

Review article

The influence of physiotherapy in long stay institutions: an integrative review

A influência da fisioterapia em instituições de longa permanência: uma revisão integrativa

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Abstract

Objective: Analyzing the influence of physiotherapy practiced within LSIE's in the life of the institutionalized elderly person. **Data sources:** This is an integrative literature review conducted through the Virtual Health Library and PubMed databases, from September to November 2019. The descriptors used were: "physiotherapy", "elderly" and "institutionalization". Inclusion criteria were articles that addressed physiotherapy in LSIE's; articles published in Portuguese, English and Spanish; articles published between 2012 and 2019 that have done research in Brazil. Exclusion criteria were repeated articles in the search; articles that did not address physiotherapy in LSIE's as the main theme; literature review articles, dissertations and theses. The final sample consisted of five articles that evaluated physiotherapy in long-term care facilities. **Conclusion:** Most studies addressed the improvement of patients undergoing physiotherapy. It was possible to show that, when proposing measures for strengthening and double-task exercises, patients showed improvement in scores, but most of the elderly studied had physiotherapy due to some dysfunction, not being applied to physiotherapy from prevention to health promotion.

Keywords: physiotherapy; elderly; institutionalization.

Resumo

Objetivo: Analisar a influência da fisioterapia praticada dentro de ILPI's na vida da pessoa idosa institucionalizada. **Fonte de dados:** Trata-se de uma revisão integrativa da literatura conduzida por meio das bases de dados Biblioteca Virtual em Saúde (BVS) e PubMed, no período de setembro a novembro de 2019. Os descritores utilizados foram: "fisioterapia", "idoso" e "institucionalização". Os critérios de inclusão foram: artigos que abordaram a fisioterapia em ILPIs; artigos publicados em português, inglês e espanhol; artigos publicados entre 2012 a 2019 e que tenham feito a pesquisa no Brasil. Os critérios de exclusão foram: artigos repetidos na busca; artigos que não abordaram a fisioterapia em ILPIs como tema principal; artigos de revisão de literatura, dissertações e teses. A amostra final foi composta por cinco artigos que avaliaram a fisioterapia nas instituições de longa permanência. **Conclusão:** Os estudos abordaram em sua maioria a melhora dos pacientes submetidos à realização de fisioterapia. Foi possível evidenciar que ao propor medidas para fortalecimento e exercícios em dupla tarefa os pacientes apresentaram melhora nos escores, porém a maioria dos idosos estudados faziam fisioterapia devido à alguma disfunção, não sendo aplicada a fisioterapia desde a prevenção até a promoção de saúde.

Palavras-chave: fisioterapia; idoso; institucionalização.

Introduction

Aging is a natural process that involves neurobiological, structural, functional, chemical and psychosocial changes. Environmental and personal factors are also directly associated with healthy aging of the elderly.¹ The constant change in the age structure of the world population has been a major theme, since one of the major challenges is to provide active aging with quality of life. It is estimated that by 2050, 15% of the Brazilian population will be 70 or older.²

The increase in this population generates concern in many families. Many elderly people find themselves with poor health, socioeconomic problems, family conflicts, low pay and other factors that contribute to families referring the elderly to nursing homes, geriatric institutions or entities called the Long-Stay Institution for the Elderly (LSIE's).³

The LSIE's are government or non-governmental institutions of residential character, intended to be collective homes of people aged 60 or older.⁴ The institutionalization of the elderly has become increasingly common, many families resort to this measure because they do not have time to care for the elderly or, still, because they do not have affective ties. There are also the elderly who do not have a family and, therefore, seek institutions to have social interaction or for not being able to perform activities of daily living (ADLs) without assistance.^{5th}

With aging, alterations inherent to the behavior and physical capacity of the elderly appear, such as imbalance, decreased muscle strength, reduced bone mass and difficulty in performing ADLs.⁶ The active and healthy aging of the living old person in an LSIE's makes a difference when the institution offers ample space and suitable for special needs, which should include physical therapy assistance.⁷

