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FACTORS ASSOCIATED WITH THE FALL OF ELDERLY WHICH MAY RESULT IN FEMORAL FRACTURE

FATORES ASSOCIADOS À QUEDA DE IDOSOS QUE PODEM RESULTAR EM FRATURA DE FÊMUR

FACTORES ASOCIADOS CON LA CAÍDA DE ANCIANOS QUE PUEDEN RESULTAR EN FRACTURA DE FÊMUR

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ABSTRACT

Objective: analyzing the factors associated with the fall of the elderly that may result in femur fractures. **Method:** an exploratory and a descriptive study of a qualitative approach developed at the Integrated Health Center Uninovafapi, with 50 seniors. Data were collected through interviews, processed in Iramuteq and analyzed through the descending hierarchical classification. **Results:** they were presented in five categories, namely: 1. Condition of the homes of the elderly that facilitate the falls; 2. Lack of adapting homes to the needs of the elderly; 3. Irregular conditions of paving of streets; 4. Irregular conditions of the sidewalks of homes and businesses; and 5. High blood pressure and diabetes, as chronic diseases associated with falls among the elderly. **Conclusion:** the factors associated with the fall of the elderly is related to the conditions of the homes and streets of the city, but what determines the severity of these accidents are the chronic diseases that old people have. There is a need to improve public policy of elderly care related to falls. **Descriptors:** Elderly; Accidents for Falls; Family Health.

RESUMO

Objetivo: analisar os fatores associados a queda de idosos que podem resultar em fratura de fêmur. **Método:** estudo exploratório e descritivo com abordagem qualitativa, desenvolvido no Centro Integrado de Saúde do Uninovafapi, com 50 idosos. Os dados foram coletados por meio de entrevista, processados no Iramuteq e analisados pela classificação hierárquica descendente. **Resultados:** foram apresentados em cinco categorias, a saber: 1. Condição das residências dos idosos que facilitam as quedas; 2. Falta de adaptação das residências às necessidades dos idosos; 3. Condições irregulares do calçamento das ruas; 4. Condições irregulares das calçadas das casas e comércios; e 5. Hipertensão arterial e diabetes, como doenças crônicas associadas às quedas entre idosos. **Conclusão:** os fatores associados à queda de idosos tem relação com as condições das residências e as ruas da cidade, mas o que determina a gravidade desses acidentes são as doenças crônicas que o idoso possui. Há necessidade de melhorar a política pública de atenção ao idoso relacionada às quedas. **Descritores:** Idosos; Acidentes Por Quedas; Saúde da Família.

RESUMEN

Objetivo: analizar los factores asociados con la caída de las personas mayores que pueden dar lugar a fracturas de fémur. **Método:** estudio exploratorio y descriptivo con enfoque cualitativo desarrollado en el Centro Integrado de Salud Uninovafapi, con 50 personas mayores. Los datos fueron recolectados a través de entrevistas, procesados en Iramuteq y analizados por la clasificación jerárquica descendente. **Resultados:** se presentaron en cinco categorías, a saber: 1. Condición de las viviendas de las personas mayores que facilitan las caídas; 2. La falta de adaptación de viviendas a las necesidades de los ancianos; 3. Condiciones de pavimento irregular de calles; 4. Condiciones irregulares de las aceras de las casas y negocios; y 5. La presión arterial alta y la diabetes como las enfermedades crónicas asociadas con caídas entre los ancianos. **Conclusión:** los factores asociados con la caída de personas mayores está relacionada con las condiciones de las viviendas y calles de la ciudad, pero lo que determina la gravedad de estos accidentes son las enfermedades crónicas que las personas mayores tienen. Hay una necesidad de mejorar las políticas públicas relacionadas con el cuidado de ancianos a las caídas. **Descriptores:** Ancianos; Accidentes por Caídas; Salud de la Familia.

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INTRODUCTION

Brazil is currently considered a country of old people, twenty-one million people are aged more than sixty years old, which corresponds to 11% of the national population. The forecast for 2020 is a population of thirty million elderly, which represent 13% of the population in the country. In 2010, the number of people in Piauí aged 60 or over was of 331.772, which corresponds to 11,4% of the State population and the city of Floriano, located 240 km from the capital, had 6.439, corresponding to 11,16% of the population.¹

The increase in life expectancy of the population is already something quite remarkable. The World Health Organization defines the elderly as the socioeconomic status of each nation. In developing countries, like Brazil, there are considered elderly who are 60 or older. A study by the Brazilian Institute of Geography and Statistics (IBGE), released in November 2012, shows that the number of Brazilians in this age group grew by 55% between 2001 and 2011. This means that seniors increased from 15,5 to 23,5 million people in ten years. All these changes have aroused great interest in the public health area.²

