases, functional disabilities are added to the elderly individuals[5].

However, in the health care process for the elderly, aging should not be seen as a certainty of disability and dependence, but as a greater risk for vulnerability. Even with some health problems, the elderly are often able to play their role in society. However, this finding does not make it possible to think of strategies to transform care models, and it is significant to use functional capacity as a health indicator[5]. Global functionality can be understood as the individual's ability to adapt to the difficulties encountered in their daily lives, realizing their insertion in society, even in the face of social, physical and mental limitations[6].

Well-being is related to functionality and is reflected in autonomy (capacity of decision) and independence (capacity of execution), enabling the individual to take care of his/her life, and both capacities are strictly intrinsic to the integrated functioning of the functional domains: cognition; mood/behavior; mobility; and communication. The basis for the functionality assessment will be based on these domains and evaluated based on the basic daily life activities, related to self-care, such as the ability of the elderly to take a bath, and instrumental, in other words, activities with greater complexity, associated with the ability to perform daily life tasks such as the ability to clean the house[5].

In this context, one notices the importance of tracking and identifying characteristics that identify frailty as to functionality in the elderly, since many health professionals in the country tend to consider the elderly fragile, based on their general appearance, diseases and comorbidities[7]. Therefore, the assessment of global functionality and the main functional systems, especially cognition and mood/behavior are essential to preserve and stimulate the autonomy of the elderly.

Thus, it is essential to use rapid screening instruments that can be performed by any healthcare professional and that are able to identify the elderly at risk of functional frailty, such as the Clinical and Functional Vulnerability Index-20 (IVCF-20)[8]. The IVCF-20 is an important tool to quickly and simply recognize the frail elderly in Home Care (HC).

The HC stands out as a strategy to provide a singular and comprehensive health care, performed at the user's home, promoting the individual's autonomy, family participation and the expanded view of the health team in the care process[9]. Therefore, to evaluate the global functionality of elderly people in AD by means of the IVCF-20, with emphasis on cognition and mood/behavior, is fundamental to recognize the health needs of this population in relation to autonomy, supporting the planning of health actions. It is also important that nurses are familiar with global functionality assessment tools, knowing how to apply them, facilitating the screening of frail elderly and allowing advances in the health of the elderly.

In view of the above, the present study had as a research question: How are the functional systems related to cognition and mood/behavior of older adults followed by the HC of Primary Health Care (PHC)? The objective was to identify the sociodemographic characteristics and analyze the association of sociodemographic variables with the functional

systems related to cognition and mood/behavior of the elderly linked to the HC.

METHOD

Cross-sectional, descriptive research, of quantitative approach and carried out via telephone contact. The research participants were 108 elderly people aged 60 years or older linked to HC1 of the PHC in the city of Santa Maria, region located in the state of Rio Grande do Sul - Brazil.

The study field was composed of four Family Health Strategies (FHS). The selection of the four FHSs was due to the fact that they represent 28.5% of the units with the highest number of elderly individuals registered in the HC. The choice of the FHSs was made through a survey with the person responsible for the Health Policy for the Elderly of the Municipal Health Secretariat, totaling 247 elderly people enrolled in the HC in these four FHSs of the city. Data collection occurred from July to August 2021.

To identify the sample size calculation, we obtained a population of 247 elderly individuals linked to the four FHS participating in the study. A reliability level of 95%, a margin of error of 5%, and an expected proportion of 10%10 were considered, resulting in the need for a sample of 108 elderly people.

The inclusion criteria for the study participants were: elderly aged 60 years or older, of both genders, and the elderly registered in the HC1 of the aforementioned family health strategies. Among the exclusion criteria were: elderly people with whom it was not possible to make telephone contact after three attempts in different periods and times; institutionalized or hospitalized elderly people at the time of data collection; and elderly people with cognitive impairment or disability and diagnosed with advanced dementia.

After previous training on the phone call, application of the questionnaire, instrument, and ethical aspects in order to avoid biases in the application of the instruments, the researchers, nursing students, started data collection by phone from July to August 2021. The sociodemographic data questionnaire and the clinical-functional vulnerability index (IVCF-20)[8] were used. In the interviews, the researcher was present, who made the telephone contact, and the elderly with their caregiver or family member who helped with the answers to the questionnaire and the instrument to be applied.

