Concern with falls in elderly people attended in an Integral Attention Center

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ABSTRACT

Falls are concerning factors in elderly people, because they cause diverse complications. The objective of this study was to identify the level of concern with falls, associating them with self-reported diseases and history of falls of elderly attended in an Integral Attention Center. This was a descriptive study with 80 elderly. The results demonstrated an extreme concern regarding the possibility of falling for most female, married, of 60-79 years and receiving low monthly income; there is also extreme concern for those with hypertension and arthrosis. Nursing should establish integral actions to map elderly with risk of falling and, that promote awareness for these elderly and their family members regarding fall prevention measures, to prevent falls and to reduce the fear of falling.

Descriptors: Aging; Accidental Falls; Nursing Care.

INTRODUCTION

Population aging has been universally recognized. According to the Brazilian Institute of Geography and Statistics (IBGE), through a National Survey of Home Sampling (2013), Brazil is an aged country once the number of people of ≥ 60 years is higher than 24,856 thousands, representing about 12.6% of the total population. Brazil occupies today the seventh global position for the number of elderly, and it is estimated that in 2025, it will occupy the sixth position[1].

One of the biggest concerns related to aging is the life expectancy increment associated to a high rate of co-morbidities. Postural instability and falls are the most common health alterations in elderly, constituting one of the main clinical and public health issues due to its high incidence, consequent health complications, and high assistance costs, which can lead to disability, injury and death[2-3].

Fall is conceptualized as a non-intentional movement of the body to a lower level than the initial position, without timely correction; and, it is determined by multi-factorial circumstances that compromise stability, that is, mechanisms involved with postural maintenance, which can present diverse impacts in the elderly life. Falls can include important morbidity and mortality, functional deterioration, hospitalization, institutionalization and consumption of social and health services[4].

Some intrinsic and extrinsic factors can be indicators for this incidence; within them, the most noted ones are: to be female, to be older than 75 years, recurrent falls, compromised activities of daily living, inactivity, use of medications, poorly illuminated, unsafe and, poorly planned places with architecture barriers[5].

After a fall, besides the direct consequences, elderly people restrict their activities because of present pains, incapacities, protective actions of family members and caregivers, and even due counseling of non-capable health professionals, generating concern about the possibility of falling[6]. This feeling is defined as low self-esteem or confidence in their own balance to avoid falls, causing a decline of physical and functional performance, changes in balance and in gait, and negative impact in the quality of life, that can even result in depression[7].

From this perspective, to avoid falls, as well as, the concern with the possibility of falling, a conduct requiring development of prevention strategies should be considered, which are seen as potentially useful. Thus, activities as: improving lightning in the environment, to avoid lose carpets at home and, to pain attention to side effects of diverse medications are contributing practices for vigilance and prevention of falls[8].

Considering the theme's relevance and the lack of national and international studies about it when rapidly searching scientific data bases, the following questions were raised: What is the level of concern with falls in elderly? Do self-reported diseases and the history of falls influence the concern with falls? In a trial to answer these questions and with the possibility to expand new views about the theme, the objective was to identify the level of concern about the possibility of falling and, its association with self-reported diseases and, the history of falls in elderly attended in an Integral Attention Center.

METHODS

This is a descriptive, exploratory and quantitative study. It was conducted in an Integral Attention Center for Elderly Health, in João Pessoa/PB, Brazil in a medium complexity unit that offers specialized ambulatory attention, through a multi-professional team.

The investigated population was 16,495 elderly attended in the center on the last three months of 2014. The sample was calculated with a error of 5% (Error=0.05), confidence level of 95% (α=0.05, that provides $Z_{0,05/2}$=1.96) and proportion p=95%, resulting in a total of 73 elderly. However, it was possible to interview 80 elderly of both genders.

We collected data from individual interviews with instruments containing questions pertinent to the

proposed objectives. The assessment of the socio-demographic profile was conducted with a semi-structured instrument in which we assessed: gender, age, marital status, education, monthly income, employment; housing location and conditions, if living in a house or apartment, if lived in a asphalted street, internal living aspects related to the possibility of eventual falls, for example, good lightning, presence of steps, too high or too low shelves, slippery surfaces and others; and clinical data, asking the elderly if they had any disease/condition, as hypertension, cancer, depression, diabetes mellitus, within others, besides aspects about morbidity and history of previous falls.

To assess the concern with falls, we used the International Falls Efficacy Scale (FES-I-BRASIL), translated and culturally adapted for Brazil. It investigates the concern with the possibility of falling in 16 daily activities scored in a scale of 1 to 4, for example, to clean the house, to go shopping, to go up/down stairs, and to walk in crowded places. The total score varies from 16 (no concern) to 64 (extreme concern)[9].

