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PERCEPTION OF ELDERLY PEOPLE ON THEIR RISK OF FALLS AND ASSOCIATED FACTORS[1]

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ABSTRACT

Objective: This study aimed to analyze the prevalence of elderly people's perception of their risk of falls and the associated factors. **Method:** This is an analytical study carried out with 190 elderly people participating in an active aging program. Data were collected through interviews using questionnaires and scales. The perception of risk was evaluated through an instrument elaborated with the technique of vignette. Bivariate statistical analysis and multiple logistic regression of the data were performed. **Results:** The results showed that 63.7% of the elderly had a low perception of risk of falling. Factors associated to the perception of the elderly on their risk of falls were difficulty in mobility (p=0.018) and concern about falling (p = 0.002). **Conclusion:** It is concluded that there is a high prevalence of low risk of falls in the investigated population and the associated factors probably point to the fact that most of the elderly are younger, have good health, have a few fallshistory, considering themselves in good condition of aging and interact with other people in social groups.

Keyword: Risk Reduction Behavior. Accidents by Falls.Perception. Health of the Elderly.

INTRODUCTION

Risk is an indicator of people's level of safety. It has as a characteristic the possibility of occurrence of an adverse or undesired event, a threat or danger that will influence the security status of a person, and may cause physical, emotional, psychological or material damages or losses[1].

In general, people are exposed to a number of risks that are sometimes not perceived[2]. In the elderly population, a very frequent risk is that of falling[3]. Because they are exposed to several risks both from the aging process and from the environment and from their behaviors, falls are events of significant prevalence in this population[4]. Its reduction depends on the adoption of preventive measures that act on the risk factors.

Several factors contribute to the risk of falls in the elderly, including risk perception (RP). RP is the ability each individual has to interpret threatening situations that may cause life damage[5].

For a long time, several fields have studied RP as a central phenomenon to understand people's behaviors in relation to risks [5,6]. In health, studies focus on people's RP in the face of diseases, occupational risks, among others[1,7].

Studies on RP with elderly patients are scarce[7,8]. Regarding to falls, even though it represents a potential health problem for the elderly, it is known that few studies have been developed, and in general they investigate the elderly people's perception of risk factors[3,9,10,11].

Little is known about the perception that elderly people have of their own risk of falling. Depending on the RP they have, they can expose themselves to the risks of falls. There are those who perceive their limits and tend to be less exposed to risks and unnecessary waste of energy[11]. Otherwise, others do not consider aging as a phase with limitations[12], they do not perceive themselves as at risk of falling or minimizing this risk[13] and, consequently, they

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are more exposed to the risks.

Considering that several sociodemographic[14], socioenvironmental[1], health[15], and personal[4] factors determine the way people perceive the risks, in this study, the objective was to analyze the prevalence of the perception of the elderly about your risk of falls and the associated factors.

MATERIALS AND METHODS

Cross-sectional and analytical study carried out in Cuiabá-MT. Elderly patients 60 years of age or older (criterion adopted by the United Nations) participating in a multidisciplinary extension program of the Federal University of Mato Grosso (UFMT), entitled Healthy Longevity Program (PLS), were eligible for the study. In PLS, health promotion actions are carried out through physical, intellectual and cultural activities to approximately 300 elderly people.

The sample was defined through non-probabilistic convenience sample. All the 306elderly enrolled in PLS were invited to participate in the study. Of these, 20 declined and 83 gave up participating in program activities. Of the 203 remaining, 190 met the inclusion criterion: to present cognitive and communication skills that allow the understanding and response of the questions evaluated through the Mental State Mini Exam (MMSE)[16].

The data were collected by the researcher from May to August, 2016, through an interview with the elderly person at the place where the activities of the program (PLS) were performed, after signing the informed consent form (TCLE). In the interview a questionnaire was used with questions about the sociodemographic characteristics of the elderly and health conditions. The degree of dependence for daily life activities was evaluated with the Katz Index[16] and the Lawton and Brody Scale[16]. Falls Efficacy Scale International[17] was also used to identify the concern of the elderly with the possibility of falling and the Falls Risk Score[18] to assess the risk of falls of the elderly.

