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CLINICAL CONDITIONS OF ELDERLY WHO ARE VICTIMS OF MUSCLE-SKELETAL TRAUMA[1]

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ABSTRACT
The objective of this study was to evaluate the clinical conditions of the elderly with muscle-skeletal trauma. A cross-sectional, descriptive and observational study was carried out with 133 elderly patients hospitalized with lower limb traumas. The data were collected between January and August 2014. A form based on Henderson's theory was applied. The clinical conditions of the elderly were evaluated from the following variables: height, medication use, visual and auditory acuity, muscle-skeletal impairment, smoking, alcohol use and basic diseases. The association between height decrease and demographic/clinical characteristics by the □2 and likelihood ratio tests was analyzed; the CRs and their IC95% were calculated. The prevalence was female (52.6%), mean age 78.7 ± 9.9 years-old. Diseases such as hypertension and diabetes favor the occurrence of falls. There was a compromise of the age group 79-98 with femoral neck fractures (CR = 1.07, IC95% 0.42-270) and trochanter (CR = 1.52, IC95% 0.59-3, 92). Among the fundamental needs assessed, the following stand out: total dependence on feeding, diaper use, height decrease, visual impairment and femoral fractures. The results point to the nurses' awakening in the care of this population in order to plan preventive care of complications and reestablish their functional capacity.

Keywords: Nursing. Elderly people. Research in Clinical Nursing. Wounds and Injury. Emergency Hospital Service..

INTRODUCTION

Aging changes make the elderly people more vulnerable clinically and predisposes them to non-communicable chronic diseases, as well as to accidents due to external causes, such as domestic ones, and falls are the most frequent accident. Associated with illness, these accidents require hospitalizations, which may contribute to worsening neurological, cardiovascular problems, urinary and/or intestinal incontinence, balance, strength and vision problems, as well as changes in gait and adverse drug reactions[1].

Aging is a natural and universal phenomenon characterized by slow functional decline of organs and systems, physiological and cognitive vigor, aggravating the inherent changes in age and sensitivity to chronological diseases. This natural action of time denotes different aspects between individuals and their body systems, predisposing some elderly people to situations of fragility and loss of autonomy[2].

Both old age and illness are elements that threaten the integrity of the human being, especially when the illness causes bed rest, a situation of extreme vulnerability[3].

In elderly people, muscle-skeletal traumas, specifically lower limbs, are the majority of the accidents. The evidence in recent studies, fractures involving hip bones stand out as the second most common. From these, 80.5% are in the age group above 60 years-old and femoral fractures are the major cause of mortality in this population[4].

In this context, the nurse will implement care towards the elderly in order to meet the needs arising from the changes resulting from the aging process, together with the immobility generated by lower limb traumas. Physical trauma in the elderly people, especially the lower limbs, has an impact on the quality of life of this population, since they lead to immobility and to momentary and/or continuous

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dependence. These traumas still compromise the functional capacity, autonomy and independence of the elderly. Therefore, trauma, such as falls, is considered to be a significant event in the elderly person's life, as a potential for the decline of a new disease function or symptom, with disastrous and striking consequences[5].

Based on nursing theories, such as Virginia Henderson's framework[6], who addresses the fundamental and intrinsic needs of the human being, the nurse can identify the demands of the elderly and plan actions according to the individuality of each one. Such actions will favor a qualified clinical care, as well as the strengthening of the professional autonomy for the effectiveness of care based on scientific knowledge.

In view of the above, the purpose of the study was to evaluate the clinical conditions of elderly who are victims of muscle-skeletal trauma of the lower limbs.

METHODOLOGY

Cross-sectional, descriptive, observational study performed with elderly patients hospitalized with muscle-skeletal trauma of lower limbs in a public reference hospital in traumas, in Fortaleza-CE.

In order to calculate the sample size, a prevalence of hospitalized elderly with muscle-skeletal trauma was estimated at 30%, a significance level of 5% (□= 0.05) and an absolute sample error of 6% were set. These values applied in the formula indicated for finite populations (N = 342 patients) provided a sample size ("n") equal to 133. Inclusion criteria were: preserved cognition and muscle-skeletal limb traumas. The preservation of cognition was evaluated at the moment of completing the data collection form by the responses of the elderly to the questions. Elderly patients with muscle-skeletal trauma of the lower limbs, associated with traumatic brain injury and burns, were excluded. The composition of the sample of 133 elderly was constituted by the accessibility technique.

