

<http://dx.doi.org/10.1590/0104-07072016000360015>

## PREVALENCE AND FACTORS ASSOCIATED WITH FALLS IN THE ELDERLY

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**ABSTRACT:** This research aimed to determine the prevalence of falls in the last 12 months among the elderly; compare sociodemographic, clinical, and functional health variables between the elderly victims and non-victims of falls and verify the factors associated with falls in the elderly. This is a domestic survey conducted with 729 elderly people living in the urban area of the city of Uberaba-MG. The prevalence of falls was 28.3%. Most of the elderly fall victims were female; aged 80 years or older; presence of two or more conditions and used five or more medications. The falls were associated with females; aged 80 years or older and presence of two or more conditions. The study reinforces the need for investment in health promotion and prevention of morbidities, considering that, among the predictors of falls, health professionals can only intervene in the presence of comorbidities.

**DESCRIPTORS:** Aged. Accidental falls. Urban population. Prevalence. Risk factors.

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## PREVALÊNCIA E FATORES ASSOCIADOS A QUEDAS EM IDOSOS

**RESUMO:** Esta pesquisa objetivou determinar a prevalência de quedas, nos últimos 12 meses, entre os idosos; comparar as variáveis sociodemográficas, clínicas, de saúde e funcionais entre os idosos que tiveram quedas e aqueles que não as tiveram; e verificar os fatores associados a quedas em idosos. Inquérito domiciliar conduzido com 729 idosos da zona urbana de Uberaba, Minas Gerais. A prevalência de quedas foi de 28,3%. A maior proporção entre os idosos que tiveram queda foi a do sexo feminino; com 80 anos ou mais; que apresentavam duas ou mais morbidades e usavam cinco ou mais medicamentos. As quedas estavam associadas ao sexo feminino; com idade de 80 anos ou mais e que apresentavam duas ou mais morbidades. O estudo reforça a necessidade de investimento na promoção da saúde e prevenção de morbidades, considerando que, dentre os preditores de quedas, somente a presença de comorbidades é passível de intervenção do profissional de saúde.

**DESCRIPTORIOS:** Idoso. Acidentes por quedas. População urbana. Prevalência. Fatores de risco.

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## PREVALENCIA DE CAÍDAS Y FACTORES ASOCIADOS EN LOS ANCIANOS

**RESUMEN:** Esta investigación tuvo como objetivo determinar la prevalencia de caídas, en los últimos 12 meses, entre los ancianos; comparar las variables sociodemográficas, clínicas, de salud y funcional entre los ancianos que tuvieron caídas y aquellos que no las tuvieron; y verificar los factores asociados con caídas en los ancianos. Encuesta de hogares de 729 ancianos del área urbana de Uberaba-MG. Prevalencia de caídas fue del 28,3 %. La mayor proporción de los ancianos que tuvieron caídas eran mujeres; con 80 años o más; presencia de dos o más morbidades y utilizado cinco o más medicamentos. Las caídas se asociaron con sexo femenino; con 80 años o más y presencia de dos y más morbidades. El estudio refuerza la necesidad de inversión en promoción de la salud y prevención de enfermedades, teniendo en cuenta que intervención profesional de la salud.

**DESCRIPTORIOS:** Anciano. Accidentes por caídas. Población urbana. Prevalencia. Factores de riesgo.

## INTRODUCTION

As age advances, several factors pose challenges for elderly people to live independent and autonomously, among which falls stand out. They are considered one of the most disabling and concerning geriatric syndromes, as a single event can entail social, economic and health repercussions.<sup>1</sup>

Fall is defined a non-intentional contact with the support surface, resulting from an individual's position change to a lower level than his initial position, without the presence of an intrinsic determining factor or an unavoidable accident.<sup>2</sup>

