

## COGNITIVE AND HEALTH CONDITIONS IN ELDERLY PARTICIPANTS IN RECREATION AND LEISURE ACTIVITIES CENTERS

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### ABSTRACT

The objective of the present study was to identify the cognitive and health conditions of elderly participants in community center groups in a northern city in Rio Grande do Sul. The study is a descriptive cross-sectional research, performed with 85 elderly participants attending community center groups. Two instruments were used for data collection. One instrument gathered sociodemographic data and included the Mini-Mental State Examination (MMSE). Descriptive statistics were used in data analysis. Results indicated a female predominance 79(92.9%), with 52 participants within the age bracket 60-69 years (61.2%); 46 were widowed (54.1%), 45 had four to seven years of formal education (52.9%) and 53 were living with companions (62.4%). Hypertension and varicose veins, in addition to fall events 34(40%) stood out among the diseases/conditions determined to affect participants in this study. The MMSE demonstrated that 20(23.6%) of the elderly people presented with cognitive decline. Results point out the need for guided interventions to maintain functional capacity and autonomy in the elderly.

**Descriptors:** Aged. Cognition. Recreation and Leisure Activities Centers.

### RESUMO

*Objetivou-se identificar o estado cognitivo e as condições de saúde de idosos participantes de grupos de convivência de um município do norte do Rio Grande do Sul. Pesquisa transversal e descritiva, realizada com 85 idosos participantes de grupos de convivência. Foram utilizados dois instrumentos para a coleta dos dados. Um contém dados sociodemográficos e o Miniexame do Estado Mental (MEEM). Para a análise dos dados, foi utilizada a estatística descritiva. Os resultados indicaram predomínio de mulheres 79 (92,9%), na faixa etária de 60-69 anos 52 (61,2%), viúvos 46 (54,1%), frequentaram de quatro a sete anos o ensino formal 45 (52,9%) e residem acompanhados 53 (62,4%). Dentre as enfermidades mencionadas, destacaram-se hipertensão arterial e varizes, além da ocorrência de quedas 34 (40%). O MEEM evidenciou que 20 (23,6%) dos idosos apresentam declínio cognitivo. Os resultados apontaram necessidade de intervenções direcionadas à manutenção da capacidade funcional e autonomia dos idosos.*

**Descritores:** Idoso. Cognição. Centros de convivência e lazer.

**Título:** Estado cognitivo e condições de saúde de idosos que participam de grupos de convivência.

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## RESUMEN

Se objetivó identificar el estado cognitivo y condiciones de salud de ancianos participantes de grupos de convivencia de un municipio del norte de Rio Grande do Sul. Estudio transversal y descriptivo, realizado con 85 ancianos participantes de grupos de convivencia. Fueron utilizados dos instrumentos para la recolección de datos. Uno versa sobre datos sociodemográficos y el Miniexamen del Estado Mental (MEEM). Para el análisis de los datos se utilizó estadística descriptiva. Los resultados indicaron predominio de mujeres 79(92,9%), con edades entre 60-69 años 52(61,2%), viudos 46(54,1%), que frecuentaron de cuatro a siete años la instrucción formal 45(52,9%) y residen acompañados 53(62,4%). Entre las enfermedades mencionadas destacaron hipertensión arterial y las venas varicosas, y la aparición de caídas 34(40%). El MEEM evidenció que 20(23,6%) de los longevos presentan declino cognitivo. Los resultados relativos a las condiciones de salud apuntaron a la necesidad de intervenciones direccionadas al mantenimiento de la capacidad funcional y autonomía de los ancianos.

**Descriptor:** Anciano. Cognición. Centros de ocio y convivencia.

**Título:** Estado cognitivo y condiciones de salud de longevos que participan de grupos de convivencia.

## INTRODUCTION

The increase in life expectancy has propelled changes in the Brazilian population's demographic and epidemiological profiles, resulting in an increasing number of elderly people. This fact is related to decreasing rates of transmissible diseases, contrasted with increasing chronic and non-transmissible diseases. Aging is followed by physical and cognitive decline in ability that may vary according to each subject's life conditions and features. Senescence presents neuropsychological alterations such as: cognitive deficit, decline in memory and reasoning, sleep changes, episodes of confusion, psychological disorders and changes in daily life activities that may be related to dementia and depressive symptoms<sup>(1)</sup>.

