Elderly's activities of daily living, depressive symptoms and quality of life

Atividades de vida diária, sintomas depressivos e qualidade de vida de idosos

Actividades de la vida diaria, síntomas depresivos y calidad de vida de los adultos mayores

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Abstract

Objective: To correlate depressive symptoms with the ability to perform activities of daily living and the quality of life of elderly people living in Nursing Homes.

Methods: This is a cross-sectional study, with a sample consisting of 99 elderly people, living in ten public Nursing Homes in the city of São Paulo. Data collection used the instruments WHOQOL Bref and Old, Beck Depression Inventory and Katz Index. Data were collected from July 2016 to February 2019 and statistical treatment was performed using the Statistical Package for Social Sciences® (SPSS - version 24.0).

Results: The elderly have a positive perception of their quality of life correlated with independence for activities of daily living, with statistical significance for sensory functioning (r = .263), physical (r = .200) and psychological (r = .214) domains; and a negative assessment in relation to depressive symptoms in sensory functioning (r = -.438), autonomy (r = -.310), past, present, and future activities (r = -.384), social participation (r = - .368), death and dying (r = -.913), intimacy (r = -.351), physical (r = -.590), psychological (r = -.539), social relationships (r = -.382), and environment (r = -.533) domains.

Conclusion: Independent elderly had better scores in sensory functioning, physical and psychological domains. Those with depressive symptoms had worse scores in all quality of life domains.

Resumo

Objetivo: Correlacionar os sintomas depressivos com a capacidade de realização das atividades básicas de vida diária e a qualidade de vida em idosos residentes em instituições de longa permanência.

Métodos: Estudo transversal, com amostra constituída por 99 idosos, residentes nas dez instituições de longa permanência para idosos públicas da cidade de São Paulo. Na coleta de dados utilizou-se os instrumentos Whoquol Bref e Old, Inventário de Depressão de Beck e Índice de Katz. Os dados foram coletados no período de julho de 2016 a fevereiro de 2019 e o tratamento estatístico foi realizado utilizando o *software Statistical Package for the Social Sciences*® (SPSS – versão 24.0).

Resultado: Os idosos têm uma perceção positiva da sua qualidade de vida correlacionada com a independência para as atividades básicas de vida diária, com significância estatística para os domínios funcionamento sensorial (r = ,263), físico (r = ,200) e psicológico (r = ,214). E uma avaliação negativa em relação a sintomas depressivos nos domínios funcionamento sensorial (r = -,438), autonomia (r = -,310), atividade passada, presente e futura (r = -,384), participação social (r = -,368), morte e morrer (r = -,913), intimidade (r = -,351), físico (r = -,590), psicológico (r = -,539), relações sociais (r = -,382) e meio ambiente (r = -,533).

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Conflicts of interest: nothing to declare.

Conclusão: Os idosos independentes apresentaram melhores escores nos domínios funcionamento sensorial, físico e psicológico; já os com sintomas depressivos demostraram piores escores em todos os domínios da qualidade de vida.

Resumen

Objetivo: Correlacionar los síntomas depresivos con la capacidad de realización de las actividades básicas de la vida diaria y la calidad de vida en adultos mayores residentes en instituciones de larga permanencia.

Métodos: Estudio transversal, con una muestra formada por 99 adultos mayores, residentes en las diez instituciones públicas de larga permanencia para adultos mayores en la ciudad de São Paulo. Para la recopilación de datos se utilizaron los instrumentos Whoquol Bref y Old, Inventario de Depresión de Beck e Índice de Katz. El período de recopilación de datos ocurrió de julio de 2016 a febrero de 2019 y el tratamiento estadístico se realizó utilizando el *software Statistical Package for the Social Sciences*® (SPSS – versión 24.0).

