



RESEARCH ARTICLE

OPEN ACCESS

## ANALYSIS OF THE FUNCTIONAL CAPACITY OF ELDERLY INDIVIDUALS ASSISTED BY THE HIPERDIA PROGRAM IN A BASIC HEALTH UNIT

<sup>1</sup>Fabiano Feitosa de Souza, <sup>2</sup>Firmina Hermelinda Saldanha Albuquerque, <sup>3</sup>Karla Maria Carneiro Rolim, <sup>4</sup>Maria Solange Nogueira dos Santos, <sup>5</sup>Henriqueta Ilda Verganista Martins Fernandes, <sup>6</sup>Rejane Medeiros Millions, <sup>7</sup>Mirna Albuquerque Frota and <sup>8</sup>Suzane Passos de Vasconcelos

<sup>1</sup>Nurse. Universidade Federal do Amazonas-UFAM/ISB-Coari, AM, Brazil

<sup>2</sup>Nurse. Master's Degree in Collective Health, Universidade de Fortaleza-UNIFOR. Professor of Universidade Federal do Amazonas-UFAM/ISB-Coari, AM, Brazil

<sup>3</sup>Nurse. PhD in Humanization in Neonatal Care, Université de Rouen (CHU-ROUEN), France. Coordinator of the Master's Degree Course in Technology and Innovation in Nursing; Universidade de Fortaleza (MPTIE/UNIFOR). Full Professor of the Collective Health Program of Universidade de Fortaleza (PPGSC/UNIFOR). Fortaleza, CE, Brazil

<sup>4</sup>Nurse. Master's Degree in Technology and Innovation in Nursing, Universidade de Fortaleza-UNIFOR. Fortaleza, CE, Brazil

<sup>5</sup>Nurse. PhD in Collective Health; Universidade de Fortaleza (UNIFOR). Ph.D. in Education; Instituto de Educação pela Universidade Lusófona de Humanidades de Lisboa. Adjunct Professor at Escola Superior de Enfermagem do Porto (ESEP). Member of Centro de Investigação em Tecnologias e Serviços de Saúde (CINTESIS), Universidade do Porto. Porto, Portugal

<sup>6</sup>Nurse. PhD in Collective Health; IMS/UERJ. Professor at Centro Universitário do Rio Grande do Norte - UNI-RN. Titular member of the Research Ethics Committee of Universidade Federal do Rio Grande do Norte, Natal, Brazil

<sup>7</sup>PhD; Université de Rouen (CHU-ROUEN), France. Ph.D. in Nursing, Universidade Federal do Ceará (UFC). Full Professor of the Undergraduate Nursing course; Universidade de Fortaleza (UNIFOR); Coordinator of the Postgraduate Program in Collective Health (PPGSC/UNIFOR); Professor of the Master's Degree Course in Technology and Innovation in Nursing (MPTIE/UNIFOR). Fortaleza, CE, Brazil

<sup>8</sup>Nurse. Master student in Technology and Innovation in Nursing at Universidade de Fortaleza-UNIFOR. Fortaleza, CE, Brazil

### ARTICLE INFO

#### Article History:

Received 12<sup>th</sup> May, 2019  
Received in revised form  
16<sup>th</sup> June, 2019  
Accepted 26<sup>th</sup> July, 2019  
Published online 28<sup>th</sup> August, 2019

#### Key Words:

Health Services for the Elderly,  
Functional Capacity, Hypertension,  
Diabetes Mellitus.

### ABSTRACT

Brazil, the elderly constitute the fastest growing age group, and many of these individuals need better care to enjoy an active and healthy old age. Functional capacity is essential for a good quality of life, with both being of equal importance for health promotion. The aim of this study was to analyze the functional capacity of elderly individuals assisted by the HIPERDIA program in a Basic Health Unit in the municipality of Coari-AM, Brazil. The present was a quantitative, cross-sectional study with a descriptive design. Katz and Lawton questionnaires were applied to 50 elderly individuals. The study showed that the variables feeding and bathing: Basic Activities of Daily Living (BADL) showed greater independence among the elderly, respectively 45 (90%) and 44 (88%). As for the Instrumental Activities of Daily Life (IADL), the best performances were related to the actions of using the telephone, taking care of finances and taking medication on time, with the following percentages: 38 (76%), 37 (74%), and 36 (72%). Systemic arterial hypertension and/or diabetes mellitus, if well controlled, do not constitute a major reason for loss of functional capacity; everyone who appropriately used medication felt well, just as they were able to perform their activities on a day-to-day basis. Decreased functional capacity is not only related to senescence, as it was confirmed in this study that the dependent or partially-dependent elderly individuals had another chronic disease, often because they did not acquire healthy habits.

