









Frailty syndrome in the elderly in elderly with chronic diseases in Primary Care

Síndrome do idoso frágil em idosos com doenças crônicas na Atenção Primária
Síndrome del anciano frágil en personas mayores con enfermedades crónicas en la Atención Primaria

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ABSTRACT

Objective: To evaluate the frailty syndrome in the elderly nursing diagnosis in elderly with chronic diseases of a health district of the Federal District. **Method:** A quantitative, descriptive, cross-sectional study was conducted with elderly patients served at the Basic Health Units, who presented arterial hypertension and/or diabetes mellitus. The following were used: a sociodemographic questionnaire, the Mini-Mental State Examination, anthropometric data, evaluation of sarcopenia (measured by body composition), muscle strength and functional capacity, and the identification of NANDA-I nursing diagnosis. A statistical software was used for data analysis. **Results:** Participation of 78 elderly people, of which 93.6% of had Impaired memory, 93.6% had Impaired physical mobility, 82.1% had Fatigue, 76.9% had Impaired ambulation, 53.8% had Dressing self-care deficit, 43.6% had Activity Intolerance, 35.9% had Social Isolation, 30.8% had Hopelessness, 29.5% had Feeding self-care deficit, 29.5% had Bathing self-care deficit, 12.8% had Toileting self-care deficit, and 10.3% had Decreased cardiac output. **Conclusion:** The nursing diagnosis Frailty Syndrome in the Elderly allows a multidimensional view of the elderly. Since one factor can cause health problems in several health fields, nurses must intervene early, plan and implement actions in the short and long term.

DESCRIPTORS

Aged; Frail Elderly; Nursing Diagnosis; Nursing Process; Geriatric Nursing; Chronic Disease.

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INTRODUCTION

Aging is a natural process of life in which physical, psychic and social changes occur. Each individual experiences these changes differently depending on the social, political and economic context of the elderly person⁽¹⁾.

In Brazil, the growing increase in the number of elderly people⁽²⁻³⁾ has occurred concurrently with the increase in the incidence of chronic diseases, especially Diabetes Mellitus (DM) and Systemic Arterial Hypertension (SAH)⁽⁴⁻⁶⁾. DM is defined as a group of metabolic disorders characterized by hyperglycemia⁽⁶⁾. SAH is a cardiovascular disease characterized by elevation and sustentation of pressure levels ≥ 140 and/or 90 mmHg⁽⁵⁾. Both are associated with poor dietary habits and sedentary lifestyle, which consequently increases the prevalence of obesity. Therefore, these diseases are the main risk factors for incapacitating consequences such as stroke, renal failure, blindness and amputation⁽⁴⁻⁶⁾.

Nurses stand out in this context given their essential role of care provision for the elderly. In order to carry out such care effectively, these professionals rely on the nursing process (NP), "a methodological tool of care specific to this profession that organizes the clinical approach through sequential steps: data collection, nursing diagnosis, planning, implementation and evaluation"⁽⁷⁾. The NP equips the professionals involved in care, and facilitates teaching and research.

The nursing diagnosis (ND) stands out in this process, and is defined as "the clinical judgment performed by the nurse about a phenomenon of professional practice that provides the basis for selecting the interventions to achieve the expected results for which nursing is responsible"⁽⁸⁾.

In the context of aging, NDs depict a strategy of care provision to elderly patients, since interventions occur in a systematized and more efficient way. Among them, we highlight the Frailty Syndrome in the Elderly (FSE), a multidimensional diagnosis that evaluates the physical, functional, psychological and social fields and allows the identification of frailties in the elderly. The definition of FSE is a "dynamic state of unstable equilibrium that affects the elderly going through deterioration in one or more of a health domain and leads to increased susceptibility to adverse health effects, disability, in particular"⁽⁸⁾.

FSE was included in the NANDA-I version of 2015-2017 from results of research in hospital and community settings in the context of elderly care⁽⁹⁻¹¹⁾, a proposal from a group of researchers from the University of Castilla La Mancha, Spain⁽⁹⁾. Therefore, FSE is considered a new diagnosis, little explored and lacking research in the Brazilian reality. A study conducted in Bahia identified the main NDs of the elderly with DM, and found that 60% of the elderly have FSE⁽¹⁰⁾. In another study conducted with elderly people in primary care, was found that NDs are related to FSE⁽¹¹⁾, a fact that further reinforces the need to elucidate the syndrome in this context.

The specificity of this stage of life, and the increase of chronic diseases demonstrate the need to produce scientific studies in this area, so nursing professionals can develop skills and abilities to provide services to the elderly. Studies

addressing the Frailty Syndrome in the Elderly ND in primary care are scarce. Furthermore, since the FSE ND is multidimensional, nurses can identify signs and symptoms early and implement interventions to prevent injuries, increase the quality of life and promote healthy aging.

In view of the above, the aim of this study was to evaluate the nursing diagnosis Frailty Syndrome in the Elderly in elderly subjects with chronic diseases of a health district of the Federal District.

METHOD

TYPE OF STUDY

This is a quantitative, descriptive, cross-sectional study.

SCENARIO

Study conducted with 78 elderly people with chronic disease of two Basic Health Units (BHU) of Ceilândia, regional administrative of the Federal District – DF.

In the BHU, is provided nursing care focused on primary health care, including patients with chronic diseases such as DM and SAH. The study population was composed of elderly patients registered in the Hypertensive and Diabetic Groups of the BHU. A total of 1,000 patients were registered in the two BHUs.

SELECTION CRITERIA

The following inclusion criteria were considered: minimum age of 60 years and having a medical diagnosis of Hypertension and/or Diabetes Mellitus for at least six months. The exclusion criteria were patients without physical and mental conditions to communicate verbally and perform the evaluations.

