Acta Paulista de Enfermagem
ISSN: 0103-2100
ISSN: 1982-0194
Escola Paulista de Enfermagem, Universidade Federal de São Paulo

Araújo, Gleicy Karine Nascimento de; Souto, Rafaella Queiroga; Alves, Fábia Alexandra Pottes; Sousa, Rute Costa Régis de; Ceballos, Albanita Gomes da Costa de; Santos, Rafael da Costa; Lyra, Érica Verônica de Vasconcelos; Nogueira, Renata Torres de Assis

Capacidade funcional e fatores associados em idosos residentes em comunidade
Acta Paulista de Enfermagem, vol. 32, núm. 3, Maio-Junho, 2019, pp. 312-318
Escola Paulista de Enfermagem, Universidade Federal de São Paulo

DOI: 10.1590/1982-0194201900043

Disponível em: http://www.redalyc.org/articulo.oa?id=307060482011

Original Article

Functional capability and associated factors in the elderly living in the community

Capacidade funcional e fatores associados em idosos residentes em comunidade

Capacidad funcional y factores asociados en ancianos residentes en geriátricos

Gleicy Karine Nascimento de Araújo[1]
Rafaella Queiroga Souto[1]
Fábia Alexandra Pottes Alves[2]
Rute Costa Régis de Sousa[2]
Albanita Gomes da Costa de Ceballos[2]
Rafael da Costa Santos[1]
Érica Verônica de Vasconcelos Lyra[2]
Renata Torres de Assis Nogueira[2]

Keywords
Health; Health of the elderly; Aged; Activities of daily living; Morbidity

Descritores
Saúde; Saúde do idoso; Idoso; Atividades cotidianas; Morbidade

Descriptores
Salud; Salud del anciano; Anciano; Actividades cotidianas; Morbilidad

Submitted
January 12, 2019

Accepted
April 4, 2019

Abstract
Objective: Estimate the level of functional capacity, self-reported diseases and the associated factors between community-dwelling elderly people;
Methods: This was a quantitative, descriptive, cross-sectional study conducted with 159 elderly people. We used the Brazil Old Age Schedule, Lawton and Brody scale, Katz index and a self-reported disease questionnaire;
Results: In the sample of 159 participants, it was observed that of the elderly people were between 60 and 70 years old, female, widowed, divorced or never married, could read and write, did not work and received minimum wage. For basic activities of daily living, having diabetes was the most important factor, with seven point thirty times the likelihood of been dependent. For instrumental and advanced activities of daily living, not been literate and suffering from stroke, respectively, were the most important factors;
Conclusion: Functional capacity was associated with osteoporosis and stroke and was correlated with self-reported diseases.

Resumo
Objetivo: Estimar o nível de capacidade funcional, as doenças autorreferidas e fatores associados entre idosos comunitários.
Métodos: Estudo quantitativo, descritivo, transversal, realizado com 159 idosos. Foram utilizados o questionário Brazil Old Age Schedule (BOAS), a escala de Lawton e Brody, o índice de Katz e um questionário de doença autorreferida.
Resultados: Na amostra de 159 participantes, 85 idosos tinham entre 60 e 70 anos, eram do sexo feminino, viúvos, divorciados ou nunca casados, sabiam ler e escrever, não trabalhavam e recebiam salário mínimo. Para as atividades básicas da vida diária, ter diabetes foi o fator mais importante, com 7.30 vezes a probabilidade de ser dependente. Para atividades instrumentais e avançadas da vida diária, não ser alfabetizado e sofrer acidente vascular cerebral (AVC), respectivamente, foram os fatores mais importantes.
Conclusão: A capacidade funcional foi associada à osteoporose e AVC, e teve correlação com doenças autorreferidas.