The increase of the number of elderly in Brazil has generated social impact by drawing society's attention to public policies for the elderly. From the perspective of an aging population, studies have shown that these are major users of health services and many are affected by diseases or injuries that require monitoring, which, even if not fatal, tends to compromise the quality of life.³

Among the characteristics of this new disease profile sequels caused by falls can be cited. It is believed that in 2050, approximately one in three people aged 65 or more suffer one or more falls each year, and about half of these result in injuries. Both falls and fear of falling are common syndromes with potentially serious outcomes in the elderly.⁴

Falls are the most serious and frequent accident occurring with the elderly and the main cause of accidental death in people in this age group. By definition, fall are characterized by an unintentional displacement of the body to below the starting position with correction inability to timely, determined by multifactorial circumstances, such as environmental, physiological, psychosocial and biomedical, compromising the stability.⁵

Faced with this problem, the study aims to analyze the factors associated with the fall of the elderly that may result in femoral fractures.

METHOD

This is an exploratory and descriptive study of a qualitative approach developed in UNINOVAFAPÍ University Center, with 50 seniors from 60 years of age or older, registered in the Family Health Strategy. To characterize this group of seniors there was used the information gathered in the implementation of the Health Record Elderly.

The inclusion criteria participated in the survey seniors from 60 or older registered in the Family Health Strategy treated at the University Center UNINOVAFAPÍ, with their cognitive functions preserved, conscious and oriented to respond to the instrument.

Only participated in the survey subjects effectively linked to UNINOVAFAPÍ University Center and expressed agreement with the legal parameters of the Consent and Clear term. Exclusion criteria were eliminated from the study seniors who were not linked to the Academic Center UNINOVAFAPÍ, those who had cognitive impairment and who demonstrated against participating or will sign the Informed Consent - IC.

Data were collected through a semi-structured interview guided in May 2014 and processed by IRAMUTEQ software (R Interface pour les Analyses Multidimensionnelles of Textes et Questionnaires), which aims to discover the essential information in a text, textual through statistical analysis. Although there is talk of quantitative analysis of textual data, this does not fail to consider the quality of the phenomenon studied, and also provides criteria from the material itself, for the consideration of it as an indicator of a phenomenon of scientific interest.⁶ Data were analyzed by Descending Hierarchical Classification.

The use of computer programs such as IRAMUTEQ provides the development of data analysis techniques that benefited the research on the phenomenon, which justifies its use in addition to the innovative character that this instrument gives the analysis of speeches. This software was developed by Pierre Ratinaud, and so you can understand the textual analysis that performs, you must first clarify some important concepts: 1) Corpus 1 is the set of texts to be analyzed. 2) Text is every interview that makes up the Corpus. If a given analysis concerns the answers "n" participants to an open question,

every answer will be a text, and we 'n' texts.
3) Text segments are parts of the text, most of the time, of the size of three lines, scaled by the software itself. So corpus, text and text segments are the IRAMUTEQ the object of analysis.⁷

It is significant that this computer program can make various kinds of textual data analysis, highlighting similarity analysis, which was the type used in this research. This type of analysis is based on the theory of graphs⁸ and makes it possible to identify the co-occurrences between words and the result brings indications of connectedness between words, assisting in identifying the structure of representation.

After the verbal acceptance of the study participants were asked to them to sign the free and informed consent form, which complies with ethical and legal as the Ethics and Research Committee - CEP / UNINOVAFAP agreed with the requirements of Resolution

466/12, which deals with guidelines and standards for research involving human subjects.⁹

RESULTS

The classes and their descriptions

There were identified five semantic classes in the analyzed material and a combination thereof the study variables, gender and age, which represented 100% of the material to be analyzed.

The corpus is analyzed in the study comprised 50 initial context units (ICU) or interviews and divided into 34 basic context units (UCE).

The descendant hierarchical analysis showed the following distribution of classes or thematic contexts.