SAMPLE

In the sample calculation, was considered a sample error of 5% and a confidence interval of 50%, thereby resulting in 100 elderly subjects. The sample selection was randomized (draw), and the number of the medical record of each elderly person registered in the two BHUs was used in the draw with 50% of the sample (n=50) in each BHU. The draw of the elderly was done in a conventional way by using a brown envelope and considering the registration number in the Hypertensive and Diabetic Groups of the BHU. During the study, 22 elderly people were lost, out of which 12 did not participate in the second moment of data collection, five did not complete the evaluations (three did not perform the sarcopenia evaluation and two participated only in the nursing consultation), and five refused to participate in the study. The sample loss of 22 elderly subjects did not compromise the results obtained, since losses are inherent in any research, and furthermore, random losses do not produce negative effects in results of the study.

DATA COLLECTION

The data collection period was between March and June 2017. The elderly selected through the draw were invited to

participate in the study at the time of the group meeting in the BHU. After the invitation, they signed the Informed Consent form and scheduled the first moment of data collection held at the BHU.

For data collection, was adopted the NANDA-I 2015-2017 ND of FSE⁽⁸⁾, and was constructed an instrument with a checklist of defining characteristics and related factors.

Thirteen nursing diagnosis were assessed to identify the defining characteristics: Impaired Physical Mobility, Impaired Memory, Fatigue, Activity Intolerance, Impaired Walking, Hopelessness, Social Isolation, Decreased Cardiac Output, Imbalanced Nutrition: less than body requirements, Dressing self-care deficit, Bathing self-care deficit, Toileting self-care deficit and Feeding self-care deficit. In relation to related factors, the following were investigated: Chronic disease, History of falls, Sedentary lifestyle, Change in cognitive function, Prolonged hospitalization, Living alone, Sarcopenia, Psychiatric disorder, Sarcopenic Obesity (SO) and Malnutrition⁽⁸⁾.

The nursing consultation was conducted individually in a private room at the BHU, and included an anamnesis directed to the problems of the diagnosis FSE, followed by physical examination. During the consultation, the checklist instrument was completed by previously trained examiners. Consultations lasted an average of 60 minutes.

The sociodemographic questionnaire was applied for the evaluation of gender, age, marital status and schooling. In the anthropometric evaluation, were measured the weight and height with use of a measuring tape and scale, and the Body Mass Index (BMI) was calculated through the formula $\text{weight}/\text{height}^2$. Measurements were obtained by previously trained professionals from the application of Lohman techniques: a calibrated, digital scale with maximum capacity of 150 kilograms and divisions of 100 grams was used to measure the weight. Elderly subjects were weighed in the center of the scale, barefoot, with as little clothing as possible, and an empty bladder. Stature measurement was performed through a portable 2-meter stadiometer. Elderly subjects stood barefoot with the weight evenly distributed between their feet and the body stretched to the fullest extent. The following BMI reference values were considered: normal ($22.0\text{kg}/\text{m}^2$ to $27.0\text{kg}/\text{m}^2$) and overweight ($> 27\text{kg}/\text{m}^2$)⁽¹²⁾.

"Alteration of cognitive function" was assessed by the Mini-Mental State Examination (MMSE) through tests in two sessions. The first session relates to orientation, memory and care, and the second relates to specific skills such as naming, obeying a verbal and written command, language, constructive ability (drawing pentagons). The test has a maximum score of 30 points, and the following cut-off points were considered for the classification of cognitive deficit: 20 points for illiterates, 25 points for the elderly with schooling of 1-4 years, 26.5 points for 5-8 years, 28 for 9-11 years and 29 points for more than 11 years⁽¹³⁾.

At the end of the consultation, was scheduled a visit of the elderly to the Universidade de Brasília (UnB) for the second moment of data collection.

In the second moment, was evaluated the "Sarcopenia" related factor, in which were considered the body composition

(to evaluate the relative appendicular fat-free mass – AFFM), muscular strength and functional performance⁽¹⁴⁾. According to the criteria suggested by the European Working Group on Sarcopenia in Older People (EWGSOP)⁽¹⁴⁾, for considering elderly individuals as sarcopenic, they must have at least two out of the three parameters evaluated (relative AFFM, muscular strength and functional capacity). Body composition was assessed by the dual energy X-ray absorptiometry test (DEXA). The examination was performed at the Laboratory of Biophysics of the UnB and comprised a complete scan of the patient's body in dorsal decubitus position and approximate duration of 17 minutes. The device was always regulated and was operated by a technically trained professional. For calculation of the relative AFFM, was considered the sum of the fat-free mass of the upper and lower limbs divided by the height in squared meters. The relative AFFM was classified as reduced in women who presented $<5.67\text{ kg}/\text{m}^2$ and in men with $\text{AFFM} <7.25\text{ kg}/\text{m}^2$ ⁽¹⁴⁾.

Functional performance was assessed by the Timed Up and Go (TUG) test. Elderly subjects performed the test once as training. Their performance was evaluated in seconds, and the timing was initiated shortly after the signaling with the word "go" while the senior was still seated, and finished immediately when he/she sat down again. A colored mark was set to demarcate the three-meter walk. Elderly patients with impaired functional capacity were those who performed the test in more than 12.47 seconds⁽¹⁵⁾.

Muscle strength was measured using the calibrated JAMAR[®] hydraulic dynamometer. Each participant performed three sets of 5 seconds of maximum isometric contraction with 30 seconds in-between them, as recommended by the American Society of Hand Therapists (ASHT). The highest value among series was considered for analysis. Values of less than 20 kilograms for women and 30 kilograms for men were considered as strength reduction^(14,16). After the evaluations, the elderly were classified into the following categories: normal, sarcopenia (alteration of two out of the three parameters evaluated), and severe sarcopenia (alteration of the three parameters evaluated)⁽¹⁴⁾.