RP was measured by a vignette technique consisting of a brief description of a particular event or situation, through narratives, images and videos, fictitious or real, in which participants are encouraged to express their perceptions, opinions, behaviors, attitudes and knowledge about the phenomenon studied[19]. In this study an instrument was elaborated including 12 vignettes with images with situations and environments of risk of falls for the elderly. The instrument was submitted to validation of content to 15 judges with expertise in the gerontology field and RP. The final content validity index (CVI) was 0.9[20].

The dependent variable of the study was the perception of the elderly about their risk of falls, verified through the question: In this situation/environment, is there a possibility of falling? In the absence of a reference for RP classification, we chose an arbitrary classification, considering the proportion of risks identified by the elderly in the vignettes. Thus, low risk perception was considered when the elderly identified in the vignettes from 0 to 49% of the risks and high-risk perception that identified 50% or more of the risks.

Independent variables: Sociodemographic: gender (male/female); age (60 to 69 years/70 to 79 years/80 years and over); marital status (single/married or stable union/separated or divorced/widowed); years of study (illiterate/1 to 4 years/5 to 8 years/9 to 10 years/> 11 years); occupational situation (working/ retired/retired working/not working); income (does not have/up to a minimum wage (MW)/from 2 to 3 MW/more than 3 MW); lives with (alone/spouse or partner/family-person who is not the spouse/partner/ family-spouse plus family person/caregiver-caregiver and non-family member/other people); attend another social group (yes/no); visit friends/relatives (yes/no) and receives visits (yes/no). Health conditions: current self-perception of health (very bad/bad/regular/good/very good); smokes cigarettes (yes/no); drink alcohol (yes/no); have any health problems (yes/no/if yes, how many?); which health problem (hypertension/diabetes/osteoarticular/spinal problems/sensory problems/degenerative diseases/dyslipidemia/congestive heart failure/urinary incontinence /others); use of medication (yes/no); risk of falls (yes/no); mobility difficulty (yes/no); practice physical

exercises (yes/no); degree of dependence for activities of daily living and instrumental activities of daily life (independent/dependent); fall in the last 12 months (yes/no/if yes, how many?); after the fall (excoriation/bruises/fractures/twists); risk of falls (low risk for falls/high risk for falls) and fear of falling (little concerned about falling/very worried about falling/extremely worried about falling).

Data were encoded and double-typed in Epi-Info version 3.2.5 spreadsheets for correction of typing errors and inconsistencies. The descriptive analysis was expressed by relative and absolute frequency. In the bivariate analysis we verified the possible associations by means of the chi-square test (x^2), considering statistically significant associations with *p* value <0.05. Later, multiple logistic regression was applied to identify the factors associated with the perception of the elderly people about their risk of falls. The stepwise forward method was used for selection of the variables and assembly of the model considering p <0.20 in the bivariate analysis. Finally, a correspondence analysis graph was made to verify how the categories of the variables were associated.

The research was approved by the Ethics Committee under opinion 1,375,313 on December 18, 2015.

RESULTS

Of the 190 elderly people interviewed, the majority (90.5%) are female and 60 to 69 years old (67.4%), 36.3% are married, 38.4% live with relatives and have more than 11 years of study (58.9%). Regarding to occupation, the majority (51.6%) of the elderly are retired and 36.8% have a monthly income of 2 to 3 minimum wages. The majority (54.7%) attend another social group besides PLS, visit friends and relatives (91.1%) and receive them (93.7%).

