

## SCIENTIFIC PRODUCTION ON PHYSICAL ACTIVITY AND PREVENTION OF FALLS IN THE ELDERLY: A BIBLIOMETRIC STUDY

Produção científica sobre atividade física e prevenção de quedas em idosos: estudo bibliométrico

Producción científica sobre actividad física y prevención de caídas en ancianos: estudio bibliométrico

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### How to cite this article:

Souto HC, Costa SBC, Evangelista CB, Macêdo DS, Santos LS, Costa BHS. Scientific production on physical activity and prevention of falls in the elderly: a bibliometric study. 2021 jan/dez; 13:205-213. DOI: <http://dx.doi.org/10.9789/2175-5361.rpcfo.v13.8231>.

### ABSTRACT

**Objective:** The study's purpose has been to analyze the bibliometric indicators of scientific production made available in journals addressing physical activity and the prevention of falls towards the elderly population.

**Methods:** It is a bibliometric study with a quantitative approach, and documental basis consisting of 43 articles found in the *Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS)* [Latin American and Caribbean Literature in Health Sciences] and Medical Literature Analysis and Retrieval System Online (MEDLINE) databases in the period from 2007 to 2017. **Results:** There was a predominance of studies on the thematic in the *Revistas Brasileira de Geriatria e Gerontologia* and *Fisioterapia e Movimento*; in the South and Southeast regions of Brazil; and on the international scene in the United states; of the original type, through non-randomized clinical trials, with a quantitative approach; In the area of medicine and authors holding PhD academic degrees. **Conclusion:** The scientific production on the subject, although still incipient in the area of physical education, shows the relevance of physical activity for the prevention of falls and the growing interest of managers, researchers, and professionals.

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**DESCRIPTORS:** Physical activity, accidental falls, prevention of accidents, elderly health promotion.

## RESUMO

**Objetivo:** Analisar os indicadores bibliométricos da produção científica disponibilizada em periódicos sobre atividade física e a prevenção de quedas em idosos. **Método:** Estudo bibliométrico, com abordagem quantitativa, de base documental, constituído por 43 artigos encontrados nas bases de dados Literatura Latino Americana e do Caribe e *Medical Literature Analysis and Retrieval System Online* no período de 2007 a 2017. **Resultados:** Houve predominância de estudos sobre a temática na Revista Brasileira de Geriatria e Gerontologia e na Revista Fisioterapia e Movimento; nas regiões Sul e Sudeste do Brasil; e no cenário internacional, nos Estados Unidos; do tipo original, mediante ensaios clínicos não-randomizados, com abordagem quantitativa; na área de Medicina e autores com titulação de doutor. **Considerações finais:** A produção científica acerca da temática, embora ainda incipiente na área da Educação Física, mostra a relevância da atividade física para a prevenção de quedas e do interesse crescente de gestores, pesquisadores e profissionais.

**DESCRITORES:** Atividade física; Acidentes por Quedas; Prevenção de Acidentes; Promoção da Saúde Idoso.

## RESUMEN

**Objetivo:** analizar los indicadores bibliométrico de producción científica disponibles en publicaciones periódicas sobre actividad física y prevención de caídas en ancianos. **Método:** estudio bibliométrico, con aproximación cuantitativa, base documental, consistente en 43 artículos encontrados en las bases de datos de literatura latinoamericana y caribeña y en el sistema de análisis y recuperación de literatura médica en línea en el periodo de 2007 a 2017. **Resultados:** hubo un predominio de los estudios sobre la temática en la revista brasileña de Geriatria y Gerontología y en la revista fisioterapia y movimiento; En las regiones del sur y sureste de Brasil; Y en la escena internacional en los Estados Unidos; Del tipo original, mediante ensayos clínicos no aleatorizados, con un enfoque cuantitativo; En el área de medicina y autores con titulación doctoral. **Consideraciones finales:** la producción científica sobre el tema, aunque aún incipiente en el ámbito de la educación física, muestra la relevancia de la actividad física para la prevención de caídas y el creciente interés de directivos, investigadores y profesionales.