Therefore, chronic diseases are prevalent and, among them, dementia stands out as one of the main causes of morbimortality among the elderly. Alzheimer's disease (AD) is a progressive neurodegenerative brain disease that causes dementia and, throughout its evolution, compromises patients' autonomy. It is featured by long-term episode and recent memory deficits that may be related to severances in the clinical profile<sup>(2)</sup>.

As the population ages, AD represents a serious health problem as the most common degenerative dementia, affecting approximately 15 million people throughout the world. Incidence increases around 0.5% each year in the population over 65 years and 8% in those over 85 years old. Its prevalence is around 5% in the 65-year old population and 47% in the 85-year old or older age group<sup>(3)</sup>.

Within this scenario, tracking and monitoring the evolution of cognitive deficit symptoms becomes relevant to determine possible interventions, according to health demands and their potential effects on elderly life styles. In light of this, epidemiological tracking studies regarding cognitive deficits among the elderly population are important and may constitute a balancing instrument in elaborating healthcare public policies for this population group.

Among the frequently-used cognitive tests used to track cognitive functioning in dementia in elderly patients, the Mini-Mental State Examination (MMSE) is featured. This instrument presents its scores and is affected by variations according to the subject's educational level and previous abilities. It requires partial preservation of sensorio-motor and language abilities and direct contact between the interviewee and the evaluator<sup>(2)</sup>.

MMSE is constituted by a cognitive evaluation scale used to aid in the investigation of possible cognitive deficits in high-risk individuals, such as elderly persons. It is simple, rapid and self-explanatory. In Brazil, the MMSE was translated and adjusted<sup>(4)</sup> and, although it does not substitute for a complete evaluation and it is not entirely sensitive in detecting cognitive variations, it is used by both mental health researchers and professionals<sup>(2)</sup>. It is a valid instrument used for screening and also for geriatric evaluation.

Considering the aspects mentioned above, this present study has the objective of identifying the cognitive health conditions in elderly participants in community center groups in a northern city in the state of Rio Grande do Sul/Brazil.

## METHOD

This investigation is comprised of a descriptive cross-sectional study, part of the investigation named 'Life quality and cognitive level of elderly participants in community center groups', approved by the Research Ethics Committee of the Federal University of Santa Maria/UFSM under process number 23081.017883/2008-03/2009.

In the city where the study was performed, there are five community center groups in the urban area, each one with 20 elderly participants. Not all participants are older than 60 years old. Therefore, this investigation's population is comprised of 85 elderly people who fulfilled the following criteria: being 60 years or older and being part of a senior citizens' group. The group's coordination was performed by one of the group's members and weekly meetings were held for approximately two hours. Within these groups, activities such as handcrafts, physical activities, discussion of elderly themes, celebrations, dances, outings and trips are developed.

Data collection was performed in the same location and on the same dates as the community groups meetings, after the performance of the planned activities. The interviewer explained the objective of the research at the beginning of the meeting, including the fact that the interviewer would be present for the activities, and invited them to participate in the research. All elderly people present on the day of the group meeting agreed to participate in the research. In order to collect data, the Mini-Mental State Examination (MMSE) and an instrument with questions related to sociodemographic data and self-reported health conditions were employed, where elderly participants were questioned about how they perceived their health and freely stated the diseases/conditions they suffered from. The MMSE provides information about the mental condition and evaluates different cognitive parameters, with questions grouped within seven categories. Each category aims at evaluating specific cognitive functions: temporal orientation, space orientation, three words registering, calculations and attention, three words memory, language and visual constructive ability. MMSE score may vary from zero, indicating the highest level of cognitive compromise in the individual, to 30 points, corresponding with the best cognitive capacity<sup>(9)</sup>. For this study, those with cognitive decline were

considered as the elderly with scores lower than 24 on the MMSE, since all of the elderly participants were educated<sup>(9)</sup>. For data analysis, the statistics software program SPSS(10.0) was used, as well as descriptive statistics and the Pearson Chi-Square test or the Fisher Exact test whenever the conditions for the use of the Chi-Square were not verified<sup>(6)</sup>. The significance level used in the statistics tests decision was 5%.

## RESULTS

This study had the participation of 85 elderly people, 79 females (92.9%) and 6 males (7.1%). Regarding the MMSE, the average score for all elderly participants was 25.9 points  $\pm$  3.2, ranging from 16 to 30 points. It demonstrated that 20(23.6%) of the elderly participants presented cognitive decline; the average score was of 21.1 points  $\pm$  2.1, ranging from 16 to 23 points.