Falls prevalence is highly important in public health.<sup>3</sup> Studies in Brazil have found his falls prevalence rates among elderly living in urban areas.<sup>4-7</sup> A study of elderly living in the city of Cuiabá-MT found falls rates in the last 12 months corresponding to 37.5%,<sup>4</sup> against 30.0% in Sete Lagoas-MG<sup>5</sup> and 51.0% in Catanduva-SP.<sup>6</sup> In a study conducted in 23 Brazilian states, involving 6,616 elderly, the prevalence corresponded to 27.6% and, among fall victims, 11% resulted in fracture. The prevalence of falls per geographic region of Brazil ranged between 18.6% in the North and 30% in the Southeast.<sup>7</sup>

Based on the abovementioned studies, very high prevalence rates of falls have been verified in Brazil, with regional differences. In addition, the studies have been conducted in cities of more than 500 thousand inhabitants. These data indicate the need for research in smaller cities, especially in cities where the percentage of elderly exceeds the national average (12.1%), like in the city of Uberaba-MG (12.5%),<sup>8</sup> with a view to understanding the aspects related to falls and their predictors.

Falls are events of multifactorial origins, which can involve the interaction among different risk factors.<sup>3,9</sup> The scientific literature has described the following main factors: female sex;<sup>5,10</sup> advanced age;<sup>4</sup> dizziness;<sup>4</sup> consumption of different continuous prescription drugs;<sup>6</sup> cognitive decline;<sup>11</sup> presence of chronic illnesses;<sup>4</sup> worse physical performance;<sup>6,12</sup> history of falls;<sup>13</sup> rooms with slippery surfaces and insufficient lighting.<sup>9</sup>

Nevertheless, a systematic review and meta-analysis revealed that no consensus exists yet and that the study variables need to be expanded with regard to the occurrence of falls.<sup>13</sup> In this study, the discussion is expanded with regard to the perceived health, the functional capacity for Instrumental Activities of Daily Living (IADLs) and Advanced Activities of Daily Living (AADLs) and the fear of falling syndrome.

In addition, the World Health Organization has encouraged the expansion of knowledge on the predictors of falls, as one of the pillars of the falls prevention model.<sup>9</sup> In this perspective, the need is emphasized to develop Brazilian research on the factors associated with falls, with a view to supporting systematic approaches by the health professionals and public support policies to reduce this event that remains so frequent among the elderly.

This study was intended to determine the prevalence of falls in the last 12 months among the elderly; to compare the sociodemographic, clinical, health and functional variables among the elderly victims and non-victims of falls; and to verify the factors associated with falls in the elderly.

## METHOD

Quantitative, cross-sectional, observational and analytic domestic survey. The population sample was calculated in view of a falls prevalence rate of 33.3%,<sup>5</sup> a precision of 3.4% and a confidence interval of 95%, for a finite population of 36,703 elderly, reaching a sample of 724 subjects. Considering a 20% sampling loss, the maximum number of interview attempts corresponded to 905 elderly and, to select the subjects, the multiple-stage cluster sampling technique was used.

To select the elderly, in the first stage, 50% of the census tracts in the city were randomly drawn through systematic sampling, organizing a single list of tracts and identifying the neighborhood they belonged to. In the city of Uberaba-MG, 409 urban census tracts exist, 204 of which were selected. The Sampling Interval (SI) was calculated by means of the formula:  $SI = Ncs / ncs$ . The first census tract was randomly drawn and the remainder according to SI; the list of the tracts was ordered in increasing numerical order for the drawing.

In the second stage, the number of elderly to be interviewed, according to the sample calculation ( $n=724$ ), was divided by the number of census sectors in the city ( $n=204$ ) to obtain an approximately similar number in each census tract. The number of homes/elderly in Uberaba-MG was 3.55, rounded off to four elderly per census tract. Thus, the number of interview attempts was 816 elderly.

The following inclusion criteria were considered: age 60 years or older, living in urban Uberaba-MG and presenting no signs of cognitive decline. Elderly not located by the interviewer after three attempts, tracks without elderly ( $n=32$  elderly), tracks without homes ( $n=36$  elderly) and tracks

that did not complete the number of elderly (n=19 elderly) were excluded. Hence, due to the losses, 729 elderly were interviewed.