Data were collected from January to August 2014, with a form composed of two parts: the first one containing sociodemographic variables (gender, age range and marital status) and the second one by clinical interview and physical examination, based on the theoretical of Virginia Henderson, who contemplates fourteen basic human needs, with only nine evaluated (breathing normally, eating and drinking, disposing of body waste, sleeping and resting, avoiding environmental hazards, communicating, clean body and protected integuments, moving and keeping adequate posture)[6].

The filling of the form and physical examination lasted an average of 60 minutes, with records of the measurements (temperature, blood pressure) and additional information collected from the medical records by the researcher.

The results were presented in tables with absolute and percentage values. The associations between the fall from own height variable and sociodemographic and clinical characteristics were analyzed using the □2 and likelihood ratio tests. The strength of the associations was measured by the odds ratios (RCs) and their confidence intervals (IC95%). Data were processed in SPSS 20.0 and analyzes with $p < 0.05$ were considered statistically significant.

In the development of the project approved by the Committee of Ethics in Research with Human Beings of the State University of Ceará, opinion nº 501.763, the national and international norms of ethics in research were fulfilled. The objectives of the research were presented to the elderly people and the information requested was offered and, after signing the Term of Consent, the physical examination and the interview were performed.

RESULTS AND DISCUSSION

The 133 elderly patients hospitalized who are victims of muscle-skeletal trauma and waiting for a surgical procedure had a mean age of 78.7 ± 9.9 years-old, ranging from 60 to 98 years-old. From the total, 70 (52.6%) were female, 76 (57.1%) were married, while 102 (76.7%) lived with their relatives and 83 (62.4%) were from the interior of the state. The prevalent basic diseases were: systemic arterial hypertension (42.9%) and diabetes mellitus (19.5%). Skeletal muscle injuries were due to falls and/or auto-accidents.

Based on the author Virgínia Henderson, the most prevalent care demands identified were: total food dependence, diaper use, height decrease, visual acuity decrease, and femoral fractures, as shown in table 1.

Table 1. Distribution of the number of elderly according to the fundamental needs and clinical conditions. Fortaleza-CE, Brazil, 2014.

Needs	Clinical conditions	N(%)
Breathing normally	Difficulty breathing	18(13,5)
Eating and drinking properly	**Addiction to feed**	
	Independent	52(39,1)
	Partial aid	26(19,5)
	Total Dependent	55(41,4)
	Oral cavity	
	No abnormalities	42(31,6)
	Dental defects/non-prosthesis	50(37,6)
	Use of prosthesis	35(26,3)
	Other lesions	6(4,5)
Eliminating body waste	Uses diapers [(1)]	102(76,7)
	Use water tray and/or urine collector	31(23,3)
	Continence	91(69,5)
	Incontinence	40(30,5)
	Use of laxatives	47(35,3)
	Nº of bowel movements	
	1-2 times/ weeks	75(57,7)
	3-6 times /week	14(11,5)
	Every day	40(30,8)
Sleeping and resting	Difficulty in falling asleep	55(41,4)
	Insomnia	35(26,3)
	Rest without changing	43(32,3)
Avoiding environmental hazards	Traffic accidents	41(20,9)
	Falls of one's own height	92(69,2)
	History of falls	51(38,9)
	Referred pain	115(86,5)
	Use of medication	92(78,6)
Communication	**Visual acuity**	
	Decreased	130(98,5)
	Absent	2(1,5)
	Auditory acuity	
	Normal	99(74,4)
	Decreased	34(25,6)
Clead body and integument protected	Resected skin with senile lesions*	103(77,5)
	Ecchymoses, bruises	14(11,7)
	Pressure ulcer	10(7,9)
	Other injuries	10(7,9)
Moving and maintaining proper posture	Fracture of the femoral shaft *	86(64,7)
	Fracture of the femoral neck	27(20,3)
	Trochanter fracture	29(21,8)

* Variable with more than one answer

Accordingly, the fall in height was associated only with the female sex (CR = 2.2, IC95%: 1.04 - 4.71) and the age range 90-98 years-old (CR = 7.8, IC95%: 1.40-35.70) and 80-89 years-old (RC = 3.97, IC95%: 1.52-10.32). The reported pain, present in 115 elderly (86.5%), has broad meaning, since trauma can lead to pain as well as physical

immobility, which is also a consequence of pain. As revealed in the study, lower limb pain is directly related to immobility and disability[7].