Resumen
Objetivo: Estimar el nivel de capacidad funcional, enfermedades autorreferidas y factores asociados entre ancianos de residencias geriátricas.
Métodos: Estudio cuantitativo, descriptivo y transversal realizado con 159 ancianos. Se utilizó el cuestionario Brazil Old Age Schedule (BOAS), la escala de Lawton y Brody, el índice de Katz y un cuestionario de enfermedad autorreferida.
Resultados: En la muestra de 159 participantes, 85 ancianos tenían entre 60 y 70 años, eran de sexo femenino, viudos, divorciados o nunca casados, sabían leer y escribir, no trabajaban y recibían salario mínimo. Para las actividades básicas de la vida diaria, tener diabetes fue el factor más importante, con 7.30 veces de probabilidad de ser dependiente. Para actividades instrumentales y avanzadas de la vida diaria, no estar alfabetizado y sufrir accidente cerebrovascular (ACV) fueron los factores más importantes, respectivamente.
Conclusión: La capacidad funcional fue asociada a la osteoporosis y ACV y estuvo relacionada con enfermedades autorreferidas.

Autor correspondente
Rafaella Queiroga Souto
https://orcid.org/0000-0002-7368-8497
Email: rafaellaqueiroga7@gmail.com

DOI
http://dx.doi.org/10.1590/1982-0194201900043

How to cite:
Araújo GK, Souto RQ, Alves FA, Sousa RC, Ceballos AG, Santos RC, et al. Functional capability and associated factors in living in a community. Acta Paul Enferm. 2019;32(3):312-8.

[1]Universidade Federal da Paraíba, João Pessoa, PB, Brasil.
[2]Universidade Federal de Pernambuco, Recife, PE, Brasil.

Conflitos de Interesse: Cada um dos autores declara que não apresenta qualquer tipo conflito de interesse e aprovou a apresentação do estudo.

Introduction

The complexity of the morphological and functional modifications of aging is one of the concerns of the health services, especially with regard to disease prevention and quality of life improvement.[1]

During the aging process, chronic non-communicable diseases (CNCDs) are frequently identified, and their increased incidence is related to a greater loss of functional capacity.[1] These diseases are of multifactorial and noninfectious origin, present determinants and conditioning factors and may be associated with deficiencies.[2] In Brazil, CNCDs account for approximately 70% of health care expenditures.[2]

Functional capacity can be defined as the ability to plan and perform the activities of daily living that are necessary for independent living and that allow for self-care.[3,4] The functional capacity evaluation is an attempt to measure the performance levels of elderly people in the execution of activities in different areas, such as in social interactions and leisure activities.[5] This evaluation is carried out with the objective of maintaining a state of health and disease prevention, aiming at guaranteeing autonomy and independence for the longest possible time.[6]

Senescence is not necessarily related to diseases and functional loss; however, the incidence of CNCDs is related to decreased functionality.[7] The Pact for Life and the National Policy on the Health of the Elderly (Política Nacional de Saúde da Pessoa Idosa; PNSPI) determined that health care for the elderly population should have primary health care as a gateway and is considered a priority in the Unified Health System (SUS).[8,9]

The decreased ability to perform daily activities is related to a predisposition to fragility, violence and institutionalization; it can also have consequences throughout life, including an earlier death. From this, functional capacity is identified as one of the important markers of healthy and active aging, since it impacts the daily activities differently, being able to occur simultaneously with potential diseases that vary in severity.[6]

Therefore, studies that discuss functional capacity in elderly people are essential, mainly for understanding how people are living the additional years gained by increasing longevity and thus subsidizing health actions that may favor active aging.[10]

In this context, the present study aimed to estimate the level of functional capacity, self-reported diseases (SRD) and the associated factors between community-dwelling elderly people.

Methods

This was a descriptive, cross-sectional, quantitative study carried out in the municipality of Recife, Pernambuco state, Brazil from 2016 to 2017.

This study included elderly people enrolled in the coverage area of 3 teams of family health of the Sítio Wanderley Primary Care Unit (PCU), located in micro-area III of Health District IV in the municipality of Recife, Pernambuco state, Brazil.

The sample was calculated using the finite population formula for epidemiological studies, using a 95% confidence level and 5% error power. Based on this calculation, the resulting sample consisted of 159 elderly people.

Sampling was random of the systematic type. The number of elderly people was determined by proportionality among the 3 health unit teams. One in every 5 seniors on the list of each team was selected and invited to participate in the survey.