The data were collected at the elderly's homes between January and April 2014 through a direct interview. The cognitive decline was assessed by means of the Mini Mental State Examination (MMSE), translated and validated in Brazil.<sup>14</sup> The elderly people's sociodemographic data, clinical and health indicators, morbidities and self-referred complaints and the occurrence of falls in the previous 12 months were collected using a tool constructed by the Health Research Group at *Universidade Federal do Triângulo Mineiro* (UFTM).

To measure the functional capacity, the following were used: the Scale of Independence for Activities of Daily Living (ADLs) (Katz Scale), elaborated and adapted to the Brazilian reality;<sup>15</sup> the Lawton and Brody Scale for the Instrumental Activities of Daily Living (IADL), adapted in Brazil;<sup>16</sup> and the 13-item structured questionnaire to assess the AADL.<sup>17</sup>

The fear of falling syndrome was assessed using the Falls Efficacy Scale-International-Brazil (FES-I Brasil), a scale adapted and validated in Brazil with questions about the concern with the possibility of falling when performing 16 activities, with respective scores between one and four. The total score ranges between 16 and 64; the lowest score corresponds to the absence of concern with the possibility of falling, and the highest to extreme concern with falls.<sup>18</sup>

To assess the physical performance, the Brazilian version of the Short Physical Performance Battery (SPPB) was used, which corresponds to the sum of scores on the tests of balance, walking speed and getting up from the chair five consecutive times, with scores ranging from 0 (worst performance) to 4 (best performance). Thus, the total SPPB score ranges from zero (worst performance) to 12 points (best performance).<sup>19</sup>

The study variables were: sociodemographic characteristics: sex (female and male); age range

(60-80; 80 years or older); education (0-4 and 5 years or older); marital status (with partner and without partner); housing arrangement (accompanied and alone); morbidities and self-referred complaints: rheumatism, arthritis/arthrosis, osteoporosis, asthma or bronchitis, tuberculosis, embolism, arterial hypertension, bad circulation (varicose veins), cardiac problems, diabetes mellitus, obesity, stroke, Parkinson, urinary incontinence, fecal incontinence, sleeping problems, cataract, glaucoma, back problems, renal problems, sequelae due to accident/trauma, malign tumors, benign tumors, sight problems and depression; number of self-referred morbidities (0-2; 2 and more); number of regular medicines (0-5; 5 or more); perceived health: very bad/bad/regular (negative) and good/excellent (positive); use of walking aid (uses or does not use); functional capacity for ADL (independent and dependent) and for IADL (independent and dependent); falls (occurred and did not occur). The functional capacity for AADL, the fear of falling syndrome and the physical performance were operated as continuous variables, calculating the elderly's mean score.

To hold the interviews, ten interviewers were selected, who received training, qualification and information on the ethical aspects of the research. Systematic meetings were held between the interviewers and researchers of the Research Group in Collective Health at UFTM to monitor and advise on the data collection.

After collecting the data, the database was elaborated in an Excel® worksheet and data were included through double data entry. Next, the consistency between the two databases was verified and, when necessary, corrections were made, looking up the data in the original interview. For the sake of analysis, the database was imported from the Excel worksheet to the software Statistical Package for The Social Sciences (SPSS), version 17.0.

The prevalence rate was calculated according to the following formula:

$$\text{Prevalence coefficient} = \frac{\text{No of cases of a certain disease in a given location and period}}{\text{population of the same location and period}} \times 10^n$$

The data were submitted to descriptive analyses (absolute and percentage frequencies) and, for the categorical variables, bivariate analysis was applied through the prevalence ratio (PR) and prevalence odds ratio (POR). Functional disability

for AADLs, fear of falling syndrome and physical performance were considered as numerical variables, calculating the mean and applying Student's t-test for intergroup comparison (occurrence or not of falls).

