Quality of Life and the Cognitive Condition of Elderly Served in Family Health Unit

ORIGINAL

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Abstract

Introduction: The cognitive impairment affects the functional capacity of the individual in their day to day, resulting in a loss of independence and autonomy, with consequent loss of quality of life of the elderly.

Objective: Investigating the relationship between cognitive status and quality of life of the elderly.

Methods: A quantitative, observational, cross-sectional study conducted with 110 elderly in the Family Health Unit located in the city of João Pessoa. The instruments used were: socio-economic map, Mini Mental State Examination (MMSE), WHOQOL-Bref and WHOQOL Old. The collected data were analyzed using descriptive statistics and Pearson correlation.

Results: The results showed that 64.5% of the elderly were female, aged between 60 and 64 years old, studied one and four years, had a family income between one and three minimum wages, married and lived with their children and spouses, 20% of seniors had cognitive impairment, cognitive function that was more difficult to answer was "Constructive capacity". The domain "Social relations" and the facet "Sensory abilities" had the highest scores of the QOL. The domain "Environmental", the facets "Death and Dying", and "Past-Present-Future Activities of QOL" showed a positive correlation with cognitive state.

Conclusion: The evaluation of the cognitive status of older people in primary care settings enables the generation of subsidies for the development of strategies at the level of attention, planning and implementing actions in health promoting QOL of the elderly.

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Introduction

Over the past three decades, Brazil lives with demographic indicators, which show the quick growth of its elderly population [1]. This reality means for public managers and society major challenges facing the demands generated in various sectors, stressing the health field because they represent changes in the pattern of morbidity and mortality causes, characterized by decreased mortality from communicable diseases, the rise of chronic noncommunicable diseases (NCDs) and external causes [2].

Attention to the health of the elderly in Brazil is guided by the constitutional provisions and principles present in the organic laws of the Unified Health System (SUS), which calls for universal and equal access to services and health promotion, disease prevention, and recovery health, ensuring comprehensive care, focusing on the different health needs of the individual and population [3]. Both the Pact for Life [4], as the National Policy for Health Care of the Elderly (PNSPI) [3] defined as a priority attention comprehensive and integrated into the health of the elderly with a view to contributing to an active and healthy aging.

The practice of care for the elderly in Brazil is focused on assistance rather than on prevention [5]; however, the PNSPI advocates a global, interdisciplinary and multidimensional approach, which considers the interaction between the physical, psychological, interfering social and environmental in health of older people, thus enabling a better selection of interventions, the identification of elderly at risk of harm, and monitoring of clinical-functional changes [3].

Aging is a stage of life characterized by physiological, psychological and social changes [6] and enter these changes to difficulties with memory and other cognitive abilities is quite common, which directs it to a decrease in cognitive function in people over 60 years old. This finding is quite common, especially when compared to current performance to last [7].

Cognitive deficiency affects the individual's functional capacity on a daily basis, resulting in loss of independence and autonomy, with consequent loss of quality of life (QOL) of the elderly [7]; as quality of life is understood as something subjective and multidimensional, defined as the "perception that the individual has of his position in life in the context of culture and value system in which he lives, and in relation to his goals, expectations, standards and concerns" [8].

This individual perception is directly affected by their physical health, personal beliefs, psychological condition, their social relationships and interaction with the environment. The intervention on the conditions that allow satisfactory quality of life in old age, as well as the variations that this state behaves is of great scientific and social importance, and should be taken based on the standards of health promotion [9].

Currently, there are few studies that direct their attention to the relationship between cognitive function in the elderly and the quality of life. Researchers have sought to establish the reasons and patterns of dysfunctional aging, seeking the systematic description of the conditions that precede and contribute to changes caused by aging and to determine the quality of life of seniors. However, it stresses the importance of the integrity of cognitive functioning and continuity of self-regulation mechanisms of personality in determining the longevity and quality of life in aging [9].

Thus, it becomes necessary to develop researches investigating the relationship between quality of life and cognitive condition of the elderly, since their results will contribute to important elements in change model of health care for the elderly and especially in implementation policies already proposed in the elderly health aimed at promoting the welfare and improving the lives of the same.