Initially, data were compiled and stored using Microsoft Office Excel program and lately, analyzed in the Statistical Package for the Social Sciences (SPSS) version 20.0. We conducted a descriptive analysis of variables, calculating measures of distribution and central tendency. In respect to the comparison of means obtained through the FES-I, we conducted bivariate analyses with Student's T test, considering the homogeneity of variances that was previously tested with Levene's test. To identify associations between data, we used Person's Chi-square test and Fisher's exact test, considering a statistically significant association when $p < 0.05$.

During the study, we met all ethical and legal aspects involving studies with human beings, considering the Brazilian norms. The project was approved by the Ethics in Research Committee of the Health Sciences Center from Universidade Federal da Paraíba, nº 42620315.3.0000.5188, protocol nº 995.194. We guaranteed the anonymity, privacy and rights to withdraw at any given step of the study of participants, and they signed the Free and Informed Consent Term.

RESULTS

In the total sample, 81.2% of elderly were female, 51.3% were between 60-69 years of age, 45% were married, 41.2% studied for 4-5 years, 85% earned between 1.1 to three minimum wages and, 67.5% were retired (Table 1).

Table 1: Distribution of socio-demographic characteristics of elderly (n=80). João Pessoa, PB, Brazil, 2015.

Variable	Categories	n	%
Gender	Female	65	81.2
	Male	15	18.8
Age	60 to 69 years	41	51.3
	70 to 79 years	35	43.7
	80 years or more	04	5.0
Marital status	Married	36	45.0
	Widowed	21	26.2
	Single	14	17.5
	Divorced	09	11.3
Years of education	Illiterate	10	12.5
	4 to 5 years	33	41.2
	12 to 13 years	23	28.7
	Less than 12 to 13 years	07	8.8
	15 to 16 years	07	8.8
Family income	No income	04	5.0
	Less than 1 minimum wage	02	2.5
	1.1 to 3 minimum wages	68	85.0
	3.1 to 5 minimum wages	05	6.2
	5.1 to 10 minimum wages	01	1.3
Employment	Retired	54	67.5
	Receiving pension	10	12.5
	Stay home	08	10.0
	Unemployed	05	6.3
	Employed	03	3.7
Total		**80**	**100%**

The housing variable obtained a multi-generation result from the total interviewed (51.2%), that is, elderly lived with family members of other age groups; most elderly lived at home (91.2%); 100% of the studied population had access to running water; 80% had septic pit latrines, the employment and streets of most of them were asphalted (63.9%). The analysis showed that most houses did not have steps (68.7%), slippery surfaces (71.2%), and good lightning (93.8%).

Regarding clinical characteristics, hypertension was the most prevalent self-reported disease (30.8%), followed by osteoporosis (20.3%) and, arthrosis (13.7%) (Table 2).

Table 2: Distribution of clinical characteristics of elderly (n=80). João Pessoa, PB, Brazil, 2015.

Variable	Categories	n	%
Self-reported diseases	Hypertension	56	30.8
	Osteoporosis	37	20.3
	Arthrosis	25	13.7
	Diabetes mellitus	18	9.9
	Arthritis	16	8.8
	Labyrinthitis	14	7.7
	Heart disease	06	3.3
	Stroke	04	2.2
	Depression	03	1.6
	Cancer	02	3.3
	Hypothyroidism	01	0.5
Total		**182**	**100**

On Table 3, we observe that 73.8% of elderly had fallen, from those, 72.9% had one to three previous events and, 27.1% had four or more. 66.1% had some kind of physical or psychic, or both alterations, after falling. Within physical alterations found in this study, the most cited ones were on lower and upper limbs (66.7%); from the psychic alterations, fear of falling again was high, corresponding to 59.3% of cases.

Table 3: Distribution of data referring to previous falls (n=80). João Pessoa, PB, Brazil, 2015.