To analyze the predictor variables, the logistic regression model was used, adopting the occurrence or not of falls as the outcome ( $p < 0.05$ ).

Approval for the project was obtained from the Ethics Committee for Research involving Human Beings at UFMT, Protocol 573.833. The interviews were held with the elderly's agreement after the signing of the Term of Free and Informed Consent.

## RESULTS

Among the 729 elderly, 206 (28.3%) were victims of falls in the past 12 months. The average was 3.46, with 92 (44.6%) elderly being victims of one fall episode and 114 (55.4%) victims of two or more, that is, recurring falls.

Among the elderly fall victims, the highest registered percentages were related to women (33.1%);

age 80 years or older (35.7%); up to four years of education (29.5%); living accompanied (31.5%); with a partner (33.3%); negative perceived health (32.7%); taking five or more medicines (35.9%); having two or more morbidities (33.8%); using a walking aid (40.0%); and dependent for ADLs (35.7%) and IADLs (34.2%) (Table 1).

In the intergroup comparison, the largest proportion of elderly falls victims were women ( $p < 0.001$ ); aged 80 years or older ( $p = 0.023$ ); lived accompanied ( $p < 0.001$ ); had a partner ( $p < 0.001$ ); presented negative perceived health ( $p = 0.002$ ); had two and more morbidities ( $p < 0.001$ ); used five or more drugs ( $p = 0.002$ ); and were dependent for the IADLs ( $p < 0.001$ ) (Table 1).

Table 1 displays the distribution of the sociodemographic, clinical, health and functional capacity variables.

**Table 1 - Frequency distribution of sociodemographic, clinical, health and functional capacity variables, according to the occurrence of falls among elderly people in the city of Uberaba-MG, 2014 (n=729)**

Variables	Falls		PR* (95%CI)	POR† (95%CI)	p‡
	Yes n (%)	No n (%)			
Sex					
Female	161 (33.1)	326 (66.9)	1.78 (1.33-2.38)	2.16 (1.49-3.15)	<0.001
Male	45 (18.6)	197 (81.4)			
Age range (in years)					
60   80	152 (26.4)	423 (73.6)			
80 or older	55 (35.7)	99 (64.3)	1.35 (1.05-1.74)	1.54 (1.06-2.26)	0.023
Education (in years)					
≤ 4	152 (29.5)	363 (70.5)			
> 4	54 (25.2)	160 (74.8)	1.17 (0.90-1.53)	1.24 (0.86-1.78)	0.242
Marital status					
With partner	143 (33.3)	286 (66.7)			
Without partner	63 (21.0)	237 (79.0)	1.59 (1.23-2.05)	1.89 (1.33-2.65)	<0.001
Housing arrangement					
Accompanied	182 (31.5)	395 (68.5)			
Alone	24 (15.8)	128 (84.2)	2.00 (1.36-2.94)	2.46 (1.57-3.93)	<0.001
Perceived health					
Negative	136 (32.7)	280 (67.3)	1.46 (1.14-1.87)	1.69 (1.20-2.36)	0.002
Positive	70 (22.4)	243 (77.6)			
Medications					
0   5	123 (24.8)	373 (75.2)			
5 or more	83 (35.9)	148 (64.1)	1.45 (1.15-1.85)	1.70 (1.21-2.38)	0.002
Morbidities					
0   2	34 (15.7)	183 (84.3)			
2 and more	173 (33.8)	339 (66.2)	2.16 (1.55-3.01)	2.75 (1.82-4.14)	<0.001
Walking aid					
Yes	16 (40.0)	24 (60.0)			
No	190 (27.6)	499 (72.4)	1.45 (0.97-2.16)	1.75 (0.91-3.37)	0.090
ADL					
Dependent	10 (35.7)	18 (64.3)	2.7 (0.92 - 7.92)	3.4 (1.01-11.38)	0.059
Independent	196 (28.0)	505 (72.0)			
IADL					
Dependent	151 (34.2)	291 (65.8)	1.78 (1.36-2.34)	2.19 (1.54-3.12)	<0.001
Independent	55 (19.2)	232 (80.8)			

\*PR: Prevalence Ratio; †POR: Prevalence Odds Ratio; ‡Significance level  $p < 0.05$ .