Faced with the subjectivity of the QV builder and complexity of human aging the objective of this study was to investigating the relationship between

cognitive status and quality of life in elderly patients in the Family Health Unit (FHU).

Method

It is a quantitative study, observational, cross-sectional developed into a FHU, located in the city of João Pessoa - PB. The population was composed of elderly patrons of the selected FHU to the composition of the sample were selected by convenience 110 subjects of both genders.

Data collection was carried out at the homes of elderly after the approach to FHU in the period from October to December 2013. We applied four instruments: the first expounded on the socioeconomic profile, based on a semi-structured, which aimed to characterize the population, in the matters of identification, age, gender, race, education, marital status, living arrangement and monthly family income.

The second instrument used was the Mini Mental State Examination (MMSE) [10], translated and validated for the Brazilian population by Bertolucci et al. [11], used to assess the cognitive function of the elderly. It is a semi-structured test consisting of several typical questions grouped into seven categories, each designed with the objective of evaluating specific functions and certain score as temporal orientation (05 points), spatial orientation (05 points), immediate memory (03 points), calculation and attention (05 points), recall the words (03 points), language (08 points) and visual construction (01 point). The scores can range from a minimum of zero to a total of 30 points. The scores used were adopted according to schooling: 13 points for illiterate, 18 for low schooling (1-4 years incomplete) and middle schooling (4-8 years incomplete) and 26 for high school (> 8 years) [11].

The third and fourth instruments were used to assess the quality of life of the elderly, the WHOQOL-BREF and WHOQOL-OLD. The WHOQOL-BREF is an instrument with psychometric properties satis-

factory in the investigation of QOL in Brazilian elderly, it has 26 items, two related to global QOL and general health, and the 24 others being categorized into four domains (Physical, Environmental, Social Relations and Psychological). The domains comprise questions whose answers ranging the scores between 1 and 5 [12].

The WHOQOL-OLD consists of 24 questions separated into six facets, forming an additional domain incorporating issues related to aging. The facets are: Sensory Skills (impact of the loss of their sensory abilities in the individual's QOL), autonomy (independence of the elderly), past-present and future activities (satisfaction with achievements in life and objectives to be achieved), Social participation (participation in activities of daily living, especially in the community), Death and dying (concerns about death and dying) and Intimacy (ability to have intimate and personal relationships) [13].

Data were organized in a database created in Excel program, after the organization and the coding of the data, the database was imported into the software Statistical Package for the Social Sciences (SPSS) version 11.0 to aid in the statistical analysis. The WHOQOL-BREF and WHOQOL-OLD instruments were analyzed according to their respective syntax. The higher scores corresponding to better QOL [12-13].

The internal regularity of items in each WHOQOL-BREF and WHOQOL-OLD domain was assessed by Cronbach's coefficient, whose value varies from zero to one (1.0), and the higher the value, the greater the congruence between items, indicating homogeneity to the extent of the same phenomenon [14].

The exploratory analysis was performed by calculating the distribution measures (average, standard deviation and variation), considering the variables of interest for the characterization of study participants. In the stage of the confirmatory analysis, statistical tests were used Pearson's chi-square (χ^2) and Fisher's exact test to identify possible associations between variables.

For correlation between the averages of the domains and facets of QOL instruments and the absolute MMSE scores used the Pearson correlation test, following the classification proposed by Cohen¹⁵, considered to be weak, if $|r| < 0.3$; moderate, $0.3 \leq |r| < 0.5$ and strong, $0.5 \leq |r| \leq 1.00$. The level of significance for the study was of 5%.

For realization and consistency of research, the ethical aspects that regulate research involving human subjects arranged in Resolution 466/2012 CNS/MOH/BRAZIL, especially the secrecy and confidentiality of informations were observed [16]. For this, we used the Consent and Informed for the elderly group interview.

This research is inserted in the Project: Life Quality, Functional Capacity and Elderly People Attended the Health Status in the Service of Health Primary Care approved by the Ethics Committee/HULW with Opinion No. 138.228 in 30th October, 2012.