For the determination of sarcopenic obesity, was considered the method that calculates residual values of a regression equation that predicts the AFFM based on height (m) and fat mass (FM) in kg evaluated in the DEXA. The predictive equation for determining the AFFM in the elderly was: $\text{predicted AFFM} = -14.529 + (17.989 \times \text{height in meters}) + (0.1307 \times \text{total FM in kg})$. The measured AFFM was assessed by the sum of the fat-free mass (FFM) of the upper limbs and lower limbs. The residual values (AFFM measured – AFFM predicted) were used in the classification of SO; the cut-off value was a residual value less than or equal to -3.4, that is, elderly patients with a residual value less than or equal to -3.4 were classified as sarcopenic obese⁽¹⁷⁾.

ANALYSIS AND PROCESSING OF DATA

Data were entered in the Statistical Package for the Social Sciences (SPSS), version 20.0, in order to calculate the mean, standard deviation and absolute and relative frequency values presented later in the form of tables.

ETHICAL ASPECTS

The project was approved by the Research Ethics Committee of the State Health Department of the Federal District (SES/DF) under number 1.355.211/15. All recommendations of Resolution n. 466/12 of the National Health Council were followed. All participants signed an Informed Consent form. This study is part of the project "Approach to non-communicable chronic conditions in Primary Care", from the "Health Care and Aging" Research Group, Faculty of Ceilândia, Universidade de Brasília (FCE/UnB).

RESULTS

The evaluation included 78 elderly people. Most were female (80.8%), mean age of 68.8 ± 6.0 years (Minimum = 60 years; Maximum = 85 years); 34.6% were aged between 66 and 70 years; 33.4% were between 60 and 65 years; 19.2% were between 71 and 75 years; 7.7% were between 76 and 80 years, and only 5.1% were aged over 80 years old. Regarding marital status, 50.0% were married, 20.5% were widowed, 19.2% single and 10.3% were divorced. Most elderly had primary education (75.6%), 18.0% had secondary education, 5.1% were illiterate and 1.3% had higher education.

Regarding comorbidities, most elderly presented associated SAH and Diabetes Mellitus (53.9%). In the nutritional evaluation, 80.8% of the elderly were overweight according to the BMI (Table 1).

The results of the mental state evaluation revealed that 44.9% presented cognitive deficit. In the evaluation according to sarcopenia criteria, 7.7% of the elderly had sarcopenia, and 3.8% had severe sarcopenia (Table 1).

Table 1 – Description of comorbidities, nutritional and mental evaluation of the elderly with chronic diseases – Brasília, DF, Brazil, 2017.

Comorbidity	n	%
Diabetes Mellitus	3	3.8
Systemic Arterial Hypertension	33	42.3
Both	42	53.9
Body Mass Index (BMI)		
Normal (22.0kg/m ² to 27.0 kg/m ²)	15	19.2
Overweight (>27.0kg/m ²)	63	80.8
Mini-Mental State Examination (MMSE)		
No cognitive impairment	43	55.1
Cognitive deficit	35	44.9
Sarcopenia		
Normal	69	88.5
Sarcopenia	6	7.7
Severe Sarcopenia	3	3.8

RELATED FACTORS

In Table 2, are observed nine related factors (RF) of the Frailty Syndrome in the Elderly ND among participants of this study, a mean of three related factors for each elderly person. The most prevalent related factor was Chronic disease, since all elderly in the study had some chronic

non-communicable disease (CNCD). Next, was observed the RF History of falls, as 79.5% of the elderly reported having suffered previous falls.

The RF Sedentary lifestyle was presented by 48.7% of the elderly, who stated they did not perform physical exercise. The RF Change in cognitive function was evaluated through the MMSE, and results showed 44.9% of the elderly with mild or moderate cognitive deficit. Prolonged hospitalization was reported by 24.4% of the elderly in this study. The RF Living alone was presented by 12.8% of the elderly subjects.

The RF Sarcopenia was present in 11.5% of the elderly, and 11.5% had psychiatric disorders, mainly depression and anxiety (Table 2).

Table 2 – Description of related factors of the Frailty Syndrome in the Elderly nursing diagnosis of elderly subjects with chronic diseases – Brasília, DF, Brazil, 2017.

Related factors	n	%
Chronic disease	78	100
History of falls	62	79.5
Sedentary lifestyle	38	48.7
Change in cognitive function	35	44.9
Prolonged hospitalization	19	24.4
Living alone	10	12.8
Sarcopenia	9	11.5
Psychiatric disorder	9	11.5
Sarcopenic obesity	2	2.6
Malnutrition	0	0

DEFINING CHARACTERISTICS

The 13 defining characteristics (DC) of the Frailty Syndrome in the Elderly represent the Nursing Diagnosis present in NANDA⁽⁸⁾. The mean was six DCs for each elderly of this study.

The most significant DCs were Impaired memory and Impaired physical mobility, both with 93.3% prevalence (Table 3). In the Impaired memory ND, the forgetfulness of elderly subjects was evident, as well as their inability to remember events and whether an action was performed or not. In the Impaired physical mobility ND, the elderly presented gait alterations, discomfort and slow movements.

The Fatigue ND was presented by 82.1% of the elderly, which is evidenced by fatigue, increased need for rest and insufficient energy. Impaired ability to climb the stairs, uphill and downhill walking demonstrated the Impaired walking ND in 76.9% of the elderly subjects.

