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INTEGRATIVE LITERATURE REVIEW

MECHANICAL CONTAINMENT IN LONG-STAY INSTITUTIONS FOR THE ELDERLY CONTENÇÃO MECÂNICA EM INSTITUIÇÕES DE LONGA PERMANÊNCIA PARA IDOSOS CONTENCION MECÁNICA EN INSTITUCIONES DE LARGA PERMANENCIA PARA ANCIANOS

Rosimere Ferreira Santana¹, Romulo Delvalle², Lívia Maria da Silva Souza³, Arianna Kassiadou Menezes⁴, Cristiane da Silva Gabriel Capeletto⁵, Teresa Cristina Brasil Ferreira⁶, Uyara Garcia Melo⁷

ABSTRACT

Objective: to identify the use of mechanical restraint in long-stay institutions for the elderly. Method: this is a bibliographical study, type integrative review, in articles published from 2005 to 2015, in the Databases MEDLINE, LILACS, CINAHL and SCOPUS. The results are presented in figures. The results were discussed comparing the studies and conclusions with the literature. Results: 15 articles were published and the continent with the highest production was Europe, followed by North America and Asia. It was inferred that the most used forms were the containment with grids in the bed and the containment by the trunk in wheelchair, in older people, with high dependence and immobility, and the reason for the restraint, was mostly to prevent the risk of falls and institutional routine. Conclusion: it has been demonstrated that there is a high prevalence of mechanical restraint in long-stay institutions for the elderly, with high variability, and efforts have been made to avoid adverse events and improve the quality of care. The importance of studying the theme in the country and in the Latin American reality is reinforced. Descriptors: Physical Restriction; Institution of Long Stay for the Elderly; Geriatric Nursing; Health of the Elderly; Nursing Care; Health Services for the Elderly.

RESUMO

Objetivo: identificar o uso da contenção mecânica em instituições de longa permanência para idosos. *Método*: trata-se de um estudo bibliográfico, tipo revisão integrativa, em artigos publicados de 2005 a 2015, nas Bases de Dados MEDLINE, LILACS, CINAHL e SCOPUS. Apresentam-se os resultados em figuras. Realizou-se a discussão dos resultados comparando-se os estudos e conclusões com a literatura. *Resultados*: publicaram-se 15 artigos e o continente com maior produção foi a Europa, em seguida, a América do Norte e a Ásia. Inferiu-se que as formas mais utilizadas foram a contenção com grades no leito e a contenção pelo tronco em cadeira de rodas, em pessoas mais idosas, com alta dependência e imobilidade, e a razão para a contenção, em sua maioria, foi para prevenir o risco de quedas e a rotina institucional. *Conclusão*: demonstrou-se que há alta prevalência de contenção mecânica em instituições de longa permanência para idosos, com alta variabilidade e têm-se assumido esforços para se evitar eventos adversos e melhorar a qualidade dos cuidados. Reforça-se a importância de estudar o tema no país e na realidade latino-americana. *Descritores*: Restrição Física; Instituição de Longa Permanência para Idosos; Enfermagem Geriátrica; Saúde do Idoso; Cuidado de Enfermagem; Serviços de Saúde para Idosos.

RESUMEN

Objetivo: identificar el uso de la contención mecánica en instituciones de larga permanencia para ancianos. Método: se trata de un estudio bibliográfico, tipo revisión integrativa, en artículos publicados de 2005 a 2015, en las Bases de Datos MEDLINE, LILACS, CINAHL y SCOPUS. Se presentan los resultados en figuras. Se realizó la discusión de los resultados comparando los estudios y conclusiones con la literatura. Resultados: se publicaron 15 artículos y el continente con mayor producción fue Europa, luego, América del Norte y Asia. Se consideró que las formas más utilizadas fueron la contención con rejas en el lecho y la contención por el tronco en silla de ruedas, en personas mayores, con alta dependencia e inmovilidad, y la razón de la contención, en su mayoría, fue para prevenir el riesgo de caídas y la rutina institucional. Conclusión: se demostró que hay alta prevalencia de contención mecánica en instituciones de larga permanencia para ancianos, con alta variabilidad y se han asumido esfuerzos para evitar eventos adversos y mejorar la calidad de los cuidados. Se refuerza la importancia de estudiar el tema en el país y en la realidad latinoamericana. Descriptores: Restricción Física; Hogares para Ancianos; Enfermería Geriátrica; Salud del Anciano; Atención de Enfermería; Servicios de Salud para Ancianos.

