**ACCIDENTS CAUSED BY FALLS IN THE ELDERLY PEOPLE: A PUBLIC HEALTH PROBLEM****ACIDENTES POR QUEDAS EM PESSOAS IDOSAS: UM PROBLEMA DE SAÚDE PÚBLICA****ACCIDENTES POR CAÍDAS EN PERSONAS MAYORES: UN PROBLEMA DE SALUD PÚBLICA**

Alyne de Souza Dias<sup>1</sup>, Leiliane Naves Dias Alves<sup>2</sup>, André Santos Freitas<sup>3</sup>, Jacson Santos dos Reis<sup>4</sup>, Ewerton Naves Dias<sup>5</sup>

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<https://doi.org/10.47820/jht.v1i1.7>**RECEIVED: 03/05/2022****APPROVED: 02/07/2022****PUBLISHED: 21/07/2022****ABSTRACT**

**INTRODUCTION:** Currently, there is a great growth of the elderly population at the global level, this process is accompanied by a series of changes in the lives of the elderly, which deserve to highlight the occurrence of falls, a factor that can interfere in the quality of life of the elderly. **OBJECTIVE:** The study aimed to describe through a literature review on accidents due to fall in the old. **METHODS:** this is an integrative review of the literature. To this end, a search was conducted in the Virtual Health Library (VHL) with the following expression: "Accidents by Falls and Elderly". **RESULTS:** In summary, the studies addressed the following themes: Prevalence and factors associated with the fall of the elderly, Impact of falls on the quality of life of the elderly, Feelings of the elderly after fall, Prevention of falls in the elderly. **CONCLUSION:** The occurrence of falls in the elderly is related to several factors and is considered a serious public health problem that affects the quality of life and physical and psychological health of these people. It is therefore up to health professionals to implement actions that favor the management and prevention of falls.

**KEYWORDS:** Accident by Falls. Elderly

**RESUMO**

**INTRODUÇÃO:** Na atualidade, observa-se um grande crescimento da população idosa em nível global, este processo é acompanhado por uma série de mudanças na vida das pessoas idosas, das quais merece destaque a ocorrência de quedas, fator que pode interferir na qualidade de vida dos idosos. **OBJETIVO:** O respectivo estudo teve como objetivo descrever por meio de uma revisão de literatura sobre os acidentes por queda em pessoas idosas. **MÉTODOS:** trata-se de uma revisão Integrativa da literatura. Para tanto, conduziu-se uma busca na Biblioteca Virtual de Saúde (BVS) com a seguinte expressão: "Acidentes por Quedas and Idoso". **RESULTADOS:** Em síntese, os estudos abordavam sobre as seguintes temáticas: Prevalência e fatores associados a queda de idosos, Impacto das quedas na qualidade de vida dos idosos, Sentimentos das pessoas idosas pós-queda, Prevenção de quedas em idoso. **CONCLUSÃO:** A ocorrência de quedas em idosos está relacionada a diversos fatores sendo considerada um grave problema de saúde pública que afeta a qualidade de vida e a saúde física e psicológica dessas pessoas. Cabe, portanto, aos profissionais de saúde implementar ações que favoreçam o manejo e a prevenção de quedas.

**PALAVRAS-CHAVE:** Acidentes por Quedas. Idoso

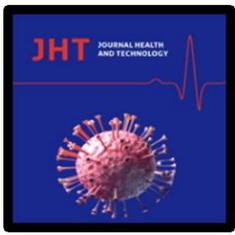
<sup>1</sup> Psychology student at the University of Mogi das Cruzes, Brazil.

<sup>2</sup> Nurse Coordinator of Nursing care at Unimed-Rio, Brazil.

<sup>3</sup> Master's degree student in Sciences at the University of Guarulhos, UNG, UNIVERITAS

<sup>4</sup> Social Worker and Historian with a Masters in Psychogerontology from the Educatie College, Brazil.

<sup>5</sup> Nurse, PhD Psychology by the University of Porto, Portugal. Professor of the Master and PhD Program in Nursing at the University of Guarulhos, UNG, UNIVERITAS



## INTRODUCTION

Currently, there is a growing increase in the elderly population (people aged 60 years or more) around the globe. Estimates indicate that 22% of the world population will be elderly by 2050, and 80% of these individuals will live in medium and low-income countries<sup>1</sup>. In Brazil, the scenario will not be different, the aging process the country has been going through will imply in a greater pressure on the health system to serve this population<sup>2</sup>, characterized by requiring special care.