Included in the research were people age 60 years and over enrolled in a PCU in micro-area III of Recife's Health District IV. Those who were in a terminal stage, had severe hearing or vision deficits or had a severe cognitive deficit were excluded. The last criterion was identified by the researcher through observation or information coming from the caregivers.

Data collection occurred at the residence of the participant after clarification about the objectives of the research, orientation on data confidentiality, availability to participate and signing the informed consent form.

For data collection, the following instruments were used: the Brazil Old Age Schedule (BOAS);[11] SRD questionnaire, with questions about the existence of chronic diseases; the Katz Index of

Independence in Activities Daily Living (ADL);[12] the Lawton Instrumental Activities of Daily Living Scale (IADL);[13] Advanced Activities of Daily Living (AADL).[14]

The sociodemographic characterization of the studied group was made using the BOAS instrument, which is divided into sections that include general information, physical health, the use of medical and dental services and mental health.[11] Issues related to age, gender, marital status, literacy, work and income were extracted from this instrument.

The SRD questionnaire contains 9 chronic diseases (angina or heart attack, stroke or cerebral vascular accident, cancer, arthritis or rheumatism, pneumonia or bronchitis, depression and osteoporosis) that have been diagnosed by a doctor in the last year.

The Katz index was developed with the objective of evaluating the results of treatment in elderly people and to relate the prognosis to chronic patients.[12] There are 6 items that verify performance in for ADL, following a hierarchy of complexity: feeding, sphincter control, transference, personal hygiene, ability to dress and ability to bathe.[13]

Instrumental activities of daily living refer to the adaptive activities of elderly people to their environment and require a greater functional capacity in order to be performed, since they are more complex activities.[14] They also refer to everyday life, including using the telephone, using means of transportation, shopping, preparing food, performing household chores, taking medication and handling money. The classification on this scale also identifies elderly people as totally dependent, partially dependent or independent.[15]

In regard to AADL, one study used a set of questions adapted by the FIBRA network and used in a study of frailty profiles in Brazilian elderly people, held in cities of São Paulo state.[16] These questions inquired about the presence of elderly people in educational, civic, religious and leisure activities and had 3 options: "never did", "stopped doing" and "still does". Those who performed 4 or more activities were classified as more active (MA), and elderly people who performed 3 or fewer activities were classified as less active (LA).

The data collected were tabulated and analyzed in SPSS version 21.0 by means of descriptive statistics (absolute and relative frequency, mean, median, standard deviation, minimum and maximum) and inferential statistics (Pearson's Chi-square, Fisher exact test and Spearman's correlation test and Multiple Logistic Regression Models). The correlation strength followed this parameter: $r=1$ (perfect); $0.80<r<1$ (very high); $0.60<r<0.80$ (high); $0.40<r<0.60$ (moderate); $0.20<r<0.40$ (low); $0<r<0.20$ (very low); $r=0$ (null), and the interpretation was the same regarding negative coefficient values.

The non-parametric test was chosen because according to the Kolmogorov-Smirnov normality test, the variables did not present a normal distribution. For all analyses, we used a significance level of 5% ($p<0.05$).

The Pearson's Chi-square, Fisher exact test and Spearman's correlation test were used to measure associations of each study variable with functional capacity on ADL, AIDL and AAD. The variable entry criterion was set to $p<0,2$ based on results of the above tests, were included in the logistic regression model. A two-tailed probability value of 0.05 or less was considered significant.

This project is linked to a research project entitled "Impact of multidimensional interventions on elderly people enrolled in primary health care and their caregivers", approved by the Research Ethics Committee of the Centro de Ciências da Saúde (Health Sciences Center; CCS) of the Federal University of Pernambuco (UFPE) under number 1.413.599.

Results

In the sample of 159 participants, it was observed that 53.5% (n=85) of the elderly people were between 60 and 70 years old, 76.7% (n=122) were female, 66.0% (n=105) were widowed, divorced or never married, 66.7% (n=106) could read and write, 79.2% (n=126) did not work and 71.1% (n=113) received minimum

wage. The variables of marital status and literacy level were associated with the level of independence in ADL (p=0.017 and p=0.029, respectively). Regarding functional capacity in IADL and AADL, the only variables that did not present a statistically significant association were gender, income and SRD. It was observed that 85.5% (n=136) of the elderly people presented 0-2 diseases. It was also possible to verify that functional capacity loss was greater among participants with 3-7 diseases and those with a prevalence of partial dependence (13.0%; n=3) and total dependence (17.4%; n=4) in ADL (Table 1).