Results

The study included 110 elderly, 64,5% female, with average age of 71,67 years old (SD = ± 8.0), married (69.1%) with 1-4 years of schooling (33.6%) and family income of up to three minimum wages (41.8%) (**Table 1**).

Of the total group of participants 20% had cognitive impairment, predominantly inserted in the age group of 60-79 years old (young old), women (81.8%), highly educated (68.2%). As a result of the association of the variables age, gender and education with cognitive status, we observed statistically significant only with schooling (**Table 2**).

Among the cognitive functions contemplated by the MMSE, it was found that older respondents had higher average (6.71) the function "Language" and lower (0.39) in the function "Visual Constructive Capacity" (**Table 3**).

QOL measured by WHOQOL-BREF showed a higher score for the domain "Social Relationships" with average of 73.93. On the other hand, the domain with the lowest score was the environmental do-

Table 1. Socioeconomic characterization of elderly in Basic Health Units. João Pessoa/PB, 2013.

Variables	n	%	Average	SD	Observed variation
Gender					
Female	71	64.5			
Male	39	35.5			
Age (in years)			71.67	± 8	[60.93]
60 - 64	28	25.4			
65 - 69	18	16.4			
70 - 74	26	23.6			
75 - 79	21	19.1			
80 or over	17	15.5			
Marital status					
Married	76	69.1			
Single	5	4.5			
Divorced	6	5.5			
Widower	23	20.9			
Schooling (in years)					
Illiterate	20	18.2			
1 - 4	37	33.6			
5 - 8	17	15.5			
9 - 11	4	3.6			
12 or over	32	29.1			
Family Income					
Up to 1 minimum wage	8	7.3	2000	± 881	[678.4068]
1 - 3 minimum wages	38	34.5			
4 - 5 minimum wages	20	18.2			
6 - 7 minimum wages	18	16.4			
8 - 10 minimum wages	11	10.0			
10 or more minimum wages	6	5.5			
No information	9	8.2			
Minimum wage in Brazil in 2013: R\$ 678.00					

Table 2. Cognitive condition of elderly people and its relationship with the variables: age, gender and schooling. João Pessoa/PB, 2013.

Variables	With cognitive deficit		Without cognitive deficit		P value
	n	%	n	%	
Age (in years)					
Younger elderly (60 - 79)	19	86.4	73	83	1.000**
Older elderly (80 or over)	3	13.6	15	17.0	
Gender					
Female	18	81.8	53	60.2	0.081**
Male	4	18.2	35	39.8	
Schooling (in years)					
Illiterate	2	9.1	18	20.5	0.000*
Low and medium (1 - 8)	5	22.7	49	55.7	
High (over 8 years old)	15	68.2	21	23.9	
Total group	22	20	88	80	
* Chi-square			** Fisher's exact test		

Table 3. Distribution of the cognitive functions of the MMSE. João Pessoa/PB, 2013.

Cognitive Functions of MEEM	Average	SD
Time Orientation	4.21	±1.79
Spatial Orientation	4.72	±1.10
Immediate memory	2.88	±0.57
Attention and Calculation	1.85	±2.33
Evocation of words	1.92	±1.41
Language	6.71	±2.34
Constructive visual capacity	0.39	±0.49

main, averaging 61.27. The WHOQOL-OLD showed highest score (76.19) in sensory abilities facet and "Autonomy" facet showed lower score (61.47). The internal consistency of these instruments showed satisfactory values of Cronbach's Alpha in the domains and QOL facets. (Table 4).

When linking the QOL Domains and Facets to the cognitive status of elderly respondents, it was

observed that the "Environmental" domain and the facets "Death and Dying" and "Past-Present-Future Activities" showed a positive correlation and of low magnitude. (Table 5).

Table 4. Averages, standard deviation and Cronbach's alpha of the facets and domains of QOL. João Pessoa/PB, 2013.