Physiotherapy, in a context of LSIE, aims to preserve motor functions, treat changes and symptoms from the presented pathology, prevent deformities and immobility, improve the functionality of the elderly, thus avoiding new deformities and loss of functional capacity.⁸

Physiotherapy plays an important role in the lives of the elderly, especially in those with chronic degenerative diseases associated with the aging process itself. For more active and healthy aging, physiotherapy

contributes by restoring and/or maintaining the highest level of motor function and physical independence possible of the elderly patient. In the elderly person, the practice should be continued, preventing the patient from acquiring new dysfunctions, maintaining functional capacity.⁹

In this sense, the focus of this study converges to studies that investigated the performance of physiotherapy in a context of LSIE. Thus, it aimed to analyze the influence of physiotherapy practiced within LSIE's on the life of the institutionalized elderly person.

Materials and Methods

This is an integrative review of the literature. This type of research refers to a broad methodological approach, which allows including studies with different methodological designs¹⁰

The elaboration of the guide question is the first stage for which the included studies will be defined, the forms for identification and the information collected from the selected studies. The question that guide this review is: What is the influence of physiotherapy practiced within LSIE's on the life of the institutionalized elderly person?

The search was conducted by two independent researchers and compared the results in the following databases: Virtual Health Library (VHL) and PubMed of the United States National Library of Medicine. The descriptors used in Portuguese were "physiotherapy", "elderly" and "institutionalization". In English they were "physiotherapy", "elderly" and "institutionalization". In Spanish language were "physiotherapy", "ancianos" and "institucionalización".

Inclusion criteria were articles that addressed physiotherapy in LSIEs; articles published in Portuguese, English and Spanish; articles published between 2012 and 2019 and that have done the research in Brazil. Exclusion criteria were repeated articles in the search; articles that did not address physiotherapy in LSIEs as the main theme; literature review articles, dissertations and theses.

A critical analysis of the included studies was performed. In this phase, the characteristics of the studies were organized, evaluating the methods and results. Next, the interpretation of the studies and a synthesis of the results found, being made the comparison of the selected data. The flowchart represented in Figure 1 presents all the steps for the final selection of articles.