The Dressing self-care deficit was observed in 53.8% of the elderly, evidenced by impaired ability to put on shoes and to put on clothes in the lower part of the body. Other deficits in self-care were observed in this population, such as feeding (29.5%), evidenced by impaired ability to open containers and handle utensils; bathing (29.5%), due to impaired ability to wash the body (feet); and toileting (12.8%) due to impaired ability to lift up from the toilet and to sit on the toilet.

The Activity intolerance was a DC present in 43.6% of the elderly and evidenced by discomfort to exertion, dyspnea

on exertion and fatigue. Despair was presented by 30.8% and evidenced by decreased affection, alterations in the sleep pattern and verbal indicators of hopelessness. Social isolation was evidenced by sad affection, disease and desire to be alone in 35.9% of the elderly.

Decreased cardiac output was found in 10.3% of the elderly, and demonstrated by cardiac palpitations, edema and altered blood pressure.

Table 3 – Description of the defining characteristics of the Frailty Syndrome in the Elderly nursing diagnosis of elderly subjects with chronic diseases – Brasília, DF, Brazil, 2017.

Defining characteristics	n	%	MRF	MDC
Impaired memory	73	93.6	2	3
Impaired physical mobility	73	93.6	5	4
Fatigue	64	82.1	2	3
Impaired walking	60	76.9	5	3
Dressing self-care deficit	42	53.8	3	2
Activity Intolerance	34	43.6	1	3
Social isolation	28	35.9	2	3
Hopelessness	24	30.8	2	3
Feeding self-care deficit	23	29.5	3	2
Bathing self-care deficit	23	29.5	3	1
Toileting self-care deficit	10	12.8	2	1
Decreased cardiac output	8	10.3	2	3
Imbalanced nutrition: less than body requirements	0	0.0	0	0

MRF: mean of related factor; MDC: mean of defining characteristics

DISCUSSION

The results of this study identified elderly individuals at risk for developing geriatric disabilities. The main problems of this specific population can be listed through the NP, so professionals are directed to the points requiring more attention, which allows the improvement of care in the individual scope.

Aging is a progressive phenomenon in which different biopsychosocial changes occur, and the association of such changes with comorbidities facilitates the appearance of geriatric syndromes⁽¹⁸⁾. In this context, the NANDA-I taxonomy defines a syndrome as a set of two or more nursing diagnoses. The Frailty Syndrome in the Elderly is considered multidimensional⁽⁸⁾, and the dysfunction of one of the dimensions causes harm in the other, thus generating somatic effects in cascade, which potentiate the appearance of adverse effects, such as falls, hospitalizations and geriatric disabilities⁽¹⁹⁾.

Diabetes mellitus and hypertension were the chronic diseases used as inclusion factor in this study, so 100% of the elderly had the chronic disease RF. In Brazil, chronic diseases are the most prevalent causes of mortality in the elderly. In the international scenario, a study conducted in Stockholm, Sweden, followed 1,099 elderly patients for 11 years to determine the effect of chronic diseases on their survival and functionality. The conclusion was that one in four deaths were attributed to cardiovascular diseases, in

addition to loss of approximately five years. The researchers also concluded that multimorbidity (≥ 2 chronic diseases) accounted for 69.3% of all deaths, and caused a loss of 7.5 years. Chronic diseases demand long-term care, may be incapacitating, and predispose the elderly to frailty⁽²⁰⁾.

The second most prevalent RF was the History of falls, since 79.5% of the sample reported having at least one fall episode. This prevalence is considered high compared with results from other national studies. In a cross-sectional study with institutionalized elderly people, was observed a prevalence of falls of 45%⁽²¹⁾. In a descriptive study with elderly people linked to a Basic Health Unit in Goiás, Brazil, was found the prevalence of falls of 33%⁽²²⁾. The falls of the elderly affect the family, social and economic dynamics, because they increase the number of hospitalizations due to fractures, can generate incapacities and lead to premature death. Several risk factors for falls in the elderly were identified in this study, namely: impaired vision, pain, gait alteration, lack of physical conditioning, polypharmacy, comorbidities, impaired balance, musculoskeletal impairment, sarcopenia, pre-obesity and obesity, decreased cognitive function and sedentary lifestyle.

Another prevalent RF was the sedentary lifestyle reported by 48.7% of the elderly. Both physical activity, defined as any body movement produced by the musculoskeletal system that generates energy expenditure⁽²³⁾, and physical exercise, defined as an activity practiced continuously with a certain intensity and duration that maintains or improves physical fitness⁽²⁴⁾, are used as therapeutics for chronic diseases such as DM and SAH, because they prevent the appearance of complications and promote the maintenance of health⁽²³⁾. In addition, physical exercise practice provides other benefits, such as musculoskeletal strengthening, reduction in the incidence of falls, control of body weight, reduction of prescription drugs and prevention of functional and cognitive capacity.

In 44.9% of the sample, was found alteration of cognitive function. This can be understood by the predominance of primary school education, a low educational level that leads to worse cognitive performance. With aging, the information processing capacity is slower in the elderly compared to young people⁽²⁵⁾. The decline of cognition affects autonomy, decision-making, independence, and one's possibility of performing activities of daily living without the help of others that affects the family environment in which this elderly person is inserted, and all these elements are risk factors for abandonment. In another cross-sectional study, was found a similar prevalence to that of the present study, a cognitive deficit of 42.1% in the elderly, which was significantly associated with schooling, income, marital status and arterial hypertension⁽²⁶⁾.