Regarding health conditions, 48.9% of the elderly self-rated their health as good, 98.4% do not smoke and 65.8% do not use alcohol. The majority (64.7%) reported having more than two health problems, mainly sensorial (88.8%), such as vision and hearing alterations. A large proportion of the elderly (90.0%) reported regular use of medications, had no change in balance (76.3%) and difficulty in mobility (88.4%). Regarding falls, 21.6% of the elderly reported falling in the last 12 months, more than half (51.2%) fell only once, having as main consequences excoriation (39.0%) and bruises (34, 1%). The majority (52.1%) are at low risk for falls and with little concern about falling (59.5%).

Regarding the prevalence of elderly people's perception of their risk of falls, 63.7% presented low risk perception (Figure 1.

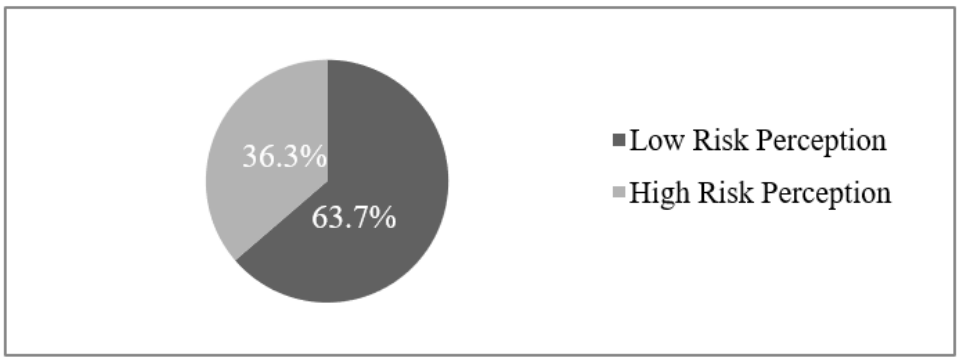

Figure 1 – Prevalence of risk perception of elderly participants in PLS of the UFMT for falls. Cuiabá-MT, 2016.

In the bivariate analysis, it was verified that there was no statistically significant association between the sociodemographic variables and the low perception of risk of falls.

In the bivariate analysis between the variables of health conditions and the perception of risk of falls, there was a statistically significant association with the variable's mobility difficulty (*p*=0.018) and concern about falling (*p*=0.002) (Table 1).

Table 1. Prevalence of the low perception of fall (%), according to the health conditions of the elderly participants of the PLS of the UFMT. Cuiabá, MT, Brazil, 2016.

Variables	n*	Prevalence LowPerception (%)	pvalue**
Health self-assessment* **			
Regular/Bad	65	53.8	0.042
Good/VeryGood	125	68.8	
Smoke			
Yes	3	66.7	0.914
No	187	63.6	
Drink alcohol			
Yes	6	83.3	0.500
Sometimes	59	66.1	
No	125	61.6	
Health Problem			
Yes	187	63.1	0.187
No	3	100.0	
Related Health Problem** **			
Sensorial[1]	166	62.6	0.719
Hipertension	118	59.3	0.161
Osteoarticular[2]	68	52.9	0.030
Spineproblems	41	65.8	0.679
Degenerative diseases[3]	2	100.0	0.277
Dyslipidemia	51	66.7	0.536
Diabetes	25	64.0	0.920
Congestiveheartfailure	2	100.0	0.277
Urinaryincontinence	41	53.7	0.132
Use ofmedication			
Yes	171	62.0	0.145
No	19	78.9	
Balance change referred			
Yes	45	55.6	0.194
No	145	66.2	
Difficultymobilityreferred			
Yes	22	40.9	**0.018**
No	168	66.7	
Practiceofphysicalactivity			
Yes	182	64.3	0.411
No	8	50.0	
Falls in the last 12 months			
Yes	41	56.1	0.254
No	149	65.8	
Risk of falls (Falls Risk Score)			
Lowrisk for falls	99	68.7	0.135
Highrisk for falls	91	58.2	
Fear of falling (FES-I-BRAZIL)*** **			
Little worriedaboutfalling	113	73.4	**0.002**
Veryworriedaboutfalling	54	51.8	
Extremelyworriedaboutfalling	23	43.5	

*n – Sample.