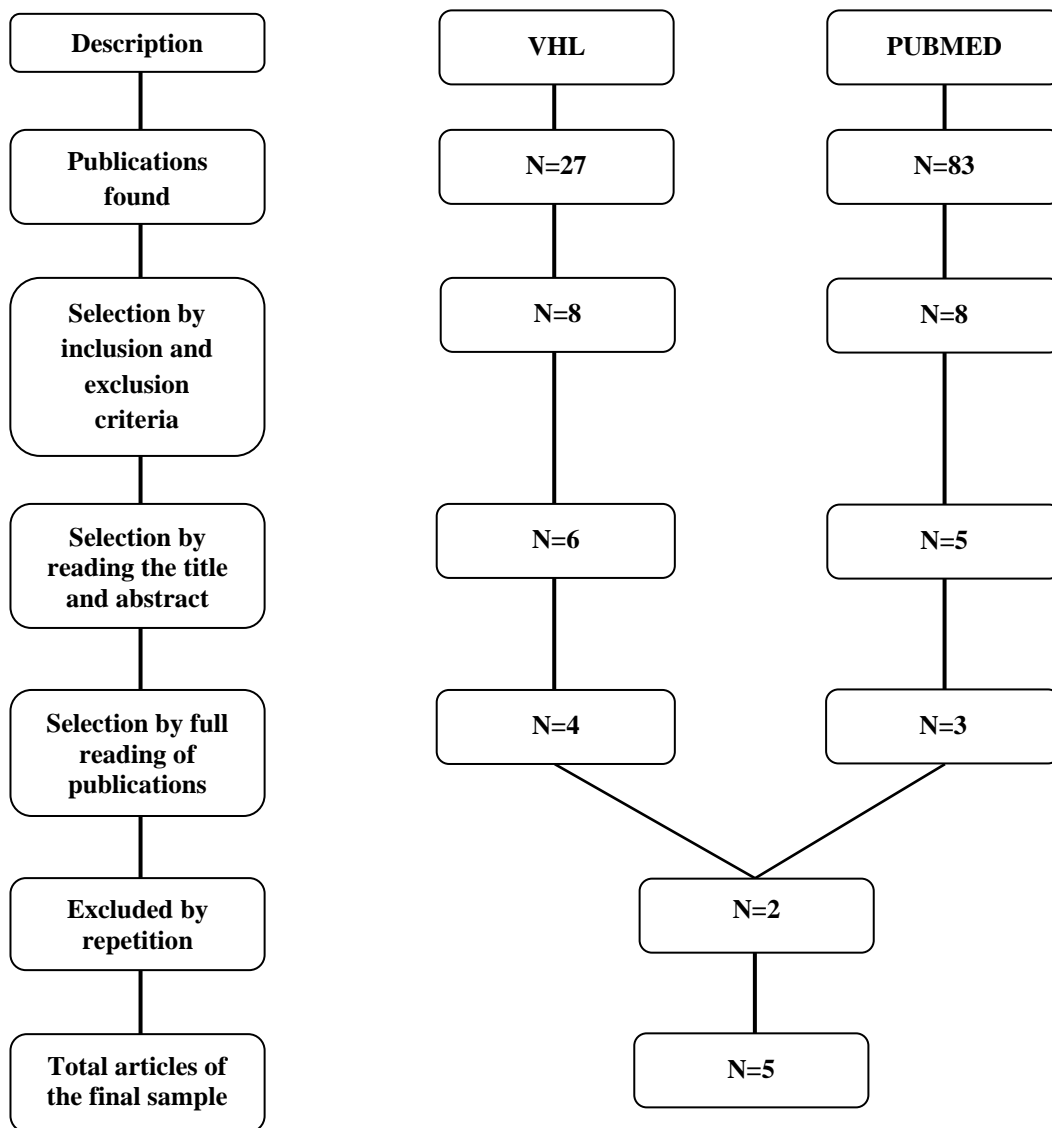


Figure 1. PRISMA flowchart with the results of the selection of the articles

Results

Five articles that evaluated institutionalized elderly who underwent physiotherapy were included in the sample of this review. All articles were published in Portuguese, in 2012, 2013, two in 2016 and 2017.

The studies use assessment instruments such as: the Berg Balance Scale (BBS), Tinetti tests, Time Up and Go (TUG), Functional Anterior Range (FAR), International Physical Activity Questionnaire (IPAQ), Single-Legged Support Test, sitting and getting up, motor

and cognitive dual task test, mini mental state examination, verbal fluency test, Barthel scale and Pfeffer index.

Only one article evaluated cardiorespiratory physiotherapy, being submitted to the following tests: evaluation of respiratory muscle strength by means of the manovacuometer and expiratory flow through peak flow, after evaluation the elderly were submitted to the use of inspiratory incentive (Respiron), expansive manual techniques and inspiratory incentive. Table 1 shows the summary of the data extracted from the articles.

Table 1. Presentation of the summary of the data extracted from the articles

Authors	Title	Journal	Type of study
(RIBAS et al., 2012) ¹¹	Profile of Elderly People Assisted by Physiotherapy in Long-Term Care Institutions in Pindamonhangaba – SP.	UNOPAR Scientific. Biological and Health Sciences	This is a descriptive study. The convenience sample consisted of thirty elderly people assisted by physiotherapy in two LSIEs in the city of Pindamonhangaba/SP.
(OLIVEIRA et al., 2013) ¹²	Effects of the expansive and respiratory-encouraging technique on respiratory muscle strength in institutionalized elderly.	Physiotherapy on the Movement	Longitudinal study, control case conducted in an institution in the city of Curitiba (PR), with 16 male individuals (70 to 80 years old).
(MENEZES et al., 2016) ¹³	Effectiveness of a cognitive-motor physical therapy intervention in institutionalized elderly with mild cognitive impairment and mild dementia.	Science & Public Health	This is a quantitative clinical trial research with two independent groups: experimental group (EG) and control group (CG).
(DIAS; SILVA; PIAZZA, 2016) ¹⁴	Balance, functional mobility and level of physical activity of institutionalized elderly who perform and do not perform physiotherapy.	ConScientiae Health	Cross-sectional, descriptive and comparative study.
(SILVA; DIAS; PIAZZA, 2017) ¹⁵	Performance in single and double tasks activities of institutionalized elderly who perform and do not perform physiotherapy.	Physiotherapy and Research	Cross-sectional, descriptive and comparative study.