First, the elderly linked to the HC1 of the FHSs were identified through lists provided by the health teams participating in the study. With the users who met the inclusion criteria, a telephone contact was made, scheduling an available time for the dialogue with the elderly according to their preference and by video calls or only voice calls.

Three attempts at telephone contact were made both for the initial scheduling call and for the interview, on different days and shifts, excluding from the 247 users in HC1: 67 users because contact was not obtained; two users who were institutionalized or hospitalized at the time of data collection; 22 elderly who had a disability or cognitive impairment and with a diagnosis of advanced dementia identified in the users' medical records; 10 elderly who died; five elderly who did not agree to participate in the research and 33 users whose telephone contact was listed as non-existent or outdated, totaling for the final sample 108 elderly.

The calls were recorded using an online messaging service that can be used by different devices at the same time. With the application it was possible to organize groups where members could share files simultaneously, save and consult them in a safe way.

In the interview stage, the Informed Consent Form was explained and, after consent, the following instruments were applied: the questionnaire of sociodemographic data and

the CFVI-20. The interviews lasted an average of 30 minutes. During data collection, the caregivers helped the researchers in the questioning directed to the elderly.

The sociodemographic data questionnaire was developed by the researchers of this study, containing the following questions: date of birth, age, gender, marital status, level of education, religion, family income, number of individuals living in the same household, type of caregiver the user has, and health problems (comorbidities).

The IVCF-20 is a multidimensional and interdisciplinary instrument, which was developed by a group of researchers in Brazil, with the aim of being a screening methodology of easy application in PHC and assesses the main determinants of health in the elderly.[5] It is a simple instrument, with an average application time of five to 10 minutes and consists of 20 questions that assess eight dimensions that predict functional decline in the elderly: age; self-perception of health; activities of daily living; cognition; mood; mobility; communication; and the presence of multiple comorbidities. In the present study, the dimensions related to cognition (three questions) and to mood/behavior (two questions)[5] were used.

Due to the context of the pandemic by COVID-19, during the period of data collection, the author of the IVCF-20 instrument was asked about the possibility of applying it by telephone contact. The author stated that the collection could be conducted in this way.

Data were entered into an Excel® spreadsheet and analyzed using the Statistical Package for the Social Sciences (SPSS) for Windows, version 25. A descriptive analysis was made of the sociodemographic and health variables of the elderly, and of the clinical and functional vulnerability indicators of the functional systems cognition and mood/behavior, with the quantitative variables represented as mean and standard deviation and the qualitative variables as absolute and relative frequency. For the association of socio-demographic variables with the functional systems referring to cognition and mood/behavior, the chi-square test and Student's T test for independent samples were used for the mood/behavior functional system. The associations were considered significant when the results presented a p-value < 0.05.

The ethical aspects were met in accordance with the opinion of the Research Ethics Committee, under number 4,733,308.

RESULTS

The research users were mostly women, 77 (71.3%), with a mean age of 78.7 ± 9.3 years, 48 (44.4%) were married/stable union and 47 (43.5%) were widows, and 71 (65.7%) had only incomplete elementary school education. As for the total household income, 56 (54.3%) earned between 1 and 2 minimum wages. In relation to comorbidity, the most frequent one was systemic arterial hypertension (SAH) 69 (63.9%), followed by diabetes mellitus (DM) 41(38%) and arthritis/arthritis 35(32.4%). Table 1 presents the sociodemographic characteristics and the most frequent comorbidities in the elderly participants of the research.

Table 1 - Characterization regarding sociodemographic data and comorbidities of the elderly in HC. Santa Maria, RS, Brazil, 2021

Socio-demographic variables	n=108 (%)
Age (average ± SD) *	78.7 ± 9.3

Gender(n)**	
Male	31(28.7)
Female	77(71.3)
Marital Status (n)	
Single	5(4.6)
Married/stable union	48(44.4)
Widowed	47(43.5)
Divorced/separated	8(7.5)
Education level (n)	
Incomplete elementary	71(65.7)
Elementary school complete	23(21.3)
Middle school incomplete	7(6.5)
High school complete	7(6.5)
Total income per household(n)***	
< 1 minimum wage	4(3.9)
1 - 2 minimum wages	56(54.3)
2 - 3 minimum wages	32(31.1)
More than 3 minimum wages	11(10.7)
Comorbidities(n)	
Systemic arterial hypertension	69(63.9)
Diabetes Mellitus	41(38)
Arthritis/arthrosis	35(32.4)
Depression	21(19.4)
Dyslipidemia	20(18.5)
Congestive heart failure	12(11.1)
Cancer	10(9.3)
Parkinson's	6(5.6)
Chronic renal disease	3(2.8)
Other	70(64.8)