Resultados: Los adultos mayores tienen una percepción positiva de su calidad de vida que se correlaciona con la independencia para las actividades básicas de vida diaria, con significación estadística para los dominios funcionamiento sensorial (r = ,263), físico (r = ,200) y psicológico (r = ,214). Es una evaluación negativa con relación a síntomas depresivos en los dominios funcionamiento sensorial (r = -,438), autonomía (r = -,310), actividad pasada, presente y futura (r = -,384), participación social (r = -,368), muerte y morir (r = -,913), intimidad (r = -,351), físico (r = -,590), psicológico (r = -,539), relaciones sociales (r = -,382) y medioambiente (r = -,533).

Conclusión: Los adultos mayores independientes presentaron mejor puntuación en los dominios funcionamiento sensorial, físico y psicológico; con los síntomas depresivos demostraron peor puntuación en todos los dominios de la calidad de vida.

Introduction

The growing number of elderly people in the population is a global reality resulting from the drop in fertility, mortality and increase in life expectancy.[1] In Brazil, in 2018, the life expectancy rate reached 76.3 years.[2] This change in the population's demographic profile and age structure is associated with a decrease in the functional reserve and an increase in the incidence of chronic diseases.[3]

The trend in the modern world points to a reduction in the size of families. The insertion of women in the labor market, the allegation of lack of time in their current life and family conflicts make the demand for housing specialized in long-term care for the elderly grow. Consequently, institutionalized elderly people's quality of life (QoL) may be compromised.[4]

Research reveals that institutionalized people have a worse perception of QoL when compared to elderly people living in the community. Among the domains assessed in the QoL questionnaires, autonomy and environmental aspects are usually the ones that least satisfy the elderly.[5,6] Depressive symptoms and dependence to perform activities of daily living (ADL) negatively affect the QoL of those living in Nursing Homes (NHs).[7]

The public NHs in São Paulo are equipment for collective care, known as a social and health service, of a social and health nature. Institutionalized residents are those with different needs and/or degrees of dependency. They live in a situation of social and physical vulnerability, unable to remain in the family, weakened or broken family ties, a situation of family or institutional neglect, suffering abuse, mistreatment or other forms of violence, or with a loss of self-care capacity.[7,8]

The Brazilian National Health Regulatory Agency (ANVISA - *Agência Nacional de Vigilância Sanitária*)[9] attributes to NHs the development of activities that encourage elderly people's autonomy and independence, promote social integration and conditions for leisure, such as physical activities, leisure and cultural, in conditions of freedom, dignity and citizenship. NH, whose environment is discouraging, with sedentary habits and lack of exercise and leisure, compromise the performance of daily activities, such as eating, bathing, taking a bus, making a phone call or walking, which negatively influences functional capacity.[10] This is defined as the condition in which the individual has independence and ability to perform daily activities and self-care with preservation of physical mobility, communication, autonomy, ability to manage their own life with mental function and mood for social activities.[11]

Humor is the indispensable function for the preservation of individuals' autonomy, being essential for carrying out ADL. Depression is a psychiatric syndrome characterized by depressed mood, loss of interest or pleasure and changes in biological functioning that affect individuals' QoL.[12]

QoL is a subjective phenomenon associated with the perception of life, and involves biological, psychological and socio-structural criteria. As well as elderly people's cultural aspects, values, goals, expectations and concerns in relation to life.[7] Improving elderly people's QoL is a goal to be achieved and becomes the function of a multidisciplinary team, at all levels of health care, including the NHs[13] and can be compromised by the loss of ability to perform ADL, depressive mood and the fact of living in a NH.[7]

This study is important for geriatric and gerontological nursing. As a multidisciplinary team member, nurses perform a multidimensional assessment of institutionalized elderly, such as the capacity for self-care, the presence of depressive symptoms and satisfaction with QoL.[14] The results of this research contribute to the nurse's coordination, organization and implementation of comprehensive health care for the elderly, thus qualifying the nursing care offered by NHs.[15] Furthermore, it possibly supports the development and evaluation of strategies to preserve and promote autonomy and independence through the maximization of functional capacity, as recommended by the World Health Organization (WHO), the Brazilian National Policy for Elderly (PNI - *Política Nacional do Idoso*), the Elderly Statute and the Brazilian Policy for Senior Health.[16]

In this context, the present study aims to: correlate depressive symptoms with the ability to perform ADL and the QoL of elderly people living in NHs.