Elderly individuals within the ages of 60 and 69 years old (61.2%) were predominant. Regarding the cognitive decline age bracket, we observed that, specifically among 80-year old or older individuals, 66.6% presented with cognitive decline. Regarding marital status, most individuals were widowed (54.1%). As for education, (number of years of formal education), there was a predominance of individuals who went to school for four to seven years (52.9%). When cognitive level was related to education time, we observed that the greater the length of education time, the better the cognitive level. Religion demonstrated a predominance of Catholics (94.1%). Most individual monthly incomes ranged between one and three minimum wages (88.2%). Family organization demonstrated a higher number of individuals who lived with companions (62.4%) (Table 1).

Regarding lifestyle habits, most of the elderly (64.7%) mentioned performing physical activities. There was a predominance of those who demonstrated no cognitive decline (47.1%). Regarding alcohol and tobacco consumption, 81.2% did not use tobacco and 61.2% did not consume alcoholic beverages. In the statistics analysis there was no proof of an association between the variable cognitive decline and physical activities, tobacco and alcohol use variables, according to Table 2.

Self-evaluation of health conditions by the elderly indicated that 49.4% considered their

**Table 1** – Distribution of elderly individuals with or without cognitive decline, according to social and economic characteristics. Palmeiras das Missões/RS, 2009.

Variables	Categories	WCD*		WOCD†		Total	
		N	%	N	%	N	%
Gender	Female	18	21.2	61	71.8	79	92.9
	Male	2	2.4	4	4.7	6	7.1
Age	60 to 69 years	9	10.6	43	50.6	52	61.2
	70 to 79 years	7	8.2	20	23.5	27	31.8
	80 years or more	4	4.7	2	2.4	6	7.1
Marital Status	Widowed	11	12.9	35	41.2	46	54.1
	Married	7	8.2	17	20.0	24	28.2
	Separated/Divorced	1	1.2	12	14.1	13	15.3
	Single	1	1.2	1	1.2	2	2.4
Years of education	1 to 3 years	9	10.6	15	17.6	24	28.2
	4 to 7 years	9	10.6	36	42.4	45	52.9
	8 years or more	2	2.4	14	16.4	16	18.8
Religion	Catholic	19	22.4	61	71.8	80	94.1
	Christian	1	1.2	4	4.7	5	5.9
Monthly income	Less than 1 MW‡	-	-	3	3.5	3	3.5
	From 1 to 3 MW	18	21.2	57	67.1	75	88.2
	From 3 to 5 MW	1	1.2	4	4.7	5	5.9
	More than 3 MW	1	1.2	1	1.2	2	2.4
Family Organization	Living with a companion	15	17.6	38	44.7	53	62.4
	Living alone	5	5.9	27	31.8	32	37.6

Source: Field research

\* WCD: With cognitive decline according to MMSE

† WOCD: without cognitive decline according to MMSE

‡ MW: Minimum Wage

**Table 2** – Distribution of elderly individuals with or without cognitive decline, according to physical activities and alcohol and tobacco consumption. Palmeiras das Missões/RS, 2009.

Variables	Categories	WCD		WOCD		Total		Chi-Square Test p value
		N	%	n	%	n	%	
Physical activity	Yes	15	17.6	40	47.1	55	64.7	0.271
	No	5	5.9	25	29.4	30	35.3	
Use of tobacco	Yes	1	1.2	15	17.6	16	18.8	0.061*
	No	19	22.4	50	58.8	69	81.2	
Alcoholic beverages consumed	Yes	6	7.1	27	31.8	33	38.8	0.354
	No	14	16.5	38	44.7	52	61.2	

Source: Field research

\* Fisher Exact Test

P<0.05 there is significant relation

**Table 3** – Distribution of elderly individuals with or without cognitive decline according to self-referred health conditions. Palmeiras das Missões/RS, 2009.

Variables	Categories	WCD		WOCD		Total		Chi-Square Test
		N	%	n	%	n	%	
Health condition	Good	9	10.6	33	38.8	42	49.4	0.652
	Average	11	12.9	32	37.6	43	50.6	
Hypertension	Yes	16	18.8	40	47.1	56	65.9	0.128
	No	4	4.7	25	29.4	29	34.1	
Diabetes Mellitus	Yes	2	2.4	7	8.2	9	10.6	0.644*
	No	18	21.2	58	68.2	76	89.4	
Arthritis	Yes	8	9.4	23	27.1	31	36.5	0.451
	No	12	14.1	42	49.4	54	63.5	
Varicose veins	Yes	7	8.2	33	38.8	40	47.1	0.217
	No	13	15.3	32	37.6	45	52.9	
Cardiac failure	Yes	3	3.5	10	11.8	13	15.3	0.638*
	No	17	20.0	55	64.7	72	84.7	
Major depressive disorder	Yes	6	7.1	22	25.9	28	32.9	0.749
	No	14	16.5	43	50.6	57	67.1	
Osteoporosis	Yes	4	4.7	14	16.5	18	21.2	0.578*
	No	16	18.8	51	60.0	67	78.8	