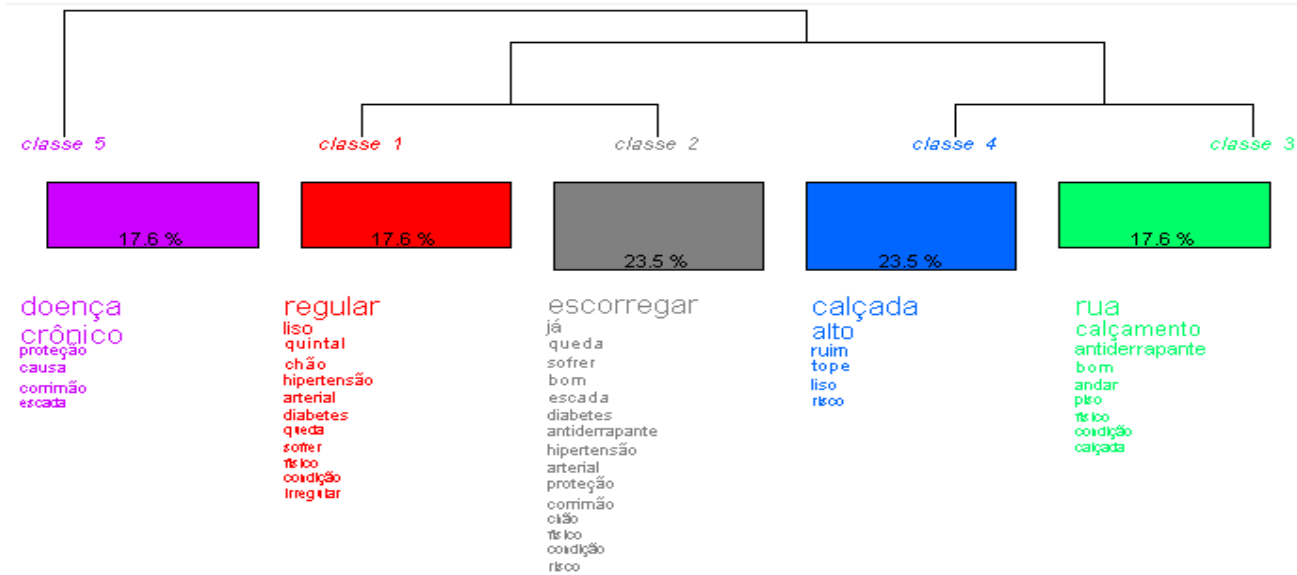


Figure 1. Thematic structure of the factors associated with the fall of the elderly that can result in fracture of femur. Teresina (PI), 2014.

Class 1- Condition of the elderly homes that facilitate falls, it is formed by 06 UCE's, concentrates 17,6 % of the UCE's of the corpus. The same features directly related to class 2.

I've had fall of step too high and resulted in fracture of femur. (Dep 14)

The risks are the floor smooth I've had fall slipped while washing the backyard. (Dep. 34)

Class 2 - Lack of adaptation of homes to the needs of the elderly, consists of 08 UCE's, concentrates 23.53% of UCE's of the corpus. The same is presented directly related to the Class 1.

The risks are the floor smooth without anti-slip. (Dep 25)

The risks to which I am exposed are the stairs without banisters and floor flat. (Dep. 06)

Class 3 - Irregular conditions of the paving of streets, consists of 06 UCE's, concentrates 17.6% of UCE's corpus. The same is presented directly related to the Class 4.

The risk we run is the lack of pavement, difficulty walking with the walker. (Dep. 08)

Unpaved streets and badly adapted to pedestrians, I had to fall off the bus and had fracture of femur. (Dep. 26)

Class 4 - Irregular conditions on the sidewalks of homes and businesses, consists of 08 UCE's, concentrates 23.5% of UCE's of the corpus. The same is presented directly related to the Class 3.

The risks are the sidewalks and ground flat. (Dep. 24)

The risks are for the flat ground and sidewalks high and potholed. (Dep. 33)

Class 5 - High blood pressure and diabetes, and chronic diseases associated with falls among the elderly, consists of 06 UCE's, is the most significant and concentrates 17.5% of UCE's corpus. The same features is directly related to the class 1, 2, 3 and 4.

I have suffered loss because of dizziness. (Dep. 11)

What made me fall was the weakness and the ladder without handrail and without antiskid. (Dep. 14)

DISCUSSION

There are some findings that should be taken into account when it comes to elderly and fall, one is that the elderly fall more in their own home than in the street or in other environments. Over 70% of falls occur inside the residence, and people living alone are at greater risk.¹⁰

Many risk factors for falls in different communities' nursing homes have been reported. Intrinsic factors that may increase the risk of falls and fractures for the elderly, the self-perception of the elderly of their vision and poor health and how extrinsic factors are those related to the environment, such as lighting, surface to walk, throw rugs, high and narrow steps.

Environmental risk factors are present in 20-58% of falls in the elderly. The uneven, wet and slippery surfaces, as well as loose rugs and uneven ground were the most prevalent in the studies analyzed on environmental factors and risk of falls in the elderly. Seniors more active tend to fall outdoors to their homes and less active elderly fall more within their own homes.¹²

Study of factors associated with falls among elderly physical activities practitioners identified the incidence of 7,63% and the factors associated with falls were: being female, being between 70 and 79, presenting vision problems as well as environmental factors such as local wet, indoors and uneven sidewalks, when they fell in the street.¹³

Research has shown that 42% of participants experienced fall in and out of the residence and the higher incidence of places in the house were: patio/backyard (22,0%); bathroom (16,9%) and house entrance hall (13,6%). Possibly this is due to confidence in the environment, enabling the elderly greater movement within it.¹⁴