**p value- *chi-square.*

***Health self-assessment - Classification according to the Surveillance System of Risk Factors and Protection for Chronic Diseases by Telephone Inquiry (VIGITEL) de 2014.

****Referred health problem, multiple choice question, refers to: [1]Sensorial - Corresponds to vision, hearing, touch and smell impairments; [2]Osteoarticulares - Corresponds to problems such as arthritis, osteoporosis and rheumatism and [3]Degenerative diseases - Corresponds to diseases such as Alzheimer's and Parkinson's.

*****FES-I-BRASIL – *Falls Efficacy Scale* – International – Brazil.

In the final model (adjusted OR), there was a higher prevalence of the low perception risk of falls in the elderly with little concern about falling in relation to the elderly with great or extreme concern about falling, regardless of gender and age. In addition, a higher prevalence of low perception risk of falls was observed in those without mobility difficulties, in relation to those who said they had difficulty, independently of the other variables in the model. The goodness-of-fit test was performed, showing that the model is adequate (0.5491) (Table 2).

Table 2. Multiple logistic regression model: variables associated with the low perception of the elderly participants in the PLS of the UFMT on their risk of falls. Cuiabá, MT, Brazil, 2016

Variables*	Prevalence (%)	Gross OR (CI95%)	AdjustedOR (CI95%)	p Value**
Concern about falling* **				
Little concern about falling	73.5	1.00	1.00	
Greatconcern about falling	51.8	0.39 (0.20-0.77)	0.41 (0.20-0.83)	**0.013**
Extreme concern about falling	43.5	0.28 (0.11-0.70)	0.30 (0.12-0.76)	**0.011**
Mobility difficulty				
Yes	40.9	1.00	1.00	**0.046**
No	66.7	2.89 (1.16-7.17)	2.62 (1.02-6.77)	

*Adjusted by gender and age.
Gross OR: Gross*OddsRatio*
CI: confidence interval
Adjusted OR: Adjusted *OddsRatio*
**p Value: *qui-quadrado*
***Evaluated byFES-I-BRASIL – *Falls Efficacy Scale* – International - Brazil

The relationships and similarities between the perception of the own risk of falls of the elderly and their associations were demonstrated through an ordering elaborated by correspondence analysis (CA) (Figure 2).

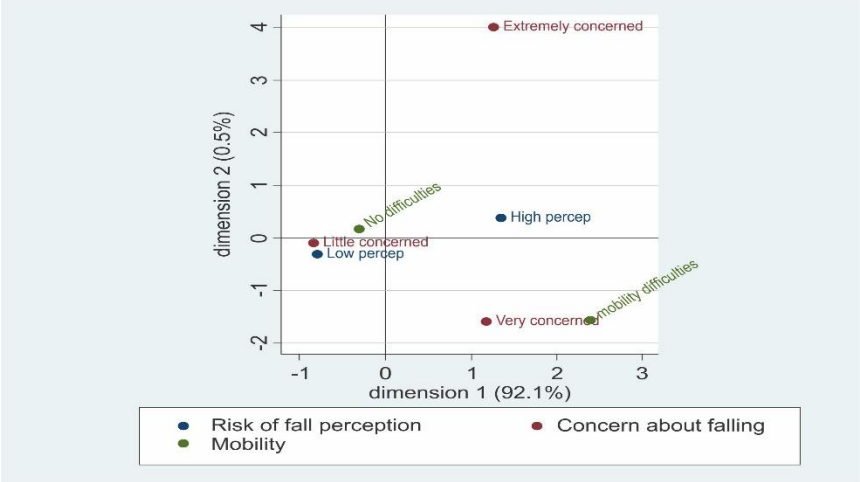

Figure 2 – Correspondence analysis of the perception of the elderly about their risk of falls and associated variables: little concern about falling and absence of mobility difficulties, UFMT, 2016.

