RESEARCH

Cognitive Capacity and Depressive Symptoms in Elderly People Attending the Primary Care Services

Condições Cognitivas e Sintomas Depressivos em Pessoas Idosas Inseridas na Atenção Básica

Condiciones Cognitivas y Síntomas Depresivos en Personas Idosas Insertadas en la Atención Básica

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ABSTRACT

Objective: The study's goal has been to investigate the association between depressive symptoms and cognitive capacity in elderly people attending the Primary Care services. **Methods:** It is a descriptive and cross-sectional study with a quantitative approach, which was performed with a total of 234 elderly people assisted by Health Units in João Pessoa city. The elderly people were interviewed using a structured questionnaire, which contained questions addressing scales of depressive symptoms detection and cognitive loss. The data were statistically processed through the Statistical Package for Social Science (SPSS) version 21.0. The Wilcoxon signed-rank test was used. **Results:** It was found that 38% (n=88) of the participants have shown suggestive symptoms of depression, which were prevalent among women within the age group from 60 to 69 years old. Furthermore, the depressive symptoms presence is highly associated with a cognitive performance progressive decline. **Conclusion:** The characterization of elderly people with depressive symptoms and its correlation with cognitive performance might give support the development of strategies and actions that deal with early onset of cognitive and mood disorders, such as depression.

Descriptors: Activities of Daily Living, Elderly People, Cognition, Depression.

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RESUMO

Objetivo: Investigar a associação entre os sintomas depressivos e as condições cognitivas de pessoas idosas inseridas na Atenção Básica. **Métodos:** Estudo descritivo e transversal, com abordagem quantitativa, realizado com 234 idosos assistidos em Unidades de Saúde no Município de João Pessoa, Paraíba, utilizando um questionário estruturado, composto por escalas de detecção dos sintomas depressivos e das perdas cognitivas. Os dados foram tabulados e analisados por meio do programa estatístico Statistical Package for Social Science (SPSS) versão 21.0. **Resultados:** Verificou-se que 38% (n=88) dos idosos apresentaram sintomas sugestivos de depressão, com prevalência entre as mulheres idosas mais jovens. Além disso, a presença dos sintomas depressivos está associada significativamente ao declínio progressivo do desempenho cognitivo. **Conclusão:** A caracterização de idosos com sintomas depressivos e a correlação com o desempenho cognitivo podem fundamentar o desenvolvimento de estratégias e ações que detectem precocemente a instalação de transtornos cognitivos e de humor, como a depressão.

Descritores: Atividades Cotidianas, Idosos, Cognição, Depressão.

RESUMEN

Objetivo: El presente estudio tuvo por objetivo investigar la asociación entre los síntomas depresivos y las condiciones cognitivas de personas mayores insertadas en la Atención Básica. **Método:** Se trata de una investigación descriptiva y transversal, con abordaje cuantitativo, 234 ancianos atendidos en Unidades de Salud, en el municipio de João Pessoa, Paraíba, un cuestionario estructurado, compuesto por escalas de detección de los síntomas depresivos y de perdidas cognitivas. Los datos fueron tabulados y analizados estadísticamente a través del programa estadístico Statistical Package for Social Science (SPSS) versión 21.0. Con el objetivo de probar la significancia de las variables, se utilizó la prueba no paramétrica de Wilcoxon. **Resultados:** Se verificó que 38% (n = 88) de los ancianos participantes presentaron síntomas sugestivos de depresión, con prevalencia entre las mujeres, en el grupo de edad entre 60 y 69 años. Los datos del presente estudio también indicaron que la presencia de los síntomas depresivos está asociada con la pérdida progresiva del desempeño cognitivo. **Conclusión:** La caracterización de ancianos con síntomas depresivos y la configuración del desempeño cognitivo pueden fundamentar el desarrollo de estrategias y acciones que aborden precozmente la instalación de trastornos cognitivos y de humor, como la depresión.

Descriptores: Actividades Cotidianas, Ancianos, Cognición, Depresión.

INTRODUCTION

Pondering about the multiple faces of old age has been a complex task, since the mere fact of naming it already causes feelings of fear, denial, and rejection in many. The worldwide trend of reducing child and adolescent mortality, coupled with rising fertility declines, has led to an increase in life expectancy. The human being never has lived for so many years, as in the present days.[1]

Because it is multifactorial and multidimensional, aging favors progressive biopsychosocial changes that can generate fear, conflict, insecurity and feelings of solitude, given the difficulties inherent to this phase, such as loss of social roles, friends and family, economic status and functional vigor, exposing the elderly person to the development of psychiatric illnesses, such as dementia and depression, of

heavy overload for patients and their relatives.[2,3]

According to the World Health Organization (WHO) publication "Depression and other common mental disorders: global health estimates", it is estimated that by 2015, 322 million people have been affected by either depression or depressive symptoms throughout the planet (corresponding to 4.4% of the entire world population), of which about 800,000 people are killed by suicide. Projections still indicate that depression may become the major cause of disabling conditions, with high morbidity and mortality rates recorded in human history by 2030 in developed countries,[4,5] but with increasing prevalence in developing countries.