Copyright © 2019, Fabiano Feitosa de Souza et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Fabiano Feitosa de Souza, Firmina Hermelinda Saldanha Albuquerque, Karla Maria Carneiro Rolim, 2019. "anAllysis of the functional capacity of elderly individuals assisted by the hiperdia program in a basic health unit", *International Journal of Development Research*, 09, (07),

### INTRODUCTION

The population pyramid has retained its format for a long time. Currently, this graph has taken another format, with less

irregular dimensions, so that the age groups show less discrepant numbers. The age group of the elderly is more comparable with that of young individuals, especially with

people under 15 years of age. It is clear that the Brazilian population are aging in large numbers, and this fact is not limited to Brazil, but also to other countries. It is estimated that in 2025 Brazil will reach the world's ranking of number of elderly citizens, since demographic research shows that the country will be the sixth in the world with a large population aged 60 years or older (WHO, 1999). Population aging is the result of changes in certain health indicators, especially the decrease in fertility and mortality, followed by an increase in life expectancy (Brazil, 2006). On the one hand, having a long life is an achievement/victory, as people are reaching an ever-increasing life expectancy. On the other hand, this population becomes a matter of concern, since not all have the socioeconomic and related support from the government. Concomitantly with the advancing years, there must also be quality of life. The aging population faces global, national and local challenges. Overcoming these challenges depends on a strategy with innovative planning and concrete and considerable political reforms in both developed and developing countries. When policies and programs address the elderly's needs, as well as their rights to social, physical and financial security, the protection, dignity and care of elderly individuals are guaranteed (WHO, 2005).

The aging process results in several changes in the human body, and these changes are not necessarily drastic ones. It is necessary to understand that a human being, upon reaching old age, will not have the same body reactions in comparison with others, since the aging process is not a homogeneous one for all individuals. That means that aging has different impacts, interfering with the processes of distinction and exclusion related to gender, ethnicity, racism, social and economic situations, geographical location of origin and place of residence (Brazil, 2006). Each individual may present different particularities and different responses at this stage. There are morphological, functional and biochemical changes, and these modifications may result in some individuals being more fragile than others, a fact that varies from individual to individual, as "being more fragile" does not mean necessarily mean incapacity, dependence. Aging is a dynamic and progressive life process, and this process goes through several stages, until senescence occurs. The Pan-American Health Organization (PAHO, 2003) defines aging as a "sequential, individual, cumulative, irreversible, universal, non-pathological process of deterioration of a mature organism, inherent to all members of a species." If aging is inherent to all species, then it is the natural process, one that is experienced daily, at every minute. Such process can decrease the individuals' capacity to do something they did when they were younger, but that does not mean that old age is a disease, or a synonym for incapacity. A conceptualization of aging based on functional capacity states that the aging process is characterized by a reduction in the capacity of homeostatic adaptation to situations of functional overload (Costa, 2010).

According to the Brazilian Institute of Geography and Statistics (IBGE), the proportion of individuals aged 60 years and older is the population segment that increases the most in Brazil, with growth rates of more than 4% per year in the period of 2012 to 2022. Making an analysis of the data since 2000 shows how much it has grown and will grow even more, using the IBGE projections: in 2000 the population aged 60 or older was 14.2 million; this number increased to 19.6 million in 2010 and the estimate is that in 2030 the elderly will be 41.5 million and could reach 73.5 million individuals by 2060

(IBGE, 2015 and IBGE, 2016). The demographic expansion of the elderly is attributed to the low fertility rate of the last 50 years. It decreased from 6.2 children per year in 1960 to 1.77 children in 2013, together with an improved quality of life. This situation of population aging is also influenced by the decrease in mortality at all age ranges. The IBGE also states that the life expectancy of the Brazilian people will significantly increase, from 75 years in 2013 to 81 years in 2060 – with women living on average 84.4 years, and men 78.03 years (IBGE, 2015 and IBGE, 2016). In the state of Amazonas, the elderly population also grew more than the other age groups. According to the IBGE, the state reached 3.9 million inhabitants, and the number of elderly individuals has increased to 3.5% since 2005. According to the IBGE study, people aged 60 years or older already constitute 8.8% of the current population, which is equivalent to more than 347,000 individuals (IBGE, 2016). The National Program of Hypertension and Diabetes Mellitus (*HIPERDIA*) is a primary care program of the Ministry of Health and basically comprises a process of registry and monitoring of hypertensive and diabetic patients. Systemic Arterial Hypertension (SAH) is a multifactorial clinical condition characterized by elevated and sustained blood pressure (BP) levels. It is often associated with functional and/or structural changes in target organs (heart, brain, kidneys and blood vessels) and metabolic alterations, with a consequent increase in the risk of fatal and nonfatal cardiovascular events (SBC, 2016). Diabetes Mellitus (DM) is not a single disease, but a heterogeneous group of metabolic disorders that have hyperglycemia in common, resulting from defects in insulin action, insulin secretion or both (Milech *et al.*, 2016).