Discussion

Among the five articles in the final sample, it was identified that the total number of patients who were part of the investigations were 181 elderly who were institutionalized. The age range ranged from 60 to 80 years old and both men and women living in some LSIE were surveyed. In general, the physiotherapeutic interventions were satisfactory.¹¹⁻¹⁵

Two studies of the same authors were conducted at different times with elderly participants in LSIE's. The first study was published in 2016, in which they aimed to compare institutionalized elderly who performed and did not perform physiotherapy, evaluating balance by EEB, risk of falls and independence by the Tinetti Test, functional mobility by TUG and the level of activity of the elderly by IPAQ. Another test that the authors used was the TAF that determines the elderly's ability to move within the stability limit, as well as the risk of falls.¹⁴

In the evaluation of balance, functional mobility and independence of the elderly, the study showed, even without significant differences, that the group that did not perform physiotherapy presented higher scores in the tests, since the elderly who did not perform physiotherapy were more active than the elderly who underwent physiotherapy. In the evaluation of TAF, the group that underwent physiotherapy presented lower range compared to the other group, indicating low risk of falls, which caused strangeness according to the history of falls of the elderly.¹⁴

The authors concluded that the elderly who underwent physiotherapy in the LSIE's evaluated, for the most part, gave priority to the elderly with functional

impairments, which may justify the results of the tests in relation to the other group of elderly. They also emphasize the importance of physiotherapy in health promotion and prevention to ensure greater functional independence for the elderly.¹⁴

The second study of these authors was published in 2017, in which they evaluated in the LSIEs the performance of simple and double-tasking activities in the elderly who perform and did not perform physiotherapy. The simple tasks were being single-legged support, walking along the corridor, going up and down one step, being timed the time and duration of each movement. As double activities were the same task as the simple, however, associated with holding a glass with water (double motor task), speaking the days of the week in reverse (double cognitive task) and holding a glass with water saying the days of the week in reverse (double motor and cognitive task).¹⁵

No significant differences were observed in the single-legged support tasks between the two groups evaluated. However, the greater the complexity of the task, the more difficulties were presented by the elderly, consequently decreasing the speed in performing the tasks. When the physiotherapy investigation focused on the activity of climbing and descending the step it was reported that the group that did *physiotherapy* was able to perform the task more often than the group that did not do physiotherapy, a fact that can be justified by the exercises of strengthening the lower limbs performed in the physiotherapy sessions.^{15th}

Thus, it also occurred with the activity of sitting and getting up from the chair, no significant differences

were recorded. However, the group that underwent physical therapy was able to perform the activities more often, even reducing performance by adding double cognitive motor tasks. The authors suggest that physical therapists add activities that include dual tasks to the treatment program, in view of improving functional mobility as well as reducing the risk of falls during ADLs.^{15th}

In this study, the BSE Scale, the TUG, the Mini Mental State Examination, Verbal Fluency Test and Frontal Evaluation Battery were used to analyze cognitive functions, to verify mobility, using the Barthel Scale and the Pfeffer Index to assess functional independence. The study included 15 elderly people, divided into an experimental group with N=7 and a control group with N=8, the experimental group participated in exercises with cognitive-motor stimulation for 4 months with the frequency of a weekly session with one hour of duration, and the control group was followed up without intervention. It was evidenced by the significant differences in mobility, but in the cognitive function and functionality of the elderly was not effective. The authors concluded that the intervention was not effective, but also highlighted that this may be the fact of the time and the low weekly frequency of the intervention.¹³