Vulnerability and fragility related to senile or senescent aging, when neglected, can considerably increase the cycle of chronicity established by silently incapacitating diseases,[6] imposing social and cognitive limitations.

Given the aforementioned, cognitive capacity appears as an important indicator of health, well-being, and quality of life for old age, considered by many authors as one of the strongest and current paradigms in the health of the elderly. Therefore, it is the basal dimension for the creation of models of geriatric-gerontological assessments and interventions as well as for the development of policies directed at the real demands imposed by aging.[7,8]

Elderly people may see themselves to be healthy and socially active, when they can fulfill their expectations and projects by performing daily activities, constructing positive images and attitudes about their own old age, even in the face of limitations imposed by chronic non-communicable diseases. Thus, an important correlation between health and good cognitive functioning in old age is established, constituting a central concern in the field of aging, since cognitive disability has an unfavorable impact on the elderly, families and society.[8]

The understanding of the above-mentioned concepts as well as representations about depression in old age needs to be expanded, fostering earlier preventive and care practices in Primary Care. Hence, considering depression as a public health problem, with a high prevalence and repercussion among elderly people, it is necessary to reflect on the reality of the mental health of the Brazilian elderly, through health indicators that may suggest not only quantitative data but also are capable of fostering reflections on changes of social dimensions, such as cognitive capacity.

Bearing in mind the aforesaid, this research meant to investigate the association between depressive symptoms and cognitive capacity in elderly people attending the Primary Care services.

METHODS

It is a descriptive and cross-sectional study with a quantitative approach. The sample consisted of 234 elderly

people, in the family health unit of *Grotão* I and II, as well as, in the family health unit of the *Maria de Nazaré* Community, related to the II Sanitary District, in *João Pessoa* city, *Paraíba* State, Brazil.

The data collection protocol was performed using a structured questionnaire, using a script composed of scales that extracted demographic data (age, gender, marital status, religion, profession, education). The second part of this script was composed of cognitive assessment scales, such as the 15-item Geriatric Depression Scale (GDS-15), and the Mini-Mental State Examination (MMSE).[10-3]

The sociodemographic data were tabulated and analyzed using the statistical program Statistical Package for Social Science (SPSS), version 21.0, using the tools of descriptive statistics. Measures of central tendency and dispersion were used for the analysis of quantitative variables and absolute and relative frequencies for qualitative variables.

Frequencies and percentages were initially calculated for the quantitative variables related to sociodemographic data and GDS-15, in addition to the descriptive measures for the quantitative variables that characterized the sample. Subsequently, in order to test the significance of the associations between the GDS-15 and the Mini-Mental State Examination (MMSE) final score, the Wilcoxon signed-rank test (a non-parametric test) was used.

The MMSE was adopted in order to establish cognitive health conditions. The final score of 17 points for illiterates, 22 points for schooling between 1 and 4 years, 24 points between 5 and 8 years and 26 points for 9 and more years of schooling, as suggested by validation studies carried out with the Brazilian population.[9] Therefore, interviews with MMSE scores that did not reach the cutoff point were not considered for the aforementioned study.

It should be noted that in the present study the data did not present the assumptions for the use of parametric estimation methods, so the Wilcoxon non-parametric test and the Spearman correlation coefficient were used to confirming if there are statistically significant differences between group and correlation referring to the variables of the study, in which the hypothesis of dependence of the variables with p≤0.05 was accepted.

All the construction of the present work obeyed the ethical and legal aspects regarding the anonymity of the interviewees, as recommended by the Resolution No. 466/2012 from the National Research Ethics Council.

RESULTS AND DISCUSSION

A total of 234 elderly people, being 70.2 years old on average (SD=±4.3 y.o.), have participated in the study. In general terms, it can be observed that the profile of elderly people was predominantly female (72.2%), within the age group from 60 to 69 years old (53.4%), education from 5 to 9 years and with a Catholic preponderance (72%).