This situation is accompanied by the occurrence of non-transmissible chronic diseases and by the occurrence of falls, a factor that leads to eventual injuries and fractures, which are recurrent in the upper limbs, lower limbs and pelvis<sup>3</sup>. It is reinforced that factors such as systemic arterial hypertension, diabetes mellitus, heart disease, alcoholism, depression, osteoporosis, and epilepsy are listed as the main pathological conditions predisposing to falls<sup>4,5</sup>.

It is noteworthy that the main consequences of falls in the elderly are trauma, fractures of extremities, pain, and head trauma. It is noteworthy that the adverse effects of falls tend to worsen with advancing age and social inequalities experienced by the subjects, a situation that requires actions aimed at reducing these impacts on the quality of life of individuals, especially those in vulnerable situations<sup>6</sup>.

It is worth mentioning that falls are more recurrent among the elderly due to the aging process itself and the functional losses that directly affect balance, which demands the implementation of preventive strategies that contribute to health promotion<sup>4</sup>.

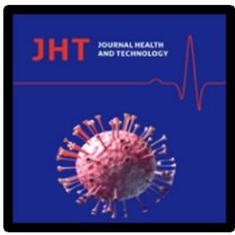
Considering this scenario, it is evident that falls can seriously compromise the quality of life, physical and mental health of the elderly, leading to the loss of autonomy, independence, depression, and hospitalization, which can evolve to more severe cases, such as death<sup>7-8</sup>. Therefore, studies such as this one, which aims to describe this phenomenon, are extremely relevant, as they can contribute to the knowledge gap in this area, synthesizing information that can provide adequate assistance to the elderly, both in prevention and in post-fall care.

## OBJECTIVE

The aim of this study was to describe by means of a literature review the accidents caused by falls in elderly people.

## METHODS

This is an integrative review of the literature used to reach the proposed objective. For the development of this study the following steps were followed: (1) identification of the research question; (2) establishment of criteria for inclusion and exclusion of studies and literature search; (3) definition of information from the studies included in the integrative review; (4) interpretation of results, and (5) presentation of the review<sup>10</sup>.



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### STAGE 1: identification of the research question

Considering the proposed objective for the present research, the following guiding question was proposed: "what are the main implications of falling for the elderly person?"

### STAGE 2: establishment of criteria for inclusion and exclusion of studies and literature search

The Health Science Descriptors/Medical Subject Headings were checked for terms that would allow the identification of articles included in the research scope and the elaboration of the search expression. The Boolean operator AND was used to assist the search. Thus, the following descriptors were used: Falls Accidents AND of the Elderly. The literature search was carried out in the Virtual Health Library (VHL) from 2013 to 2019. Inclusion criteria were: peer-reviewed articles published in English, Portuguese, or Spanish; articles available in their entirety for access; articles that address the topic of falls and the elderly. On the other hand, the exclusion criteria were: articles not available in their entirety; duplicate papers; articles that did not cover the scope of this research; gray literature, such as dissertations, theses, and conference abstracts.

### STEP 3: definition of information from the studies included in the integrative review

The information of the studies included in the integrative review was extracted from the articles. Thus, the following information was extracted: article name, authorship, journal, year of publication, and the main findings <sup>11</sup>.

### STEP 4: interpretation of results

The interpretation of the results was descriptive since the present review aims at bringing a synthesis of the knowledge regarding the main implications of falls for the elderly.

### STAGE 5: review presentation

Finally, the studies were presented by means of a table and then analyzed, categorized and discussed<sup>11</sup>.

## RESULTS

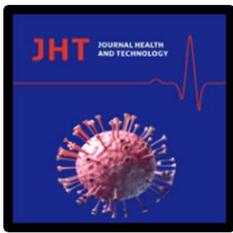
After searching the VHL, 181 results were retrieved, 168 of which were excluded because they did not meet the inclusion criteria established for this study. Therefore, the final sample consisted of 12 articles that covered the scope of the study.

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**Table 1.** Characteristics of the selected articles regarding authorship, title, periodical, year of publication, and main findings.

