

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

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Highlights: (1) The participating caregivers had been providing care for more than 2 years, with daily hour loads exceeding 12 hours. (2) The educational intervention reduced musculoskeletal pain in these caregivers. (3) The study contributed to self-care and self-awareness regarding proper body postures for care provision.

PRE-PROOF

(as accepted)

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INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

ABSTRACT

Objective: To assess the efficacy of an instructional manual for musculoskeletal pain reduction among in-home caregivers of aged individuals. **Method:** A randomized clinical trial pilot study with 45 caregivers: 23 in the Control Group and 22 in the Intervention Group. The data were collected between September and December 2021 in a remote fashion. A sociodemographic and health questionnaire was applied, as well as the Nordic Musculoskeletal Questionnaire. The intervention was developed in three stages: Training the caregivers in how to use the instructional manual with self-care guidelines; Training about body postures while providing care to aged individuals; and Weekly follow-up for two months. Pearson's Chi-square test was used for the intergroup comparison, and the statistical software program employed was JAMOVİ®. **Results:** In all, 91.6% of the Intervention Group caregivers presented musculoskeletal pain reduction in the spine and knees. The study has been registered in the Brazilian System for Recording Clinical Trials (*Sistema Brasileiro de Registro de Ensaios Clínicos*, ReBEC) (RBR-4fvfn2p). **Conclusion:** When compared to the Control Group, using the instructional manual promoted musculoskeletal pain reduction in the spine and knees in the Intervention Group. It was possible to advise the caregivers about the importance of taking care of themselves in order to provide care to others. **Keywords:** Caregivers; Health Education; Clinical Trial; Musculoskeletal Pain; Aged; Health Promotion.

INTRODUCTION

Longer life expectancy is positively related to the incidence of chronic non-communicable diseases (CNCDs). These ailments generally result in functional independence and autonomy losses, making aged people require care to preserve their well-being¹⁻². A main caregiver is the person responsible for the direct assistance provided to a person with impaired functional capacity³. When they perform tasks related to home-based care improperly and for extended periods of time, in-home caregivers can develop injuries in their musculoskeletal system⁴.

National and international studies (conducted in Brazil and in Japan) have drawn the attention to this deficit regarding in-home caregivers' health and have focused on

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

musculoskeletal diseases among caregivers of aged individuals. As a result of the care provided by in-home caregivers, this population group presents predominance in terms of pain-related complaints⁴⁻⁷. For example: a research study conducted in Rio de Janeiro (Brazil) with forty caregivers of aged patients identified that thirty nine of them presented musculoskeletal pain in at least one part of their body⁸.

In addition to be a consequence of providing direct care to aged individuals, musculoskeletal diseases result from the somatization of emotional problems due to situations such as exhausting daily routines, stress, concern regarding the family member cared for and self-care management⁹. Therefore, caregivers do not prioritize their own health for the sake of taking care of the other person. In addition to self-care neglect, insufficient time due to family-related demands stand out as a reason for that¹⁰.

With the emergence of the COVID-19 pandemic in December 2019, the demands imposed on caregivers were intensified due to social distancing, generating work overload and risks for physical ailments to worsen¹¹. A number of studies revealed that prolonged isolation during the pandemic significantly increased caregivers' physical burden due to pain exacerbation, in addition to potentiating their stress, as it precluded other people from assisting in the care to be provided^{6,12-13}.

Given that, the health teams that support the assistance provided to aged patients need to think about strategies that help prevent musculoskeletal problems in caregivers, for the sake of their health and the quality of the care continuity offered to aged individuals¹⁴⁻¹⁵.

This study is justified by the high prevalence of physical complaints among caregivers, resulting from continuous strain and lack of technical training. Such scenario not only overloads professionals; it also impairs the quality of the assistance provided to aged people, evidencing the need for immediate and structured interventions. The results shall confer visibility to this population segment and to their musculoskeletal health, supporting actions to minimize pain-related symptoms.

Consequently, the objective of this study is to assess the efficacy of an instructional manual for musculoskeletal pain reduction among in-home caregivers of aged individuals.

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

METHOD

A Randomized Clinical Trial (RCT) pilot study, parallel and unblinded, presented according to the Consolidated Standards of Reporting Trials (CONSORT)¹⁶. The decision to conduct the pilot study was strategic, as caregivers routinely face high levels of stress and physical and emotional overload, which hinders access and adherence to the intervention. In this sense, testing the efficacy of an intervention was important to assess viability and adjustments in terms of future protocols and instruments. In addition to that, this RCT included non-pharmacological interventions, as pain is mainly treated using medications.