¹PhD, Fluminense Federal University / UFF. Niterói (RJ), Brazil. E-mail: rosifesa@gmail.com ORCID iD: http://orcid.org/0000-0002-4593-3715; 2.3,5,6 Masters, Federal University Fluminense / UFF. Niterói (RJ), Brazil. E-mail: delvalleromulo@gmail.com ORCID iD: http://orcid.org/0000-0002-8782-6184; E-mail: liviasouza.enf@gmail.com ORCID iD: http://orcid.org/0000-0002-5225-2045; E-mail: gabrielcristiane@yahoo.com.br ORCID iD: http://orcid.org/0000-0002-0122-890X; E-mail: teresabrasil6@hotmail.com ORCID iD: http://orcid.org/0000-0002-4780-0115; 4Master (PhD student), Fluminense Federal University / UFF. Niterói (RJ), Brazil. E-mail: arianna.kassiadou@yahoo.com.br ORCID iD: http://orcid.org/0000-0002-9159-3002; 7Nursing student, Universidade Federal Fluminense / UFF. Niterói (RJ), Brazil. E-mail: uyara.gmelo@gmail.com ORCID iD: http://orcid.org/0000-0002-4191-4266

INTRODUCTION

The term mechanical restraint refers to any manual or physical method, mechanical equipment or material attached or adjacent to the body of the individual that can not be easily withdrawn and which restricts freedom, movement or normal access to the body itself.

Mechanical restraints are used in several ways, such as: lateral bars in the patient's bed; trunk and limb belts; trunk vests and limbs; tables set in chairs that prevent the person from getting up. Some containments are made and they are available in the market for the purchase, while others are improvised and adapted forms, such as the sheet and crepe bandage, which are most commonly found in Brazil.

It is known that mechanical restraint may be commonly used in long-stay institutions for elderly and international demonstrate a high prevalence in some countries. It is inferred, however, that little is known about the beneficial or deleterious effects of this conduct. Among the adverse events found in the scientific literature are: decline in physical function, incidence of falls, contractures, hospital infections, pressure injury, mental health problems, aggressive behavior, and mortality. 1-2 It is understood that the elderly are more susceptible to physical restraint, as this is often used when there is cognitive decline or mobility impairment.3

In view of the foregoing, the development of this study is justified by the growing elderly population that, consequently, tends to increase in long-term institutions, as well as by the lack of research in Brazil on mechanical restraints, their prevalence and the implications for the population, in addition to the need to disseminate the culture of non-restraint of the elderly to the general population and health professionals.

OBJECTIVE

• To identify the use of mechanical restraint in long-term care facilities for the elderly.

METHOD

It is a bibliographical study, integrative review, that followed the following steps: identification of the theme and selection of the research question; establishment of criteria for inclusion and exclusion of studies; definition of the information to be extracted from the selected studies; evaluation of studies included in the integrative review;

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interpretation of results and presentation of the review.⁴

The following research question prevalence, elaborated: What is the predictive factors and adverse events of the use of mechanical restraint in elderly people living in long-term care facilities? The following databases were used to search for MEDLINE (Medical Literature data Retrieval System Online), LILACS (Latin American and Caribbean Literature in Health Sciences), CINAHL (Cumulative Index to Nursing and Allied Health Literature) and SCOPUS, from December 2015 to March 2016.

The descriptors were: physical restraint (restraint physical), long-stay institution for the elderly (homes for theaged) and elderly (aged). Publications in the period 2005 to 2015, in English, Portuguese and Spanish, available in full and dealing with mechanical containment in long-term institutions for the elderly, were included. We excluded articles in which the prevalence was treated indirectly without methodological description of their measure, intervention evaluation articles and review articles.

During the search strategy, the Boolean operator AND was used to perform the associations. After consulting the databases and the application of the search strategies, the selection of the studies was carried out, firstly, through the reading of the titles and abstracts. Following the pre-selection, the recovery of the articles in full and the elimination of duplicate articles followed. A total of 690 articles were found, and 568 articles were excluded by reading titles and abstracts. The complete articles searched and, after reading and translating the articles, 17.

The evidence of the article was classified into six levels: Level I - studies related to the meta-analysis of multiple controlled studies; Level II - individual experimental studies: Level III - quasi-experimental studies, such as the non-randomized clinical trial, the pre- and post-test single group, besides time series or case-control; Level IV - non-experimental studies, such as descriptive, correlational and comparative research, with a qualitative approach and case studies; Level V evaluation data of systematically obtained programs and Level VI - expert opinions, experience reports, consensuses, regulations and legislation.⁵ The objective and the question, the methodology used in the studies and the results found by the authors (Supplement I) were analyzed. The results were discussed comparing the studies and conclusions with the literature.