Source: Field research

\* Fisher Exact Test

P&lt;0.05 there is significant relation

health to be good, while 50.6% considered their health to be average. Among those who mentioned chronic health conditions, 12.9% presented cognitive decline. Self-referred diseases mentioned by the elderly were: hypertension (65.9%), varicose veins (47.1%), arthritis (36.5%), major depressive disorder (32.9%), osteoporosis (21.1%), cardiac failure (15.3%), and diabetes mellitus (10.6%). When related to the cognition level, those who mentioned being hypertensive demonstrated cognitive decline.

## DISCUSSION

Results show that women are predominant in terms of participating in community center groups. This may be due to the fact that there is a higher prevalence of women compared to elderly men. On the other hand, women tend to go more frequently to social areas such as community groups; also, men are commonly the financial provider for the home and thus may have less time to attend group meetings.

Female motivations for participating in these activities are different from male motivations, since

most elderly women currently perform a restricted role at home. In other words, most women who frequently go to senior citizen groups develop no professional activities; the opposite is true: they have been housewives, mothers and wives<sup>(7)</sup>.

Currently, differences between male and female life expectancy lead to a female featuring of the group. Under this scenario, elderly women are more exposed to poverty and loneliness, more frequently institutionalized, show higher risk of morbidity, seek out healthcare services more frequently, and have fewer opportunities to count on a partner being present for their last few years of life. Hence, they constitute a group that deserves social interventions, considering their specific conditions<sup>(8)</sup>.

Another feature of the population stratum composed by elderly individuals is the higher proportion of widows than in any other age bracket. One of the causes for this situation is that women tend to marry older men, a fact that when associated with a higher male mortality rate, increases the survival probability of women compared to their spouses. Moreover, widowers normally marry again

after becoming a widower, more often than widows. This is similar to divorced individuals<sup>(8)</sup>.

Regarding cognitive decline, a significant number of elderly individuals (23.6%) were identified with this condition. However, a study performed with elderly participants in a senior citizen program demonstrated a higher percentage (36.5%) of individuals with cognitive decline<sup>(9)</sup>. This may be due to differences in educational levels, since 91% of the elderly participants in the Senior Citizen Municipal Programs in Viçosa/MG<sup>(9)</sup> demonstrated less than four years of formal education.

In addition, group activities enable members to manifest and verbalize life experiences, comprising an exchanging, welcoming and bond-strengthening space. Within the group, the elderly can socialize, gain support, and feel acknowledgment in their search to preserve autonomy and dignity<sup>(10)</sup>.

Participating in group activities minimizes feelings of loneliness in elderly individuals, even in those who live with family members. It is important to point out that age is a determining factor for cognitive decline. Results demonstrate that of the six 80-year old or older elderly individuals in this study, 66.6% presented with cognitive decline, which is congruent with another study demonstrating similar data<sup>(11)</sup>.

Another factor is related to the performance of physical activities developed by an expressive number of the elderly who participated in this study (64.7%). Performing physical exercises assists in maintaining and delaying organic function decline which occurs as a result of the aging process. Performing physical activities improves breathing, cardiovascular and muscular functions, in addition to improving memory, cognition and sociability<sup>(12)</sup>. The influence of physical activities over the cognitive system demonstrates evidence that any moderate physical exercises by individuals aged above 50 is associated with the reduction in the risk of cognitive compromise<sup>(13)</sup>.

When questioned about tobacco, most of the elderly participants make no use of it (81.2%). In a study that searched for features and associated factors to smoking habits in the elderly population, it was demonstrated that there is a reduction in the habit of smoking among them, particularly among males<sup>(14)</sup>. Among tobacco users, elderly men use more tobacco cigarettes daily and start to smoke earlier than women<sup>(14)</sup>.