Sarcopenia was among the related factors found in this study. Its prevalence varies from 8.4% to 27.6% in the elderly population, and its clinical outcome is associated with physical disabilities, mobility limitations, increased risk of falls, decreased quality of life and even mortality^(16-17,27). In addition to changes in muscle mass, there is also an increase in the percentage of body fat during aging given the age-related

changes in metabolism. This includes an increase in fat mass in general, and infiltration of adipose tissue into skeletal muscle. In addition, about 15% of those with sarcopenia are also obese, a fact observed in this study. In turn, obesity can generate unfavorable health effects, for example, insulin resistance, arterial hypertension, decreased physical performance and further reduction of the quality of life of the elderly person⁽²⁷⁾.

The defining characteristic Impaired memory of the FSE nursing diagnosis was evident in 93.6% of the elderly in this study. Just as aging is natural, cognitive abilities such as memory, diminish at varying levels according to the life characteristics of each individual. However, nurses or other members of the multidisciplinary team should always pay attention to memory complaints, as these may be associated with pathologies such as depression and anxiety, and may also predict cognitive decline and the risk of dementia. In a cross-sectional study conducted in Ceará, Brazil, the objective was to “develop a nursing diagnoses subset for elderly people accompanied in Primary Health Care, based on a database of terms for clinical nursing practice according to the International Classification for the Nursing Practice (ICNP)”⁽¹¹⁾. The total of 127 ND was found, among them the Impaired Memory ND, and the authors emphasized the importance of differentiating signs of the aging process from signs indicative of cognitive impairment.

The level of cognitive impairment ranges from mild to dementia syndromes, and it reflects directly on the elderly's functional capacity and quality of life. Therefore, promoting activities for continuous cognitive stimulation is key in the nursing care process, because mental capacities lost in an extrinsic way because of lack of stimulation in the daily life can be recovered or maintained, thereby preventing mental deterioration⁽²⁸⁾.

Other prevalent defining characteristics of the FSE ND were Impaired physical mobility (93.6%) and Impaired walking (76.9%). In a study with community elderly, was found a prevalence of 71.4% of Impaired physical mobility related mainly to discomfort, pain and sedentary lifestyle⁽²⁸⁾. In the aging process, occur physiological changes in the locomotor system, such as loss of muscle and bone mass, joint stiffness, changes in posture and balance, changes in the length of steps, sarcopenia, gait changes and bradykinesia⁽²⁹⁾. The association of these conditions with osteoarticular diseases can cause pain, discomfort and risk of falls, which cause movement limitations, such as impaired ability to climb stairs, uphill and downhill walking, all found in the elderly in this study. For this reason, stimulating the practice of physical exercise is essential because, in addition to the aforementioned benefits, it helps to strengthen and improve motor functions by increasing the safety of the elderly and, consequently, reducing their fear of falling.

Impaired physical mobility can progressively interfere with the functionality of the elderly, because it impacts on the incidence of falls, hospital admissions and medication consumption. Other factors, such as environmental inadequacies, can be obstacles to the elderly's walking, such as stairs. Motor limitations increase the sedentary lifestyle and

dependence, promote isolation and the development of psychiatric illnesses⁽³⁰⁻³¹⁾.

After being questioned about activities that required physical and mental efforts, such as reading, crocheting, repairing objects and instrumental activities of daily living, fatigue was found in 82.1% of the elderly through signs and symptoms of DC, given the increased need for rest due to lack of energy. In another cross-sectional study, were found signs of fatigue in only 28.1% of the evaluated elderly⁽³¹⁾. Fatigue is subjective and varies according to the individual. The progressive physical degradation characteristic of aging, diseases and physical inactivity can produce symptoms, such as exhaustion/fatigue⁽³²⁾. However, fatigue can be triggered by psychological and emotional factors related to some mental disorder⁽³³⁾. Knowing whether the cause of fatigue is physical or mental is essential for planning nursing care.

Dressing, eating, toileting and bathing self-care deficits stood out with the same related factors: musculoskeletal damage, discomfort, pain, weakness and fatigue correlated to osteoarticular pathologies such as arthritis, osteoarthritis, osteoporosis and spinal changes. Thus, the treatment of underlying diseases with pharmacological and non-pharmacological measures, and the adaptation of the environment enable the maintenance of self-care, thus preserving functional capacity.

The DC of Activity intolerance affected 43.6% of the population in this study. It is noteworthy that 80.8% of the elderly were overweight. Obesity is a disease in the CNCD group and potentiates the onset of other comorbidities, which increases the chances of mortality. It is associated with sedentary lifestyle, poor eating habits and genetic factors, and the energy expenditure decrease occurring with aging causes accumulation of fat in adipose tissue. Excess weight causes pain in the musculoskeletal system, and obese individuals with DM and SAH have greater peripheral vascular resistance, which makes blood perfusion and venous return difficult, in addition to the fact that the elderly in this study have osteoarticular diseases causing movement limitations⁽³⁴⁾. All these factors can explain the signs and symptoms that highlighted this DC, namely discomfort, exertion dyspnea and fatigue.

The Defining Characteristics Social Isolation (35.9%) and Hopelessness (30.8%) were observed in this study. Old age is the last phase of life, and the loss of friends, professional role and separation from children are common at this moment, which can decrease social contact and generate loneliness. Stigmata in relation to elderly people can negatively affect their self-perception and produce feelings of social uselessness, which can provoke pessimism about the future. Social isolation and hopelessness have repercussions on mental health, as they are associated with mental disorders such as depression and anxiety⁽³⁵⁾.

The social participation of the elderly in sports and leisure helps to create bonds. Family support without overprotection and disregard is also important for stimulating the elderly to perform activities within their limitations, thus promoting mental health.