RESULTS

Among the 17 articles found, 15 were published in the English language and two in the Spanish language. It is noted that the continent with the highest production was Europe, with seven publications, then North America with five publications and Asia with four publications. The importance of studying the theme in the country and in the Latin American reality is reinforced by these

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findings in order to produce data that can outline and construct adequate solutions to the reality of mechanical restraint in the elderly in Brazil and under what context.

The following methods were used: transverse method; retrospective study; exploratory and quasi-experimental study. The data of the research were related to the authorship, the year of publication, the country and the type of study presenting them in figure 1.

Author	Year	Country	Type of study	
Feng, Hirdes, Smith,	2009	United States	Cross-sectional multicentric	
Finne-Soveri, Chi,	2007	Officed States	Cross-sectional mutacentric	
Du Pasquier, et al. ²				
Huang, Huang, Lin,	2013	Thailand	Epidemiological	
Kuo ¹⁰	2013	manana	Epideimological	
Verbeek, Zwakhalen	2014	The	Comparative quasi-	
SMG, van Rossum,		Netherlands	experimental	
Ambergen, Kempen,				
Hamers ¹²	2225			
Voyer, Verreault,	2005	Canada	Cross-sectional	
Azizah, Desrosiers,				
Champoux, Bédard ¹				
Vandervoort, Van	2013	Belgium	Cross-sectional and	
den Block, Van der			retrospective	
Steen, Volicer,				
Stichele,				
Houttekier, et al. 6	2010			
Chiba, Yamamoto-	2012	Japan	Cross-sectional	
Mitani, Kawasaki ⁷				
Halfens,	2013	The	Cross-sectional multicentric	
Meesterberends,		Netherlands		
Nie-Visser,				
Lohrmann,				
Schönherr, Meijers,				
et al. ¹⁶			-	
Castle, Sonon ¹⁸	2005	United States	Exploratory	
Ben Natan, Akrish,	2010	Israel	Exploratory	
Zaltkina, Noy ¹¹				
Saarnio, Isola ¹⁹	2009	Finland	Exploratory and descriptive	
Miu, Chan ¹⁷	2014	Hong Kong	Cross-sectional	
Capezuti, Brush,	2008	United States	Retrospective	
Won, Wagner,				
Lawson ⁸	2000	C		
Cabello, Trinidad,	2008	Spain	Cross-sectional descriptive	
Cordero, Fernández,				
Ruiz, Pecharroman,				
et al. ²⁰	2005	Constant	Datasasativa	
Gobert, d'Hoore,	2005	Spain	Retrospective	
Mora-Fernández,		Canada		
Moldes-Rodríguez,				
Tilquin ⁹	204E	Canada	Datrospostive	
Hoben,	2015	Canada	Retrospective	
Chamberlain,				
Knopp-Sihota, Poss,				
Thompson,				
Estabrooks ¹⁴	2045	Curada:-	Cross sectional and the section	
Foebel, Onder,	2015	Sweden,	Cross-sectional multicentric	
Finne-Soveri, Lukas,		Italy,		
Denkinger, Carfi, et		Finland,		
al. ¹³		France,		
Chinasau Olawai	2045	Germany	Current sections!	
Ghinescu, Olaroiu,	2015	Romania	Cross-sectional	
Aurelian, Halfens,				
Dumitrescu Schols,				
et al. ¹⁵		-	-	
Figure 1. Results found in the studies according to the author, the year of				

Figure 1. Results found in the studies according to the author, the year of publication, the country and the type of study. Niterói (RJ), Brazil, 2015/2016.

Also included in ten articles are containment with grids in the bed as a form of containment; three other articles exclude grids in the bed of their prevalence; three articles do not make clear what types of containment were adopted in the study and an article brings the prevalence of

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containment to recital and also excluding bed racks. It is reported that only three articles made it clear how gerontogeriatric scales were used and the scales used. We present the main results and conclusions of the studies analyzed in figure 2.