Table 2. Analysis of the odds ratio of fall from height with demographic and clinical characteristics of hospitalized elderly. Fortaleza-CE, Brazil, 2014.

Variables	Fall from height				
	Yes N(%)	No N(%)	RC	IC95%	p-value
Sex					**0,036**
Female	54(77,1)	16(22,9)	2,2	1,04 – 4,71	
Male	38(60,3)	25(39,7)	1,0		
Age group(years)					
90-98	15(88,2)	2(11,8)	7,08	1,40 – 35,70	**0,010**
80-89	42(80,8)	10(19,2)	3,97	1,52 – 10,32	**0,004**
70-79	17(58,6)	12(41,4	1,33	0,49 – 3,61	**0,565**
60-69	18(51,4)	17(48,6)	1,0		
Living with					
Others	15(65,2)	8(34,8)	0,78	0,30 – 2,06	0,246
Alone	10(66,7)	5(33,3)	0,83	0,26 – 2,67	0,762
Family	67(70,5)	28(29,5)	1,0		0,234
Smoking					
Yes	32(76,2)	10(23,8)	1,7	0,72 – 3,80	
No	60(65,9)	31(34,1)	1,0		0,349
Alcohol use					
Yes	18(62,1)	11(37,9)	0,66	0,28 – 1,57	
No	74(71,2)	30(28,8)	1,0		0,175
Hypertension					
Yes	43(75,4)	14(24,6)	1,7	0,79 – 3,64	
No	49(64,5)	27(35,5)	1,0		0,340
Diabetes					
Yes	20(76,9)	6(23,1)	1,62	0,59 – 4,40	
No	72(67,3)	35(32,7)	1,0		0,994
Medication use					
Yes	74(69,2)	33(30,8)	0,99	0,394 – 2,52	
No	18(69,2)	8(41,0)	1,0		0,331
Visual Acuity					
Decreased	48(65,8)	25(34,2)	0,69	0,32 – 1,47	
Absent	42(73,7)	15(26,0)	1,0		0,285
Auditory acuity (referred by the elderly)					
Decreased	66(66,7)	33(33,3)	0,62	0,25 – 1,50	
Normal	26(76,5)	8(23,5)	1,0		
Muscle-skeletal involvement					
Femoral diaphysis					0,328
Yes	57(66,3)	35(74,5)	0,67	0,30 – 1,49	
No	29(33,7)	12(25,5)	1,0		
Femur trochanter					
Yes	22(75,9)	70(67,3)	1,52	0,59 – 3,92	0,378
No	7(24,1)	34(32,7)	1,0		
Femoral neck					0,880
Yes	19(70,4)	8(29,6)	1,07	0,42 – 2,70	
No	73(68,9)	33(31,1)	1,0		

The conditions of sickness of the elderly with hypertension and diabetes significantly favor the increase in the probability of occurrence of falls from the height, highlighting the use of medications, among them antihypertensive drugs, attention-altering drugs, motor responses and blood pressure[8]. In the study, the age groups of 79 to 98 years-old were the most affected, with femoral neck fractures (RC = 1.07, IC95%: 0.42-270) and trochanter (RC = 1.52; IC95%: 0.59-3.92).

Often, traffic accidents and falls, especially falls from one's own height, lead the elderly person to functional incapacity, with a direct impact on their quality of life. The condition of illness, due to the vulnerability of the aging process, generates needs for attention to the elderly, especially in situations of lower limb trauma, since it causes immobility, exacerbating aggravations of preexisting diseases[9].

In the present study, the female sex was prevalent. It corroborates, therefore, with other studies (10-11), which inform us that females constitute the segment of higher incidence of femoral fractures. The greater occurrence of falls in this group was due to a greater exposure to domestic factors and to clinical changes, due to the conditions of illness, that is, due to the lower amount of lean mass and muscle strength, another factor that leads to the occurrence of falls in women[12].

Research has pointed to the significant number of falls in elderly women in this domestic context, where they spend most of the time, which makes them more susceptible to falls, leading to fractures (13).

According to another research, age is significantly associated with the likelihood of falling. As observed, the elderly under 70 years of age are less likely to fall from trauma than from other events, when compared to the elderly between 70 and 79 years old and the elderly who is 80 or older[14].