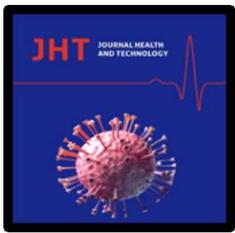
Authorship	Article title	Periodical/language	Year	Main Findings
Perracini e Ramos <sup>12</sup>	Factors associated with falls in a cohort of community-dwelling elderly	Revista de Saúde Pública/Português	2002	The elderly person is more vulnerable to new fall episodes after the consequences (e.g. fracture) of a previous fall; the impairment of activities considered instrumental, due to aspects related to muscle strength, gait and mobility; the fear of falling can lead to progressive impairment of functional capacity
Fabício et al. <sup>13</sup>	Causes and consequences of falls in elderly patients treated at a public hospital	Revista de Saúde Pública/Português	2004	After the occurrence of falls, the elderly report the onset of diseases (stroke, osteoporosis, pneumonia, arthritis, urinary tract infections, heart disease, hearing and vision problems; due to the occurrence of fractures, many older people report the fear of falling again, increased difficulty, dependence to perform activities of daily living (lying down, getting up, walking), there is the risk of death, risk of being bedridden, mental confusion, decubitus ulcers and pneumonia; emotional, psychological, social changes, feeling of fragility and insecurity; situation favors atrophy and potentiates new falls.
Hamra et al. <sup>14</sup>	Correlation between fall fracture in the elderly and medication use	Acta Ortop Bras	2007	Falls most commonly affect the proximal third of the femur (53.1%); a safe home should consider slippery environments, backyards, and uneven toilets; medication use (captopril, clonazepam, hydrochlorothiazide, cinnarizine, flunarizine) is a risk factor for fall fracture
Siqueira et al. <sup>15</sup>	Prevalence of falls in the elderly and associated factors	Revista de Saúde Pública/Português	2007	Falls can result in fractures, more prevalent in the arms (26.2%) and lower limbs (28%); dose-response relationship among women regarding falls and self-perception
Gonçalves et al. <sup>16</sup>	Functional balance of community-dwelling elderly: comparison in relation to history of falls	Brazilian Journal of Physical Therapy/Português	2009	Seniors with a history of falling take longer to complete the functional balance test and show a decline in balance when compared to seniors without a history of falling, which increases the risk of falling
Carvalho et al. <sup>17</sup>	The look and the feeling of the post-fall elderly	Revista Brasileira de Geriatria e Gerontologia/Português	2010	The elderly show feelings of acceptance of their fragility; conformity with their pathologies; assimilation of the idea of negativity and unproductivity of their lives; fear of falling again; impairment of confidence in daily life and execution of their activities; recurrence of falls refers to the idea of "normality"; conformity with the limitation of living at home; impairment of functional independence; changes in quality of life negatively impact the daily life of the elderly and their active independence; spirituality helps in adapting and coping; when the elderly fall, they tend not to expose themselves to the



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				risk of another fall; difficulties in performing activities of daily living; feeling of vulnerability and insecurity; negative repercussions of dependence on others; physical limitations; low self-esteem
Lopes e Dias <sup>18</sup>	The impact of falls on the quality of life of the elderly	ConScientiae Saúde/Português	2010	Falls result in multiple complications that affect the quality of life of the elderly; physical consequences (tissue damage, fractures, hospitalizations, immobilization, respiratory problems, respiratory injuries, reduced physical activity); functional consequences (limitation of mobility, changes in living habits, abandonment of activities, partial dependence, loss of independence, activity restrictions); psychosocial consequences (fear of falling again, emotional distress, feelings of helplessness, shame, decreased optimism, decreased self-esteem).
Fhon et al. <sup>19</sup>	Prevalence of falls in frail elderly	Revista de Saúde Pública/Português	2013	The main consequence of falling is the fear of falling again ("post-fall syndrome"); falling can cause severe functional disability and increase the risk of institutionalization; falling can lead the elderly to frailty, which leads to a new fall
Almeida et al. <sup>20</sup>	Quality of life in the elderly who suffered falls	Revista APS/Português de	2014	The domains of overall quality of life with the lowest contribution are the physical and the one with the highest contribution is the psychological, followed by the social and the environmental; falls provide greater complications and can negatively affect the quality of life of the elderly; maintenance of autonomy and functional capacity are associated with the quality of life of the elderly; insertion in the social environment also helps maintain quality of life
Carvalho et al. <sup>21</sup>	Quality of life assessment in elderly fall victims	Journal of Health Science Institute/Português	2015	Worsening of the perception of quality of life in relation to the environment domain; falls result in morbidity and mortality; injuries cause social and economic costs; greater risks are brought to the elderly who have some balance/walking impairment; falls can decrease or lead to loss of physical and psychological autonomy
Pimentel et al. <sup>22</sup>	Geriatrics, Gerontology and Aging	Geriatrics, Gerontology and Aging	2015	Falls cause injuries, bruises, and fractures; falls may cause no consequences; falls may influence the mental health domain (anxiety, depression, behavioral changes, psychological well-being); severe falls may affect the quality of life of the elderly; falls may lead to fear of falling again, frailty, and feelings of insecurity
Rosa et al. <sup>23</sup>	Analysis of risk factors for falling in institutionalized elderly	Revista Brasileira de Geriatria e Gerontologia	2019	Falls result in physical, psychological and social harms; physical harms are most common and injuries are observed; skin injuries are observed; health impacts for the elderly