Methods

This is a cross-sectional study, carried out from July 2016 to February 2019, and included all public NHs in the city of São Paulo, which at the time totaled ten. The institutions are part of the community and have a physical structure with residential and adapted characteristics.

The convenience population consisted of 318 elderly people from ten NHs. Therefore, the inclusion criteria considered were age ≥ 60 years, both sexes, residents for at least three months, and who had favorable conditions for understanding the questionnaires. As exclusion criteria, those with impaired cognition and hearing deficit were excluded. Thus, the sample consisted of 99 elderly people.

Data collection was carried out through directed interviews, with application of questionnaires, mean duration of 40 minutes, in a private room, provided by the institution, when the researcher read the questions individually. The interviewer has prior knowledge of the instruments used in this research as they have been applied in other studies with institutionalized elderly people.

The first instrument applied was the MMSE, which assessed cognition and guided the continuity of the others. Elderly individuals who scored less than 19 points when illiterate, 23 points with 1 to 3 years of education, 24 points with 4 to 7 years of education, and 28 points with 7 years of education or more were excluded from the study.[17]

Social information (age, sex, marital status, education level and skin color), lifestyle (physical activity and leisure) and support network (visiting visits, freedom to go out, length of residence and number of children) were stored in a structured questionnaire prepared by the authors.

The Katz Index was applied, which allows evaluating the degree of dependence shown by elderly people in carrying out the ADL based on their ability to self-care and to live independently in their environment. The scale is divided into six categories that include bathing ability, clothing, personal hygiene, transference, continence and feeding. The final result defines the elderly as dependent if they obtain between 0 and 2 points; partially dependent, from 3 to 4 points; and independent, from 5 to 6 points.[11]

The Beck Depression Inventory (BDI) was used to track depressive symptoms. In the overall score result, a score of up to 9 points means absence or minimal depressive symptoms; 10 to 18 points, mild to moderate symptoms; from 19 to 29 points, moderate to severe; and from 30 to 63 points, se-

vere symptoms. The BDI is one of the most used instruments in clinical research to estimate depressive symptoms, being applied to psychiatric and non-psychiatric patients, validated in other countries and deeply analyzed regarding the reliability and validity criteria.[18]

QoL was also assessed using the World Health Organization instruments: The World Health Organization Quality of Life - Old (WHOQOL-OLD)[19] specific to be used with the elderly population and The World Health Organization Quality of Life - Bref (WHOQOL-BREF)[20] generic QoL assessment instrument in abbreviated version. Both were translated into Brazilian Portuguese and validated for use in the Brazilian elderly population. The final scores for each domain of the questionnaires can range from zero to 100 points. The closer to 100, the better the QoL.[19,20]

The WHOQOL-OLD consists of 24 questions divided into six domains: sensory functioning, autonomy, past, present, and future activities, social participation, death and dying, and intimacy. The WHOQOL-BREF consists of 24 questions divided into four domains: physical, psychological, social relationships, and environment.[19]

The mean score in each of the six facets of the WHOQOL-OLD or the four facets of the WHOQOL-BREF indicates elderly people's perception regarding satisfaction in each aspect of their life, which reflects on their QoL. According to the scale used from 0 to 100, the closer the mean score of the elderly to 100, the more satisfied or positive is the perception. The level of satisfaction in each domain is classified according to the following score: 0 to 20 very dissatisfied, 21 to 40 dissatisfied, 41 to 60 neither satisfied nor dissatisfied, 61 to 80 satisfied and from 81 to 100 very satisfied.[21]

Data were stored in the Statistical Package for Social Sciences (SPSS) 24.0 for Windows®. Variables were presented through means, variation, absolute and relative frequency. The Kolmogorov-Smirnov test was used to verify normality. Due to the normal distribution of the data, with $p>0.05$, Pearson's correlation test was used. To interpret the degree of correlation, the value of r with a positive or negative sign (+ or -) was agreed upon, according to Lira:[22] 0.00 to 0.19 very weak correlation; 0.20 to 0.39 weak correlation; 0.40 to 0.69 moderate correlation; from 0.70 to 0.89 strong correlation and from 0.90 to 1.00 very strong correlation. For the entire analysis, $p\leq0.05$ was adopted.

