CHALLENGES OF PREVENTION OF FALLS IN THE ELDERLY IN PRIMARY HEALTH CARE

DESAFIOS DA PREVENÇÃO DE QUEDAS EM IDOSOS NA ATENÇÃO PRIMÁRIA À SAÚDE

DESAFÍOS DE LA PREVENCIÓN DE CAÍDAS EN ANCIANOS EN LA ATENCIÓN PRIMARIA DE LA SALUD

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Objective: to identify the risk factors for falls in elderly people who must remain in bed and of those with locomotion difficulties attended at home. Method: cross-sectional, descriptive study. Subjects of the survey were 75 elderly residents in the area of coverage of a Family Health unit. An interview script was used to collect the socioeconomic data and the variables of the Morse Scale for risk stratification of falls. Data was collected between March and May 2018. Results: of the 75 subjects of the study, 64% were women, with a mean age of 80 years old, 58% had between one and three pathologies, 42.67% used 4 to 6 medications per day, 81.33% had a secondary medical diagnosis, 69.33% used some walking support, 84% had gait and 61.33% had a high risk of falls. Conclusion: the following risk factors for falls in the elderly were identified: age over 80 years old, secondary medical diagnosis, history of falls, use of walking supports and gait impairment.

Keywords: Elderly. Accident by Fall. Risk Factors. Family Health.

Objetivo: identificar os fatores de risco de quedas em idosos acamados e de difícil locomoção atendidos em domicílio. Método: estudo transversal, descritivo. Os sujeitos da pesquisa foram 75 idosos moradores na área de abrangência de uma unidade de Saúde da Família. Utilizou-se um roteiro de entrevista para levantamento dos dados socioeconômicos e das variáveis da Escala de Morse para estratificação de risco de quedas. Os dados foram coletados entre os meses de março e maio de 2018. Resultados: dentre os 75 sujeitos investigados, 64% eram mulheres, idade média de 80 anos, 58% apresentavam entre uma a três patologias, 42,67% usavam de 4 a 6 medicamentos por dia, 81,33% possuíam diagnóstico médico secundário, 69,33% usavam apoio para deambulação, 84% apresentavam marcha comprometida e 61,33% dos idosos apresentavam alto risco de quedas. Conclusão: foram identificados como fatores de risco para quedas entre os idosos: faixa etária superior a 80 anos, existência de diagnóstico médico secundário, histórico de quedas, uso de apoio para auxiliar na deambulação e comprometimento da marcha.

Descritores: Idoso. Acidente por Queda. Fatores de Risco. Saúde da Família.

Objetivo: identificar los factores de riesgo de caídas de ancianos que presentan difícil locomoción en el hogar y que se encuentran postrados en cama. Método: estudio transversal y descriptivo. Participaron de la encuesta 75 ancianos que residen en el área de cobertura de una unidad de Salud Familiar. Se utilizó una guía para entrevistar

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y recolectar los datos socioeconómicos y las variables de la Escala Morse para estratificar los riesgos de las caídas. Se recolectaron los datos entre marzo y mayo de 2018. Resultados: entre los 75 sujetos investigados, 64% eran mujeres, con una edad promedio de 80 años; 58% tenían de una a tres patologías, 42,67% utilizaban de 4 a 6 medicamentos por día; 81,33% tuvo un diagnóstico médico secundario; 69,33% obtuvo apoyo ambulatorio; 84% presentó una locomoción comprometida y el 61,33% un alto riesgo de caídas. Conclusión: se pudo identificar los factores de riesgo para las caídas en los pacientes de edad avanzada, tales como: edad mayor a 80 años, diagnóstico médico secundario, historial de caídas, uso de apoyo para ayudar a caminar y problemas en la locomoción.

Descriptores: Ancianos. Accidentes por Caídas. Factores de Riesgo. Salud de la Familia.

Introduction

The World Health Organization (WHO) estimates that by 2050 world's population over 60 will total two billion people. In addition, the WHO estimates that by 2025 Brazil will be considered the sixth oldest country in the world, totaling about 32 million elderly people, that is, people with a chronological age from 60 years old. In developed countries, this age is postponed to 65 years old, which shows that this population has been aging rapidly and intensely[1].

Current data shows that the Brazilian elderly population is composed of 23 million people, totaling 11.8% of the country's total population, with an increase in life expectancy at 74 years. In recent years, there has been some widening of the top of the age pyramid, highlighting the growth of the population aged 60 and over[2].