Functional capacity (FC) is currently defined as the potential the elderly have of independently deciding and performing activities in their daily lives. "This concept is also considered in broad sense, because it coexists with more restricted ones, such as the above mentioned ones correlating FC to physical and mental capacity, while others consider only the capacity to perform physical tasks" (Lino *et al.*, 2008). The FC of the elderly can be characterized in several ways; it has a broad meaning, if we analyze all dimensions, and involves the capacity to perform certain physical tasks, such as mobility, work, etc., but it is also associated to mental activities maintained at a satisfactory level and the individuals' inclusion in the communities where they live. It is also seen as the capacity to perform activities that allow self-care and independent living, as well as the full maintenance of physical and mental skills developed throughout life, necessary and sufficient for a life with independence and autonomy (Veras, 2012; Litvoc and Brito, 2004). That is, the individuals can only perform activities of daily living, such as self-care and other activities in the community, at home or other environment, if their functional capacity is preserved, allowing them to carry out such actions daily.

In this study, we emphasize the definition by Neri (2005): according to the author, FC is associated with the degree of preservation of the individual's capacity to perform activities of daily living and perform the instrumental activities of daily living. When assessing the functionality of the elderly individual, it is necessary to differentiate between performance and FC. It is important to differentiate the two terms, since they can generate the idea of a single one. Performance refers to what the elderly individual actually performs daily; therefore, it is a fact that they perform such activity, whereas

functional capacity refers to the functions that the elderly persons are able to perform, that is, they could, but do not do, because of the constant interference of the family members, who restrict the elderly to certain tasks, limiting them due to excessive care or not knowing that the individual is able to perform other activities rather than those stipulated by the family for them (Brazil, 2006). FC preservation in the elderly is essential for their self-esteem, since they feel able to perform their daily tasks without help, do not feel like a burden to the family, feel independent and useful, because a possible incapacity will lead to suffering and, in many cases, to depression. Incapacity refers to the difficulty and need for assistance in the performance of activities of daily living (Brazil, 2006). To determine the level of FC, it is necessary to measure it through functional assessment, and it [...] can be understood as a systematized attempt to objectively assess the levels at which a person is functioning in a variety of areas using different capacities [...] (Brazil, 2006). A disabling process is the evolution of a chronic condition that involves risk, demographic, social, psychological, environmental, lifestyle, and behavioral factors and biological characteristics of the individuals. Old age is sometimes accompanied by morbidities, but that does not mean that diseases or disability are inherent to it. In the studies on aging, morbidity is one of the main health indicators analyzed. Few studies evaluate FC and autonomy, although in many scenarios they are more important than morbidity, since they are directly related to quality of life (Chaimowicz, 1997). A healthy elderly individual is not free of any morbidity, but rather, the one who actively participates in society and have a preserved FC (Ramos, 2003). The importance of functional evaluation lies in the possibility of detecting the self-care capacities and incapacities of the elderly, so that the needs are compatible with the activities, i.e., it is necessary to evaluate them, aiming to measure the individual's degree of independence. Once this is done, the professionals will actually know at which point the elderly will require intervention or not and, therefore, they will plan and implement their care, without going to the extremes of too much or lack of care, which can be harmful to elderly person's health (Roach, 2009). The dimensions evaluated in this study are: (i) Basic Activities of Daily Living (BADL) and (ii) Instrumental Activities of Daily Living (IADL), where: (i) is associated with the individual's capacity to perform selfcare, and (ii), the independence of the elderly in the community. Considering that aging is a multifactorial process that manifests in a particular and individual way, it is necessary to take into account the specificities of the different geographic regions of Brazil (Barbosa *et al.*, 2014). Therefore, in order to promote healthy aging, it is necessary for every family health team to know, as well as to evaluate the FC and the autonomy of the elderly population in their region. Such knowledge will provide the necessary subsidies for comprehensive health promotion in this population group. Therefore, the aim of this study was to analyze the functional capacity of elderly individuals assisted by the *HIPERDIA* program in a Basic Health Unit (UBS) in the municipality of Coari, state of Amazonas, Brazil.

## MATERIALS AND METHODS

This is a quantitative, cross-sectional and descriptive study, carried out in the municipality of Coari, located in the central region of the state of Amazonas, in the middle channel of the Solimões River, 363 km away from the capital city, Manaus. The study population corresponded to the elderly individuals

enrolled in the *HIPERDIA* program of the Manoel Carlito dos Santos BHU. The sample consisted of 50 participants, as the Manoel Carlito dos Santos BHU have 243 hypertensive patients, 68 diabetic patients and 43 with DM and SAH, totaling 354 individuals. After applying the inclusion and exclusion criteria, only 117 people met the required criteria, i.e., 33.05% of the population diagnosed with both or one of the abovementioned pathologies, which are part of the research scope. This justifies our sample of approximately 43% of the total number of people eligible to participate in the study.