**DESCRITORES:** Actividad física; Accidentes por Caídas; Prevención de Accidentes; Promoción de la Salud ; Ancianos.

## INTRODUCTION

From a biological standpoint, aging is a consequence of the progressive accumulation of molecular and cellular changes, which generates a gradual decline in physical and mental capacities and an increased risk for the development of diseases.<sup>1</sup>

Although the aging process is seen as something natural, with this process, functional and structural changes may arise, leading to a decline in health, sexuality, body changes, isolation, and a decrease or loss of activity.<sup>2</sup> It should be noted that with aging and with the physiological changes typical of this phase, there is an increase in the number of traumas due to external causes, especially falls among the elderly.<sup>3</sup>

As age advances, there is an increase in the number of deaths and hospitalizations due to falls of the elderly, especially among those who are 80 years old or more. A study

investigated mortality from falls involving elderly people and showed that in Brazil, between 1997 and 2010, the number of deaths was 8,142,342, of which 50,348 (0.61%) were due to falls. Among the deaths, 50.6% occurred among those are 80 years old or more. Thus, strategies to decrease and prevent the incidence of falls among the elderly are necessary.<sup>3</sup>

Accordingly, a more active lifestyle will favor, among other things, the increase in muscle mass, and consequently, the improvement in strength, balance, and functional capacity of this population.<sup>4</sup>

Given this framework, the performance of physical activities or exercises should be encouraged, as they allow the delay, reduction or reversal of the loss of functional capacity, the recovery of structural components and physical strength, and provide the elderly with autonomy in the development of daily activities and consequently improving the quality of life of this group. The increase in muscle strength from exercise can also decrease the number of falls, since it is associated with loss of muscle mass.<sup>5</sup>

For there to be possible maintenance of functional independence, physical activity must be present in the lives of these individuals, as this practice provides physical, psychological, and social benefits.<sup>6,7</sup> So, given the relevance of physical activity to prevent falls of the elderly, it was considered opportune to explore the subject, using the method of bibliometrics, in national and international literature.

Therefore, this research sought to answer the following guiding question: What are the bibliometric indicators of scientific productions distributed in online journals that address physical activity and the prevention of falls involving elderly? Considering the aforementioned, this study meant to analyze the bibliometric indicators of scientific production made available in journals addressing physical activity and the prevention of falls towards the elderly population.

## METHODS

This is a bibliometric study. Bibliometric research allows the dissemination of scientific knowledge in the area studied, as well as an evaluation of the productivity and quality of research by the actors (authors/researchers).<sup>8</sup>

It should be noted that bibliometric indicators are used to assess the results of investments in research, production of scientific articles, patents, and to answer questions about the impact of research in the scientific community.<sup>9</sup>

For the operationalization of this study, three operational steps were considered.<sup>10</sup> In the initial stage, a bibliographic survey was carried out about scientific productions on physical activity and the prevention of falls involving elderly people and the selection of the sample.

For that, a search was performed in the database of *Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS)* [Latin American and Caribbean Literature in Health Sciences] and *Medical Literature Analysis and Retrieval System Online (MEDLINE)*.

It is worth mentioning that health terminology was used through the Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH). Subsequently, the descriptors

“physical activity for elderly” and “accidental falls”, “physical activity” and “aging” were identified and combined with the Boolean operator AND. So, it was possible to identify 66 publications.

For sample selection, the following inclusion criteria were listed: studies in the form of articles, available in full, that addressed physical activity and fall prevention involving elderly people, published between 2007 and 2017, in Portuguese and English.

A total of 23 studies were excluded, as they did not meet the proposed criteria. Therefore, the study sample consisted of 43 works that were organized and grouped in folders and named according to the databases in which they were located.

In the second stage, the data was collected and organized. Data collection took place from June 2018 to July 2018, which consisted of data collection, using a structured script, containing the following information: journal name, year, database, academic background of the authors, type, study design and approach, research location, and keywords.

Regarding the third stage, this consisted of the presentation and analysis of the data. Accordingly, the treatment of the data was performed, by calculating the simple and relative

frequencies, using the Microsoft Office Excel® 2010 program as a tool. After this procedure, data were analyzed in the light of the literature relevant to the investigated theme.

A concept map was used to organize the keywords. Concept maps are schematic structures represented by a set of ideas and concepts, from the most comprehensive to the least inclusive, organized in order to present the knowledge exhibition more clearly, and organize it to simplify and order the contents that will be approached, visualized and analyzed in depth and in length, using the Cmap Tools® software.<sup>11</sup>

Hence, the concept map was considered as a highly relevant strategy to portray the keywords cited in the articles selected for the study.<sup>12</sup> Identified by conceptual thematic affinity, the keywords were grouped from the main one - physical activity -, as it is one of the themes of the study, and systematically organized into thematic classes, but not hierarchically.