The study was conducted with caregivers of aged individuals registered in a Reference Center for Older Adults' Health Care (*Centro de Referência de Atenção à Saúde do Idoso*, CREASI) from Bahia, Brazil. This institution has the support of an interdisciplinary team that serves aged people with some functional dependence level, duly accompanied by their caregivers. The reason to choose a CREASI was that the service gathers many aged individuals undergoing health monitoring/treatments and who attend the appointments with their caregivers.

The caregivers included were those that met the following criteria: being in-home caregivers; being at least 18 years old; having developed the caregiving role for at least twelve months, justified by the instrument used (which assesses pain from twelve months onwards); and having access to a tablet or smartphone. Recruited caregivers who did not report musculoskeletal pain were excluded. The criteria to discontinue participation in the research were as follows: caregivers who failed to continue attending the intervention after five contact attempts; and impossibility to establish follow-up contacts for any reason.

The eligible caregivers were identified and recruited at two in-person moments: between December 2019 and February 2020, interrupted due to the COVID-19 pandemic and resuming from May to June 2021, once the social isolation measure had been suspended. The research proposal was presented at those moments, respecting the health-related guidelines, and the caregivers were invited to take part in the study. Those interested were asked to provide their full name and telephone number for later contacts.

Those who accepted to participate were sent a Free and Informed Consent Form, made available in a digital file and sent via a message app. Once the consent forms were signed, the date to initiate the data collection procedure was scheduled. The randomized

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

allocation sequence was implemented by an external researcher in a safe and confidential way. It was decided to employ simple randomization in Microsoft Excel, creating three columns: Codename, Caregivers' code and Distribution of the groups. The random function was incorporated after this stage, generating a distribution between Control Group (CG) and Intervention Group (IG). The study was blind for the researchers in charge, who were the same ones that analyzed the data.

Data collection instruments (Phase I)

Comprised by 16 members, the team underwent previous training in charge of the researcher by means of in-person and remote meetings. This training was targeted at standardizing data collection, applying the instruments and implementing the interventions, ensuring safety of the processes and mitigating possible biases.

The data were collected between September and October 2021. Two instruments were used in Phase 1: 1) sociodemographic and health characterization questionnaire for the caregivers, prepared by the researcher and her team and including the following: age, gender, self-declared skin color, marital status, years of study, family income, kinship and time providing care to their aged person at home in years and daily hours; 2) the Nordic Musculoskeletal Questionnaire (NMQ) was used to identify presence of musculoskeletal symptoms, considering any types (such as discomfort, pain, tingling and numbness) both 12 months ago and in the last week and which precluded performing everyday activities. The decision to choose this instrument was based on its efficacy in terms of identifying musculoskeletal disorders and analyzing how such symptoms impair the caregivers' functionality and occupational performance¹⁷.

Fifteen days after the intervention had ended, the team remotely reapplied NMQ to all caregivers, both from the IG and from the CG, only considering the question referring to the last seven days. The primary outcome considered for this study was the musculoskeletal pain reduction resulting from the guidelines and follow-up offered to the caregivers.

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

Intervention (Phase II)

The intervention was implemented in three stages: 1. Sending the manual in PDF format and the access link to an explanatory video on the activities it included; 2. Training regarding the activities included in the manual and clearing doubts; and 3. Follow-up twice a week for two months to reinforce the lessons learned, clear residual doubts and remind the participants that they should perform the activities included in the manual/video every day. All contacts respected each caregiver's time availability, and the interventions lasted between 30 and 40 minutes.

In the first meeting for the intervention (which was conducted via *Google Meet*), the caregivers were asked to review the material, ensuring that the CG participants could not access it considering that this would exert an impact on the study results and because the material is not yet in the public domain.

The manual was prepared based on a literature review and on the research team clinical experience. It has twenty-four pages that include thirty-four figures on self-care, with guidelines about respiratory exercises, active movements, stretching, self-massage and body posture guidelines to be followed while providing care to aged individuals. The material is distributed across nine topics for everyday follow-up when waking up and throughout the day, as shown in Chart 1.

Chart 1. Topics from the instructional manual for in-home caregivers' self-care. Salvador, Bahia, Brazil, 2021.