The diagnosis of the Decreased cardiac output DC at the primary care level is difficult because invasive resources such as pulmonary artery catheters are not used and laboratory tests are of rapid readiness, which makes the verification of cardiac output imprecise. This DC was demonstrated by cardiac palpitations, edema and alteration of blood pressure, and the elderly self-reported the presence of arrhythmias, history of infarcts and heart failure. These cardiac dysfunctions can reduce cardiac output and cause tissue hypoperfusion⁽³⁶⁾. Furthermore, most participants presented a number of risk factors for cardiovascular diseases, such as ex-smokers, DM, SAH, dyslipidemia, sedentary lifestyle and excess weight. Diseases of the cardiovascular system increase the chances of functional disability and mortality.

The identification of FSE in primary care has proved to be relevant given the holistic approach adopted for these elderly with chronic disease. FSE investigation is essential in the population in this context because of its high prevalence, especially of NDs related to mobility and cognition. When using the NP, nurses should be aware of the diversity of signs and symptoms involved in FSE, as these can interfere with diagnostic accuracy if problems are judged in isolation, rather than using the approach to a syndrome. When evidencing the FSE, nurses will improve nursing care, because specifics will be observed in the choice of nursing interventions, thus implying an individualized and systematized care for the frail elderly.

The limitations found when conducting this study were the evaluation of the sedentary lifestyle through self-report, the occurrence of losses in the second moment of data collection, the cross-sectional type of study, and the

cognitive deficit that may have caused response bias in self-reported questions. In future studies, is recommended the use of instruments to measure the degree of physical activity of patients.

CONCLUSION

In the evaluation of the FSE Nursing Diagnosis in elderly with DM and/or SAH attended in primary care, were identified the NDs that make up its defining characteristics, and the main ones were: Impaired memory, Impaired physical mobility, Fatigue, Impaired walking, Dressing self-care deficit, Activity Intolerance and Social Isolation.

Given these results, it is essential that nurses intervene early, plan and implement actions in the short and long term for preventing disabilities and physical limitations and promoting the autonomy and independence of this age group. Such actions may be aimed at minimizing problems related to the elderly's frailty, such as the reduction of sedentary lifestyle by encouraging physical exercise practice, using workshops or working groups to address cognitive stimulation and activities involving the elderly in community social groups.

The projections of exponential increase in the number of elderly people, and the expenses generated by this population with health commitments and changes in their family and social context demonstrate it is essential to conduct studies in this subject. Such studies should include validated instruments for the elderly's evaluation, the development of public policies for promoting the elderly's health, and the guidance and improvement of nursing care, which will bring quality and scientificity to care planning.

RESUMO

Objetivo: Avaliar o diagnóstico de enfermagem Síndrome do Idoso Frágil em idosos com doenças crônicas de uma regional de saúde do Distrito Federal. **Método:** Estudo quantitativo, descritivo e transversal, realizado com idosos que apresentavam hipertensão arterial e/ou diabetes *mellitus* atendidos Unidades Básicas de Saúde. Utilizou-se de Questionário sociodemográfico, Miniexame do Estado Mental, dados antropométricos, avaliação da sarcopenia (medida pela composição corporal), força muscular e capacidade funcional e identificação do diagnóstico de enfermagem da NANDA-I. Os dados foram analisados em *software* estatístico. **Resultados:** Participaram 78 idosos. Foram identificados 93,6% idosos com Memória prejudicada, 93,6% com Mobilidade física prejudicada, 82,1% com Fadiga, 76,9% com Deambulação prejudicada, 53,8% com *Deficit* no autocuidado para vestir-se, 43,6% com Intolerância à atividade, 35,9% com Isolamento Social, 30,8% com Desesperança, 29,5% com *Deficit* no autocuidado para alimentação, 29,5% com *Deficit* para banho, 12,8% com *Deficit* para higiene íntima, e 10,3% com Débito cardíaco diminuído. **Conclusão:** O diagnóstico de enfermagem Síndrome do Idoso Frágil permite ter uma visão multidimensional do idoso. Considerando que um fator pode acarretar agravos a vários campos da saúde, torna-se essencial que o enfermeiro intervenha precocemente, planeje e implemente ações em curto e em longo prazo.

DESCRITORES

Idoso; Idoso Fragilizado; Diagnóstico de Enfermagem; Processo de Enfermagem; Enfermagem Geriátrica; Doença Crônica.

RESUMEN

Objetivo: Evaluar el diagnóstico enfermero Síndrome del Anciano Frágil en personas mayores con enfermedades crónicas de un centro regional de salud del Distrito Federal. **Método:** Estudio cuantitativo, descriptivo y transversal, llevado a cabo con ancianos que presentaban hipertensión arterial y/o *diabetes mellitus* atendidos en Unidades Básicas de Salud. Se utilizó un Cuestionario sociodemográfico, Miniexamen del Estado Mental, datos antropométricos, evaluación de la sarcopenia (medida por la composición corporal), fuerza muscular y capacidad funcional e identificación de diagnóstico de enfermería de la NANDA-I. Los datos fueron analizados en *software* estadístico. **Resultados:** Participaron 78 personas mayores. Fueron identificados el 93% de ancianos con Memoria perjudicada, el 93,6% con Movilidad física perjudicada, el 82,1% con Fatiga, el 76,9% con Deambulación perjudicada, el 53,8% con Déficit en el autocuidado para vestirse, el 43,6% con Intolerancia a la actividad, el 35,9% con Aislamiento Social, el 30,8% con Desesperanza, el 29,5% con Déficit en el autocuidado para alimentación, el 29,5% con Déficit para baño, el 12,8% con Déficit para higiene íntima, el 10,3% con Gasto cardíaco disminuido. **Conclusión:** El diagnóstico enfermero Síndrome del Anciano Frágil permite tener una visión multidimensional de la persona mayor. Considerándose que un factor puede traer agravamientos a distintos campos de la salud, se hace esencial que el enfermero intervenga precocemente, planifique e implante acciones a corto y largo plazo.