Still according to the study, among the causes of muscle-skeletal trauma, the fall from height is the most significant (15). The length of hospital stay due to falls varies greatly, and in the case of hip fractures, this variation can be from four to fifteen days, or up to twenty days. With increasing age and level of frailty, elderly people are likely to remain in the hospital longer after suffering a fall[11].

As evidenced, the majority of hip fractures are possibly the most dramatic consequence in older people. It is associated with high morbidity and mortality rates that usually result in expensive hospital costs, long rehabilitation procedures and difficulties to return to pre-fracture life and achieve full recovery of function. In addition to impairment due to illness, elderly people also have social impairment due to fracture[16].

Faced with this fact, it is up to professionals, especially nurses, to adopt preventive measures (removal of carpets, use of appropriate footwear, improvement of environmental lighting, reduction of domestic furniture and installation of support bars) related to falls, with a view to strengthen the functional capacity of the elderly patient, through educational strategies, according to the population.

It is known that changes in the muscle-skeletal system in the elderly person cause complaints in the face of limitations, such as in the exercise of daily life activities. However, the elderly people should consider continued exercise in order to avoid the stiffening of ligaments and cartilage, which contributes to a greater risk of injury, their spontaneous rupture and greater instability, consequently favoring the occurrence of falls.

Added to the senescence alterations, other factors were observed as compromising of the clinic of the hospitalized elderly patient: dependence of collection tray/urine collector for urinary and fecal elimination and/or diaper use. Such conditions, such as the use of diapers (76.7%), favor the appearance of lesions that are associated with reduced turgor, presence of micro-lesions, and, thus, contribute to the aggravation of the clinical conditions of the elderly due to the appearance of ulcers, and/or multiple lesions, prolonging hospitalization and, consequently, immobility with juxtaposition of many diseases[9].

Such lesions have been a discussion factor in nursing, especially in the hospital environment, in order to prevent the appearance of complications and to treat in a short time those that manifest themselves,

adopting technologies in line with the evaluations of the skin of the elderly person (18). The study points out that elderly people with dementia, heart failure and renal impairment have complications and survival, as well as a surgical delay of more than four days increase mortality risk from six months to one year[5].

The use of multiple medications in the treatment of pre-existing diseases (hypertension and diabetes) has also been identified in the elderly; among the classes of drugs the most identified were antihypertensive and anxiolytic drugs.

Anxiolytics, especially benzodiazepines, have solubility and rapid absorption regardless of the route of administration. In the elderly people, due to an increase in adipose tissue and a decrease in the quantity of water, there is a longer time for drug excretion, predisposing them to falls. These conditions are also complicated by the history of smoking and alcohol, as shown in table 2, and require greater attention from professionals, considering time and its effects[17].

In general, complications of smoking occur later in the period of use and may be manifested in the smoker for years with no apparent effects. However, cessation of this habit has immediate beneficial effects over time for people who have or do not have cigarette smoking diseases. Almost 759% of the potential years of life lost due to smoking occur among the elderly people[18].

According to research, in different age groups, it suggests that older people have fewer problems related to alcohol use than younger people. However, according to longitudinal research, the individual standard for alcohol use remains practically stable over time, varying according to social norms or historical aspects in force at a given time[18-19].

Thus, changes due to aging are considered to modify the pharmacokinetics and pharmacodynamics of medicinal products. From these, changes in body fat, with a proportional increase greater than 35% between the ages of 20 and 70 years-old, alterations in renal, hepatic metabolism and in the composition of plasma transport proteins they are important factors in the increased risk of the use of medications in Elderly patients. Research indicates that the elderly people are especially vulnerable to drug reactions due to factors that characterize them: pharmacokinetic and pharmacodynamics peculiarities, presence of chronicity due to diseases, use of multiple medications, and others[17].

Researches on the use of drugs in older people are still restricted and generally focus on a specific group of drugs, such as antidepressants and anti-inflammatories. In an American study with 68 elderly people, the reluctance to use antidepressants reported by these subjects is strongly associated with fear of experiencing adverse reactions and becoming addicted. However, some elderly people continue to take antidepressant medications more frequently and in greater quantity[18].

At this stage of life, the prevalence of polypharmacy is high, as observed in a study with 800 elderly in the city of Rio de Janeiro, Brazil. About half of the sample used one to four medications and one third took five or more medications[18].