Domains/Facets	Averages	SD	Cronbach's alpha
WHOQOL BREF			
Social Relations	73.93	±11.47	0.54
Physical	67.95	±14.62	0.70
Psychological	67.38	±12.45	0.55
Environmental Domain	61.27	±23.92	0.60
WHOQOL BREF			
Sensory Skills	76.19	±23.92	0.83
Death and Dying	70.05	±25.70	0.72
Intimidade	68.46	±16.11	0.75
Past-Present-Future Activities	66.47	±15.51	0.64
Social Participation	64.26	±12.75	0.53
Autonomy	61.47	±17.17	0.68

Table 5. Correlation of the averages of the QOL domains and facets of the total score of MMSE. João Pessoa/PB, 2013.

Domains/Facets	Total Score of MMSE	
	R	p
WHOQOL-BREF		
Social Relations	0.133	0.166*
Physical	0.164	0.087*
Psychological	0.089	0.355*
Environmental Domain	0.249	0.009*
WHOQOL-OLD		
Sensorial Skills	0.093	0.333*
Death and Dying	0.230	0.016*
Intimidate	0.145	0.130*
Past-Present-Future Activities	0.210	0.027*
Social Participation	0.019	0.844*
Autonomy	0.139	0.148*
*Pearson correlation test		

Discussion

The results showed that women predominate among the participants of this research, fact also been observed in other national studies [17-18]. This phenomenon is known as the feminization of old age, it is expected behavior among this age group according to the male mortality be higher than the female, throughout life, allowing women to survive in greater numbers at older ages [19].

The participants in this study were at an average age of 71, characterized as young elderly, consistent results with the Brazilian aging process, which started in the 60's, the decline in fertility, as an average of 6.3 children per woman in 1960 to 2.0 in 2005 and finally 1.94 in 2010. These data show that the aging of the Brazilian population occurred at an accelerated rate, differentiating the experience lived by the population of developed countries that required a hundred years to achieve a birth rate of 2.2 and Brazil this process took only 40 years to reach lower values shown for these countries [19, 20].

The most prevalent marital status was married, followed by widowed, this result corroborates studies conducted with elderly enrolled in the Family Health Strategy Foz do Iguaçu [17] and the elderly group of Veranópolis [18], who also prevailed married and widowers.

The elderly presented a low educational level, ie have fewer than four years of formal study. This reflects the exclusion of the elderly in the Brazilian educational system that prioritizes education and younger manpower training to work in the capitalist system. Importantly, the education factor, by itself, can be considered a limiting factor for the survival and quality of life [21].

In terms of income, 34.5% received between one and three times the minimum wage. Insufficient family income of the elderly is an indicator of poor conditions and QOL [22].

Regarding cognitive impairment in this study men showed less loss than women. This result was

similar to the study developed with institutionalized elderly in Brasília-DF, indicating that women have a greater predisposition to present a cognitive loss greater than man [23]. In relating the age group with cognitive impairment found that most elderly people with cognitive impairment were between 60 and 79 years old (86.4%). A similar result was found in a study carried out in Viçosa, Minas Gerais [24].

There was also a significant difference between the cognitive impairment according to schooling. This result was similar to the study of 115 elderly residents in three long-term care facilities in Presidente Prudente-SP [25] and another study in Viçosa [24]. Cognitive impairment is related to functional decline, with a reduction and/ or loss of skills for development activities of daily life, interfering significantly in performing daily activities of the elderly and education is an important factor that contributes significantly to cognitive decline [24].

The different cognitive functions of the MMSE, where it was found that older people had more difficulty answering the questions of capacity building items (0.39), calculation and attention (1.85) and evocation of words (1.92), corroborating the cross-sectional study conducted in institutionalized elderly residents in long term care facility for seniors [26] and this result may be related to low education presented by the elderly in this study.

Concerning Quality of Life, assessed by WHOQOL-BREF, the "Social Relations" domain had the highest score, indicating that older people are satisfied with their personal relationships with their sex life and the support received, that because these seniors in their most are married or live with their children, standing in line with other national studies [27-28]. The domain "Environmental" had the lowest score; this result means that these people are not satisfied with aspects of their life, such as: security, access to health care, transportation, housing conditions and finances [12], emphasizing that they live on an income family of up to 3 minimum wages.