DESCRIPTORES

Anciano; Anciano Frágil; Diagnóstico de Enfermería; Proceso de Enfermería; Enfermería Geriátrica; Enfermedad Crónica.

REFERENCES

1. Valcarenghi RV, Lourenço LFL, Siewert JS, Alvarez AM. Nursing scientific production on health promotion, chronic condition, and aging. *Rev Bras Enferm*. 2015;68(4):618-25. DOI: <http://dx.doi.org/10.1590/0034-7167.2015680419i>
2. Organización Mundial de la Salud. Informe mundial sobre el envejecimiento y la salud. Ginebra: OMS; 2015.
3. Oliveira ATR, Oneill MMVC. Cenário sociodemográfico em 2022/2030 e distribuição territorial da população: uso e ocupação do solo [Internet]. Rio de Janeiro: Fundação Oswaldo Cruz; 2013 [citado 2018 jan. 28]. Disponível em: <http://books.scielo.org/>
4. Barreto MS, Carreira L, Marcon SS. Envelhecimento populacional e doenças crônicas: reflexões sobre os desafios para o Sistema de Saúde Pública. *Rev Kairós Gerontol* [Internet] 2015 [citado 2018 jan. 28];18(1):325-39. Disponível em: <https://revistas.pucsp.br/index.php/kairos/article/view/26092/18731>
5. Malachias MVB, Souza WKSB, Plavnik FL, Rodrigues CIS, Brandão AA, et al. 7ª Diretriz Brasileira de Hipertensão Arterial. *Arq Bras Cardiol* [Internet]. 2016 [citado 2018 jan. 28];107(3 Supl.3). Disponível em: http://publicacoes.cardiol.br/2014/diretrizes/2016/05_HIPERTENSAO_ARTERIAL.pdf
6. Sociedade Brasileira de Diabetes. Diretrizes da Sociedade Brasileira de Diabetes 2015-2016 [Internet]. São Paulo: SBD; 2016 [citado 2018 jan. 28]. Disponível em: <https://www.diabetes.org.br/profissionais/images/docs/DIRETRIZES-SBD-2015-2016.pdf>
7. Gutiérrez MGR, Morais SCR. Systematization of nursing care and the formation of professional identity. *Rev Bras Enferm* [Internet]. 2017;70(2):455-60. DOI: <http://dx.doi.org/10.1590/0034-7167-2016-0515>
8. Nanda International. Nursing diagnoses: definitions and classification: 2015-2017. Oxford: Wiley Blackwell; 2015.
9. Garrido-Abejar M, Serrano-Parra M D, Bartolomé-Gutiérrez R, Martínez Vizcaino V. Diferencias en la expresión del síndrome de fragilidad en hombres y mujeres mayores institucionalizados sin deterioro cognitivo severo. *Rev Esp Geriatr Gerontol*. 2012;47(6):247-53. DOI: 10.1016/j.regg.2012.06.007
10. Lacerda NFRS, Lima PV. Diagnósticos de enfermagem identificados em pessoas idosas com diabetes mellitus. *Rev Multidisc Psicol*. 2017;11(38):431-44. DOI: <https://doi.org/10.14295/online.v11i38.908>
11. Clares JWB, Guedes MVC, Silva LF, Nóbrega MML, Freitas MC. Subset of nursing diagnoses for the elderly in Primary Health Care. *Rev Esc Enferm USP*. 2016;50(2):270-6. DOI: <http://dx.doi.org/10.1590/S0080-62342016000200013>
12. Lipschitz DA. Screening for nutritional status in the elderly. *Prim Care*. 1994;21(1):55-67.
13. Brucki SMD, Nitrini R, Caramelli P, Bertolucci PHF, Okamoto IH. Sugestões para o uso do mini-exame do estado mental no Brasil. *Arq Neuro Psiquiatr*. 2003; 61(3B):777-81. DOI: <http://dx.doi.org/10.1590/S0004-282X2003000500014>
14. Cruz-Jentoft AJ, Baeyens JP, Bauer JM, Boirie Y, Cederholm T, Landi F, et al. Sarcopenia: European consensus on definition and diagnosis: report of the European Working Group on sarcopenia in older people. *Age Ageing*. 2010;39(4):412-23. DOI: <https://doi.org/10.1093/ageing/afq034>
15. Alexandre TS, Meira DM, Rico NC, Mizuta SK. Accuracy of Timed Up and Go Test for screening risk of falls among community-dwelling elderly. *Rev Bras Fisiot*. 2012;16(5):381-8. DOI: <http://dx.doi.org/10.1590/S1413-35552012005000041>
16. Lauretani F, Russo CR, Bandinelli S, Bartali B, Cavazzini C, Di Iorio A, et al. Age-associated changes in skeletal muscles and their effect on mobility: an operational diagnosis of sarcopenia. *J Appl Physiol*. 2003;95(5):1851-60. DOI: <https://doi.org/10.1152/jappphysiol.00246.2003>
17. Oliveira RJ, Bottaro M, Junior JT, Farinatti PTV, Bezerra LA, Lima RM. Identification of sarcopenic obesity in postmenopausal women: a cutoff proposal. *Braz J Med Biol Res*. 2011;44(11):1171-6. DOI: <http://dx.doi.org/10.1590/S0100-879X2011007500135>
18. Fachine BRA, Trompieri N. The aging process: the main changes that occur with the elderly over the years. *Inter Sci*. 2012;1(20):106-32. DOI: <http://dx.doi.org/10.6020/1679-9844/2007>
19. Andrade NA, Fernandes MGM, Nóbrega MML, Garcia TR, Costa KNFM. Análise do conceito fragilidade em idosos. *Texto Contexto Enferm* [Internet]. 2012 [citado 2018 jan. 28];21(4):748-56. Disponível em: <http://www.scielo.br/pdf/tce/v21n4/04.pdf>
20. Rizzuto D, Melis RJF, Angleman S, Qiu C, Marengoni A. Effect of chronic diseases and multimorbidity on survival and functioning in elderly adults. *J Am Geriatr Soc*. 2017;65(5):1056-60. DOI: <https://doi.org/10.1111/jgs.14868>
21. Silva JS, Martuscelli ICS, Fernandes VLS, Rodrigues FF, Fernandes LC, Carvalho FA, et al. Prevalência de quedas e fatores associados em idosos institucionalizados do Município de Anápolis. *Rev Educ Saúde* [Internet]. 2017 [citado 2018 jan. 28];5(1):66-74. Disponível em: <http://periodicos.unievangelica.edu.br/index.php/educacaoensaude/article/view/2384>
22. Guerra HS, Bernardes DCF, Santana JA, Barreira LM, Sousa RA, Neves CM. Avaliação do risco de quedas em idosos da comunidade. *Rev Saúde Com* 2017;13(2):879-886. DOI: <http://dx.doi.org/10.22481/rsc.v13i2.434>
23. Brasil. Ministério da Saúde; Secretaria de Atenção à Saúde, Departamento de Atenção Básica. Estratégias para o cuidado da pessoa com doença crônica Diabetes Mellitus. Brasília; 2013.
24. Nogueira IC, Santos ZMS, Monte'Alverne DGB, Martins ABT, Magalhães CBA. Efeitos do exercício físico no controle da hipertensão arterial em idosos: uma revisão sistemática. *Rev Bras Geriatr Gerontol*. 2012;15(3):587-601. DOI: <http://dx.doi.org/10.1590/S1809-98232012000300019>
25. Domiciano BR, Braga DKAP, Silva PN, Vasconcelos TB, Macena RHM. Escolaridade, idade e perdas cognitivas de idosas residentes em instituições de longa permanência. *Rev Neurociênc*. 2014;22(3):330-6. DOI: <http://dx.doi.org/10.4181/RNC.2014.22.03.971.7p>
26. Zortea B, Gautério-Abreu DP, Santos SSC, Silva BT, Ilha S, Cruz VD. Cognitive assessment of elderly people in outpatient care. *Rev Rene*. 2015;16(1):123-31. DOI: <http://dx.doi.org/10.15253/2175-6783.2015000100016>
27. Stoeber K, Heber A, Eichberg S, Brixius K. Sarcopenia and predictors of skeletal muscle mass in elderly men with and without obesity. *Gerontol Geriatr Med*. 2017;3:1-8. DOI: <http://dx.doi.org/10.1177/2333721417713637>
28. Morais PCA, Mauricio TF, Moreira RP, Guedes NG, Rouberte ESC, Ferreira JDF, et al. Nursing diagnosis of Impaired Physical Mobility in elderly people at primary health care. *Int Arq Med*. 2017;10(35):1-8. DOI: <http://dx.doi.org/10.3823/2305>