By analyzing the responses to the 15-item Geriatric Depression Scale (GDS-15), it was found that 38% (n=88) of the participants have shown suggestive symptoms of depression (**Fig. 1**).
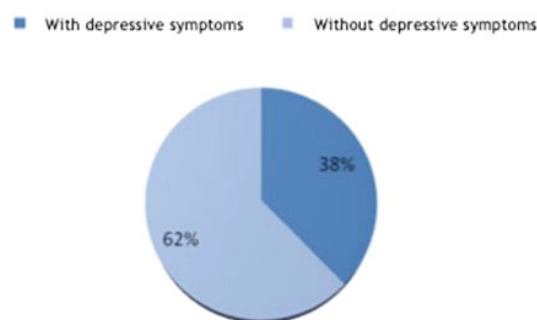

Figure 1 - Frequency distribution addressing the presence and absence of depressive symptoms (n=234).

These findings are considered to be high for national and international population-based research on late-onset depression, which involved the use of GDS-15, corroborating data from a study conducted with Portuguese and Brazilian elderly, revealing that the depressive symptomatology found was 49.76% among Brazilian elderly and 61.40% among Portuguese.[13] The Brazilian Cadre of Basic Attention also confirms the frequency found by bringing the prevalence of depression among Brazilian elderly living in the community ranges from 4.7 to 36.6%, increasing according to the environmental conditions, presence of physical disability, hospitalizations and institutionalization.[14]

Depression may present psychic, behavioral, cognitive and somatic symptoms that exacerbate the biopsychosocial vulnerability that permeates old age. Feelings such as "pessimism", "disinterest", "fear and concern for the future" and "life frustration" were also found in longitudinal studies,[15,16] but related such feelings with lower self-esteem and lack of social support, since in countries like Brazil, with an unstable economy and with precarious public policies, the demands of aging are borne by the elderly themselves, inciting feelings of uncertainty and fears about the additional years.[16]

Table 1 shows the sociodemographic differentials between participants with and without depressive symptoms. Among the elderly with depressive symptoms, there was a higher incidence in women, who were considered as young women (41.2%, within the age group from 60 to 69 years old), married (24.8%), with low educational level (42% said they had only 1 to 4 years of study). Although the predominance of female and younger age groups remained in the group of the elderly without depressive symptoms, a differentiation was observed in relation to schooling. Another interesting aspect is the more acute religiosity and spirituality during aging observed among the participants of both groups.

Table 1 – Frequency distribution according to depressive symptoms and sociodemographic data in regard to the age group, gender, marital status, religion, and education. *João Pessoa* city, *Paraíba* State, Brazil (n=34).

Variable		n	With depressive symptoms (n=88)		Without depressive symptoms (n=146)	
			n	%	n	%
Gender	Male	65	24	27.3	41	28.1
	Female	169	64	72.7	105	71.9
Age Group	60 - 69 y.o.	125	49	41.2	76	52.0
	70 - 79 y.o.	76	27	22.7	49	33.6
	80 y.o. or more	33	12	10.1	21	14.4
Education	Illiterate	27	06	6.8	21	14.4
	1 to 4 years	65	37	42.0	28	19.2
	5 to 9 years	70	19	21.7	51	34.9
	10 to 13 years	48	20	22.7	28	19.2
	More than 14 years	24	06	6.8	18	12.3
Religion	None	6	1	1.1	5	3.4
	Catholic	173	69	78.4	104	71.2
	Protestant or Evangelic	47	17	19.3	30	20.5
	Jewish	8	1	1.1	7	4.8
Marital Status	Single	35	25	28.4	10	6.8
	Married	102	32	24.8	70	47.9
	Divorced	14	8	9.1	6	4.1
	Parted	5	2	2.3	3	2.0
	Widowed	77	21	21.9	56	38.5
	No answer	1	---	---	1	0.6

The scientific literature shows that the longevity and approximation of the end of the life cycle, associated with the onset or severity of chronic diseases, the death of loved ones, the advent of retirement and changes in daily activities and finances, generate a considerable reducing the social network and, consequently, make it difficult to construct new and significant social bonds and roles, making the elderly vulnerable to diseases such as depression.[17]

The results of a study carried out in *Montes Claros* city, *Minas Gerais* State, has revealed the prevalence of depressive symptoms in 88.8% of the surveyed elderly people, who were predominantly female, low income and low educational level, aged 60 and 69 years old and with chronic pathologies.[18]

Hypertension (64.4%), degenerative diseases in the spine (60%) and rheumatic diseases (44.3%) were the most mentioned.

It should be pointed out that such pathologies are related to chronic pain and, consequently, to the association between this clinical finding, depressive symptoms, and sleep disorders, which alternate as an uninterrupted cycle.[19]

So, depression emerges in postmodern society as evidence of man's vulnerability to new rhythms, values, and contexts, materializing latent expiatory suffering through cessation of interest in the modern world, in a mixture of progressive loss of identity by recriminations against themselves and decline in self-esteem.[17,18] This scenario interferes negatively in personal and social productivity, enabling disabilities across the age range, races, faith, gender, socioeconomic status, as well as historical, cultural and geographical boundaries between nations.[20]

The cognitive performance among elderly people either with or without depressive symptoms is described in **Table 2**. It is noted that although 'preserved cognition' has had the highest frequency among depressed elderly people, there is a cumulative percentage of mild to moderate cognitive loss

(34.1%), which draws attention to the relationship between late-onset depression and the cognitive changes so common among individuals who experience the aging process, tending to establish dementia states.