**DISCUSSION**

After reading and analyzing the articles the following themes were identified: Prevalence and factors associated with falls in the elderly, Impact of falls on the quality of life of the elderly, Feelings of the elderly post-fall, Prevention of falls in the elderly. In the sequence each one of them is explained.

**Prevalence and factors associated with falls in the elderly**

When it comes to the occurrence of falls in the elderly, it is evident that physiological changes contribute to and increase the risk, and some factors can be emphasized. Among them, being female, being 80 years old or older and the existence of one or more comorbidities can be considered as predictors of falls in the elderly population<sup>24</sup>.

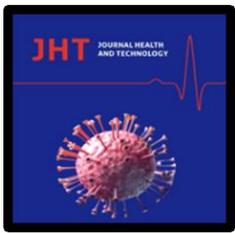
In regard to women, it must be highlighted that the associated factors need further investigation and detailing, but aspects such as their greater involvement in domestic work, greater physical fragility, bone mass loss due to hormonal aspects<sup>25-26-27</sup> and longer life expectancy favor the occurrence of falls in this population.

The advancing age implies in cognitive changes, leading to negative implications in postural control and gait with advancing age due to physical factors<sup>28</sup>. The senescence process has as a remarkable characteristic the occurrence of processes that lead to functional losses that directly affect balance; furthermore, the existence of pathological conditions is considered a predisposing element for the occurrence of falls in the elderly<sup>4,5</sup>.

A study observed that the elderly with chronic diseases (diabetes mellitus, systemic arterial hypertension) showed a higher occurrence of fractures due to the occurrence of falls<sup>25</sup>. The elderly usually falls outside and inside their homes, but it is more common for the elderly to fall in their homes<sup>26</sup>, in locations such as the bathroom and in the bedroom. In yards and backyards, the elderly is also found to fall, especially from their own height<sup>29</sup>. For example, in the investigation by Tako et al<sup>30</sup> of the elderly who fell, 54.4% fell in their residence in the morning, outside (23.6%), in the bedroom (20%), and in the bathroom (18.2%), with 54.5% reporting that they had not stumbled and 50.5% requiring help to get up.

An investigation<sup>31</sup> conducted with 401 elderlies associated with the Family Health Strategy in the municipality of João Pessoa (PB), found that 42.4% of the elderly reported falling and the event was more prevalent in females. A study<sup>30</sup> which approached elderly residents in the coverage area of four basic health units in the municipality of Lagarto (SE) found that 24.3% had suffered a fall in the last year. In the study by Tomaz et al<sup>32</sup>, which involved the evaluation of 317 elderly subjects, the prevalence of falls was 52.4%. In an evaluation<sup>33</sup> conducted with 12 elderly people from a long-stay care institution in the center-west of Minas Gerais state, it was found that 75% of the elderly had fallen in the last year, the lower limbs were the most affected region (44.4%), a situation linked to the use of medications due to comorbidities, education, and cognitive functioning.

It is relevant to highlight the fact that medications can contribute to the occurrence of falls in the elderly, since many take medication due to their comorbidities. Research that evaluated 317 elderly assisted in basic health units in Coronel Fabriciano (MG) found a significant association ( $p=0.009$ )



between the use of benzodiazepines and the occurrence of falls in the last 12 months <sup>32</sup>. Extrinsic environmental conditions also favor falls in the elderly, such as areas with poor lighting and slippery floors <sup>34</sup>.

### **Impact of falls on the quality of life of the elderly**

In the literature, it is evident that the occurrence of falls can have negative implications on the quality of life of the elderly, such as dependence for performing activities of daily living and advanced activities of daily living, reduced performance of these activities by the elderly, worsening of physical performance, bone fractures and injuries, as well as functional impairments <sup>3,4,24</sup>. Furthermore, after the first year following a fall, the elderly may be afraid of falling again <sup>35</sup>, which directly affects their daily lives.