Author Main results and conclusions				
Feng, Hirdes, Smith, Finne-Soveri, Chi, Du	The prevalence of mechanical restraint use presented high			
Pasquier, et al. ²	variability.			
Huang, Huang, Lin, Kuo ¹⁰	The prevalence of mechanical restraint was 62.0% and the main motivation was prevention of falls.			
Verbeek, Zwakhalen SMG, van Rossum, Ambergen, Kempen, Hamers ¹²	Long-term institutions for the elderly have a lower prevalence of mechanical restraint use.			
Voyer, Verreault, Azizah, Desrosiers, Champoux, Bédard ¹	The mechanical and chemical containment has a significant association with the aggressive behavior of the elderly.			
Vandervoort, Van den Block, Van der Steen, Volicer, Stichele, Houttekier, et al. ⁶	Mechanical restraint was used in 21.4% of the elderly with dementia.			
Chiba, Yamamoto- Mitani, Kawasaki ⁷	The prevalence of mechanical restraint was 17.8%. The main reason to perform mechanical restraint was fall prevention.			
Halfens, Meesterberends, Nie- Visser, Lohrmann, Schönherr, Meijers, et al. ¹⁶	In the Netherlands, the prevalence of elderly people contained by grids in the bed was 58.3%. In Austria, this prevalence was 77.9%.			
Castle, Sonon ¹⁸	In the United States, mechanical restraint presented a prevalence ranging from 8.4% to 12.8%.			
Ben Natan, Akrish, Zaltkina, Noy ¹¹	The main reason used by the nursing team to perform mechanical restraint was to maintain the safety of the elderly and control the behavior.			
Saarnio, Isola ¹⁹	The use of mechanical restraint can be triggered by family members, by nursing professionals and by the patient himself.			
Miu, Chan ¹⁷	Pain is highly prevalent among the elderly with moderate to severe dementia and is associated with the use of mechanic restraint.			
Capezuti, Brush, Won, Wagner, Lawson ⁸	The number of deaths related to the use of mechanical restraint decreased after the law reforming long-term care institutions for the elderly.			
Cabello, Trinidad, Cordero, Fernández, Ruiz, Pecharroman, et al. ²⁰	The results allow us to obtain a current overview of mechanical restraint in long-stay institutions for the elderly in Madrid.			
Gobert, d'Hoore, Mora-Fernández, Moldes-Rodríguez, Tilquin ⁹	The mechanical and chemical containment presented high variability.			
Hoben, Chamberlain, Knopp-Sihota, Poss, Thompson, Estabrooks ¹⁴	Mechanical restraint was one of the three erroneous practices in end-of-life care.			
Foebel, Onder, Finne-Soveri, Lukas, Denkinger, Carfi, et al. ¹³	Mechanical restraint is potentially more deleterious than the use of psychotropic medications.			
Ghinescu, Olaroiu, Aurelian, Halfens, Dumitrescu, Schols, et al. ¹⁵	The instrument proved to be feasible to identify the quality of care offered.			

Figure 2. Main results and conclusions of the studies analyzed. Niterói (RJ), Brazil, 2015/2016.

DISCUSSION

It is understood that the use of means of restraint in services that are intended for the long-term care of the elderly is a topic that

has generated the interest of research in several regions of the world, more especially in the last two decades, followed by a a trajectory initiated by the field of mental health from the 1960s and meeting the new

demands arising from the aging population. This field of interest is undoubtedly a response to the need to approach care processes based on a critical and reflexive view that considers, among other aspects: the quality of care; practice based on evidence; the centrality of the elderly and the guarantee of fundamental human rights, including dignity and freedom. This is still a new topic in Brazil and studies of the prevalence of this phenomenon can contribute both to the better mapping of the Brazilian reality and to trigger a process of discussion about ways of overcoming this practice.

It is known, however, that the evaluation of the prevalence of containment may suffer interferences regarding the methodological design of the studies, the process of observation and data collection, and also the eligibility of the phenomena to be evaluated. The prevalence results can also be changed considerably when the use of bed grabs as a form of restraint is considered in the research and, in the studies analyzed, this has increased prevalence rates.⁶

It was also found that, in the last week of life and in the presence of dependence and disability, mechanical restraint can be used in more than 20.0% of the cases. Thus, one of the peculiarities of this study is the fact that it enables discussions about the quality of care provided at the end of life in circumstances in which the right to human dignity demands an even more special recognition.⁶

It can be seen that the factors that predispose or influence the use of mechanical restraint have not yet been fully elucidated. It was analyzed that its use was often associated with common sense and the organizational culture of each service. Among the subgroups most at risk of being submitted to restraint practices were elderly individuals with dementia disorders, particularly in relation to the behavioral manifestations related to their underlying neurological disorder.^{8,12,19}

It is believed that specific legislation is necessary to reduce the use of mechanical containment, but a study in Japan concluded that the legislation did not contribute in any significant way to the abolition containment practice in the country.7 It is revealed, on the other hand, the existence of a specific law in the United States since 1987 which prohibited the use of means of containment and effectively contributed to the progressive reduction of this practice in successive decades.8