Table 1. Functional capacity according to the socioeconomic characteristics of the elderly participants

Variables	ADL			IADL			AADL	
	I n(%)	PD n(%)	TD n(%)	I n(%)	PD n(%)	TD n(%)	MA n(%)	LA n(%)
Age								
60-70	73 (85,9)	9 (10,6)	3 (3,5)	51 (60,0)	18 (21,2)	16 (18,8)	55 (64,7)	30 (35,3)
71-79	35 (85,4)	3 (7,3)	3 (7,3)	17 (41,5)	13 (31,7)	11 (26,8)	17 (41,5)	24 (58,5)
≥80 years old	22 (68,8)	6 (18,8)	4 (12,5)	4 (12,5)	9 (28,1)	19 (59,4)	11 (34,4)	21 (65,6)
p-value		0.192**			<0.0001**		0.004*	
Sex								
Male	35 (94,6)	1 (2,7)	1 (2,7)	17 (45,9)	8 (21,5)	12 (32,4)	22 (59,5)	15 (40,5)
Female	96 (78,7)	17 (13,9)	9 (7,4)	56 (45,9)	32 (26,2)	34 (27,9)	62 (50,8)	60 (49,2)
p-value		0.081**			0.801*		0.356*	
Marital status								
Married or in a stable union	51 (94,4)	2 (3,7)	1 (1,9)	32 (59,3)	14 (25,9)	8 (14,8)	35 (64,8)	19 (35,2)
Single/widowed or separated	80 (76,2)	16 (15,2)	9 (8,6)	41 (39,0)	26 (24,8)	38 (36,2)	49 (46,7)	56 (53,3)
p-value		0.017**			0.012*		0.030*	
Literate								
Yes	92 (86,8)	11 (10,4)	3 (2,8)	63 (59,4)	20 (18,9)	23 (21,7)	63 (59,4)	43 (40,6)
No	39 (73,6)	7 (13,2)	7 (13,2)	10 (18,9)	20 (37,7)	23 (43,4)	21 (39,6)	32 (60,4)
p-value		0.029**			<0.0001*		0.018*	
Works								
Yes	25 (92.6)	1 (3,7)	1 (3,7)	20 (74,1)	6 (22,2)	1 (3,7)	22 (81.5)	5 (18,5)
No	103 (81.7)	15 (11.9)	8 (6,3)	53 (42,1)	31 (24,6)	42 (33.3)	61 (48.4)	65 (51.6)
p-value		0.367**			0.003**		0.002**	
Income								
Up to 1 minimum wage	92 (81,4)	13 (11,5)	8 (7,1)	47 (41,6)	29 (25,7)	37 (32,7)	56 (49,6)	57 (50,4)
2-3 minimum wages	34 (82,9)	5 (12,2)	2 (4,9)	22 (53,7)	10 (24,4)	9 (22,0)	24 (58,5)	17 (41,5)
≥3 minimum wages	5 (100)	0 (0,0)	0 (0,0)	4 (80,0)	1 (20,0)	0 (0,0)	4 (80,0)	1 (20,0)
p-value		0.852**			0.283**		0.286**	
No. of SRD								
0-2		115 (84,6)			15 (11,0)		6 (4,4)	
3-7		16 (69,6)			3 (13,0)		4 (17,4)	
p-value		0.053*			0.439*		0.603*	

Source: Survey data (2016-2017).
* Pearson's Chi-square test; ** Fisher exact test; I – independence; PD – partial dependence; TD – total dependence; MA – more active; LA – less active; ADL – activities of daily living; IADL – instrumental activities of daily living; AADL – advanced activities of daily living; SRD – self-reported diseases.

The results of the correlation analysis between the SRD total score and the number of activities in ADL, IADL and AADL identified a positive correlation between SRD and the AADL total score (Table 2).