## RESULTS AND DISCUSSION

The sample consisted of 43 articles about physical activity about fall prevention involving elderly people. These articles will be presented in **Table 1**.

**Chart 1** - Distribution of studies according to title, journal, and database. João Pessoa, PB, Brazil, 2018

Title	Journal	Author/year	Database
Comparative analysis of old people practicing physical exercises and sedentary ones regarding the risk of falling	<i>O Mundo da Saúde</i>	Padoin et al. (2010)	LILACS
Analysis of the influence of physical exercise on balance, motion and activity of daily living in elderly people	<i>Revista Brasileira de Geriatria e Gerontologia</i>	Figliolino et al. (2009)	LILACS
Physical fitness and incidence of falls in elderly practitioners of physical exercise	<i>Revista Brasileira de Atividade Física e Saúde</i>	Streit et al. (2011)	LILACS
Whether or not to affiliate stretching with resistance training to improve equilibrium in the elderly?	<i>Acta Fisiátrica</i>	Gomes et al. (2016)	LILACS
Physical activity and prevalence of falls among elderly living in Southern Brazil	<i>Revista Brasileira de Geriatria e Gerontologia</i>	Benedetti et al. (2008)	LILACS
Evaluation of physics capacity and falls in elderly active and sedentary of community	<i>Revista Brasileira de Clínica Médica</i>	Silva et al. (2010)	LILACS
Isokinetic muscle function comparison of lower limbs among elderly fallers and non-fallers	<i>Fisioterapia &amp; Pesquisa</i>	Jacquemin (2012)	LILACS
Consequences of falls in older people living in the community	<i>Revista Brasileira de Geriatria e Gerontologia</i>	Maia et al. (2011)	LILACS
Effects of different methods of physical training and the habit of walking on functional balance of elderly	<i>Fisioterapia em Movimento</i>	Helrigle et al. (2013)	LILACS
Effects of resistance, balance and stretching on functional mobility in elderly with low bone mass	<i>Revista Brasileira de Atividade Física e Saúde</i>	Moura et al. (2012)	LILACS
Effects of physical activity on cognitive functions, balance and risk of falls in elderly patients with Alzheimer's dementia	<i>Revista Brasileira de Fisioterapia</i>	Hernandez et al. (2010)	LILACS
Effects of a back-school program on the balance and coordination of non-institutionalized elderly people	<i>Fisioterapia Brasil</i>	Santos et al. (2008)	LILACS
Physical exercises to prevent falls: a clinical trial with institutionalized elderly in the city of Goiânia in Brazil	<i>Ciência &amp; Saúde Coletiva</i>	Sá et al. (2012)	LILACS