ACTIVITY
1. Work on your breathing
2. Activity for the head and neck
3. Activity for the arms
4. Activity for the trunk/spine
5. Activity for the legs
6. Self-massage
7. Body postures to change an aged person's position
8. Body postures to exchange diapers or sheets
9. Body postures for bed-chair/wheelchair transfers, or vice versa

Source: The authors.

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

Description of the Control Group

The CG participants were not subjected to any type of intervention during this period; they were contacted by phone once a month for two months indicating them that they would receive the material and the same intervention at the end of the study.

Data analysis

The data analysis was performed in the JAMOVI® statistical software program. The Shapiro-Wilk test was performed to verify distribution normality. Descriptive statistics were employed to analyze the independent variables, the sociodemographic/clinical data and the working conditions. The main dependent variable (“Pain”) was expressed as absolute and relative frequencies. Pearson's Chi-square test was used for the intergroup comparison before and after the intervention, as it asks about pain in the last seven days. A 95% confidence interval was considered, setting the significance level at 5%.

It was decided to select a non-probability and by convenience sampling method to include the caregivers; therefore, the participants were identified by providing a roster with the number of aged individuals linked to the CREASI by October 2019, presenting 3,540 older adults registered in the system according to the aforementioned criteria.

Ethical aspects

The participants' anonymity was ensured as per Resolution No. 466/12 of the National Health Council belonging to the Ministry of Health; in addition, Resolution No. 580/18 was also observed, which sets forth the ethical specificities for research studies of strategic interest to the Unified Health System, as well as the requirements contained in Circular Letter for Online Surveys No. 2/2021. The study was approved by the Research Ethics Committee of the Nursing School at the Federal University of Bahia (No. 4,447,759) and has been registered in the Brazilian System for Recording Clinical Trials (ReBEC) (RBR-4fvfn2p).

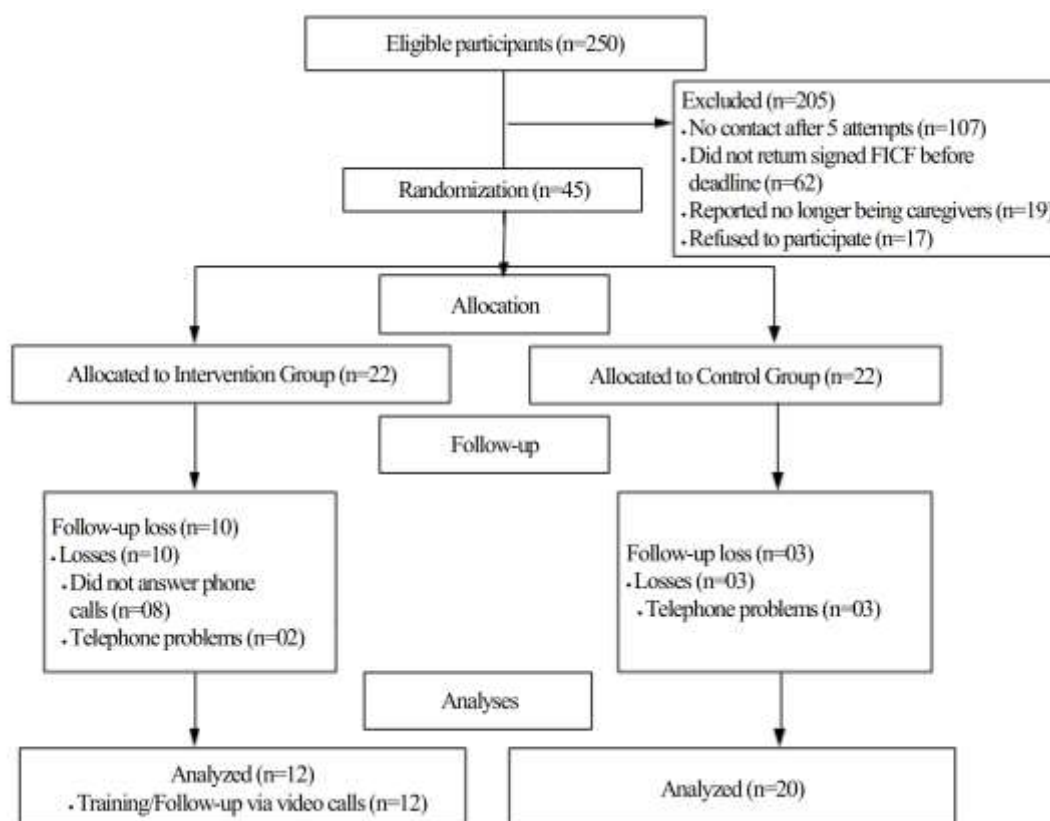
RESULTS

Following the CONSORT guidelines¹⁶, Figure 1 presents a flowchart for the participants throughout the study. A total of 45 caregivers were recruited: 22 in the