The municipality of Juiz de Fora is in the state of Minas Gerais, in the Zona da Mata Mineira, with a population of approximately 526,709 inhabitants. Of these, 71 thousand are elderly, representing 14% of the population[2].

Regarding health care for the elderly, it is estimated that, in Brazil, about 70% of the elderly population is dependent on the services provided by the Unified Health System (SUS), assisted by Primary Health Care (APS), where the actions developed by the Family Health Strategy (ESF) are highlighted, which prioritize the promotion, protection and recovery of health carried out in an integrated and continuous way, with a multidisciplinary approach and action planning[3-4].

When considering care for the elderly in APS, health professionals are expected to demonstrate competence and technical ability to provide qualified care, as well as effective communication and empathy with the elderly. It is therefore necessary to have an enlarged view of the aging process[4].

Faced with the universe of actions to be performed at the ESF, it is believed that it is necessary to intervene in the most prevalent injuries in the elderly assisted population, with emphasis on the occurrence of falls. Among the elderly, falls are considered a serious public health problem, since it is associated with a high morbidity and mortality rate, generating high social and economic costs[5].

It is estimated that, by 2030, the number of elderly people living in Brazil will surpass the number of children and adolescents in about four million individuals. Consequently, there will be a predominance of chronic non-communicable diseases, presence of disabilities, increased risk for falls, leading to an increase in the rate of institutionalization and early death as a result of these events[6]. In the expressive growth of the elderly population, the main concern lies in the occurrence of falls, being considered the first cause of accidents among these individuals, besides occupying the third place among causes of death in old age[7].

The occurrence of falls in the elderly is responsible for the increase in the demand for a home visit (VD) by ESF staff, due to repercussions like immobility, fractures, functional disability, increased fragility; apart from the fact that they significantly increase hospitalization rates. It should be emphasized that the achievement of RV for the elderly in these circumstances can

contribute to a better prognosis, recovery, and prevention of injuries, among other aspects[8].

It should be noted that injuries resulting from falls (hematomas, bruises, contusions, femoral fractures, hip fractures and trauma to the skull) can lead to serious complications that compromise the health of the elderly, with serious impairments in their autonomy and, consequently, their daily activities and loss of self-confidence[7].

Faced with this, the post-fall recovery process can be lengthy. Prolonged immobility may lead to complications such as venous thromboembolism, pressure injury, and urinary incontinence. These problems are impacting on health services, due to the high costs of medication, medical consultations, treatment and rehabilitation, as well as generating a financial impact for the families, who are, in most cases, in need of hiring caregivers[9].

The actions developed by the multiprofessional team that works in the APS should consider integrality in the care of the elderly to strengthen the bonds between these and the professionals who perform the care, to identify the risks of falls to which they are exposed in the home environment and to develop preventive measures to improve the quality of life of these individuals[4].

In view of the foregoing, the objective of the study is to identify the risk factors for falls in elderly people who must stay in bed and of those with locomotion difficulties attended at home.

Method

A cross-sectional study was carried out with 75 elderly individuals who must stay in bed and/or present locomotion difficulties enrolled in an ESF team of a Basic Health Unit (UBS) located in a city in the interior of Minas Gerais. The team covers the attendance of 2,803 registered users, corresponding to 1,471 families. Of the 600 elderly individuals registered and being followed up by the health team, 80 must stay in bed and/or present locmotion difficulties.

Participants in this study were recruited after the VD performed by the UBS health team. Two meetings were necessary: the first one was for presentation and scheduling of return; and the second one for data collection.

Inclusion criteria to participate in the research were being a resident of the area covered by the UBS, being 60 years old or over, having to stay in bed or presenting locomotion difficulties. Those who did not have the necessary motor skills to sign the Free and Informed Consent Form participated in the study by having the family member or person responsible for them sign the form. Five elderly patients who met the inclusion criteria were not included in the study: two were not found after two subsequent VDs, two did not agree to participate in the study, and one was hospitalized at the time of data collection.

Data collection was performed between March and May 2018. The instrument used was the interview script to collect sociodemographic data and Morse Scale variables to stratify the risk of falls.

In Brazil, the Morse Scale is widely used in health institutions because of its ease of applicability. Falls can be classified into three types: accidental fall, which occurs when the patient slips or trips, usually caused by environmental factors; anticipated physiologic fall, defined as predictable, when the patient shows signs that indicate the probability of falling; and unpredicted physiological, defined as unpredictable, usually associated with the presence of fainting, convulsions, hip fractures, among other causes. The Morse Scale is applicable mainly when the fall is predictable[10].