Title	Journal	Author/year	Database
Effects of a whole-body vibrating platform on postural balance in elderly persons	<i>Acta Fisiátrica</i>	Silva et al. (2011)	LILACS
Effects of physical training on gait performance and functional mobility in elderly	<i>Fisioterapia e Movimento</i>	Fernandes et al. (2012)	LILACS
Study of relationship between level of physical activity and risk of falls in older women	<i>Fisioterapia e Pesquisa</i>	Silva et al. (2011)	LILACS
Physical exercise, functional mobility, balance, functional capacity and falls in elderly	<i>Conscientiae Saúde</i>	Accioly et al. (2011)	LILACS
Physical exercise for preventing falls in elder people living in the community	<i>Revista Brasileira de Medicina da Família e Comunidade</i>	Bento et al. (2017)	LILACS
Elderly fallers and non-fallers: physical fitness and falls prevalence	<i>Conscientiae Saúde</i>	Gonçalves et al. (2017)	LILACS
Implications of regular exercise on postural control in the elderly	<i>Estudos Interdisciplinares e sobre o envelhecimento</i>	Ceccon et al. (2015)	LILACS
March and balance in institutionalized elderly: evaluation pre and post exercises program	<i>Revista Kairós Gerontologia</i>	Szydoski et al. (2015)	LILACS
Fear of falling and physical performance in elderly practitioners of physical activity	<i>Revista de Educação Física UEM</i>	Hauser et al. (2015)	LILACS
Fear of recurrent falls and associated factors among older adults from Florianópolis, Santa Catarina State, Brazil	<i>Caderno de Saúde Pública</i>	Antes et al. (2013)	LILACS
Physical activity level, accidental falls and associated-psychosocial factors in senior citizen centers	<i>Revista Brasileira de Geriatria e Gerontologia</i>	Rogatto et al. (2011)	LILACS
Gait pattern, prevalence of falls and fear of falling in active and sedentary elderly women	<i>Revista Brasileira de Medicina do Esporte</i>	Abdala et al. (2017)	LILACS
Does usual practice of physical activity affect balance in elderly women?	<i>Fisioterapia em Movimento</i>	De Freitas et al. (2013)	LILACS
Quality of life in elderly people that have suffered falls: integrative literature review	<i>Ciência e Saúde Coletiva</i>	Nocolussi et al. (2012)	LILACS
Timed up and go test: a comparison between values obtained outdoors and indoors	<i>Fisioterapia em Movimento</i>	Paula et al. (2007)	LILACS
Neuromotor training on gait pattern and mobility of ankles in older people	<i>Revista Brasileira de Promoção da Saúde</i>	Lima et al. (2015)	LILACS
A 2-Year Follow-Up After a 2-Year RCT with Vitamin D and Exercise: Effects on Falls, Injurious Falls and Physical Functioning Among Older Women	The Journals of Gerontology	Uusi-Rasi et al. (2017)	MEDLINE
Aerobic-synergized exercises may improve fall-related physical fitness in older adults	The Journal of Sports Medicine and Physical Fitness	Chang et al. (2017)	MEDLINE
Attitudes of older people with mild dementia and mild cognitive impairment and their relatives about falls risk and prevention: A qualitative study	Journal pone	Peach et al. (2017)	MEDLINE
Cost-effectiveness of vitamin D supplementation and exercise in preventing injurious falls among older home-dwelling women: findings from an RCT	Osteoporosis International	Patil et al. (2016)	MEDLINE
Does vibration training reduce the fall risk profile of frail older people admitted to a rehabilitation facility? A randomised controlled trial	Journal Disability and Rehabilitation	Parsons et al. (2016)	MEDLINE
Effect of Exercise and Cognitive Training on Falls and Fall-Related Factors in Older Adults with Mild Cognitive Impairment: A Systematic Review	Archives of Physical Medicine and Rehabilitation	Lipardo et al. (2017)	MEDLINE

Title	Journal	Author/year	Database
Effects of a chair-yoga exercises on stress hormone levels, daily life activities, falls and physical fitness in institutionalized older adults	Complementary Therapies in Clinical Practice	Furtado et al. (2016)	MEDLINE
Effects of WiiActive exercises on fear of falling and functional outcomes in community-dwelling older adults: a randomised control trial	Age and Aging	Kwok et al. (2016)	MEDLINE
Evaluation of a combined cognitive-behavioural and exercise intervention to manage fear of falling among elderly residents in nursing homes	Journal Age and Mental Health	Huang et al. (2016)	MEDLINE
Exercise for reducing fear of falling in older people living in the community: Cochrane systematic review and meta-analysis	Age and Aging	Kumar et al. (2016)	MEDLINE
Gender perspectives on views and preferences of older people on exercise to prevent falls: a systematic mixed studies review	BMC Geriatrics	Sandlund et al. (2016)	MEDLINE
Home-based Tai Chi Chuan May Reduce Fall Rate Compared to Lower Extremity Exercise Training in Older Adults with History of Falls	Explore The Journal of Science and Healing	Glickman et al. (2017)	MEDLINE
Reducing falls among older people in general practice: The ProAct65+ exercise intervention trial	Archives of Gerontology and Geriatrics	Gawler et al. (2016)	MEDLINE
The Role of Physical Activity and Physical Function on the Risk of Falls in Older Mexican Americans	Journal Aging Phys Act	Lewis et al. (2016)	MEDLINE

Concerning databases, 29 (67.4%) published articles were available at LILACS, and 14 (32.6%) at MEDLINE. About the LILACS database, it covers publications from the countries of Latin America and the Caribbean, and comprises the scientific production related to Health Sciences, published in the countries of that region, since 1982.<sup>13</sup>