The Institutional Review Board approved this study under opinion number 2,193,319, in accordance with the Declaration of Helsinki of 1964 and its subsequent amendments and with Resolution 466 of December 12, 2012 of the Ministry of Health of Brazil. All participants agreed to participate and signed an Informed Consent form (CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 62326816.1.0000.5505).

Results

The social, cultural and lifestyle characteristics of the 99 study participants are presented in Table 1.

Table 2 shows that the score that presented the best WHOQOL-OLD mean was expressed by the death and dying domain, and the lowest mean, the autonomy domain. The highest WHOQOL-BREF mean was the psychological domain and the most compromised was the environment.

Regarding the ability to carry out the ADL, we present the frequency distributions and classifications below: total dependence 7.1%, partial dependence 10.1%, and independents prevailed with 82.8%. Depressive symptoms were classified and some degree prevailed: absence of symptoms in 24.2%, mild symptoms in 33.4%, moderate in 21.2% and severe in 20.2%. In Table 3, the statistical analysis made it possible to identify that the elderly who were independent for ADL showed a weak positive correlation between sensory functioning, physical and psychological domains.

Those with depressive symptoms were negatively correlated with all QoL domains, with emphasis on

Table 1. Social, cultural and lifestyle characteristics of 99 elderly people living in public Nursing Homes in São Paulo

Characteristics	n(%)
Sex	
Male	50(50.5)
Female	49(49.5)
Mean age (variation)	73.5(61 to 97)
60 to 69	40(40.4)
70 to 79	36(36.4)
80 to 89	18(18.2)
90 to 99	5(5.0)
Marital status	
Married	6(6.1)
Single	53(53.5)
Widowed	23(23.2)
Divorced	17(17.2)
Color	
White	58(58.6)
Black	15(15.1)
Brown	26(26.3)
Mean housing time (variation)	28.5(1 to 120)
Freedom to leave NH	
Yes	37(37.4)
No	62(62.6)
Receive visits	
Yes	41(41.4)
No	58(58.6)
Education	
Illiterate	43(43.5)
Elementary school	40(40.3)
High school	6(6.1)
Higher education	10(10.1)
Physical activity	
Yes	12(11.7)
No	87(88.3)
Leisure activity	
Yes	43(43.5)
No	48(48.5)

Table 2. Scores of the WHOQOL-OLD and WHOQOL-BREF domains of 99 elderly people living in public Nursing Homes in São Paulo

WHOQOL-OLD	Mean	WHOQOL-BREF	Mean
Sensory functioning	66.26	Physical	60.45
Autonomy	49.74	Psychological	61.63
PPF activities*	59.69	Social relationships	56.16
Social participation	56.44	Environment	53.87
Death and dying	73.79	Total	58.12
Intimacy	52.87		
Total	59.80		

PPF activities – past, present, and future activities

sensory, physical, psychological and environmental functioning, which was moderately correlated, and death and dying, which was strong.

Table 3. Correlation of QoL, according to WHOQOL-OLD and WHOQOL-BREF, with depressive symptoms and ADL of 99 elderly people living in public Nursing Homes in São Paulo

WHOQOL-OLD	ADL r(p<)	Depressive symptoms r(p<)
Sensory functioning	0.263 (0.009)*	-0.438 (0.001)*
Autonomy	0.035 (0.732)	-0.310 (0.002)*
Past, present, and future activities	0.014 (0.891)	-0.384 (0.001)*
Social participation	0.089 (0.385)	-0.368 (0.01)*
Death and dying	-0.034 (0.739)	-0.913 (0.001)*
Intimacy	0.000 (0.999)	-0.351 (0.001)*
Total	0.100 (0.327)	-0.488 (<0.001)*
WHOQOL-BREF	**ADL r(p<)**	**Depressive symptoms r(p<)**
Physical	0.200 (0.051)*	-0.590 (<0.001)*
Psychological	0.214 (0.037)*	-0.539 (<0.01)*
Social relationships	0.082 (0.428)	-0.382 (<0.001)*
Environment	0.140 (0.173)	-0.533 (<0.001)*
Total	0.187 (0.068)	-0.625 (<0.001)*