*Quantitative variable (mean and standard deviation). **Categorical variable (absolute frequency and percentile). ***Calculated based on the current minimum wage (R$1,100.00)
Source: authors (2021).

The data of the functional systems related to the indicators of clinical and functional vulnerability related to cognition showed that 67 (62%) of the elderly reported that some family member or friend said that the elderly person was getting forgetful. On the other hand, 34 (31.5%) of the users perceived that forgetfulness was worsening in recent months, and only 16 (14.8%) reported that forgetfulness was preventing them from performing some activity of daily living.

In the questions related to mood/behavior, it was evidenced that 63 (58.3%) of the elderly felt discouraged, sad or hopeless in the last month and 39 (36.1%) lost interest or pleasure in performing activities previously considered pleasurable in the same period. Table 2 presents the functional systems cognition and mood/behavior and the questions related to the indicators of clinical and functional vulnerability of these systems.

Table 2 - Functional systems - cognition and mood/behavior and indicators of clinical-functional vulnerability. Santa Maria, RS, Brazil, 2021

Functional System	Indicators of clinical and functional vulnerability	Yes n (%)	No n (%)
Cognition	Has a family member or friend mentioned that you are becoming forgetful?	67(62)	41(38)
	Is this forgetfulness getting worse in recent months?	34(31.5)	73(67.6)
	Is this forgetfulness preventing you from doing any activities of daily life?	16(14.8)	92(85.2)
Mood/ behavior	In the past month have you been discouraged, sad, or hopeless?	63(58.3)	45(41.7)
	In the last month have you lost interest or pleasure in activities that were previously enjoyable	39(36.1)	69(63.9)

Source: authors (2021).

Table 3 exposes that no indicator of clinical and functional vulnerability concerning the cognition functional system had a significant association when associated with gender, age, education, and data on the regular use of one or more medications every day, collected by the IVCF-20 instrument.

Table 3 - Associations of sociodemographic variables and clinical-functional-cognition vulnerability indicators. Santa Maria, RS, Brazil, 2021

	Functional System-Cognition Indicators of clinical-functional vulnerability									
Variables n=108	Has a family member or friend mentioned that you are getting forgetful? p			Is this forgetfulness preventing you from doing any activities of daily life? p			Is this forgetfulness preventing you from doing any activities of daily life? p			
	Yes n(%)	No n(%)		Yes n(%)	No n(%)		Yes n(%)	No n(%)		
Gender										

Male (n=31)	19 (61)	12 (38.7)	0.919*	7 (22.6)	24 (77.4)	0.210*	5 (16.1)	26 (83.9)	0.807*
Female (n=77)	48 (62.3)	29 (37.7)		27 (35.1)	50 (64.9)		11 (14.3)	66 (85.7)	
Age									
60 to74 (n=38)	22 (57.9)	16 (42.1)		12 (31.6)	26 (68.4)		7 (18.4)	31 (81.6)	
75 to 84 (n=36)	22 (61.1)	14 (38.9)	0.689*	10 (27.8)	26 (72.2)	0.800*	2 (5.6)	34 (94.4)	0.154*
Same or more than 85 (n=34)	23 (67.6)	11 (32.4)		12 (35.3)	22 (64.7)		7 (20.6)	27 (79.4)	
Education									
Elementary incomplete	43 (60.3)	28 (39.4)		24 (33.8)	47 (66.2)		14 (19.7)	57 (80.3)	
Elementary complete (n=23)	16 (69.6)	7 (30.4)		6 (26.1)	17 (73.9)		1 (4.3)	22 (95.7)	
High School incomplete (n=7)	5 (71.4)	2 (28.6)	0.578*	3 (42.9)	4 (57.1)	0.600*	1 (14.3)	6 (85.7)	0.206*
High school complete (n=7)	3 (42.9)	4 (57.1)		1 (14.3)	6 (85.7)		0 (0.0)	7 (100)	
Use of 5 or more medications ≠ every day									
Yes (n=57)	36 (63.2)	21 (36.8)		20 (35.1)	37 (64.9)		10 (17.5)	47 (82.5)	
No (n=51)	31 (60.8)	20(39.2)	0.800*	14 (27.5)	37 (72.5)	0.390*	6 (11.8)	45 (88.2)	0.399*

*Chi-square test

Source: authors (2021).