The following factors were considered to condition falls: comorbidities, dwelling's physical structure (adjustments for the elderly), use of medications.

After the interview, the data collected was processed in the SPSS program, which allowed to organize it into tables, seeking to identify the factors that determine falls among the elderly studied and to perform the risk stratification of falls among those based on the Morse Scale.

The research was approved by the Consubstantiated Opinion of the Ethics Committee, number 2.566.157, following Resolution No. 466/12 of the National Health Council.

Results

Of the 75 elderly individuals who participated in the study, 48 (64%) were women and 27 (36%) were men. The mean age of the participants was 80.17 years old, ranging from 61 to 96 years old, with a higher frequency of elderly people over 80 years old (53.3%).

Table 1 describes the distribution of the participants according to the factors determining the occurrence of falls. Of these, 58% had between one and three pathologies that may increase the chances of suffering falls. It is also observed that the dwelling structure presented conditions that could lead to falls. Thus, after evaluation of the physical structure, a residence with adaptation for the elderly, with organization of furniture and objects in the home that allowed ambulation was considered as adequate. Thus, 48% of the homes were adequate. Regarding the drugs used daily, elderly people take 3 to 10 medications per day, and some (42.67%) used 4 to 6 medications.

Table 1 – Distribution of the elderly according to the factors determining the occurrence of falls. Juiz de Fora, Minas Gerais, Brazil – 2018 (N=75)

Conditioning factors	n	%
Age		
60 to 70 years old	11	14.67
71 to 80	24	32.00
Over 80 years old	40	53.33
Associated comorbidities		
1 to 3 pathologies	58	77.53
4 to 6 pathologies	17	22.67
Condition of dwelling		
Adequate	48	64.00
Inadequate	27	36.00
Medications in use per day		
0 to 3 medications	20	26.67
4 to 6 medications	32	42.67
7 to 10 medications	23	30.67

Source: Created by the authors.

The Morse Scale allows the individual to be stratified as to the risk of falls, classifying it as low, moderate and elevated. To do so, it is based on the following variables: history of falls, presence of secondary diagnosis, need of assistance for walking, walking posture and transfer, mental state and use of endovenous therapy[10].

Table 2 presents data on the occurrence of falls in the last three months. It is evident that 30.67% of the participants suffered a fall in this period and most were female, over 80 years.

Table 2 – Distribution of the occurrence of falls in the elderly according to sex and age group. Juiz de Fora, Minas Gerais, Brazil – 2018 (N=75)   (continued)

History of falls	n	%
Occurrence of falls in the last 3 months		
Yes	23	30.67
No	52	69.33
Occurrence of falls according to gender		

Table 2 – Distribution of the occurrence of falls in the elderly according to sex and age group. Juiz de Fora, Minas Gerais, Brazil – 2018 (N=75)   (conclusion)

History of falls	n	%
Male	7	9.33
Female	16	21.33
No falls	52	69.33
Occurrence of falls according to age		
60 to 70 years old	3	4.00
71 to 80	9	12.00
Over 80 years	11	14.67
No falls	52	69.33

Source: Created by the authors.

In addition to the history of falls, other Morse Scale items related to this occurrence were considered, such as the history of secondary medical diagnosis present in 81.33% of the participants, use of any support that aided in ambulation, present in 69.33%. Gait is another important data for assessing the risk of falls present in the Morse Scale. Of the elderly individuals in the study, only 16% presented normal gait. Most reported having gait compromised.

Another item analyzed was the mental state of the elderly individuals. When investigating the orientation regarding the limitation for ambulation, it was found that 81.33% were aware of their limitations.

Intravenous therapy, which may be one of the occurrence factors for falls, was not present among the study participants.

It was verified that most of the elderly people in the study presented a high risk of falls, as detailed in Table 3.

Table 3 – Distribution of the elderly according to the risk stratification of falls. Juiz de Fora, Minas Gerais, Brazil – 2018 (N=75)

Risk stratification	n	%
High	46	61.33
Moderate	17	22.67
Low	12	16.00

Source: Created by the authors.

Discussion

This study identified that the occurrence of falls was more frequent among the elderly over 80 years old. This aspect was also identified in another study, which presented as justification the varied biological changes resulting from the aging process, such as the decrease of elasticity and muscle strength, impairment of stability and alterations of nervous and sensory systems, which lead to gait, posture and balance impairment, making elderly people more prone to falls[11].