As shown in **Chart 1**, it is possible to verify that the Journal that got the most prominence in the publications on physical activity and the prevention of falls involving elderly people, was in the area of Geriatrics and Gerontology, the *Revista Brasileira de Geriatria e Gerontologia*; and in the area of Physiotherapy, the Journal *Fisioterapia Movimento*, with four (9.3%) studies, each; followed by the *Revista Brasileira de Atividade Física e Saúde*, *Acta Fisiátrica*, *Fisioterapia e Pesquisa*, *Ciência e Saúde Coletiva*, *Conscientiae Saúde*, *Age and Aging* with two (4.6%) each. Regarding the *Revista Brasileira de Geriatria e Gerontologia*, it is published bimonthly and specializes in issues inherent to human aging. While the Journal *Fisioterapia em Movimento* is published quarterly and publishes studies developed in Physiotherapy and Health Postgraduate Programs. Among the emphasized areas of the Journals, Geriatrics and Gerontology and Sports Physiotherapy are

highlighted. Both involve the research topic and justify the number of productions on the topic.

Although physical activity is one of the research themes, there was an incipient production on the subject in the area of Physical Education, considering that only the *Revista Brasileira de Atividade Física e Saúde* and the *Revista de Educação Física* presented studies that addressed the theme, revealing the need for more research in the area and more space in physical education journals to disseminate such important content for health promotion among the elderly.

Concerning studies according to the year of publication, there was a predominance of studies published in 2016 four (9.3%) and 2017 nine (21.0%), followed by six (14%) in 2011; 2010, 2012, 2015 with four (9.3%), respectively; 2013 three (6.9%), 2009 two studies (4.6%); in 2007, 2009 only one (2.3%) respectively, and 2014 no study was found.

Given the data presented, it is emphasized that after mentioning the World Health Organization about active aging as a health policy and the prevention of falls by activity,<sup>14</sup> there was a significant increase in publications on physical activity and the prevention of falls involving elderly people. From 2007 to 2010 there was a small increase, whereas from 2016 to 2017 there was a larger one.

**Table 1** - Distribution of studies according to the type, design and approach of the study. *João Pessoa City, Paraíba State, Brazil, 2018*

Type of study	N	%
Review	10	23
Original	33	77
Reflective	-	-
<b>Total</b>	<b>43</b>	<b>100</b>
<b>Research design</b>		
Descriptive	06	14.0
Randomized clinical trial	12	28.1
Experimental analytics	01	2.3
Non-randomized clinical trial	01	2.3
Transversal	07	16.3
Qualitative review	10	23.0
Uninformed	06	14.0
<b>Total</b>	<b>43</b>	<b>100</b>
<b>Study approach</b>		
Quantitative	33	77
Qualitative	10	23
<b>Total</b>	<b>43</b>	<b>100</b>

Most of the studies were of the original type, with randomized clinical trial design and a quantitative approach. Although the majority of studies are of a randomized clinical trial design, the presence of qualitative, cross-sectional, and descriptive studies, totaling, are highlighted.

In the experimental studies, an experiment is carried out, in which the group in which the experiment will be realized is compared with the control group, this allocation of subjects can occur randomly and without the participation of the researcher, as it occurs in randomized and non-randomized studies as in non-randomized or quasi-experimental studies.<sup>15</sup>

Quantitative studies showed prominence among the research approaches of scientific productions on the subject, when compared to qualitative ones since most studies try to quantify the decrease in the number of falls by the practice of physical activity, through different strategies.

Recognizing the changing nature of science leads us to the need to continue to employ quantitative research, whenever necessary, however, other approaches may be adopted and added to quantitative research to provide greater scientific evidence, thus contributing to the health target population.<sup>16</sup>

Given the above-mentioned, it is argued that there is a need to carry out mixed research, not present here, and whose complementary approaches can help the researcher to better understand the investigated problem and achieve more solid results. This method involves quantitative, qualitative inductions and meta-inferences (quantitative and qualitative), to allow joint analysis of quantitative and qualitative data, thus being the best method to address any research problem.<sup>17</sup>

Concerning the authors' academic degrees, the majority are doctors 33 (76.8%), followed by masters seven (16.3%), and specialists three (6.9%). Regarding the training area, there was a predominance of doctors 15 (35.1%); physical therapists 14 (32.7%), physical educators 10 (23%); nurses three (6.9%), and nutritionists one (2.3%).