Table 4 demonstrates the associations made with the variables presented and the indicators of clinical and functional vulnerability and mood/behavior. It can be observed that the variable "number of comorbidities in total" had no relation with the indicators of clinical and functional vulnerability.

Table 4 - Associations of sociodemographic variables and indicators of clinical and functional vulnerability - Mood/behavior. Santa Maria, RS, Brazil, 2021

	Functional-Humor/Behavioral System Indicators of clinical-functional vulnerability				
Variables n=108	In the last month have you been discouraged, sad or hopeless?		p	In the last month have you lost interest in previously pleasurable activities?	p
	Yes n(%)	No n(%)		Yes n(%)	No n(%)	
Gender†						

Male (n=31)	16(51.6)	15(48.4)		13(41.9)	18(58.1)	
Female (n=77)	47(61)	30(39)	0.369*	26(33.8)	51(66.2)	0.424*
Age†						
60 to 74 (n=38)	26(68.4)	12(31.6)		17(44.7)	21(55.3)	
75 to 84 (n=36)	18(50)	18(50)		10(27.8)	26(72.2)	
Same or more than 85 (n=34)	19(55.9)	15(44.1)	0.259*	12(35.3)	22(64.7)	0.314*
Marital Status†						
Single (n=5)	2 (40)	3(60)		2 (40)	3(60)	
Married/stable union (n=48)	32(66.7)	16(33.3)		23(47.9)	25(52.1)	
Widowed (n=47)	25(53.2)	22(46.8)		13(27.7)	34(72.3)	
Divorced/separated (n=8)	4(50)	4(50)	0.423*	1(12.5)	7(87.5)	0.097*
How many comorbidities in total (n=108)	Average ± SD				Average ± SD	
Yes (n=63)	3.19 ±1.857		0.054**	Yes(n=39)	3.26±1.173	0.189**
No (n=45)	2.62			No(n=69)	2.78	

*Chi-square test; **Student's t-test; †Categorical variables (%).
Source: authors (2021).

DISCUSSION

Most of the research participants were women with a mean age of 78 years, corroborating studies carried out with elderly in HC in Rio de Janeiro and São Paulo [11,12]. The feminization of aging can be explained by the fact that women have a longer life expectancy, are less exposed to work risks, use less tobacco and alcohol, and have a different attitude towards diseases and disabilities when compared to men[13].

The low education level of the users with incomplete elementary school education corroborates a study carried out in the city of Campinas, São Paulo, with 986 elderly individuals, showing low education levels and pointing out that most of the elderly had only zero to four years of education[22]. Other studies with similar themes ratify this data[15,16]. Therefore, in home care, the health professional must, through a comprehensive view and educational actions, guide the elderly so that they are informed about the care related to their health[17].

Studies found in the Brazilian literature[11,18] reiterate the finding of low family income observed in this research. Low education and reduced financial conditions expose the elderly to greater social vulnerability and negative consequences to their health, such as greater risk of frailty and cognitive deficit[16]. Recognizing that the elderly represent one of the most vulnerable portions of the population, it is expected that PHC services can organize and provide health services for the elderly, taking into account the particularities of this population, in order to reduce health inequities[19].

Among the most frequent comorbidities presented by the research, SAH and DM

stand out, followed by arthritis/arthritis. In a research[17] on the elderly linked to home care in primary health care, SAH showed the highest prevalence among comorbidities, followed by arthritis and depression. Demonstrating the importance of health promotion strategies, disease prevention and treatment in the PHC setting, aiming at the healthy aging of the assisted population[20].