The study inclusion criteria comprised being a resident in the municipality of Coari-AM / Brazil, having a permanent residence in the Espírito Santo neighborhood, being assisted at Manoel Carlito dos Santos BHU, and participating in the *HIPERDIA* program for at least six months. The elderly admitted at the hospital unit and those who were bedridden were excluded from the study. Data collection was carried out at the households and at Manoel Carlito dos Santos BHU, from February to June 2016. The interview was carried out by a Nursing student, who was trained to apply the questionnaire. The tools used for data collection on the elderly FC were closed-questions questionnaires: the Katz index that evaluates the BADL; it analyzes the independence regarding the performance of six self-care functions such as: bathing, dressing, going to the bathroom, transference, continence and feeding. Based on the Katz index, the scale of degrees of dependence was generated, where the score comprises the sum of the number of activities in which the individual is dependent, varying from 0 to 6. It is possible to allocate people to different categories, where the two extremes consist of independent in all activities (score 0) to dependent in all activities (score 6), whereas the middle of the scale contains the partially dependent individuals, at the low or high levels. The Lawton scale was also used; it measures the IADL and evaluates the functional performance of the elderly individual in terms of instrumental activities. The elderly are classified as independent, partially dependent or dependent regarding the performance of nine functions. For each question, the first answer means independence, the second partial dependence or functional capacity with the help of others, and the third means dependence. The maximum score is 27 points (Brazil, 2006). The data were tabulated, analyzed and presented as tables and charts, using the statistical program IBM SPSS Statistics 24 - Statistical Package for Social Sciences and Microsoft Excel 2010 of Microsoft Office as an auxiliary program. According to Resolution 466/2012 of the National Council of Ethics and Research (CONEP), the research project was submitted to the Research Ethics Committee (REC) of Federal University of Amazonas (UFAM), Institute of Health and Biotechnology, Coari / AM, Brazil and approved under Opinion number 1,703,260. Currently, the first developed scale - Katz Scale - is still being used, which was designed to measure a person's capacity to perform their daily activities independently and thus determine the necessary rehabilitation interventions. Later, Lawton proposed another tool to evaluate the IADL, considered more complex and of which performance independence is directly related to the capacity of independent community life (Brazil, 2006).

## RESULTS

Fifty-one elderly individuals, aged 61-96 years, 64% (32) females and 36% (18) males, participated in the study. Regarding the marital status 58% (29) were married, 28% (14)

were widowed and 14% (7) had a common-law marriage. Fifty percent (25) of the elderly are retired, 28% (14) are small farmers, and most (48%) receive a minimum wage (24). The level of schooling was largely between illiterate and incomplete elementary school, each item with 28% (14). Of those interviewed, all have children and 74% (37) live with a partner and / or children. Most (84%) said they always receive help from family members when they need it (42), and

regarding their self-rated health status, 32% (16) said that it is "neither good, nor bad", while 30% (15) said they are in good health. As for having other chronic diseases in addition to SAH and DM, 42% (21) had and 58% (29) did not have other diseases. Regarding the health care regimen, 86% (43) are in outpatient care and 14% (7) are not receiving treatment. Table 1 shows the variables: bathing, dressing, using the bathroom, transference, continence and feeding.

**Table 1. Distribution of the elderly according to the functional performance of the Basic Activities of Daily Living, Coari, AM, Brazil, 2016. (N=50)**

	Frequency	Percentage (%)
<b>BATHING</b>		
Independent	44	88.0
Partially dependent	4	8.0
Dependent	2	4.0
<b>DRESSING</b>		
Independent	43	86.0
Partially dependent	5	10.0
Dependent	2	4.0
<b>USING THE BATHROOM</b>		
Independent	43	86.0
Partially dependent	6	12.0
Dependent	1	2.0
<b>TRANSFERENCE</b>		
Independent	41	82.0
Partially dependent	8	16.0
Dependent	1	2.0
<b>CONTINENCE</b>		
Independent	36	72.0
Partially dependent	11	22.0
Dependent	3	6.0
<b>FEEDING</b>		
Independent	45	90.0
Partially dependent	3	6.0
Dependent	2	4.0

**Table 2. Distribution of the elderly according to the Instrumental Activities of Daily Living, Coari, AM, Brazil, 2016. (N=50)**