The elderly fall victims presented a larger proportion of diseases like: rheumatism ( $p<0.001$ ); arthritis/arthrosis ( $p<0.001$ ); osteoporosis ( $p<0.001$ ); cardiac problems ( $p=0.026$ ); urinary incontinence ( $p<0.001$ ); sleeping problems ( $p<0.001$ ); glaucoma ( $p=0.043$ ); back problems ( $p=0.033$ ) and depression ( $p<0.001$ ), when compared to the non-victims.

The elderly victims of falls stopped performing a larger number of AADL ( $p<0.001$ ); were more afraid of falling ( $p<0.001$ ); and demonstrated a worse physical performance ( $p<0.001$ ) when compared to the non-victims.

The analysis of each physical performance test showed that the elderly fall victims demonstrated worse performance on balance ( $p<0.001$ ) and lower limb muscle strength ( $p<0.001$ ) than the non-victims.

To verify the factors associated with falls among the elderly, the variables sex, age range, number of morbidities and number of medicines were considered as predictors of this event. These were defined based on the scientific literature and respecting the temporality of the occurrence of falls.

The following factors were associated with falls: female sex; age 80 years or older; having two or more morbidities (Table 2). The main falls predictor was the fact of having two or more morbidities (POR=2.37).

Table 2 presents the final binomial logistic regression model for the variables associated with the occurrence of falls in the elderly.

**Table 2 – Final binomial logistic regression model for variables associated with falls among elderly people. Uberaba-MG, Brazil, 2014 (n=729)**

Variables		POR*	95%CI	p†
Sex	Male	-	-	-
	Female	1.91	1.30 – 2.81	<b>0.002</b>
Age range (in years)	60   80	-	-	-
	80 or older	1.59	1.01 – 2.18	<b>0.020</b>
Morbidities	0   2	-	-	-
	2 and more	2.37	1.53 – 3.62	<b>&lt;0.001</b>
Medications	0   5	-	-	-
	5 or more	1.17	0.81 – 1.68	0.397

\*POR: Prevalence Odds Ratio; †Significance level  $p<0.05$ .

## DISCUSSION

Brazilian studies involving elderly people living in urban areas found lower prevalence rates in São Carlos-SP (27.6%)<sup>12</sup> and Florianópolis-SC (18.9%)<sup>20</sup> in relation to the present research findings.

Similarly, international studies detected lower percentages in cities in East Asian countries (21.0%)<sup>21</sup> and in Poland (19.1 %).<sup>10</sup>

The high prevalence of falls in the city studied indicates the need for articulation among the multiprofessional health teams at all care levels, with a view to detecting the elderly with potential falls risks and a background history. In addition, knowing the factors associated with the occurrence of falls is fundamental to contribute to the clarification of causal phenomena and support actions in health services to reduce their prevalence.

In addition, it is essential that the health professionals engage the elderly people's relatives in this process to favor the information exchange and provide training to facilitate the identification of risk factors, the selection of strategies to reduce their occurrence and the monitoring of related injuries.<sup>9</sup> These people play an important role in the sensitization of the elderly, in view of their greater proximity and bond.

Concerning the frequency of falls, the result diverged from other Brazilian studies in which elderly who fell only once prevailed.<sup>4,22</sup> It is important to highlight that the recurring falls mainly express the presence of intrinsic risk factors, which are related to the individual, to the physical changes resulting from the aging process, the appearance of diseases and the collateral effects of the medications.<sup>23</sup> These circumstances strengthen the research findings about the factors associated with the falls.