Regarding the questions related to the clinical-functional vulnerability indicators related to cognition, most of the elderly reported that some friend or relative said that the elderly were getting forgetful; in this aspect, a study about the predictor dimensions of clinical-functional conditions and cognition in the elderly brings divergent results, however important, when using the indicators related to cognition of the IVCF-20. On the contrary, only 40.3% of the elderly reported that some family member or friend told them that the elderly were getting forgetful; 18.4% of the elderly noticed that forgetfulness was worsening in the last months, and 5.9% reported that forgetfulness was preventing them from performing some activity of daily living[21].

Forgetfulness is sometimes associated with cognitive loss and is often perceived as something inherent to aging and associated with the presence of depression, as the elderly can become socially isolated due to the fact that the perception of memory loss is seen as something negative by society[22]. Cognitive loss is considered a condition that exposes the elderly to vulnerability, requiring health professionals to develop strategies to preserve cognitive status, reduce depressive symptoms, and promote quality of life[23], such as encouraging the social interaction of the elderly through group activities in the FHSs.

Regarding mood/behavioral issues, they showed that more than half of the elderly users felt discouraged, sad, or hopeless in the last month. A randomized community trial developed in northern Minas Gerais, where the IVCF-20 was used for the stratification of clinical and functional vulnerability of the elderly followed by FHS teams found that at the end of the study there were higher percentages for "no manifestation of sadness, discouragement or hopelessness" from 62, 1% to 67%, and that "no loss of interest or pleasure" from 80.2% to 87.3% after matriciamento actions with educational activities for health teams[18], demonstrating that the assistance to health professionals qualifies the care scenarios, reflecting in beneficial results to the health of the elderly.

Furthermore, health professionals should be aware of the need for psychosocial interventions for the elderly in HC. These interventions should be executed by planning a singularized care, feasible to be done in the home environment and seeking early observation of depressive symptoms and their consequences[24].

Regarding the factors associated with sociodemographic variables and clinical-functional vulnerability indicators - cognition, these did not show a statistically significant association in the analysis. However, it is relevant to point out that increasing age, low education[21] and polypharmacy[26] can negatively impact the cognitive and functional aspects and lead to a reduction in functional capacity and, consequently, a decline in autonomy and independence of the elderly[21].

Thus, it is essential to promote educational aspects related to the health of the elderly in order to improve and preserve cognitive functions[26], ensure appropriate pharmacotherapy for the individual, especially in the PHC setting[27], and reflect on other forms of therapy for elderly users, besides drug therapy, aiming to provide preventive and complementary forms, such as healthy eating and physical activity[25].

In the analysis of the variable "how many morbidities" and the answer "yes" to the question referring to the mood/behavior indicator as to whether the elderly person had felt discouraged, sad, or hopeless in the last month, there was no statistically significant association.

However, in clinical practice, it is observed that a broad geriatric evaluation with adequate anamnesis and approach to the mood/behavioral functional system, assessed in

this study, enable the strengthening of elderly care, thus expanding the access to health care. A study carried out with elderly individuals in an FHS allowed us to notice that the multimorbidity in the elderly population is closely associated with depression symptoms and lower perception regarding quality of life[28].

Gender, age and marital status had no significant association with the indicators of the functional mood system. Opposing this result, a research indicates that the female gender, widowed and divorced elderly have greater symptoms of depression[29]. As well as the increase in age, which tends to make people more vulnerable to health problems, disabilities, and chronic diseases, leading to a negative self-perception of health and mood[30].

Regarding the limitations of this study, it is observed that the data presented show the characterization of a specific sample of elderly users in home care, and cannot represent a more comprehensive portion of this age group in HC. However, it is expected that the data resulting from the research may contribute to the realization of new studies and serve to qualify the care of the elderly in HC through the results obtained, bringing improvements to this model of health care and, consequently, to the health of the elderly population, maintaining functionality, promoting autonomy and independence of the elderly in HC.

CONCLUSION

It highlights the importance of directing the planning and interventions within the home environment to health care that is feasible and directed to the needs of the aging process and the functionality of the elderly individual, encompassing cognition and mood/behavior when developing care. In this sense, the research brings contributions to the gerontological area, as it can help in the planning of actions of home care services, as well as serve as a subsidy for the development of new studies related to the theme.

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