In Figure 2, dimensions 1 and 2 correspond to 92.1% and 0.5% of total inertia, respectively, representing 92.6% of the total data variability.

Throughout dimension 1, responsible for 92.1%, it is possible to perceive that there is a significant relationship between the low perception risk of falls and the absence of mobility difficulties, as well as the lack of concern about falling. Likewise, still in dimension 1, it can be verified that the high perception of risk of falls is related to mobility difficulties and the major concerns about falls (Great and extremely).

DISCUSSION

The objective of this study was to analyze the prevalence of the perception of the elderly about their risk of falls and associated factors. The results show a high prevalence of the low risk perception of the elderly about their risk of falling. It is not possible to compare this result with the findings of other studies, since a similar study was carried out with a qualitative approach[13].

However, the prevalence found in this study may be explained by the fact that most of the participants are younger, because the RP of falls in this population is lower than that of the elderly who consider themselves to be less vulnerable to falls[9,10].

Likewise, having a good health condition probably contributed to this high prevalence of low risk perception among the elderly in this study. Older people often use their aging conditions, whether healthy or not, as a standpoint to estimate their own risk of falling[9].

Probably this finding can also be attributed to the historic of few falls experienced by the elderly participants of this study. This is because one of the factors that influence people's perception of their risks is strongly linked to their lifelong experiences, as well as the behavior of exposure to them[1]. Studies have found a low perception of risk of falls in the elderly with a history of few falls in 30 days and one year, respectively[9,8].

Risks are present in the lives of all people and in order to perceive them, many factors may be involved, such as our social representations about a situation, fears, individual histories and life course, but also depend on received and exchanged information, which will be part of our knowledge we have aboutpeople[1]. Therefore, another important factor to be considered in the possible explanation for the high prevalence of low risk perception of the elderly in this study is their participation in social groups.

Considering that RP is socially built[5], in social groups where these elderly live with other active and independent elderly allows a greater exchange of information related to falls and preventive measures. The influence of their peers, therefore, may contribute to the low perception that the elderly in this study have about their own risk.

The association found in this study between the low perception of the elderly about their risk of falling and the inexistence of mobility difficulties could be explained, once again, considering that the majority is younger elderly.

The advancement of age results in changes in the functional capacity of the elderly and a greater probability of falls[4]. Mobility problems prevent them from doing certain activities, such as walking, kneeling, crouching, bending, causing pain and discomfort, and preventing the maintenance of the physical abilities indispensable for an independent life[21] and consequently contribute to a higher risk of falls.

The lower the age, the lower the impairment level of mobility[4]. Good mobility and sporadic or few movement restrictions for everyday activities may justify a low risk of falls in the elderly[4], consequently there is a higher possibility that the elderly person does not perceive the risk of falling.

Another association with the low perception of risk of falls in the elderly found in this study was the variable fear of falling. The elderly with little concern about the possibility of falling had a low perception of risk for falls.

Risk naturally causes the feeling of concern, because it is perceived as a danger, involuntary and, in part, uncontrollable[15]. However, having personal control over the risk or being more familiar with it are factors that may decrease people's perception of risk[5]. It is inferred, therefore, that the elderly in this study, even if they have some concern about falling, because they are young, active and independent, with no reported alteration of balance and mobility, probably consider that they have control over the risks, consequently, perceive themselves in minor risk of falling.

The historic of falls in the elderly in this study may have contributed to the association between the low concern in falling and the low perception of risk of falls. Studies show that fear of falling is associated with a history of falls[10,11]. Elderly patients with lower fall concern have better results of strength, agility, balance and endurance performance and aerobic endurance performance walking distances significantly higher than the elderly with fear of falls[9,21]. Thus, having a history of low number of falls, better conditions of mobility and balance, it is believed that they would have less

concern about falling, therefor lesser perception of their own risk of falling.