It was observed that doctors and physiotherapists published a good proportion of studies on the subject, as they are professions that can help the elderly to prevent falls and also help in their recovery. Followed by Physical Education professionals, for putting physical exercise as an ally in preventing falls involving elderly people.

With regard to the authors' academic degrees, most hold a PhD. According to Rodrigues et al.<sup>18</sup> with the demand of the marketplace, professionals have sought to qualify more and more. So, it is no different in the area of health, mainly because science brings constant updates, consequently, postgraduate professionals seek improvement in their area and publish more, especially those with PhD.

**Table 2** - Distribution of studies according to the authors' geographical origin. *João Pessoa City, Paraíba State, Brazil, 2018*

Geographical origin	N	%
<b>South</b>		
<i>Santa Catarina</i>	04	13.8
<i>Paraná</i>	03	10.4
<i>Rio Grande do Sul</i>	08	27.6
<b>Southeast</b>		
<i>São Paulo</i>	05	17.3
<i>Minas Gerais</i>	02	6.8
<i>Rio de Janeiro</i>	04	13.8
<b>Midwest</b>		
<i>Goiás</i>	02	6.8
<b>Northeast</b>		
<i>Paraíba</i>	01	3.5
<b>Total</b>	<b>29</b>	<b>100</b>
<b>International</b>		
Finland	01	7.1
China	01	7.1
United Kingdom	02	14.5
New Zealand	01	7.1
Republic of the Philippines	01	7.1
Portugal	01	7.1
Singapore	01	7.1
USA	04	28.7
Australia	01	7.1
Sweden	01	7.1
<b>Total</b>	<b>14</b>	<b>100</b>

There is a greater predominance, in the national scenario, of publications in the South and Southeast regions, with emphasis on *Rio Grande do Sul* State eight (27.6%) studies and *São Paulo* State five (17.3%) publications. These are highly developed regions, which stand out for having great reputable universities in the country and recognized nationally and internationally. Besides, it is an area of great technological

development, consequently encouraging research, which may justify further publication in those regions. Internationally, the countries that presented the most scientific productions were the United States of America (USA) and United Kingdom research.

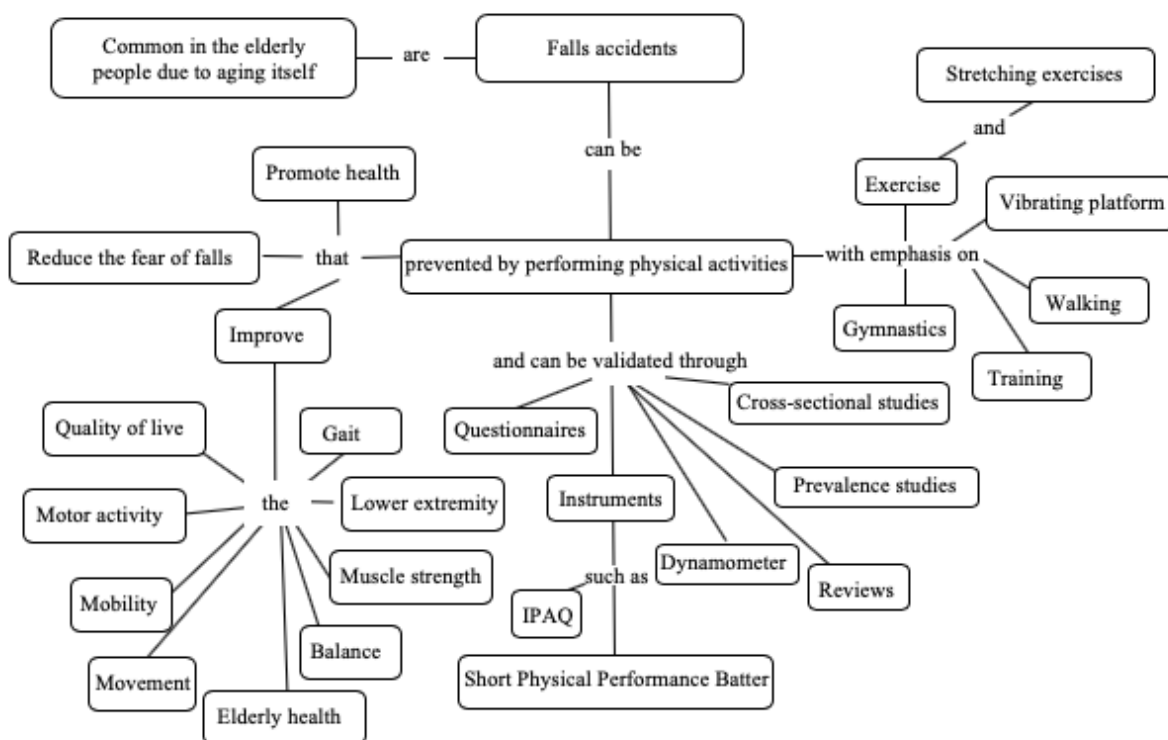
The incidences of keywords according to the studies are presented in **Table 2**.