QoL – quality of life; ADL - activities of daily living

Discussion

The findings indicate that most institutionalized elderly who participated in this study were male, single and with a mean age of 73.5 years. In a similar study in Guangzhou, China, the findings were different, predominantly female, widowed marital status and mean age 78.3 years.[23] Among institutionalized Brazilian elderly, in a multicentric study, the difference predominated with females and mean age of 77.7 years.[24]

The high prevalence of elderly people with a low level of education is in line with the level of education of Brazilian elderly people, which is still far below the desired level, especially in the Northeast region, whose majority of the population is classified as illiterate,[21] which is repeated in other regions of Brazil[4,12] and in another country in South America.[25]

Regarding the lifestyle of the elderly in this study, a small portion practiced physical activities, which were associated with those developed in physical therapy sessions. Leisure was performed by less than half of the elderly, including painting on fabric and canvas, handicrafts (decorated crochet, coaster and pen) and board games (checkers, cards and dominoes). Physical and leisure inactivity among institutionalized elderly people is frequent and enhances social isolation, depressive symptoms, sedentary lifestyle, loss of functionality, worsening of chronic diseases and reduced QoL for elder people.[26]

Public policies and NHs[9] ensure the promotion of conditions for the practice of leisure, especially through physical, recreational and cultural activities. In order to carry out such demands, it is recommended that there be a professional with higher education with a workload of 12 hours per week for every 40 elderly people. However, the data show that such actions are not practiced.

The percentage of elderly people who did not receive visits was much higher than that of elderly people living in NHs in the Northeast, who related receiving visits from friends and family as a factor that helps them to adapt to institutionalization as well as to improve their well-being and their QoL.[27]

Most were not authorized to leave the institution, despite their independence to carry out ADL. Making it impossible for elderly people to leave their physical space leads to environmental containment, which implies psychological distress.[28] Emotional stress can enhance social isolation, reducing elderly's autonomy and independence, which impairs their sociability and well-being, and is also predictive factors for depressive symptoms.[29] It is necessary to rethink the institutional culture of environmental containment, in NHs, as strategies to improve QoL.

The findings of this work show that the most compromised domain of WHOQOL-BREF was environment, and of WHOQOL-OLD, autonomy.

The environment domain is able to assess elderly people's satisfaction with aspects of physical safety and protection, health care, social aspects, participation and recreation/leisure opportunities offered in NHs.[20]

Living in the environment of public NHs of São Paulo means that they live collectively in social organizations, where elementary nursing care is provided by elderly counselors, who also administer medications that are controlled by a nurse. On the other hand, the small number and lack of qualification of elderly caregivers limits the performance of health education, management of chronic diseases and functional capacity. Health care that can be perceived by the elderly as disqualified, generating insecurity and dissatisfaction with the welcoming environment.

Institutionalized elderly people lose their social network of origin due to the fact that public NHs in São Paulo are far from their primary home. Sometimes elderly people are unable to integrate into the new social network due to differences in physical and cognitive health, daily routine and lifestyle. Making it difficult for residents to adapt to each other and establish new social relationships in NHs, frustrating the expectation of socialization in the institutional environment.

Many NHs are recognized as a monotonous and discouraging environment, offering few daily leisure activities, physical exercise and opportunities to participate in community activities, insecure and with strict routines that deprive autonomy and compromise elderly people's QoL.[8] In a survey conducted with elderly residents of a high-income NH, the autonomy domain also had the lowest mean.[7] Demonstrating that both the public and private NH environment of high economic standard, elderly people are dissatisfied with their autonomy.