Table 2. Correlation between the total score of self-reported diseases and the number of activities found in ADI, IADL and AADL

Variables	SRD total score	
	Correlation coefficient	p-value*
ADL		
Total score	0.141	0.077
Number of activities performed independently	-0.184	0.020
Number of activities performed with help	0.150	0.060
Number of activities unable to perform	0.191	0.016
IADL		
Total score	0.069	0.389
Number of activities performed independently	-0.083	0.044
Number of activities performed with help	0.160	0.044
Number of activities unable to perform	-0.022	0.782
AADL		
Total score	0.385	0.000
Number of activities never performed	0.113	0.157
Number of activities stopped performing	-0.287	0.067
Number of activities still performed	-0.130	0.102

Source: Survey data (2016-2017).
* Spearman correlation test; ADL – activities of daily living; IADL – instrumental activities of daily living; AADL – advanced activities of daily living; SRD – self-reported diseases

The variables functional capacity assessment for ADL and IADL were dichotomized in independence and dependence in order to perform the adjusted multiple regression. Only variables that presented p<0,2 in the bivariate analyses were included in the model. The following variables entered the model for ADL: gender, literacy, marital status, if the interviewee had stroke, arthritis, osteoporosis, hypertension, diabetes; for IADL: age, literacy, marital status, work, income, if the interviewee had angina, stroke, osteoporosis; and for AADL: age, literacy, marital status, work, income, if the interviewee had stroke, osteoporosis. In the multiple regression models, the factors associated with functional capacity (adjusted OR) were different for ADL, IADL and AADL. For ADL, having diabetes was the most important factor, with seven point thirty times the likelihood of been dependent. For AIDL and AADL, not been literate and suffering from stroke, respectively, were the most important factors (Table 3).

Table 3. Variables associated with dependence in ADL, IADL and AADL by means of adjusted logistic regression

Variables	OR	CI	p-value*
ADL			
Sex			
Female	4,96	[1,0-23,7]	0,04
Male	1,00	-	-
Literate			
Yes	4,82	[1,7-13,6]	<0,01
No	1,00	-	-
Hypertension			
Yes	1,00	-	-
No	3,35	[1,1-9,8]	0,02
Diabetes			
Yes	7,30	[2,4-21,5]	<0,01
No	1,00	-	-
IADL			
Literate			
Yes	1,00	-	-
No	6,28	[2,6-15,0]	<0,01
Age			-
≤70 years	1,00	-	0,01
Greater than70	2,56	[1,2-5,4]	0,01
Job			
Yes	1,00	-	-
No	3,69	[1,2-10,9]	0,01
AADL			
Age			
≤70 years	1,00	-	-
Greater than70	2,80	[1,3-5,7]	-<0,01
Job			
Yes	1,00	-	-
No	3,38	[1,1-9,9]	0,026
Stroke			
Yes	6,24	[1,5-25,0]	0,01
No	1,00	-	-

Source: Survey data (2016-2017).
ADL: R^2 adjusted: 0.273; Test Accuracy: 0.094; IADL: R^2 adjusted: 0.321; Test Accuracy: 0.442; AADL: R^2 adjusted: 0.202; Test Accuracy: 0.167; OR – Odds Ratio; IC – confidence interval; * Significance of the test

Discussion

Regarding functional capacity according to sex, in our study, most men were classified as independent and more active. However, it was observed that there was significance for ADL according to sex, as 53.8% (n=361) of the elderly people classified as independent were men.[3] This finding corroborates that found in a study carried out with elderly people living in the state of Rio Grande do Sul, Brazil, in which the fact that women live longer is not directly related to better health conditions or quality of life.[17]

In regard to IADL and AADL according to sex, in our study, women were more dependent, with the exception of total dependence for IADL, which

corroborated the literature, with women being more prevalent in all categories of AIDD.[3]

When analyzing the age groups, the younger elderly people (60-70 years old) were the majority, which corroborated the data found in a study of 820 elderly people, in which 44.4% (n=250) were in the age group of 60 to 70 years old.[3] This age group presented the highest level of independence in all classifications of activities, with statistical significance among age and IADL and AADL.