Variable	Frequency	Percentage (%)
<b>USING THE TELEPHONE</b>		
Without help	38	76.0
With partial help	11	22.0
Unable to do it	1	2.0
<b>GOING TO DISTANT PLACES USING MEANS OF TRANSPORTATION WITHOUT THE NEED FOR PLANNING</b>		
Without help	28	56.0
With partial help	11	22.0
Unable to do it	11	22.0
<b>GOING SHOPPING</b>		
Without help	32	64.0
With partial help	11	22.0
Unable to do it	7	14.0
<b>PREPARE THEIR OWN MEALS</b>		
Without help	33	66.0
With partial help	6	12.0
Unable to do it	11	22.0
<b>DOING HOUSEWORK</b>		
Without help	31	62.0
With partial help	8	16.0
Unable to do it	11	22.0
<b>DOING MANUAL WORK / SMALL REPAIRS</b>		
Without help	26	52.0
With partial help	13	26.0
Unable to do it	11	22.0
<b>DOING THE LAUNDRY AND IRONING CLOTHES</b>		
Without help	28	56.0
With partial help	9	18.0
Unable to do it	13	26.0
<b>TAKING MEDICATIONS AT THE CORRECT TIME</b>		
Without help	36	72.0
With partial help	11	22.0
Unable to do it	3	6.0
<b>TAKING CARE OF ONE'S FINANCES</b>		
Without help	37	74.0
With partial help	10	20.0
Unable to do it	3	6.0

The results of the functional evaluation of basic activities of daily living and instrumental activities of daily living are shown in Charts 1 and 2 below.

**Chart 01: Functional level based on the Katz Index of the elderly from the ManoelCarlito dos Santos Basic Health Unit in Coari, AM, Brazil, 2016. (N=50)**

N. of Dependent Functions	N. of Elderly	Percentage (%)
0	34	68%
1	8	16%
2	-	-
3	-	-
4	4	8%
5	-	-
6	4	8%

**Chart 02. Score and Results of the Lawton Scale of the elderly from the ManoelCarlito dos Santos Basic Health Unit in Coari, AM, Brazil, 2016. (N=50)**

N. of elderly	Score	Result/classification
21	27	Independent regarding all functions
17	26 to 18	Partially dependent
12	< 18	Dependent

## DISCUSSION

Considering the observed results, it is verified that some information are in agreement with those of studies carried out in the national scenario, which affirm that the prevalent age group of the elderly is 60 to 69 years old, with a greater proportion of women (Pilotto, 2018). The results were not compatible only regarding the item mean age for men and women; while in this study the mean age was older for men, other studies found an older mean age for women. This demographic phenomenon, addressed in a study by Neri (2001), correlates the significant increase in the number of elderly women, with the feminization of old age. This situation can be partially attributed to the differences between diseases affecting men and women; while in older men the rates of lethal diseases are higher, in women non-fatal, but disabling diseases are more prevalent. Regarding the variable marital status, most of the elderly were married, widowed, or had a common-law marriage, with 29 (58%), 28 (14%) and 7 (14%) individuals, respectively. As for the profession /occupation question, 25 (50%) of the elderly said they were retired, and 14 (28%) were small farmers, and most of them, 24 (48%), had a monthly income of a minimum wage. When comparing with data from the IBGE 2010 demographic census, the findings showed a moderate discrepancy, except regarding the variable income, as IBGE found a rate of 51.8% of married elderly, whereas in our study there were 58% of married elderly. The greater discrepancy was observed regarding the percentage of widowed elderly individuals: whereas in the present research it was 18%, at national level it was 28.5% (IBGE, 2013).

Regarding the educational level, whether they had children and with whom they lived, 14 (28%) were illiterate and 14 (28%) had not finished Elementary School, showing these two levels of schooling are prevalent in relation to the others. The level of schooling of the elderly is low, when compared to that of younger individuals. However, the distribution of the elderly by years of study has improved, although the proportion of the elderly with less than four years of schooling remains high

(IBGE, 2013). All the interviewees had children, and most of the target population, 37 individuals (74%), lived with their spouses/partners/children. During the application of the questionnaire, the elderly were asked if they always received help from their relatives when they needed it, and 41 (82%) answered yes to that question. The other percentages were distributed among those who said they did not receive help and those who received only sometimes. When asked how they felt about/assessed their health, even with SAH and /or DM, many answered that their health status was neither good, nor bad 16 (32%) and a significant number, 15 (30%), said they felt they were in good health. When comparing the data described above with those of the IBGE, one can observe the elderly are condescending regarding the item self-assessment of health status, as 31 (62%) of the individuals considered their health "good" and "neither good, nor bad" (regular), whereas IBGE recorded that most of the elderly considered their health status as "good or regular" (IBGE, 2015 and IBGE, 2016). The evaluation of BADL and IADL showed that, in terms of isolated activities, the variables feeding oneself and bathing were the ones that showed the highest independence among the elderly, with 45 (90%) and 44 (88%) individuals, respectively. We emphasize that these high percentages of independence mentioned above are only two of questions, because when analyzing the six items, that is, overall, 34 (68%) elderly were considered independent for all BADL, that is, in the six functions. Of the 34 independent elderly, 22 (64.7%) were females aged 61 to 82 years and 12 (35.3%) were aged 61 to 84 years, different from some studies on the subject, in which the number of independent male elderly individuals was higher than the females (Eid *et al.*, 2012).