The assessment of these aspects of life refers to the old concept of health advocated in the Brazilian Constitution and Law 8080/90, legal apparatus to SUS, which advocates health is necessary to have access to food, housing, sanitation, the environment, work, income, education, transport, leisure and access to essential goods and services, ie the dissatisfaction of the elderly with these aspects of their life, indicates the rejection of a constitutional right [29-30].

In the analysis of QOL from the WHOQOL-OLD the facet "Sensory Skills" presented higher score showing that elderly people interviewed, despite the longevity, the losses in the sensory functions did not impact their QOL. Sensory function changes that occur in the process of senescence is an important determining factor of QOL of the elderly, since it raises some problems such as: removal of the social activities and family, low self-esteem, isolation, loneliness, depression, irritability and, consequently, to participate in the community, harming their socialization [31]. So the assessment of this function is essential for the detection of its decline and in the elaboration of strategies that contribute to people to have an active ageing.

The facet "Autonomy" had the lowest medium score, such an occurrence may be related to the fact that these seniors are mostly women and live with children or spouse that often the power of decision do not guaranteed. Maintaining autonomy is main issue in the elderly QOL, defined as the individual ability to decide and command their actions. This is an important component of their health, because even if they have several chronic diseases, they can make decisions about their life [32].

By linking the MMSE score and domains QOL, the domain "Environment" is inter-related with the cognitive status, despite being weakly, but showed a positive direction, results found in a study developed in three living group in Porto Alegre [33]. These data indicate that the elderly have a safe environment, financial position to meet their needs,

access to health services, recreational opportunities, leisure, housing, information and adequate transportation they will have better quality of life. Thus, an environment to present these attributes is an important determinant for a healthy life as it contributes to the elderly development of higher levels of competence, which are manifested in greater mental flexibility and greater ability to solve problems on a daily basis, to process information, relevant thoughts or actions and to preserve the linguistic functions [33].

Facets "Death and Dying" and activity-past-present correlated positively and low magnitude with cognitive status, meaning greater cognitive condition will be pleased with the achievements of the life and future prospects and less fears have with issues related to death and dying. This shows that the cognitive functions are related to satisfaction with life accomplishments and things that longs, as well as in the end of life issues, especially with the fear of loss of autonomy and independence [34-35].

Conclusion

From the results of this study it was concluded that cognitive impairment is a health condition present among the elderly even among those entered in the group of "young old" and education an important variable that relates to cognitive condition.

The lowest scores of the domains and facets of QOL were Environment and Autonomy, meaning that older people showed dissatisfaction with the home environment, financial resources, health care, opportunity to have leisure and transport, but also indicates that there is a difficulty in exercising their autonomy. The result of the correlation of cognitive condition and quality of life of seniors revealed that the issues related to environmental characteristics, prospects for future life and aspects related to death, need to be incorporated into the general assessment of elderly health, exceeding the biologist model, focused on the disease, but valuing

health promotion, contributing to the maintenance of cognitive status and quality of life.

In this context, the evaluation of the cognitive status of the elderly in the context of primary health care, for its characteristic of continuous attention is characterized as an important tool for evaluating the health and generates subsidies for the formulation of strategies at the level of attention, planning and implementing actions in health promoting QOL of the elderly.

It is important to focus that this study is cross-sectional; it allows only show association, not a causal relationship between the variables. In this way, it indicates the execution of new studies that could deepen the theme in question, enabling a broader scale to assess the impact of cognitive impairment in the elderly QOL.