Elder care must guarantee an environment of health promotion and recovery, independence and autonomy as guaranteed by public policies. All legislative efforts, through public policies, in favor of aging, have not yet been fully implemented in Brazil. Despite advances and achievements, it is noted that, in practice, the guarantee of these rights is still far from being fully realized.[16]

As for the environment and autonomy domains, which were perceived with dissatisfaction by elderly people since this study, it is suggested that institutional care providers seek to understand the predictors of dissatisfaction. Based on this, an intervention plan that promotes elderly people's decision-making in the NH environment, including care with physical and cognitive health, social interactions and recreational activities. In order to help institutionalized elderly people to adapt to collective life, increasing the atmosphere of safety and the positive perception of the institutional environment. Thus, efforts should be made in the following areas: (1) strengthening the professional training of caregivers; (2) improve the level of elderly health management; and (3) support institutionalized elderly people to actively participate in learning activities, physical exercise and related leisure activities. In addition to this, regarding the care for institutionalized elderly, nurses need to imple-

ment a nursing process based on Dorothea Orem's Self-Care Theory and pay attention to humanistic concerns and offer psychological and social support. Only by comprehensively considering various factors (including physical and mental condition, life habits and hobbies) will it be possible to customize integrated care plans to improve these domains of elderly's QoL.

With advancing age, there is an increase in the prevalence of incapacity to perform ADL, as demonstrated in a study, which found a high dependency rate for ADL in elderly people in NHs.[27] A different result from the one found in this study, which showed independence for ADL.

Sensory functioning[19] (WHOQOL-OLD), defined as the ability to see, smell, hear, taste and touch; physical (WHOQOL-BREF), related to mobility and the ability to perform daily activities; and psychological (WHOQOL-BREF), which is related to self-esteem, body image and positive feelings,[20] showed a positive, weak and significant correlation with ADL.

Natural and physiological aging triggers biological losses throughout the body, which compromise ADL performance. However, elderly people are able to develop compensatory mechanisms to face these losses, whether using technological resources and/or social and psychological support.[30] The findings show that the better the sensory, physical and psychological functioning, the greater the capacity to perform the ADL. In this context, the biggest challenge in elder care is to be able to contribute so that, despite the progressive limitations that may occur, they can rediscover possibilities of living their own life with the maximum quality and autonomy possible.[31] This possibility increases as society considers the family and social context and is able to recognize the potential and value of older people. Therefore, it is necessary to supplant the clinical-curative approach, in favor of a multidisciplinary and interdisciplinary approach, in order to maintain the autonomy and independence of the elderly and to enable active aging with QoL and support from families and caregivers.[32]

This study showed that more than half of the elderly had some depressive symptom and there was a negative and significant correlation between all QoL domains according to WHOQOL-OLD and BREF and the presence of depressive symptoms. Similar result was found in international[33] and national research.[7] NHs that do not provide social integration, exchange of experiences and autonomy for elderly people allow residents to live in a state of loneliness, which can trigger depressive symptoms and negative QoL changes.[34]

Although the prevalence of depression in institutionalized elderly people is high and frequent, signs and symptoms can be improved with adequate therapy. However, clinical manifestations often go unnoticed or underestimated in residents, who remain without adequate stimulation and treatment, which can result in dissatisfaction with QoL, physical malfunction, early mortality and increased hospitalization rates.[35]

This research had as a limitation the cross-sectional design with a small number of elderly people and does not allow establishing relationships between cause and effect. However, the findings of this study represent elderly people with preserved cognition living in public institutions in São Paulo.

The results of this research can contribute to the qualification of social and health care provided to this population in social and physical vulnerability and implementation of public policies.

Conclusion

In this research, the elderly showed independence for ADL, a high prevalence of depressive symptoms; they demonstrated to be neither satisfied nor dissatisfied with their QoL and perceived greater dissatisfaction with autonomy and environment domains. Depressive symptoms was negatively correlated with QoL and independence for ADL, and positively with sensory functioning, physical and psychological.

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Collaborations

Scherrer Júnior G, Passos KG, Oliveira LM, Okuno MFP, Alonso AC and Belasco AGS collaborated with the study design, data analysis and interpretation, article writing, relevant critical review of the intellectual content and approval of the final version to be published.

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