Therefore, in the care of the elderly people with a fracture of the lower limbs, the nurse directs actions towards measures that prevent complications of both clinical conditions and possible injuries resulting from immobility caused by fracture and/or pain.

FINAL CONSIDERATIONS

The study showed that the aging process associated with conditions of chronic illness and environmental factors contribute to occurrence of falls among the elderly people, predisposing them to muscle-skeletal disorders.

The results point to the awakening of the nurse and health team in the care of this population, in order to plan preventive care of complications due to the immobility in the bed associated with the conditions of illness that the elderly patients have. Such measures will enable them to reestablish functional capacity upon hospital discharge.

CONDIÇÕES CLÍNICAS DE IDOSOS VÍTIMAS DE TRAUMA MUSCULOESQUELÉTICO

RESUMO

O objetivo do estudo foi avaliar as condições clínicas do idoso com traumas musculoesqueléticos. Estudo transversal, descritivo e observacional realizado com 133 idosos hospitalizados com traumas de membros inferiores. Os dados foram coletados entre janeiro e agosto de 2014. Aplicou-se formulário fundamentado na teoria de Henderson. As condições clínicas dos idosos foram avaliadas a partir das variáveis: quedas da própria altura, uso de medicação, acuidade visual e auditiva, comprometimento musculoesquelético, tabagismo, uso de álcool e doenças de base. Analisou-se a associação entre a queda da própria altura e as características demográficas/clínicas pelos testes de □2 e razão de verossimilhança, calculou-se as RCs e seus IC95%. Predominou o sexo feminino (52,6%), média de idade 78,7±9,9 anos. Adoecimentos como hipertensão e diabetes favorecem a ocorrência de quedas. Verificou-se comprometimento da faixa etária de 79 a 98 anos com fraturas de colo de fêmur (RC= 1,07; IC95% 0,42-270) e trocânter (RC=1,52; IC95% 0,59-3,92). Dentre as necessidades fundamentais avaliadas, destacou-se: dependência total para alimentar-se, uso de fraldas, queda da própria altura, diminuição visual e fraturas de fêmur. Os resultados apontam para o despertar do enfermeiro no atendimento dessa parcela populacional de modo a planejar cuidados preventivos de complicações e reestabelecer sua capacidade funcional.

Palavras-chave: Enfermagem. Idoso. Pesquisa em Enfermagem Clínica. Ferimentos e Lesões. Serviço Hospitalar de Emergência.

CONDICIONES CLÍNICAS DE ANCIANOS VÍCTIMAS DE TRAUMA MUSCULOESQUELÉTICO

RESUMEN

El objetivo del estudio fue evaluar las condiciones clínicas del anciano con traumas musculoesqueléticos. Estudio transversal, descriptivo y observacional realizado con 133 ancianos hospitalizados con traumas de miembros inferiores. Los datos fueron recolectados entre enero y agosto de 2014. Se aplicó un formulario fundamentado en la teoría de Henderson. Las condiciones clínicas de los ancianos fueron evaluadas a partir de las variables: caídas de la propia altura, uso de medicación, acuidad visual y auditiva, comprometimiento musculoesquelético, tabaquismo, uso de alcohol y enfermedades de base. Se analizó la asociación entre la caída de la propia altura y las características demográficas/clínicas por las pruebas de □2 y la razón de verosimilitud, se calcularon las RCs y sus IC95%. Predominó el sexo femenino (52,6%), promedio de edad 78,7±9,9 años. Enfermedades como hipertensión y diabetes favorecen la ocurrencia de caídas. Se verificó comprometimiento de la franja de edad de 79 a 98 años con fracturas del cuello del fémur (RC= 1,07; IC95% 0,42-270) y trocánter (RC=1,52; IC95% 0,59-3,92). Entre las necesidades fundamentales evaluadas, se destacó: dependencia total para alimentarse, uso de pañales, caída de la propia altura, disminución visual y fracturas de fémur. Los resultados señalan para el despertar del enfermero en la atención de esta parte de la población de modo a planificar cuidados preventivos de complicaciones y restablecer su capacidad funcional.

Palabras clave: Enfermería. Anciano. Investigación en Enfermería Clínica. Heridas y Lesiones. Servicio Hospitalario de Urgencia.

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