Regarding gender, although the highest frequency of falls was among women, this occurrence is related to the proportion of women and men who participated in this study. However, other studies present the fact that women present lower muscle strength and lean mass when compared to men as a possible justification for a higher frequency of falls among females. Loss of bone mass is another justification that comes out because it occurs more pronouncedly in women, due to hormonal variation during menopause, which results in a greater propensity to develop osteoporosis. Greater longevity of women is also mentioned, but it is emphasized that the presence

of these mechanisms and their associations with the highest risk of falls are still unclear, requiring further investigations[11].

The presence of two or more morbidities makes elderly people more vulnerable, which predisposes them to the occurrence of falls[12]. Among the main pathologies associated with the occurrence of falls, we can highlight cardiovascular diseases such as acute asymptomatic myocardial infarction; cardiac arrhythmias; systemic arterial hypertension; postural hypotension; neurological and psychiatric disorders such as Parkinson's, dementia and even depression due to the effect of antidepressant medications; genitourinary diseases, with emphasis on urinary incontinence; sensory disorders such as decreased visual and auditory acuity; and osteomuscular disorders, such as arthrosis and osteoporosis[13].

Although dwelling conditions are considered adequate for the study in question, it is important to note that 60% to 70% of falls occur in the homes of the elderly. This proportion increases with the advancement of age[14].

Thus, professionals of the health team should advise the elderly and their families to adopt preventive measures for falls, such as: not leaving objects in areas of greater circulation and maintaining adequate light; removing carpets near the bed or the stairs, but if they are used, giving preference to non-skid ones; installing handrails along the full length of the stairs and on both sides; if possible, replacing the stairs with ramps; installing grab bars in the bathroom; encouraging the use of a chair as a support means for the toilets, organizing the furniture at home to facilitate the locomotion; leaving pathways clear of obstacles; installing light switches in strategic locations, among other actions[15].

In this context, the WHO warns that the presence of irregular stairs, floors with protrusions, stairs with poorly designed steps, presence of external environments around the house, exposed to climatic conditions that result in slippery floor, are all factors that contribute to the occurrence of falls[14].

The use of many medications associated with the physiological process of aging causes a differentiation in the phases of absorption, distribution, metabolization and elimination of drugs, resulting in a greater occurrence of adverse events, which may have the consequence of falls. Thus, the polypharmacy associated with inadequate prescription of medications results in the worsening of the clinical prognosis of the elderly as a result of falls and may also increase the occurrence of fractures[16].

The fact that the elderly individuals in this study are in the high-risk range of falls, according to the Morse Scale, reinforces the importance for the health team to identify factors that influence their mobility, aiming at reducing the risk of suffering injuries due to falls, to implement effective actions to reduce their occurrence, to carry out health education for the family and the person responsible for care, thus favoring the exchange of information and, at the same time, effective training[12].

It is essential that primary care professionals become involved in the process of caring for the elderly. When performing the VD, they should direct their actions to health education, with emphasis on self-care, besides evaluating the profile of the elderly, to facilitate the identification of risk factors, to carry out anamnesis and physical examination directed to the reduction of injuries. In addition, it is considered fundamental to encourage the modification of harmful habits of life, such as sedentarism and irrational use of medications. Finally, to carry out a careful evaluation in the place where the elderly reside and to encourage the restructuring of the residences based on the detected needs, aiming at minimizing the risks, as well as identifying the family and social support of the elderly[18].

The limitations of the study are related to the transversal design, which did not allow to make associations among the variables over time.

Conclusion

The results of the study allowed us to conclude that age group is one of the risk factors for falls in the elderly. The existence of a secondary medical diagnosis, the history of falls, the use of supports to aid in walking, and gait impairment were other risk factors for falls that came out and stratified the study participants as being at high risk. For the ESF team responsible for the care of this area of coverage of the health unit, the results showed the vulnerabilities of the elderly individuals who must stay in bed or of those with locomotion difficulties evaluated in this study, as well as the importance of knowing the risk factors for falls and of planning preventive measures to prevent falls and their consequences.

Collaborations:

1. conception, design, analysis and interpretation of data: Letícia de Souza Pedro and Juliana de Oliveira Faria;

2. writing of the article and relevant critical review of the intellectual content: Letícia de Souza Pedro and Juliana de Oliveira Faria;

3. final approval of the version to be published: Letícia de Souza Pedro and Juliana de Oliveira Faria.

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