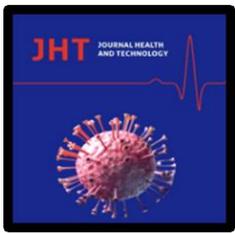
When they suffer a fall, the elderly usually has a negative self-perception of the event, as well as a poor perception of their health status, since falls cause a lot of damage to the elderly <sup>31,36</sup>. Older individuals tend to have a greater association with the number of falls and increased risks, and it must be emphasized that the senescence process implies in cumulative functional and structural alterations <sup>26</sup>.

In the post-fall period, the occurrence of pain, alterations in emotional aspects, damages to mental health and to the physical component are observed <sup>37</sup>. Other implications of falls are the need for surgical interventions due to fractures, the verification of abrasions, eventual dislocations, and gait alterations, especially in the frail or pre-frail elderly, which are more prone to falls <sup>29</sup>.

Falls can bring serious harm to people over 75 years of age, as serious declines are observed in the domains of mental and emotional aspects, besides that, as age advances, there is a loss of muscle function, loss of muscle strength, reduction of joint dynamics, sensory alterations, among others. <sup>27,37</sup>. Regarding the elderly who have had previous falls, it has been found that they tend to present deficits in the following quality of life domains: (i) physical function; (ii) emotional/mental; and (iii) body pain <sup>39</sup>.

Consequently, one of the greatest impacts resulting from falls in the elderly is related to morbidity and mortality; when hospitalization occurs, one notices the need for greater care and use of drugs, since in many falls, the elderly can fracture their hips, a situation that generates disability, as well as 25% of the elderly who end up dying after six months and the others end up having their quality of life compromised <sup>38</sup>.

Among the main consequences of a fall, one can also observe a change in habits, the occurrence of neurological lesions, changes in the family arrangement, and even moving house <sup>40</sup>, elements that can contribute to the loss of quality of life of the elderly. Falls in the elderly negatively impact their quality of life, both physically by imposing limitations and changes in their routine, as well as psychologically, since it shakes the emotional state of the elderly and brings negative implications to their mental health.



### Feelings of the elderly after a fall

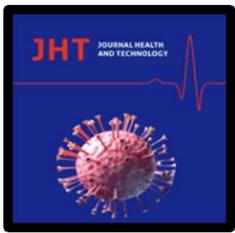
Besides the physical traumas, such as fractures, dislocations and the occurrence of pain, falls trigger the fear of falling again, functional incapacity, the elderly are restricted to their beds, the elderly lose their independence and the quality of life is also affected<sup>36</sup>. Falls result in direct psychological impacts on the elderly, and this type of damage is one of the main ones observed in the post-fall of the elderly population<sup>23</sup>. In the case of those elderly who have visual function restrictions, the associated negative feelings can be worse, considering the implications resulting from the dependence to perform activities<sup>41</sup>.

Due to the limitations, many elderly people have difficulties to perform activities or even choose not to perform such activities<sup>25</sup>. Other aspects which can result from falling are the isolation of the elderly, as well as the occurrence of depression<sup>29</sup>. This fear of falling again can be linked to the fact that the elderly understands the limitations that are imposed by the aging process itself, they start to realize their fragility, their vulnerability, besides the fear of depending on other people to promote their own care<sup>38</sup>.

An interesting point is that the fear of a new fall can lead the elderly to adopt preventive behaviors; the elderly can also have difficulty sleeping and the feeling of sadness can be associated with depressive symptoms<sup>40</sup>. Other possible feelings observed in the elderly at the post-fall moment is the reduction of their self-confidence, a low self-esteem can be observed, and anxiety can also be observed among individuals<sup>42</sup>. By losing confidence in themselves and their self-esteem, the increase of risks associated with falls in the elderly can occur, as well as due to such feelings, the elderly can also make maladaptive changes regarding their balance, making it difficult to implement strategies to cope with the post-fall moment<sup>43</sup>.

Feelings such as helplessness and fear are also observed, and the elderly end up having great fears about the occurrence of falls, considering it as an unpredictable and unavoidable event, thus fearing becoming a burden to their caregivers due to the loss of their independence<sup>44</sup> to perform activities and self-care. The fear the elderly feel after a fall favors the progressive impairment of their functional capacity<sup>12</sup>.