Of the 34 elderly, 07 (20.6%) had another alteration in the health status that did not include those treated by the *HIPERDIA* program. Of the total sample, 08 (16%) individuals were independent for almost all functions except one, so they were independent in five and partially dependent in only one function. Most of those who were independent for five functions had no other chronic diseases. Only the minority were classified as partially dependent or totally dependent, comprising 08 individuals (16%), of which 05 (62.5%) were women aged 80 to 89 years and 03 (37.5%) were men, aged 84 to 96 years. Of the 08 (16%) partially dependent or dependent individuals, all had another chronic disease in addition to SAH and/or DM or were not receiving the correct treatment for these diseases, as previously mentioned; regarding the aforementioned diseases, these can result in serious complications to the patient, if left untreated (Lima, 2019). The general classification was applied once the performance of the elderly was verified for each function, and they were distributed regarding their functional levels according to the number of dependent functions. Subsequently, the elderly were classified as independent, partially dependent and dependent, when it was observed that, although all participants had SAH and/or DM, most of them (68%) were independent. The result of this study has supported the assertion that a large part of the elderly are not dependent, demonstrating good functional capacity in this age group (Nogueira *et al.*, 2010). Of the sample of 50 individuals, only 04 (8%) were considered totally dependent and this number could be reduced if they received the appropriate treatment for their diseases, since their dependence is slowly being brought on by bad life habits. It is noteworthy in the study, the fact that the elderly individuals with a higher degree of dependence mentioned bladder control as the most common problem. This occurs when the elderly

have incontinence problems, which is often associated with other diseases observed during the aging process of the human being (Carneiro *et al.*, 2017). The aforementioned finding is important, because this problem confines the elderly to their homes, isolated, due to the fear of not controlling the bladder/sphincter in public, resulting in isolation from the community. This process leads people to stay in their homes and, consequently, there is a tendency to decrease locomotion, a decline in strength due to the fact that older people spend a greater amount of time inside their homes, restricting their movements to the physical limitations of the indoor environment (Matos *et al.*, 2019). When analyzing by decades of life, we observed the best and worst performances as follows: in the age group of 60 to 69 years, of 21 (42%) elderly individuals, the performance of all of them was satisfactory, as almost 100% of them were independent for all the activities, except regarding continence. There were 20 (95.2%) independent and 1 (4.8%) dependent individual, which is an excellent result. In the age group of 70-79, 18 (36%) individuals showed the best performance in bathing, dressing, going to the bathroom and feeding activities. For each of these tasks, 17 elderly individuals (94.4%) were independent, whereas the worst percentage again was related to the continence, with 14 (77.8%) showing an unsatisfactory performance. There were 09 (18%) elderly in the age group of 80 to 89 years, and the highest performance was related to the bathing activity with 06 (66.7%) independent individuals, whereas the worst was dressing, with 01 (11.1%) individual. Finally, the age group of 90 to 99 years had 02 (4%) elderly individuals, which showed the best performance for the feeding and dressing activities, both with 01 (50%) independent individual and the worst regarding continence, with 100% dependent individuals.

Regarding the IADL, the ones that showed a greater level of independence were: using the telephone in 38 (76%), taking care of the finances in 37 (74%) and taking the medication on time in 36 individuals (72%). We emphasize that such percentages are only related to these 3 items. When assessing the independent individuals regarding all functions, partially dependent and dependent ones, we have the following situations: 21 elderly (27%) had a maximum score of 27 points, which corresponds to 42% being independent in all functions, whereas 17 (34%) scored between 26 and 18, which classified them as partially dependent, and 12 (24%) scored less than 18 points, thus being classified as dependent according to Lawton's scale. The Lawton scale showed a decline in independence, since this other instrument involves the IADL that require more efforts. The decrease in independence may be associated with the existence of hierarchies in functional loss, where first the IADL functions are lost, followed by the BADL (Freitas *et al.*, 2016). The highest levels of dependence were observed for activities such as going to distant places, doing housework, doing manual work such as small repairs, doing the laundry and ironing. Some questions can be adapted according to the gender at the time of the assessment, as in the case of doing housework, which can be replaced by the question: "Can you go up and down the stairs?" When some men were not familiar with housework, this adaptation can be used (Brazil, 2006). Other studies have shown similar results regarding some aspects related to IADL that require greater dependence for their performance. All of these tasks can be carried out indoors, except going to distant places and shopping, which are activities carried out outside the home; even though the previous items are tasks that are performed at