Table 2 – Frequency distribution of cognitive performance according to the MMSE*. João Pessoa city, Paraíba State, Brazil (n=34).

	Variable	n	With depressive symptoms		Without depressive symptoms	
			n	%	n	%
MMSE Final Score	Preserved cognition (>25 points)	151	54	61.4	97	66.4
	Mild cognitive loss (>21<24 points)	43	16	18.2	27	18.5
	Moderate cognitive loss (>10<20 points)	31	14	**15.9**	17	11.6
	Severe cognitive loss (<9 points)	3	1	1.1	2	1.4
	Illiterate (<17 points): cognitive loss	6	3	3.4	3	2.1
	Total	234	88		146	

*MMSE= Mini-Mental State Examination.

It is important to underline the strong relationship between depression and dementia, considered the most common and most worrying cognitive disorders affecting the geriatric population, significantly compromising functionality and quality of life when associated. A study indicated that the development of dementia is stronger in the presence of depression when comparing depressed and non-depressed hypertensive men.[21]

Depression differs from dementia mainly due to the time of symptomatology. In depression, the progression of symptoms is faster, with clearer clinical evidence and possible historical evidence of previous episodes; there are no tests that evidence the pathology. Differently, dementia presents insidious and slow symptomatic onset, with imaging tests suggestive of extreme cerebral compaction and progressive loss of cognitive functions.[22]

In a study performed in *Rio de Janeiro* city, with elderly people presenting with depressive symptoms, cognitive deficit was identified in 39.6% of the elderly, and the presence of depression was observed in 17.7%, with a higher score in the scale for the which strengthens the association between gender, moderate cognitive loss, and depressive symptoms.[23]

In an analysis carried out to investigate the association between the Advanced Activities of Daily Life and the cognitive performance among elderly participants of the *FIBRA* study, in Ermelino Matarazzo, *São Paulo,* it was identified that socially participatory elders engaged in activities of leisure time would tend to have better cognitive performance, postponing the onset of dementia cognitive disorders.

When the Spearman correlation index was applied to the relationship of the GDS-15 with the sociodemographic variables "gender and age group", a possible negative association between them was observed, being, respectively, the correlation coefficient of -0.009 and p-value of 0.894 for the association between the GDS-15 and the "gender" variable,

and of 0.018 with p-value of 0.788 for the GDS-15 and the variable "age group".

It should be noted that the values of the correlation coefficients of the GDS-15 and the "gender" variable were considerably low, indicating that the sociodemographic variables, when associated, have a weak correlation with the scale analyzed in the mentioned study, and it was concluded that, by the results of p-value, the correlation between the instrument and the variable "gender" is not statistically significant.

Several population-based studies, both nationally and internationally, point to the strong link between depressive symptoms and the predominance of females. Researchers report that such association is probably due to the fact that women have a longer life expectancy and, consequently, a bigger risk of developing incapacitating chronic diseases.[19,24,25] Although data from the present study showed the prevalence of female among the elderly with depression, a statistically insignificant association was found between the gender variable and the GDS-15 instrument, as opposed to the literature consulted.

It is considered that, as time goes by, elderly people are exposed to different psycho-social episodes (death of relatives and friends, ending of marital relationships), and also to chronic diseases.[23] Another explanation is that there may be increased susceptibility to depression and anxiety with aging. Added to this, the reduced emotional response and the less resilience to stressful experiences.[25]

CONCLUSIONS

The data from this research indicate that the depressive symptoms presence is highly associated with the progressive decline of Instrumental Activities of Daily Living, as well as the progressive loss of cognitive functioning. There was also a strong association between the insidious onset of functional deficit and advancing age.

It was observed among the interviewees that the decline of self-management in daily activities, especially those related to care for finances and domestic tasks, has negative consequences for the individual's quality of life and great social implications, especially when associated with the presence of depressive symptomatology. Hence, depression must be seen as a growing epidemiological issue of relevant impact on people's life quality, both by health professionals and managers and by the general population.

It is suggested the elaboration of new epidemiological delineations, then revising the limitations presented here, also aiming to better understand the configuration of late-onset depression, as well as to characterize the biopsychosocial impacts on the elderly affected by it, therefore, instigating the development of practices and actions focused on the diagnosis and early treatment, while preserving both autonomy and independence in old age.

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