Variable	Categories	n	%
Previous falls	Yes	59	73.8
	No	21	26.2
Quantity of previous falls	1 to 3	43	72.9
	4 to 5	11	18.6
	6 or more	05	8.5
Total		**59**	**100**
Physical and psychic alterations after fall	Yes	39	66.1
	No	20	33.9
Physical alterations	Lower limbs	12	36.4
	Upper limbs	10	30.3
	Head	07	21.2
	Thorax and abdomen	04	12.1
Total		**33**	**100**
Psychic alterations	Fear of falling	35	59.3
	None	22	37.3
	Anxiety	01	1.7
	Sadness	01	1.7
Total		**59**	**100**
No		**19**	**23.7**

According to total scores obtained by the FES-I-BRASIL scale, 55% of elderly demonstrated extreme concern with falls, 30% a lack of concern and only 15%, a moderate concern. The category with higher scores between individuals were "extreme concern", in the variables: Walking on a slippery surface, 45% of elderly; Taking a shower and Going up and down in hills, with 36.2%, and Going up and down the stairs, with 30%.

On Table 4, we analyzed that women presented moderate concern with falls (86.5%), while most men presented absence of concern (33.3%), without significant differences (P>0.05). Elderly between 60-79 years presented extreme concern with falls (45.5%). In relation to marital status, married elderly also presented extreme concern (45.9%), if compared to other marital statuses. Regarding monthly income, it was seen that elderly who earned 1.1 to three minimum wages had extreme concern (81.1%), if compared with other participants (Table 4).

Table 4: Association between concern with falls in elderly according to FES-I BRASIL
and socio-demographic variables. João Pessoa, PB, Brazil, 2015.

Variable	FES-I Brasil			p
	NC*	MC**	EC***	
	n (%)	n (%)	n (%)	
Gender				0.084
Female	16 (66.7)	11 (91.7)	38 (86.4)	
Male	08 (33.3)	01 (8.3)	06 (13.6)	
Age				0.192
60 to 69 years	12 (50.0)	09 (75.0)	20 (45.5)	
70 to 79 years	12 (50.0)	03 (25.0)	20 (45.5)	
80 or more	0 (-)	0 (-)	04 (9.0)	
Marital status				0.486
Single	04 (16.7)	03 (25.0)	07 (18.9)	
Married	14 (58.3)	05 (41.7)	17 (45.9)	
Widowed	04 (16.7)	04 (33.3)	13 (35.2)	
Divorced	02 (8.3)	0 (-)	0 (-)	
Monthly income				0.158
No income	03 (12.5)	01 (8.3)	0 (-)	
Less than 1 minimum wage****	0 (-)	0 (-)	02 (4.5)	
1.1 to 3 minimum wages	21 (87.5)	11 (91.7)	36 (81.8)	
3.1 to 5 minimum wages	0 (-)	0 (-)	05 (11.4)	
5.1 to 10 minimum wages	0 (-)	0 (-)	01 (2.3)	
Total	24 (100)	12 (100)	44 (100)	

* NC: No concern.

** MC: Moderate concern.

*** EC: Extreme concern.

**** Minimum wage: 788.00 Brazilian reals, reference year: 2015.

Regarding the clinical variables, hypertension was the most prevalent between self-reported diseases, with 26.4% of elderly having one EC; arthritis and arthrosis were the diseases with statistical significance, with a level of EC of 11.6% and 14.8%, respectively and p<0.05 (Table 5).

Table 5: Association between concern with falls in elderly according to FES-I BRASIL
and clinical variables. João Pessoa, PB, Brazil, 2015.

Variable	FES-I Brasil			p
	NC*	MC**	EC***	
	n (%)	n (%)	n (%)	
Hypertension	15 (44.1)	07 (36.8)	34 (26.4)	0.282
Osteoporosis	09 (26.3)	04 (21.0)	24 (18.7)	0.251
Arthrosis	04 (11.8)	02 (10.5)	19 (14.8)	0.039
Diabetes	04 (11.8)	02 (10.5)	12 (9.3)	0.528
Arthritis	01 (3.0)	00 (-)	15 (11.6)	0.002
Total	34 (100)	19 (100)	129 (100)	

* NC: No concern.

** MC: Moderate concern.

*** EC: Extreme concern.

Regarding the variables composing the scale, there was extreme concern with the possibility of falling (55%), especially when the elderly performed the following activities: to shower (36.3%), to go up/down the stairs (30%), to walk on slippery surfaces (45%) and, to go up/down hills (36.2%).

DISCUSSION

In the studied sample, female elderly, of low income and education, aged between 60-69 years were prevalent, accompanying the aging scenario in Brazil[4-5,10].

The high prevalence of falls found in this study (73.8%) diverge from results found in another study[11], which findings pointed that in 23 Brazilian states, there was a prevalence of only 27.6% of falls among elderly. One investigation conducted in the city of João Pessoa/PB found a percentage of 41.2% of elderly who fell[12], an approximate value to the one found in Fortaleza/CE (41.9%)[13]. Aging reduces the range of motion, and this flexibility decrease associated with the occurrence of falls, especially due to mobility decrease of hips and knees, balance changes and, extrinsic factors. Such conditions implicate a higher possibility of falls, causing devastating physical and psychic alterations.