home, they are characterized as more difficult to perform (Silva *et al.*, 2011). The elderly considered to be capable of performing these instrumental activities of daily living were those who had the profession / occupation linked to manual tasks that involved more physical exertion than the others, as in the case of farmers, fishermen, auto mechanic professionals and general service employees, in 18 of them (36%). Most of these were independent regarding all the previously mentioned aspects, and this functional capacity can be attributed to a profession requiring greater physical effort, as studies have demonstrated the influence of physical activity on FC (Meneguci *et al.*, 2016). This is explained by the fact that their profession required heavier physical exertion since very early, which constitutes daily physical exercise, added to the more natural foods they consume, in the case of farmers and fishermen, and so, their functional capacity was preserved, although not as much as when they were younger.

However, even considering the age group, they are willing to perform their daily activities. Those who have retired and are currently without any activities and retired public servants were the ones that showed the most difficulties to perform the functions. The tasks with the highest levels of independence are associated with actions that are easier to perform, such as using the telephone, shopping, preparing one's own meals, taking medication on time, and taking care of finances. The high level of independence regarding the use of the telephone is an important fact, which, if diminished, can affect FC due to the probability of being caused by hearing loss, resulting in one of the most disabling disorders; when unable to hear, these elderly individuals are incapable of communicating, which prevents them from fully playing their role in society (Pereira *et al.*, 2012). It is important to highlight some limitations regarding the findings of the present study. The fact that it is across-sectional study interferes with the monitoring of the functional capacity of the elderly, making it necessary to carry out further studies, possibly longitudinal ones, that can provide knowledge and control of the functional capacity of the elderly monitored by the *HIPERDIA* Program in the countryside of the state of Amazonas and the generalization limited to the elderly as a whole, since the study assessed a group of individuals undergoing treatment for chronic diseases, assisted at a single Basic Health Unit.

## Conclusion

The present study showed that SAH and/or DM, if well controlled, are not the main reason for loss of capacity, as it was observed that despite these diseases, all individuals who used the medication properly felt well and also could perform their daily activities. The decrease in FC is not only associated with senescence. This study showed that the dependent or partially dependent elderly had another chronic disease, and this characteristic negatively affects the independence of the elderly, whereas the lack of treatment only worsens the health impairments that such diseases cause, plus the bad habit of not practicing daily physical exercises, even if they are light ones, such as walking. It is necessary to develop more studies aimed at this field, not necessarily only large studies, with large populations, but also studies in small areas with the purpose of better assessing these individuals. This will contribute in the future to the health and Quality of Life (QoL) of these elderly people, because when the problem is known, it is easier to start an intervention. It is demonstrated here, as in the medical diagnosis, how the physicians can only decide whether the

treatment will be surgical or clinical if they can diagnose the disease; the same occurs in Nursing, since to create a care plan aimed at the elderly individuals, it is necessary to know, in advance, in which areas they are dependent or partially dependent and what is causing the decrease in the FC. The improvement in sociodemographic factors also has an effect on FC, since the practice of some physical activity greatly contributes to a good performance of this capacity. An elderly individual with an efficient FC is an important condition that will provide an improvement in the QoL of these individuals, being a relevant condition so that Nursing professionals can draw a better plan of care in order to provide an active aging process. A careful evaluation of FC in this population is essential for the control and maintenance of an active and healthy aging process.