In one research, the Mini Mental State Examination, the TUG and other tests were used: the Geriatric Depression Scale (GDS -15) instrument that assesses depression in the elderly, functional capacity was measured by the Multidimensional Functional Assessment Questionnaire of the Elderly (OARS) and muscle strength was evaluated by the Daniels and Worthingan technique, the muscles were graduated according to the Kendal scale ranging from zero to five. The balance was evaluated by the Balance Scale.¹⁴ It showed many falls, and 66% of them occurred within the institution. According to the Mini Mental State Examination, most of the elderly presented positive data for cognitive deficit, as well as a difficulty of the elderly in performing ADLs. The TUG test and the Balance Scale showed impaired mobility and high risk of falls. The elderly in this study presented high levels of depressive symptoms.¹¹

According to the studies analyzed above, physiotherapy is not yet applied in all patients in the institutions, leaving it exclusive to patients with higher motor deficit. Thus, it is important to highlight the importance of physiotherapy in the promotion and prevention of the health of these elderlies. Another interesting fact was the rate of falls in the institutions, when analyzing these data, when the elderly change the environment that is adapted in addition to generating in some depressive symptoms, the non-familiarization with the space harms the cognitive system and the motor of these patients, being important physiotherapy from the moment of the institutionalization of the elderly.^{11,13-15}

The only study in the sample that addressed respiratory physiotherapy aimed to evaluate maximal inspiratory pressure, maximal expiratory pressure and

peak expiratory flow of institutionalized elderly before and after the application of expansive manual techniques and flow-oriented respiratory incentive (Respiron). The participants were 16 male patients, using a manovacuometer to evaluate respiratory muscle strength by means of inspiratory and maximum expiratory pressure. The peak expiratory flow was evaluated by *peak flow*, which evaluates the speed of air outlet from the lungs. The elderly were divided into groups and submitted to the use of the inspiratory incentive (Respiron) and expansive techniques (diaphragmatic exercises and compression/decompression, expansive manual techniques and inspiratory incentive).^{12th}

An improvement in inspiratory muscle strength was observed, as in expiratory muscles, in relation to inspiratory muscle strength and peak expiratory flow, compression and decompression techniques and diaphragmatic exercises performed well. The expiratory musculature of the group highlighted is what made the use of Respiron. The study presented satisfactory results with the application of pulmonary expansion techniques and the use of Respiron, and strength gain can be observed both in the isolated and Respiron-associated techniques.^{12th}

The research presented in this review shows the scarcity of research on physiotherapy in LSIE's. It demonstrates an absence of this professional in these institutions, as well as an absence of interest on the part of Brazilian researchers on the subject. The number of studies in the final sample reflects this lack well but reinforces the need for physiotherapy to turn a look at the old person living in LSIE's.

Conclusion

According to the studies, physiotherapy in institutionalized elderly is not a practice that occurs from prevention to the treatment of their own injuries generated by aging. Most of the elderly evaluated who underwent physiotherapy were elderly people who had some dysfunction. And, when comparing the elderly who did physiotherapy, with the elderly who did not, some results showed that the elderly who did not do physiotherapy and were more active than the elderly who did had better scores. However, by proposing a specific treatment for these elderly and analyzing the data, a significant positive difference can be observed in those who performed the protocol of the field of the study.

Respiratory physiotherapy was satisfactory in the study, but no further studies were found to evaluate these patients, and further research addressing the effectiveness and importance of respiratory physiotherapy was interesting.

It is important to approach physiotherapy since prevention, thus improving the number of occurrences such as falls, a worrisome factor in the elderly. A healthy aging within an LSIE should be made possible by a multidisciplinary team, with physiotherapy having an important function in this context.

Conflict of interest: The authors stated that there was no conflict of interest.

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