Tobacco and alcohol use represent risk factors for the development of chronic diseases, among them cardiovascular, pulmonary, oncologic diseases and dementia. These risk factors are modifiable and can therefore be minimized, especially among the elderly population. A study with elderly individuals who presented with a diagnosis of Ischemic Cerebral Vascular Accident (iCVA) demonstrated that 46.9% of patients had a history of smoking; among them 50% had already abandoned the habit and 31% were still using tobacco when they suffered the iCVA. Regarding alcohol use, 35.1% of the elderly consumed alcohol, mostly those under 70 years of age. Among those who consumed alcohol, 48.9% reported not using it anymore before the iCVA and 26.2% still used it. Nicotine and alcohol use was less common among women<sup>(15)</sup>. Specifically regarding alcohol ingestion, there is evidence demonstrated in studies that alcoholism may lead to cognitive loss, and consequently to dementia, due to the decrease in vitamin B12 absorption by the gastrointestinal system<sup>(15,16)</sup>.

Regarding chronic self-referred diseases/conditions, we identified that, among individuals with cognitive decline, there is a higher percentage of elderly individuals who mentioned some chronic morbidity, highlighting hypertension and varicose veins. However, the statistics analysis proved no association between the variable cognitive decline and self-referred health conditions mentioned by the elderly individuals.

A research that sought to describe sociodemographic, functional and clinical characteristics in elderly individuals with and without cognitive decline, living in an urban area of a city in Minas Gerais, identified an expressive percentage of hypertensive individuals with poor circulation (varicose veins), especially in those who presented with an absence of cognitive decline<sup>(17)</sup>. Another study regarding cognitive loss and health conditions in elderly individuals demonstrated that 5.2% of them, aged between 60 and 75 years, affirmed not having any diseases; 25.9% had one; 25.9% had two; 23% had three; 9.6% had four diseases; 59% had five; and finally 4.4% had six or more diseases<sup>(18)</sup>. Results from this same research demonstrated prevalent diseases such as systemic hypertension, followed by cerebral vascular accident, cardiac diseases, dementia, Alzheimer's disease and Parkinson's disease. The predominance of these diseases was

related to cognitive loss and to a compromise in the ability to perform activities of daily living<sup>(18)</sup>.

In an attempt to minimize functional and cognitive loss, physical activities have been broadly highlighted as a health promotion strategy for elderly individuals, as well as for maintaining autonomy and independence in these individuals. Moreover, it prevents and controls diseases such as cardiovascular events, diabetes mellitus, osteoporosis, obesity and major depressive disorder. In the last few years, studying the potential of physical activities to preserve and protect against cognitive decline, particularly dementia, has gained crescent interest among researchers<sup>(19)</sup>.

In another investigation on the profile of elderly individual participants of community center groups, researchers demonstrated that most individuals mentioned at least one disease. Health was self-perceived as good by 51.27% and poor by 7.11% of the elderly individuals. Regarding medication, 89.85% of the elderly individuals used at least one drug, and the most common prescription was for systemic hypertension, diabetes mellitus, cardiac disease and osteoporosis<sup>(18)</sup>.

Results in this study point to the need for guided interventions in the health area with a view to promoting health and preventing decline, as well as treatment and rehabilitation of chronic morbid conditions, favoring active aging with good quality of life.

## CONCLUSION

This study demonstrated the predominance of elderly widow women who had four to seven years of formal education. Results of the MMSE indicate that 23.6% of participants in this study presented with cognitive decline. When the age bracket is analyzed, 80-year old or older elderly individuals demonstrated a higher percentage of cognitive decline.

Regarding the health conditions self-reported by elderly individuals in this study, there is a similar percentage between those who consider their health to be good and average. Most elderly individuals mentioned performing physical activities and avoiding tobacco or alcohol use. This behavior is relevant since healthy lifestyle habits, practicing regular physical exercises and participating in group activities and social interactions collaborate in promoting health and preventing diseases, including dementia,

even in the population with some degree of cognitive deficit.

Actions guided to health promotion and disease prevention in elderly individuals contribute to maintaining their functional capacity and autonomy, enabling a more healthy aging process. The study regarding elderly individuals' health conditions who frequently went to senior citizen groups demonstrated the importance of social spaces, in which elderly people may interact, talk, make new friendships and create bonds, maintaining and developing their potentials with the objective of improving their quality of life.

Results from the statistics analysis demonstrated no evidence of association among cognitive decline and physical activity, tobacco and alcohol use. In addition, no association between cognitive decline and health conditions self-referred by elderly individuals was found. Hence, the development of new investigations is suggested with a view to identifying the relationship between cognitive decline and physical and mental diseases, as well as its association with variables such as physical activities and psychoactive substance use.

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Received: 20.11.2011  
Approved: 04.09.2012