References

1. Vasconcelos AMN, Gomes MMF. Transição demográfica: a experiência brasileira. *Epidemiol. Serv. Saúde*, Brasília. 2012; 21(4): 539-48, out-dez. doi: 10.5123/S1679-49742012000400003
2. Veras R. Envelhecimento populacional contemporâneo: demandas, desafios e inovações. *Rev Saude Publica*. 2009; 43(3): 548-54. doi: 10.1590/S0034-89102009005000025.
3. Brasil. Ministério da Saúde. Portaria n. 2.528, de 19 de outubro de 2006. Aprova a Política Nacional de Saúde da Pessoa Idosa. *Diário Oficial da União*, Brasília: MS; 2006.
4. Brasil. Ministério da Saúde. Portaria nº 399, de 22 de fevereiro de 2006. Aprova as Diretrizes Operacionais do Pacto pela Saúde em 2006. Brasília: MS; 2006.
5. Aciole GG, Batista LH. Promoção da saúde e prevenção de incapacidades funcionais dos idosos na estratégia de saúde da família: a contribuição da fisioterapia. *Saúde debate*. 2013; 37(96): 10-19. doi: <http://dx.doi.org/10.1590/S0103-11042013000100003>.
6. Fachine BRA, Trompieri N. O processo de envelhecimento: as principais alterações que acontecem com o idoso com o passar dos anos. *InterSciencePlace. Revista científica internacional*. 2012; edição 20, 1(7): 16-32. doi: 106020/1679.9844/2007.
7. Ávila R, Bottino CMC. Atualização sobre alterações cognitivas em idosos com síndrome depressiva. *Rev. Bras. Psiquiatr*. 2006; 28(4): 316-20. doi: 10.1590/S1516-44462006005000010
8. The WHOQOL Group. The World Health Organization quality of life assessment (WHOQOL): position paper from the World Health Organization. *Soc. sci. med.* 1995; 41(10): 1403-9. doi: 10.1016/0277-9536(95)00112-K
9. Beckert M, Irigaray TQ, Trentini CM. Qualidade de vida, cognição e desempenho nas funções executivas de idosos. *Estud. psicol. (Campinas)* 2012; 29(2): 155-62. doi: 10.1590/S0103-166X2012000200001
10. Fostein MF, Folstein SE, Mchugh PR. Mini-Mental state: a practical method for grading the cognitive state for the clinician. *J. psychiatr res.* 1975; 12(3): 189-98. doi: 10.1016/0022-3956(75)90026-6
11. Bertolucci PH, Brucki SM, Campacci SR, Juliano YO. Mini-Exame do Estado Mental em uma população geral: impacto da escolaridade. *Arq neuropsiquiatr*. 1994; 52(1) 1-7. doi: 10.1590/S0004-282X1994000100001
12. Fleck MPA, Louzadas S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref". *Rev. saúde pública*. 2000; 34(2): 178-83. doi: 10.1590/S0034-89102000000200012
13. Fleck MPA, Chachamovich e, Trentini C. Development and validation of the Portuguese version of the WHOQOL-Old module. *Rev. saúde pública*. 2006; 40(5), 785-91. doi: 10.1590/S0034-89102006000600007
14. Fayers PM, Machin D. Quality of life. Assessment, analysis, and interpretation. Chichester: John Wiley, 2007.
15. Cohen, J. Statistical power analysis for the behavioral sciences. Hillsdale: Lawrence Erlbaum, 1988.
16. Brasil. Ministério da Saúde. Resolução nº 466/2012 do Conselho Nacional de Saúde. Comissão de Ética e Pesquisa - CONEP sobre pesquisa envolvendo seres humanos. Brasília; 2012.
17. Faller JW, Melo WA, Versa GLGS, Marcon SS. Qualidade de vida de idosos cadastrados na Estratégia Saúde da Família de Foz do Iguaçu-PR. *Esc. Esc. Anna Nery Rev. Enferm*. 2010; 14(4): 803-10. doi: 10.1590/S1414-81452010000400021
18. Farenzena WP, Argimon II, Moriguchi E, Portugeuz MW. Qualidade de vida em um grupo de idosos de Veranópolis. *Rev. Kairós*. 2007; 10(2): 225-43. Available from: <http://revistas.pucsp.br/index.php/kairos/article/view/2600>
19. Instituto Brasileiro de Geografia e Estatística (IBGE). Síntese de indicadores sociais: Uma análise das condições de vida da população brasileira - 2013. Rio de Janeiro, 2013.
20. Carvalho JAM, Garcia RA. O envelhecimento da população brasileira: um enfoque demográfico. *Cad. Saúde Pública*. 2003; 19(3): 725 -33. doi: 10.1590/S0102-311X2003000300005