It is suggested, in the considerations presented by the authors in a study that

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compares the practice of mechanical and pharmacological containment, that the variability of the identified results may be related to the absence of specific legislation or standards of standardization of care quality in the two evaluated regions. In any case, the possibility of a direct relationship between the use of restraint, whether mechanical or pharmacological, and the individual characteristics of the guests of long-term institutions evaluated.⁹

The most frequent justification was used to use mechanical restraint in elderly people treated in long-term institutions with the intention of preventing the occurrence of falls or the withdrawal of biomedical assistance devices such as catheters and drains. Another relevant reason was the need to control behavioral restlessness. 9-10

It was identified, among the aspects considered of an organizational nature, a correlation between the use of restraint and younger caregivers. Finally, a correlation was found with higher levels of functional dependence of the elderly with the existence of a document signed by relatives or the social worker authorizing the use of mechanical restraint as a defensive measure in the event of trauma and/or injury.¹⁰

The nursing team's attitudes about whether or not to use the means of containment by subjective factors, such as personal beliefs, and the factors resulting from the pressure of the environment were able to induce the use of containment. It is noticed that about half of the universe of nursing professionals evaluated had no knowledge about the deleterious consequences associated with the use of means of containment and attributed, as a value for their decision making, the fact that the organizational culture in their work was favorable or not to the use of containment.¹¹

It was also found that a smaller institutional environment with more domestic characteristics was associated with lower rates of use of mechanical containment as a measure of behavioral control. The same observed by the researchers result was regarding the use of psychoactive medications, because the smaller the institutions. the smaller the of medications. The possible explanations for these results were associated with opportunity to stimulate and social interaction of the guests. It is observed that, in smaller institutional settings, a philosophy of care of a more enabling and personalized nature seems to prevail. 12

In a multicenter study, both the use of mechanical restraint and the application of drug restraint in elderly people with dementia assisted in care institutions were considered. The use of mechanical restraint was related to a greater risk of functional and cognitive decline when compared to the isolated use of antipsychotic medication and this risk was even greater among the elderly submitted to mechanical and pharmacological containment.¹³

It has been found, according to North American statistics, that technology products originally intended for safety but limiting the individual's bodily mobility in their daily lives are associated with the risk of bodily injury. The most serious cases are related to death due to injury directly associated with the equipment, such as suffocation caused by the containment belt, to be caught between the grids in the bed or suspended outside the bed.¹⁴ It is believed that this phenomenon would be related to the excessive trust that is attributed to the equipment, dispensing with the need for a continuous human supervision. It is inferred, therefore, that one of the indicators pointed out in international instruments for assessing the quality of care provided in long-term care institutions for the elderly has been the absence of mechanical containment. 15-7

It implies, therefore, the need to review patient safety policies with the adoption of bed rails indiscriminately as a device to prevent falls in the elderly. It is also recommended the adoption of measures to analyze the types of bed rails for each profile of the elderly and the risks and benefits thereof in view of the possibility of generating damage or risk to the elderly.¹⁸

It is noted that this study has, as implications for Nursing and the multiprofessional team, the reflection on the challenge of instituting complex intervention measures for the elderly: by promoting mobility with safety, preventing falls in a population with dependency; by decreasing the use of devices in people at risk of sarcopenia and attending to behavioral disorders in the elderly with dementia, all in environment with few specialized professionals and in small numbers, with little appreciation and tradition still in the Latin American health scenario.

However, we come to the point of intersection of this theme: "it is impossible not to contain", which refers to the reflection on the counterpoints of the contention discourse by increasing the risk of friction injury and pressure injury, increasing

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agitation, risk of death and, above all, for the moral and ethical damages caused by a person at the end of life to be deprived of the right to come and go and the human being in each health professional who, by continually holding back without reflection, of his therapeutic mission to promote life and wellbeing.

CONCLUSION

It is concluded that the data of the review show that there is a high prevalence of mechanical restraint in long-stay institutions for the elderly, with high variability and that, worldwide, efforts have been made to avoid adverse events and improve the quality of care in institutions long-term care for the elderly. It reiterates, therefore, the need of Brazil to adopt policies to reduce the culture of non-containment.

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Corresponding Address

Rosimere Ferreira Santana Escola de Enfermagem Aurora de Afonso Costa.

Rua Doutor Celestino, 74

Bairro Centro

CEP: 24020-091 – Niterói (RJ), Brazil