The elderly also have discomfort, since their routine ends up being interrupted and they end up facing the need to adapt, which makes them feel unwell and promotes a feeling of vulnerability, since many times the needs presented by the elderly end up not being met in the health services and they end up getting stressed due to the situation they are experiencing, just as they treat the situation as something unbearable and responsible for an unpleasant feeling<sup>45</sup>. Insecurity and the generation of expectations due to the fall are also observed among the elderly, a situation that is strongly influenced by the fear of having a new fall; regret for what happened can also be observed among the elderly, as individuals tend to reflect on what they could have done to avoid falling<sup>45</sup>.



### Prevention of falls in the elderly

Aging is characterized by the accumulation of situations considered to be chronic, but the professional performance can direct measures aimed at promoting the elderly health, including public policies<sup>31</sup>. The need to encourage the elderly to perform activities of daily living is well known, allowing them to maintain their independence<sup>23</sup> and contributing positively to maintain their self-esteem.

When a high prevalence of falls is observed in a certain region, it is necessary to take actions that promote the articulation of multiprofessional health teams in the different levels of care, a situation that enhances the detection of potential risks for the elderly population, brings the team closer to the associated factors, the previous history and contributes to reduce the prevalence<sup>24</sup>. The performance of health professionals is also necessary to apply predictive clinical tests that favor interventions, such as the ability to get up from the floor and the walking speed<sup>27</sup>.

Furthermore, healthcare professionals play an important role in the promotion of training and provision of information to the elderly family members, which positively contributes to the treatment of injuries, identification of risks, adoption of measures to reduce them and the identification of the most appropriate strategies<sup>43</sup>. In both females and males, the fear of falling or post-fall syndrome is observed, a situation that must also be considered in the planning of actions and interventions aimed at the elderly population who are victims of falls<sup>35</sup>.

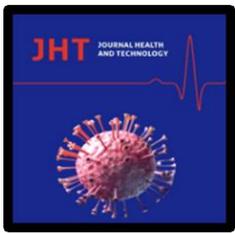
The non-use of shoes considered waterproof is one of the aspects that must be observed, since it is directly associated with the occurrence of falls<sup>23</sup>. Allied to this aspect, it is important to provide family members and caregivers about the disposition of furniture in the homes of the elderly, as well as to guide them not to use loose rugs, not to wax the floor, and to provide support for the elderly in the bathroom.

The implementation of preventive and multidisciplinary care protocols can be an alternative to minimize the occurrence of falls in the elderly<sup>23</sup>. Encouraging the elderly to perform physical exercises enables them to obtain benefits; activities and programs that aim at improving cognition, memory, and attention of the elderly population must be implemented<sup>28</sup>.

The elderly fall is a public health problem, and investments must be directed to the development of campaigns that seek to promote awareness and spread information about it to the elderly, their families, and caregivers<sup>30</sup>. During a university extension activity that employed physical activity as an intervention measure in older adults who were falling and not falling, it was found a 46% reduction in the number of falls after five weeks of intervention<sup>46</sup>.

An indispensable aspect is the ponderation of the use of medication, a necessary action to deal with the scenario of falls in the elderly. In this sense, it is important to ponder the use of benzodiazepines, due to the adverse effects (imbalance, daytime sleepiness) that can contribute to the occurrence of falls in the elderly<sup>32</sup>.

Healthcare professionals must pay special attention to visual acuity and corrective methods, as the elderly are commonly affected by pathologies such as cataracts and can suffer falls; further in this sense, it is important that healthcare professionals also evaluate the limitations caused by the environment in which the elderly live<sup>33</sup>. Primary healthcare can contribute to this sense, as it is closer



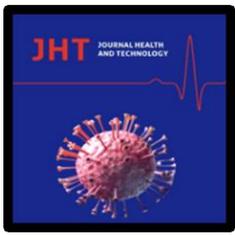
to the population. Orientations that must be adopted after a fall is something that health professionals must also pay attention to <sup>34</sup>.

## CONCLUSION

The review allowed us to infer that there are several factors which can be related to falls in the elderly, and that falls can negatively impact the autonomy, independence, health, and quality of life of this population, thus being a serious public health problem. Therefore, health professionals must implement actions that favor the management and prevention of falls.

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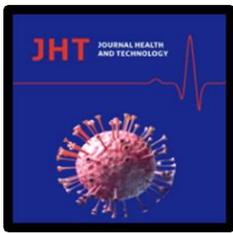


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