In that sense, health education actions need to be implemented for the elderly, family members and caregivers, addressing the factors predisposing to the recurring falls.<sup>9</sup> In addition, it is fundamental for the health professionals to intervene in the modifiable intrinsic risk factors.

Similar results with regard to the predominance of falls in women have been found in other Brazilian<sup>5,24</sup> and international studies.<sup>10,21</sup> The greater female longevity can explain this aspect, as it favors the increased proportion of elderly exposed to the event.

Concerning the higher proportion of falls among the elderly aged 80 years or older, results in the same direction were found in studies undertaken in Cuiabá-MT<sup>4</sup> and Juiz de Fora-MG.<sup>6</sup> The number of falls increases with age in men and women, in all ethnic and racial groups,<sup>25</sup> as well as the chances of these events resulting in physical consequences like fractures.<sup>23</sup>

As regards the housing arrangement and marital status, these research results were similar to the findings in a study in João Pessoa-PB,<sup>26</sup> in which the falls predominated among the elderly who lived accompanied and had partners. Thus, the need is highlighted for the health professionals to engage these people in their actions, as they can constitute support for these elderly in the adoption of preventive measures and the early detection of risk factors.

Studies involving elderly from the urban area support the negative self-perceived health associated with the presence of falls.<sup>22,27</sup> It is highlighted that the main determinants of the negative self-perceived health among the elderly are functional ability and the presence of chronic conditions.<sup>28</sup> In fact, the higher percentage of elderly fall victims in this study were dependent for ADLs and IADLs, had given up most AADLs and had two or more morbidities. In this context, this health indicator should be part of the health professionals' assessment with a view to the proposal of preventive interventions.

The factor positive association between the occurrence of falls and the concomitant use of five or more drugs detected in this study is similar to the findings in the urban area of Catanduva-SP.<sup>6</sup> Therefore, it is relevant to monitor the drug consumption by the elderly; identify the occurrence of self-medication; possible side effects and drug interactions.<sup>9</sup> In addition, the elderly's autonomy needs to be promoted, promoting, when necessary, compensation strategies like the use of reminders and the organization of the drugs in shifts to minimize possible errors in medication consumption.

Similar to the present findings, the presence of two or more morbidities among elderly fall victims was also found in a Brazilian study.<sup>4</sup> The same was observed for the morbidities and self-referred complaints, in which most elderly fall victims presented sleeping problems;<sup>29</sup> back problems;<sup>30</sup> depression;<sup>4</sup> arthritis/arthrosis;<sup>4</sup> rheumatic diseases;<sup>30</sup> urinary incontinence;<sup>13</sup> osteoporosis,<sup>31</sup> when compared to the non-victims. In that sense, the multiprofessional team should engage in the management and control of the chronic illnesses affecting the elderly, besides being apt to guide the family and caregiver's participation when necessary.

Concerning the functional ability, different results were found in Brazilian<sup>29,32</sup> and international studies.<sup>33</sup> In a study conducted in Campinas-SP,<sup>29</sup> a higher percentage of independent elderly for IADLs was found who continued to engage in the AADLs among the fall victims, but without a statistical

association. In other studies developed in Lafaiete Coutinho-BA<sup>32</sup> and Florida, United States,<sup>33</sup> the association between these events and dependence for ADLs was found.

The information deriving from the functional ability assessments is essential for the health professionals to outline health promotion, falls prevention and management strategies and interventions for the elderly. In addition, it is fundamental to develop actions to maintain and restore the functional capacity, with a view to contributing to increased independence in old age as well.

Concerning the fear of falling syndrome, similar data were found in a Brazilian<sup>20</sup> and international study.<sup>21</sup> This condition can make the elderly limit their performance in daily activities important for their life and their self-confidence regarding their skills.<sup>20</sup>

In view of its consequences, the fear of falling deserves special attention from the health professionals with a view to minimizing their repercussions in the lives of the elderly and their families. These professionals can favor the creation of spaces aimed at developing strategies to address the theme with the elderly; clarifying this condition and its repercussions for family members and caregivers; and intervening in the modifiable risk factors, like the extrinsic factors related to the environment for example.