Regarding the variable 'occupation', it was observed in our study that there was a predominance of elderly people who did not work. When we assessed the association between occupation and functional capacity, it was seen that the working elderly people performed activities independently and were more active, this association being statistically significant for both IADL and AADL. The variable 'work' can be seen as protective for the loss of functional capacity, since the employed elderly people are less likely to have dependence.[18]

The majority (44.4%, n=234) of the elderly people had 1-3 SRD, 31.7% (n=168) had 4-6, and 10.5% (n=55) had more than 6 diseases.[17] Decreased functional capacity may be due to a single disease or the sum of these diseases.

It was observed that 50.6% (n=39) of the elderly people had 0 to 2 diseases; however, the functional capacity decrease was presented as a factor associated with the variable of having 3 or more chronic diseases.[19]

Heart problems were associated with ADL, indicating that the changes that occur in the cardiovascular system due to aging have a great influence on the functional loss of elderly people.[3] However, when observing the variables of IADL, the presence of osteoporosis intervened directly in the development of limitations for the execution of the activities.

Among the elderly people interviewed, 9.8% reported having had a cerebral vascular accident, 29.6% had heart problems, and 4.9% had a diagnosis of cancer.[20] The prevalence of the inability to perform ADL was higher among individuals who had a cerebral vascular accident.

As chronological age increases, functional capacity tends to reduce, and there is a high incidence of chronic diseases, which contributes to the degenerative process; thus, the ability of elderly people to perform activities independently is reduced.[21]

By observing the functional capacity data, it was possible to verify that elderly people have a good functional capacity for ADL and IADL and a decline in AADL. The results presented a hierarchical loss, that is, from activities with a higher degree of complexity to activities of easy execution, which corroborates the literature.[17]

In this study, it was possible to observe that the activity variables performed with independence in ADL and IADL, as well as the AADL that are still performed, had a weak negative correlation. These data allow the interpretation that the elderly person who has a conserved functional capacity presents a lower number of diseases.

These findings can be explained from the assumption that the execution of ADL, IADL or AADL presents a certain degree of complexity that can be negatively influenced by the number of diseases that the elderly person presents.[17]

Conclusion

Decreased functional capacity was more evident in very old, female, single, non- literate, non-working elderly people who earned up to 1 minimum wage. Functional decay occurred hierarchically regarding activities, with the reduction in the execution of more complex activities (such as AADL) occurring first, which exhibited a greater prevalence. We identified associations between ADL and marital status and schooling; IADL and income and sex; AADL and age, marital status, schooling and occupation; the number of diseases and ADL; osteoporosis and ADL, IADL and AADL; and cerebral vascular disease and AADL. In addition, a positive correlation was observed between SRD and AADL.

Acknowledgments

To the National Council for Scientific and Technological Development (CNPq) for the grant-

ing of the Scientific Initiation Grant in accordance with project identification number 16048586.

Collaborations

Araújo GKN, Souto RQ, Alves FAP, Sousa RCR, Ceballos AGC, Santos RC, Lyra EVV and Nogueira RTA declare that they contributed to the study design, data analysis and interpretation, writing of the article and approval of the final version for publication.