Participation in community activities can also be considered a risk factor for falls. Study showed that seniors who participate in some activity out more from home, getting thus more exposed to architectural barriers such as

poor lighting, slippery surfaces, steep steps, and no railings, sidewalks inadequate and poorly maintained roads.¹⁵

With regard to chronic diseases such as diabetes mellitus, a frequency of falls in elderly diabetics higher than in non-diabetic elderly was found, this may be related to the fact that elderly diabetics have balance and mobility due to old age, limitation of activities daily, lack of balance strategy, reduced proprioceptive sensitivity and the presence of orthostatic hypotension.¹⁶

The multifactorial nature of falls characterizes as a complex geriatric syndrome that involves the interaction of various clinical conditions (intrinsic), among them dizziness and diabetes.¹⁷ Some authors found a positive correlation between changes plantar sensitivity and balance disorders in Brazilian elderly with diabetes mellitus, in addition to loss of plantar sensitivity that is associated to the risk of falls.¹⁸

The presence of hypertension and the use of antihypertensive significantly increase the chances of the elderly suffer falls, reflecting the collective and family areas with high economic costs.¹⁹

The fall may decrease the ability of the elderly to perform activities of daily life, their independence and autonomy and consequently the quality of life.²⁰ A study of the factors associated with elderly quality of life showed that diseases, smoking, physical activity, visual changes and fall of history are factors that significantly influence the quality of life of elderly.²¹

The falls and, in consequence, fractures negatively affect the quality of life in old age, as this is not a biological, psychological or social individual attribute, not an individual responsibility, but rather a product of the interaction between people living in a society changes.²²

Currently there is growing awareness that the fractures from falls substantially affect the quality of life of elderly patients and represent a significant public health problem because of the economic and social costs, and high morbidity and mortality. Patients with fractures may be unable to work, limited in their social, recreational, and emotionally depressive require extensive medical, psychological and assistance in activities of daily life.²³

Falls result in high costs for health services in Brazil. The Unified Health System (SUS) has raised every year costs related to the treatment of fractures in the elderly. According to the Ministry of Health, in 2006

approximately R\$ 49 million was spent on hospitalizations. In 2009, that number had increased to R\$ 57.610,000.²⁴

The social and economic cost of femur fracture is high, due, among other factors, to morbidity and mortality of the fracture itself and related diseases, a variable period of hospitalization, often in an intensive care unit, clinical and surgical care, and rehabilitation programs for prolonged periods. And within one year, only 40,5% of patients are fully independent in activities of daily living.²⁵

When conducting research on mortality in elderly after hospitalization for fractures from falls, it was found that women accounted for 78% of the sample, the average age was 75,5 years old (SD = 8,2) and the most common type of fracture it was the femur (72%) with percentage mortality for patients hospitalized for fractures of 25,2%.²⁶

From this perspective, it is essential the immediate patient care within the first 48 hours after the femoral fracture, avoiding from complications to death. This need for priority attention by claiming, after study at a public hospital in Rio de Janeiro, the costs of patients treated after the fourth day of hospitalization are significantly elevated, being represented mostly by clinical hospitalization, doctors' fees, fixed costs hospital and cost of surgical procedures.²⁷

The falls, then, has become a frequent occurrence and an increasing problem with the aging process. The more fragile the elderly, the greater the propensity to fall, featuring an important factor of morbidity, mortality and institutionalization. The risk of falling increases significantly with age. It is estimated that one-third of the elderly living in the community fall within one year and, among institutionalized, this prediction increases to 50%. When falling, about 5% of elderly people require hospitalization, particularly for femur fracture, and in three cases, one of the dies patients within one year.²⁸

It is important that health professionals who treat the elderly population, have knowledge about the subject falls to better guide them in terms of risk and protective factors related to the control of drug use, the health education, guidance on exercise physical, accessibility and maintenance of functional capacity of the elderly.²⁹

Health professionals should develop more studies to evaluate preventive programs falls by the elderly in order to improve the knowledge, attitudes and behaviors of the

elderly that can help to reduce the risk of falls. The application of Evaluative Scale Falls Risk (EARQUE) for older non-institutionalized people can identify areas to prevent elderly people from falling.³⁰

CONCLUSION

Falls among the elderly is a problem that may be irreversible in case of severe fractures. It can affect the quality of life of older people for causing immobility and dependence. Factors associated with the fall of elderly is related to the conditions of the homes and streets of the city, but what determines the severity of these accidents are the chronic diseases that old people have, especially hypertension and diabetes, which can cause discomfort, weakness and dizziness, contributing to increase the risk of falling. Thus, there is the need to improve the public policy of care for the elderly, reducing the risk factors associated with falls.

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