The lower score on physical performance in the lower limbs among the elderly fall victims when compared to non-victims was similar to another Brazilian study.<sup>12</sup> The analysis of each physical performance test presented similar results to the findings in the city of Catanduva-SP, involving 200 elderly, which identified lower levels of lower limb strength.<sup>6</sup> In that sense, the multiprofessional health team can assess the physical performance to identify the elderly at risk and to outline specific interventions to improve this function.

The association of falls with women was present in Brazilian<sup>4,28</sup> and international studies.<sup>21</sup> The elderly women's greater exposure to risk behaviors can explain this fact, such as the inappropriate use of shoes and preference to perform daily activities simultaneously.<sup>21</sup>

Therefore, the health professionals need to develop educative actions that focus on the risk factors in the home environment and safer forms for the elderly women to perform their daily activities. In addition, the elderly's willingness to follow the orientations and the changes needed in her environment need to be assessed.

The health professionals can use different behavioral strategies to help the elderly to change and maintain their behavior, providing regular information on their program and health contracts as a form of positive strengthening.<sup>9</sup>

The positive association between falls and elder elderly (80 years or older) was also found in studies developed in Campinas-SP (OR=3.48; CI: 1.54–7.85);<sup>29</sup> Cuiabá-MT (OR=2.30; 95% CI 1.12–4.72)<sup>4</sup> and Taiwan, East Asia (OR: 2.45; CI: 1.09–5.52).<sup>21</sup> Therefore, the health professionals need to systematically monitor these elderly to favor health education with a view to identifying risks and proposing preventive actions.<sup>9</sup>

The elderly and their family members may underreport the falls, considering that these are events characteristic of aging and, consequently, face difficulties to recognize the risk factors.<sup>34</sup> In that sense, attitudes to prevent falls may not be adopted.<sup>9,34</sup> Therefore, multiprofessional support is essential, as well as the planning of ongoing interventions shared among the health professionals, elderly and family members.<sup>34</sup>

The association between the occurrence of falls and two or more morbidities was also found in a Brazilian study undertaken in the city of João Pessoa-PB.<sup>22</sup> The presence of chronic illnesses associated with the functional decline resulting from the aging process and its consequences can make the elderly present greater vulnerability and/or proneness to falls, mainly in case of recurrence.<sup>24</sup> Monitoring these morbidities and their established consequences is fundamental to prevent this event. In addition, health promotion actions are needed to contribute to healthier, more autonomous and independent aging.

As a study limitation, the cross-sectional design should be highlighted, which does not permit the establishment of causal relations between falls and perceived health, functional capacity, fear of falling syndrome and physical performance.

## CONCLUSION

The prevalence of falls in elderly people living in urban Uberaba-MG corresponded to 28.3%, 44.6% of whom experienced a fall episode and 55.4% recurring falls.

When comparing the groups, the highest proportion of elderly fall victims were women; aged 80 years or older; who lived accompanied; with partners; presented negative perceived health; suffered from two or more morbidities; took five or more medications; were dependent for IADL; stopped

performing most AADL; were more afraid of falling; and demonstrated worse physical performance when compared to non-victims.

Falls were associated with the female sex; age 80 years or older; and the presence of two or more illnesses. The main predictor of falls was having two or more illnesses.

This study included the variables perceived health, functional capacity for IADL and AADL and the fear of falling syndrome, which other Brazilian and international studies have hardly focused on, contributing to enhance the knowledge on the factors involved in elderly falls, which remains a frequent event in this population. The findings strengthen the need to invest in health promotion and disease prevention in the course of the lifecycle, keeping in mind that, among the fall predictors, health professionals can only intervene in the presence of comorbidities.

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Received: March 06, 2015  
Approved: September 25, 2015