References

1. Silva CS, Barbosa MM, Pinho L, Figueiredo MF, Amaral CO, Cunha FO, et al. Family health strategy: relevance to the functional capacity of older people. Rev Bras Enferm. 2018;71(Supl 2):740–6.
2. Souza JO, Oliveira BC, Souza VL, Figueiras SR, Bastos AD. Prevalence of chronic diseases in bedridden nurses attended in a Basic Health Unit Family. Saúde Redes. 2016;2(3):292–300.
3. Pinto AH, Lange C, Pastore CA, Llano PM , Castro DP, Santos F. [Functional capacity for activities of the daily life of the elderly of the Rural Health Family Strategy]. Ciênc Saúde Colet. 2016;21(11):3545–55. Portuguese.
4. Poubel PB, Lemos EL, Araújo FC, Leite GG, Freitas IS, Silva RM, et al. Self-perceived health and clinical-functional of elderly in a basic health unit in northern Brazil. J Heal Biol Sci. 2017;5(1):71–8.
5. Lustosa SA, Cardoso MD, Souza GV, Souza AP, Santos AJ. Functional capacity evaluation of elderly person registered in a Family Health. Cad UniFOA. 2016;32:91–8.
6. Carneiro DN, Vilela AB, Meira SS. Evaluation of cognitive deficit, mobility and activities of daily living among elderly. Rev APS. 2016;19(2):203–9.
7. Santos Júnior E, Oliveira L, Silva R. Chronic non-communicable diseases and the functional capacity of elderly people. Rev Pesqui Cuid Fundam (Online). 2014;6(2):516–24.
8. Castro Filho JA, Motta LB. Evaluation in distance learning: a case report of the UNASUS/UERJ postgraduate course in elderly health. Rev Bras Geriatr Gerontol. 2018;21(5):513–22.
9. Santos SC, Tonhom SF, Komatsu RS. [Health of the elderly: reflections on the integrality of care]. Rev Bras Promoção Saúde. 2016;29(Supl):118–27. Portuguese.
10. Lima PV, Valença TD, Reis LA. Aging with functional dependence: buildingo strategies for coping. Rev Pesq Saúde. 2016;17(2):96–101.
11. Porciúncula RD, Carvalho EF, Barreto KM, Leite VM. [Socio-epidemiological profile and autonomy of elderly in the city of Recife, northeastern Brazil]. Rev Bras Geriatr Gerontol. 2014;17(2):315-25.
12. Antúnez SF, Lima NP, Bierhals IO, Gomes AP, Vieira LS, Tomasi E. Incapacidad funcional para actividades básicas e instrumentales de la vida diaria: un estudio de base poblacional en adultos mayores de Pelotas, Rio Grande do Sul, Brasil, 2014. Epidemiol Serv Saúde. 2018;27(2):e2017290.
13. Oliveira EM, Silva HS, Lopes A, Cachioni M, Falcão DV, Batistoni SS, et al. [Advanced Activities of Daily Living (AADL) and cognitive performance among older adults]. Psico USF. 2015; 20(1):109–20. Portuguese.
14. César CC, Mambrini JV, Ferreira FR, Costa MF. [Functional capacity in the elderly: analyzing questions on mobility and basic and instrumental activities of daily living using Item Response Theory]. Cad Saúde Pública. 2015;31(5):931-45. Portuguese.
15. Reis LA, Reis LA, Torres GD. Impact of sociodemographic and health variables on the functional capacity of low-income elderly. Ciênc Cuid Saúde. 2015;14(1):847-54.
16. Oliveira EM, Silva HS, Lopes A Cachioni M, Falcão DV, Batistoni SS, Neri AL, Yassuda MS. [Advanced Activities of Daily Living (AADL) and cognitive performance among older adults]. Psico USF. 2015;20(1):109–20. Portuguese.
17. Berlezi EM, Farias AM, Dallazen F, Oliveira KR, Pillatt AP, Fortes CK. Analysis of the functional capacity of elderly residents of communities with a rapid population aging rate. Rev Bras Geriatr Gerontol. 2016;19(4):643–52.
18. Pereira LC, Figueiredo ML, Beleza CM, Andrade EM, Silva MJ, Pereira AF. Predictors for the functional incapacity of the elderly in primary health care. Rev Bras Enferm. 2017;70(1):112–8.
19. Bortoluzzi E, Doring M, Portella M, Cavalcanti G, Mascarelo A, Dellani M. [Prevalence and factors associated with functional dependence in the oldest old]. Rev Bras Ativ Fís Saúde. 2017;22(1):85–94. Portuguese.
20. Nunes JD, Saes MO, Nunes BP, Siqueira FC, Soares DC, Fassa ME, et al. Functional disability indicators and associated factors in the elderly: a population-based study in Bagé, Rio Grande do Sul, Brazil. Epidemiol Serv Saúde. 2017;26(2):295–304.
21. Almeida TZ de, Santos CA, Rocha SV, Pedreira RB, Pinto Junior EP. [Prevalence of functional disability and associated factors among elderly in rural areas]. Rev Ciênc Méd Biol. 2016;15(2):199. Portuguese.