This study presents as a limitation the fact that the elderly under study belongs to a specific group, which reduces the possibilities of generalizations. However, it is one of the few studies on RP of falls in the elderly and the first to investigate the prevalence of the perception of the elderly about their own risk of falling and its results show aspects related to the RP of this population that allow to broaden the understanding that they have about the falls as a risk.

CONCLUSION

The results found in this study show that there is a high prevalence of low risk perception of falls in the researched population. Probably the associated factors found - absence of mobility difficulty, little concern of falling - since the majority of the elderly are younger, to have good health, a history of just few falls, to consider themselves in good conditions of aging and interact with others in social groups.

These results are worrisome as far as the practices of these elderly people, when not perceived at risk, may not be sufficiently preventive and the behaviors adopted will not be protective, resulting in falls and their consequences.

These findings indicate the need for greater investments in programs/groups that include activities that increase the perception of the elderly to the risks of falls, using strategies that allow them to recognize themselves as potential risk of falls and need to adopt preventive measures in their day to day. In these programs/groups, health professionals, especially nurses, can plan educational actions aimed at improving the capacity of these elderly to prevent, based on their real perceptions.

PERCEPÇÃO DE IDOSOS SOBRE SEU RISCO DE QUEDAS E FATORES ASSOCIADOS

RESUMO

Objetivo: Este estudo objetivou analisar a prevalência de percepção de idosos sobre seu risco de quedas e os fatores associados. **Método:** Trata-se de um estudo transversal, analítico realizado com 190 idosos participantes de um programa de envelhecimento ativo. Os dados foram coletados por meio de entrevista utilizando questionários e escalas. A percepção de risco foi avaliada por meio de instrumento elaborado com a técnica de vinheta. Foi realizada análise estatística bivariada e de regressão logística múltipla dos dados. **Resultados:** Os resultados evidenciaram que63,7% dos idosos apresentam baixa percepção de risco de cair. Os fatores associados à percepção dos idosos sobre seu risco de quedas foram dificuldade de mobilidade (p=0,018) e preocupação em cair (p=0,002). **Conclusão:** Conclui-se que há alta prevalência de baixa percepção de risco de quedas na população investigada e os fatores associados encontrados provavelmente apontam para o fato de a maioria dos idosos ser mais jovem, ter boas condições de saúde, histórico de poucas quedas, considerarem-se em boas condições de envelhecimento e interagirem com outras pessoas em grupos sociais.

Palavras-chave: Comportamento de Redução do Risco. Acidentes por Quedas. Percepção. Saúde do Idoso.

PERCEPCIÓN DE ANCIANOS SOBRE SU RIESGO DE CAÍDAS Y FACTORES ASOCIADOS

RESUMEN

Objetivo: Este estudio tuvo el objetivo de analizar la prevalencia de la percepción de ancianos sobre su riesgo de caídas y los factores asociados. **Método:** Se trata de un estudio transversal, analítico realizado con 190 ancianos participantes de un programa de envejecimiento activo. Los datos fueron recolectados por medio de entrevista utilizando cuestionarios y escalas. La percepción de riesgo fue evaluada por medio de instrumento elaborado con la técnica de viñeta. Fue realizado análisis estadístico bivariado y de regresión logística múltiple de los datos. **Resultados:** Los resultados evidenciaron que el 63,7% de los ancianos presenta baja percepción de riesgo de caída. Los factores asociados a la percepción de los ancianos sobre su riesgo de caídas fueron dificultad de movilidad (p=0,018) y preocupación en caer (p=0,002). **Conclusión:** Se concluye que hay alta prevalencia de baja percepción de riesgo de caídas en la población investigada y los factores asociados encontrados probablemente señalan para el hecho de que la mayoría de los ancianos es más joven, tiene buenas condiciones de salud, histórico de pocas caídas, se consideran en buenas condiciones de envejecimiento e interactúan con otras personas en grupos sociales.

Palabras clave: Comportamiento de Reducción del Riesgo. Accidentes por Caídas. Percepción. Salud del Anciano.

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