29. Bianchi AB, Oliveira JM, Bertolini SMMG. Marcha no processo de envelhecimento: alterações, avaliação e treinamento. *Rev Uningá [Internet]*. 2015 [citado 2018 jan. 28];45(n.esp):52-55. Disponível em: <http://revista.uninga.br/index.php/uninga/article/view/1232/854>
30. Santos MIP, Griep RH. Capacidade funcional de idosos atendidos em um programa do SUS em Belém (PA). *Ciênc Saúde Coletiva*. 2013;18(3):753-61. DOI: <http://dx.doi.org/10.1590/S1413-81232013000300021>
31. Augusti ACV, Falsarella GR, Coimbra AMV. Análise da síndrome da fragilidade em idosos na atenção primária: estudo transversal. *Rev Bras Med Fam Comunidade*. 2017;12(39):1-9. DOI: [http://dx.doi.org/10.5712/rbmf12\(39\)1353](http://dx.doi.org/10.5712/rbmf12(39)1353)
32. Mansano-Schlosser TC, Ceolim MF. Fadiga em idosos em tratamento quimioterápico. *Rev Bras Enferm*. 2014;67(4):623-9. DOI: <http://dx.doi.org/10.1590/0034-7167.2014670419>.
33. Ventura J, Semedo DC, Paula SF, Silva MRS, Pelzer MT. Fatores associados a depressão e os cuidados de enfermagem no idoso. *Rev Enfem [Internet]*. 2016 [citado 2018 jan. 28];12(12):101-13. Disponível em: <http://revistas.fw.uri.br/index.php/revistadeenfermagem/article/view/2260>
34. Agha M, Riaz MBBS. The rising prevalence of obesity: part A impact on public health. *Int J Surg Oncol*. 2017;2(7):e17. DOI: <http://dx.doi.org/10.1097/IJ9.0000000000000017>
35. Andrade ABCA, Ferreira AA, Aguiar MJG. Conhecimento dos idosos sobre os sinais e sintomas da depressão. *Saúde Redes*. 2016;2(2):157-66. DOI: <http://dx.doi.org/10.18310/2446-4813.2016v2n2p157-166>
36. Ortolani FPB, Goulart RMM. Doenças cardiovasculares e estado nutricional no envelhecimento: produção científica sobre o tema. *Kairós Gerontol [Internet]*. 2015 [citado 2018 jan. 28];2015;18(1):307-24. Disponível em: <https://revistas.pucsp.br/index.php/kairos/article/view/26063>