## REFERENCES

- Barbosa, B.R. *et al.* 2014. Avaliação da capacidade funcional dos idosos e fatores associados à incapacidade. *Ciência & Saúde Coletiva*, 19(8), 3317-3325.
- Brasil, 2006. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Envelhecimento e saúde da pessoa idosa. Brasília: Ministério da Saúde, 192 p.
- Carneiro JA *et al.* 2017. Prevalência e fatores associados à incontinência urinária em idosos não institucionalizados. *Cad. Saúde Coletiva*, 25(3), 268-277.
- Chaimowicz F. 1997. A saúde dos idosos brasileiros às vésperas do século XXI: problemas, projeções e alternativas. *Rev Saúde Pública*, 31(2), 184-200.
- Costa DC. 2010. Adaptação metabólica em granulócitos humanos induzida pelo processo de envelhecimento e Diabetes Mellitus: papel das vias de sinalização cAMP/PKA, Akt/PKB, p38 MAPK e fosfoinositídeos. Tese de doutorado. Universidade Federal de Minas Gerais.
- Eid NT *et al.* 2012. Avaliação do grau de dependência para atividades básicas da vida diária de idosos. *Rev. Bras. Clin. Med.*, 10(1), 19-23.
- Freitas EVPyL *et al.* 2016. Tratado de geriatria e gerontologia. Rio de Janeiro, 4ed. Guanabara Koogan. 1696p.
- IBGE, 2010. Instituto Brasileiro de Geografia e Estatística. Censo Demográfico 2010: população do Brasil é de 190.755.799 pessoas. <http://www.ibge.gov.br>.
- IBGE, 2013. Instituto Brasileiro de Geografia e Estatística. Capacidade funcional dos idosos: uma análise dos suplementos saúde da PNAD com a teoria de resposta ao item / KaizôIwakamiBeltrão ... [et al.]. - Rio de Janeiro: IBGE.
- IBGE, 2015. Instituto Brasileiro de Geografia e Estatística. Mudança Demográfica no Brasil no Início do Século XXI: Subsídios para as projeções da população. Rio de Janeiro.
- IBGE, 2016. Instituto Brasileiro de Geografia e Estatística. Síntese de indicadores sociais: uma análise das condições de vida da população brasileira: 2016 / IBGE. Coordenação de População e Indicadores Sociais. - Rio de Janeiro.
- Lima MF, 2019. Análise dos efeitos do exercício físico aplicado aos pacientes com hipertensão arterial sistêmica e diabetes de mellitus assistidos pela equipe de estratégia saúde e família da cidade de Paracatu-MG. *Rev Humanidades & Tecnologia*, 1(16), 474-493.
- Lino VTS. *et al.* 2008. Adaptação transcultural da Escala de Independência em Atividades da Vida Diária (Escala de Katz). *Caderno de Saúde Pública*, 24(1), 103-112.
- Litvoc, J, Brito, FC. 2004. Envelhecimento: Prevenção e promoção da saúde. São Paulo: EditoraAtheneu.
- Matos MAB. 2019. As repercussões causadas pela incontinência urinária na qualidade de vida do idoso. *Res. Fundam. Care. Online*, 11(3), 567-575.
- Meneguci J *et al.* 2016. Atividade física e comportamento sedentário: fatores comportamentais associados à saúde de idosos. *ArqCienEsp*, 4(1), 27-28.
- Milech A *et al.* 2016. Diretrizes da Sociedade Brasileira de Diabetes (2015-2016). Organização José Egidio Paulo de Oliveira, Sérgio Vencio - São Paulo: A.C. Farmacêutica.
- Neri AL 2001. Envelhecimento e qualidade de vida na mulher. Anais do 2º congresso paulista de geriatria e gerontologia. Campinas, Brasil.
- Neri, AL. 2005. As políticas de atendimento aos direitos da pessoa idosa expressa no Estatuto do Idoso. *A Terceira Idade*, 16(34), 7-24.
- Nogueira SL *et al.* 2010. Fatores determinantes da capacidade defuncional em idosos longevos. *Rev. Bras. Fisioter*, 14(4), 322-329.
- Organização Mundial de Saúde – OMS 1999. Relatório Mundial de Saúde, Banco de Dados. Genebra: Organização Mundial de Saúde.
- Organización Pan Americana de La Salud – OPAS 2003. Guia Clínica para Atención Primaria a las Personas Mayores. 3ed. Washington.
- Pereira GN *et al.* 2012. Indicadores demográficos e socioeconômicos associados à incapacidade funcional em idosos. *Cad. Saúde Pública*, 28(11), 2035-2042.
- Pilotto, CL *et al.* 2018. Prevalência de diabetes mellitus em idosos da zona rural no Sul do Brasil. *Enfermagem Brasil*, 17(4), 346-353.
- Ramos, LR. 2003. Fatores determinantes do envelhecimento saudável em idosos residentes em centro urbano: Projeto Epidoso. São Paulo. *Cad. Saúde Pública*, 19(3), 793-798.
- Roach SS 2009. Introdução à enfermagem gerontológica. Tradução Ivone Evangelhista Cabral, Marcia Tereza Luz Lisboa. Rio de Janeiro. Ed. Guanabara Koogan.
- Silva MDC *et al.* 2011. Fatores associados à perda funcional em idosos residentes no município de Maceió, alagoas. *Rev Saúde Pública*, 45(6), 1137-1144.
- Sociedade Brasileira de Cardiologia 2016. VII Diretriz Brasileira de Hipertensão. Arquivos Brasileiros de Cardiologia, São Paulo, 107(suple3), 7-13.
- Veras, RP 2012. Experiências e tendências internacionais de modelos de cuidado para com o idoso. *Ciência & Saúde Coletiva*, 17(1), 231-238.
- World Health Organization-WHO 2005. Envelhecimento ativo: uma política de saúde. Tradução: Suzana Gontijo. Brasília: Organização Pan-Americana da Saúde.

\*\*\*\*\*