The fear of falls can result in lower confidence in the ability to walk, contributing to functional decline, feelings of helplessness and social isolation[3]. This concern with falls can be explained by a lower level of knowledge about the subject, making elderly more anxious and fearful. This fact justifies even more the use of health education intended to prevent fall occurrence.

There was EC regarding the possibility of falling (55%), especially when taking a shower, going up/down the stairs, walking in slippery surfaces and, going up/down hills. 44.2% of elderly pertaining to a conviviality group from Rio Grande do Sul also presented fear of falling in at least one of the daily activities from the scale[14].

Studies revealed that the prevalence of concern of falling in the elderly population varies from 20% to 85%[5,14-15]. This data can be seen as something positive, considering that elderly who worries about falling will develop prevention strategies and eliminate risk factors for falls; as well as something negative, as elderly will limit activities when feeling insecure to perform them. This concern has been pointed as an event that depends on past falling experience, and its increase is more associated to the type of fall and its consequences, than the fall per se.

Most women presented one EC with falling. This can be justified by extra care in relation to their health and/or by more knowledge about risks and complications resulting from this event. Regarding the age group, elderly who were 60-79 years had high EC. This is not an expected result, as changes resulting from aging are progressively accumulated, leading to a higher concern of falling in older ages and not in young elderly.

The majority of the hypertensive population presented EC with the possibility of falling. In an urgency/emergency sector, 77% of assisted falls resulted from cardiovascular diseases. Elderly who fell due to heart issues had higher risk of dying if compared to those who fell due to other reasons. Although there is no significant statistical association between the concern of falling and hypertension, there is a need of concern with elderly with heart diseases[16]. For this reason, it becomes important for health teams to intensify promotion, prevention and treatment actions in the health/disease process, aiming at better quality of life for these elderly.

Arthritis and arthrosis obtained a statistically significant EC of falling. This concern can be justified by

the clinical manifestations that these diseases cause, for example, pain and difficulty to move that, when associated to fall consequences, would compromise even more the functional capacity and the quality of life of these elderly. A study[12] also showed that elderly presenting high fear of falling are those with muscle-skeletal, neuromuscular and sensorial diseases, once these are also influenced mobility and balance.

Regarding previous falls, the majority had one EC regarding the possibility of falling and the EC was also present for those who fell 1-3 times. It is important to highlight that FES-BRASIL does not constitute an indicator for the occurrence of falls, and considering the elderly context, a multi-dimensional assessment is needed[3].

A new action proposal in Nursing would amplify care for elderly, with a multi-disciplinary attention involving prevention of falls, with clarifications about risk factors, its causes, and possible consequences. Thus, this concern with falling, emphasizing the adoption of measures to avoid its occurrence, for example, to avoid domestic animals, toys spread on the ground, steps inside the house, to use adequate shoes, regular sight exams, within others. In addition, nurses should orient about care related to the functional capacity and about the maintenance of motor and cognitive skills.

CONCLUSION

The present study met the proposed objectives and allowed us to observe that most elderly have an EC regarding the possibility of falling, and this concern was more present in women, married elderly, of 60-79 years and, with a family income of 1.1-3 minimum wages; EC was also present in those with arthritis and arthrosis, and those with a history of one to three falls during old age.

The preventive approach should be multi-professional and multi-factorial. It is important to note that prevention and vigilance activities should be conducted in all levels of assistance, at home, in the primary healthcare, until the most complex levels, as in intensive care units, where already have high risk of falls per se, caused by uncommon noises and/or by medications used by elderly.

It is seen that new studies related to this concern as potential risk for elderly needs to be the target of investigation, with qualitative approaches and also directed to health professionals about how to act when facing these occurrences; thus, contributing for the improvement of elderly quality of life. It is fundamental that public and institutional fall prevention policies to be instituted with urgency, thus elderly will not fear falling or, this occurrence will not happen again. When knowing about risk factors and ways to prevent falls, the elderly will comprehend the event and consequently, decrease the concern with falling.

Nursing should establish integral actions to contemplate the mapping of the risk of fall and, and to provide awareness of these elderly and family members about ways of prevention. The concern with falls should be present in health related studies, especially using the FES-I Brasil for future comparisons, and should also be present in teaching; as in training of professionals who assist this clientele, and in the promotion for undergraduate and graduate students for this reality.

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