**Chart O2** - Distribution of studies according to the keywords. *João Pessoa* City, *Paraíba* State, Brazil, 2018

Keyword	Incidence	Keyword	Incidence
Elderly	39	Fear of falling	01
Accidental falls	11	Stratified sampling	01
Postural balance	08	Muscle strength dynamometer	01
Aging	06	Cross-sectional studies	01
Exercise	06	Muscle Stretching Exercises	01
Motor activity	05	Bottom end	01
Physical exercise	05	IPAQ	01
Falls	05	Movement	01
Physical activity	04	Prevalence	01
March	04	Accidents prevention	02
Quality of life	04	Health promotion	01
Elderly health	03	Questionnaires	01
Muscle strength	02	Review	01
Physical aptitude	01	Institutionalized elderly health	01
Body balance	01	Vibration/therapeutic use	01
Balance	01	Health services for the elderly	01
Walking	01	Short Physical Performance Batter	01
Gymnastics	01	Exercise Therapy	01
Locomotion	01	Training	01
Fear	01	<b>Total</b>	<b>129</b>

From the analysis of keywords emerged the concept map shown in **Figure 1**.

**Chart 02** - Distribution of studies according to the keywords. *João Pessoa* City, *Paraíba* State, Brazil, 2018



Considering the keywords, the most prevalent in the studies were: elderly people, accidental falls, postural balance, aging, and exercises.

A study by Alves et al.<sup>19</sup> on the occurrence of falls among institutionalized elderly with 15 who suffered falls in a long-term institution in *João Pessoa* City, *Paraíba* State, revealed that 80% of the elderly in the study had suffered three or more falls, the main cause was weakness, disturbances of balance and gait, most of them presented serious injuries and/or fractures. The same study found that 73.3% of the elderly practiced some type of physical activity such as walking and dancing.

Corroborating a descriptive study carried out with 28 elderly people participating in a physical activity program at the *Universidade de Santa Catarina*. This revealed that 50% of the elderly had already suffered two or more falls.<sup>20</sup>

The practice of physical activity is essential to strengthen the physical mobility of the human body, improve posture, and consequently reduce the risk of falls.<sup>18</sup> In this perspective, and intending to investigate the relationship between the levels of physical activity and the prevalence of falls among elderly people living in the *Florianópolis* city, *Santa Catarina* State, of probabilistic sampling with 875 elderlies, the study by Benedetti et al.<sup>21</sup> identified that the elderly considered more active in both sexes, fell more frequently.

Bearing the aforesaid in mind, the practice of physical activity by elderlies should be monitored by a professional to avoid harming their health and risking falls.

## FINAL CONSIDERATIONS

Herein, it was possible to verify that the publications about physical activity as fall prevention directed to the elderly person present a significant amount, considering the investigated period. Thus, there is an interest in researchers to disseminate their studies related to the elderly who perform physical activity, with an emphasis on preventing falls from articles originating from original researches in both national and international journals, especially in the Physical Education area.

Based on the findings of this study, it is considered that bibliometric research is a method of great importance, since it made it possible to highlight relevant characteristics about the study publications, with an emphasis on data related to journals, authors, and investigated works.

Hence, it is suggested that further studies be carried out using bibliometric research as a method of investigation, so that other indicators can emerge to raise the expansion of knowledge about the practice of physical activity such as falls prevention directed to elderly people.



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Received in: 17/09/2018

Required revisions: 19/03/2019

Approved in: 18/05/2019

Published in: 15/03/2021

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Disclosure: The authors claim to have no conflict of interest.