21. Ribeiro B et al. Referencial Teórico sobre Analfabetismo Funcional. Depto de Informática Aplicada - Universidade Federal do Estado do Rio de Janeiro (UNIRIO). Relatórios Técnicos do DIA/UNIRIO, N°. 0008/2011, Abril, 2011. Available from: <http://www.seer.unirio.br/index.php/monografiasppgi/article/view/1498/1379>
22. Instituto Brasileiro de Geografia e Estatística (IBGE). Censo Demográfico 2010 - Característica da população e dos domicílios: Resultado do Universo - 2011. Rio de Janeiro, 2011.
23. Ferreira LS, Pinho MSP, Pereira MWM, Ferreira AP. Perfil cognitivo de idosos residentes em Instituições de Longa Permanência de Brasília-DF. Revista Brasileira de Enfermagem, 2014; mar-abr; 67(2): 247-51. doi: <http://dx.doi.org/10.5935/0034-7167.20140033>
24. Machado JC, et al. Declínio cognitivo de idosos e sua associação com fatores epidemiológicos em Viçosa, Minas Gerais. Rev. bras. geriatr. gerontol. 2011; 14(1): 109-21. doi: 10.1590/S1809-98232011000100012
25. Converso MER, Iartelli I. Caracterização e análise do estado mental e funcional de idosos institucionalizados em instituições públicas de longa permanência. J. bras. psiquiatr. 2007; 56(4): 267-72. doi: <http://dx.doi.org/10.1590/S0047-20852007000400005>
26. Souza ISM, et al. Rastreamento Cognitivo de Idosos Institucionalizados em Instituição de Longa Permanência para Idosos. Rev. Bras. de Economia Doméstica. 2011; 22(2): 3-18. Available from: <http://www.seer.ufv.br/seer/oikos/index.php/httpwwwseerufvbrseeroikos/article/view/31/90>
27. Braga MCP, Casella MA, Campos MLN, Paiva SP. Qualidade de vida medida pelo WHOQOL-Bref: estudo com idosos residentes em Juiz de fora-MG. Rev. de APS. 2011; 14(1): 93-100. Available from: [file:///C:/Users/lenovo/Downloads/965-6621-1-PB.\(3\).pdf](file:///C:/Users/lenovo/Downloads/965-6621-1-PB.(3).pdf)
28. Pontes MLF. Qualidade de vida e fragilidade em idosos que residem em comunidades. [tese de doutorado], Ribeirão Preto: Escola de Enfermagem de Ribeirão Preto/USP; 2013.
29. Brasil. Constituição 1988. Constituição da República Federativa do Brasil. Brasília (DF): Senado Federal; 1988.
30. Brasil. Lei nº 8.080 de 19 de Setembro de 1990. Dispõe sobre as condições para a promoção, proteção e recuperação da saúde, a organização e o funcionamento dos serviços correspondentes e dá outras providências. Diário Oficial da União 1990; 19 set.
31. Bogardus ST Jr, Yueh B, Shekelle PG. Screening and management of adult hearing loss in primary care: clinical applications. JAMA. 2003; 289(15): 1986-90. doi: 10.1001/jama.289.15.1976
32. Moraes EN. Atenção à saúde do idoso: aspectos conceituais. Brasília: Organização Pan-Americana da Saúde; 2012.
33. Beckert M, Irigaray TQ, Trentini CM. Qualidade de vida, cognição e desempenho nas funções executivas de idosos. Estud. psicol. (Campinas). 2012; 29(2), 155-16. doi: 10.1590/S0103-166X2012000200001
34. Maués CR, Paschoal SMP, Jaluul O, França CC, Jacob Filho W. Avaliação da qualidade de vida: comparação entre idosos jovens e muito idosos. Rev. Bras. Clin. Med. 2010; 8(5): 405-10. Available from: <http://files.bvs.br/upload/S/1679-1010/2010/v8n5/007.pdf>
35. Puts MTE, Shekary N, Widdershoven G, Heldens J, Lips P, Deeg DJH. What does quality of life mean to older frail and non-frail community-dwelling adults in the Netherlands? Qual. Life Res. 2007; 16(2): 263-77. doi: 10.1007/s11136-006-9121-0

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