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

Intervention Group (IG) and 22 in the Control Group (CG). Due to losses, the participants of this study were as follows: 12 in the IG and 20 in the CG.

Figure 1. Diagram representing the flow of participants in each study stage.



Source: Consolidated Standards of Reporting Trials¹⁶.

The sample was predominantly female (87.5%) and aged between 18 and 59 years old (87.4%), with a mean of 49.4. The comparative data between the intervention and control groups reveal prevalence of self-reported black race (IG: 91.66%; CG: 95.0%) and more than eight years of study (IG: 91.66%; CG: 85.0%). Family incomes of up to three minimum wages were observed in 83.33% and 95.0% of the IG and CG participants, respectively. As for kinship, the highest percentage corresponded to sons and daughters (IG: 66.66%; CG: 85.0%). In both groups, most of the participants have been providing care for more than two years (IG: 91.66%; CG: 90.0%), with daily hour loads exceeding 12 hours (IG: 58.33%; CG: 55.0%).

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

The “Race”, “Schooling”, “Family income”, “Kinship” and “Time as caregiver” (in years and hours) variables behaved similarly between the groups. As for having a partner or not, a reversal was observed between the groups, with predominance of negative answers in the IG (58.33%) and of positive ones in the CG (55.0%). The groups were homogeneous regarding the characteristics tested (Table 1).

Table 1. Sociodemographic characteristics corresponding to the caregivers of aged individuals who are users of a center that is a reference in older adults' health. Salvador, Bahia, Brazil. 2021.

Characteristics	Strategy			p-value
	Total 32 (100%)	Control 20(62.5%)	Intervention 12(37.5%)	
Age group				
18-40 years old	7(21.8%)	4(20.0%)	3(25.0%)	0.717
41-59 years old	21(65.6%)	13(65.0%)	8(66.6%)	
≥60	4(12.5%)	3(15.0%)	1(8.3%)	
Gender				
Male	4(12.5%)	2(10.0%)	2(16.6%)	0.619
Female	28(87.5%)	18(90.0%)	10(83.3%)	
Skin color				
White and others	2(6.2%)	1(5.0%)	1(8.3%)	1.000
Black/Brown	30(93.7%)	19(95.0%)	11(91.6%)	
Marital status				
With a partner	16(50.0%)	11(55.0%)	5(41.6%)	0.716
Without a partner	16(50.0%)	9(45.0%)	7(58.3%)	
Schooling (years of study)				
Up to 8	4(12.5%)	3(15.0%)	1(8.3%)	1.000
≥8	28(87.5%)	17(85.0%)	11(91.6%)	
Monthly family income (MW)*				
0-3	29(90.6%)	19(95.0%)	10(83.3%)	0.540
>3	3(9.3%)	1(5.0%)	2(16.6%)	
Kinship				
Sons/Daughters	21(65.6%)	13(65.0%)	8(66.6%)	1.000
Spouses/Grandchildren/ Daughters-in-law/Caregivers	11(34.3%)	7(35.0%)	4(33.3%)	
Time providing care (in years)				
1-2	3(9.3%)	2(10.0%)	1(8.3%)	1.000
>2	29(90.6%)	18(90.0%)	11(91.6%)	
Daily hours devoted to care				
0-12	14(43.7%)	9(45.0%)	5(41.6%)	1.000
>12	18(56.2%)	11(55.0%)	7(58.3%)	

Source: The authors.

***MW** - Minimum wage in force at the study time: R\$ 1,100.00

In the comparison between the groups after the experiment and in relation to pain in the musculoskeletal system during the last seven days, a statistically significant difference ($p=0.030$) was noticed in the spine region and in the knees. The other segments behaved in a similar way (Table 2).

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

Table 2. Comparison regarding the variables related to musculoskeletal pain frequency in body segments among caregivers of aged individuals who are users of a Reference Center for Older Adults' Health Care in the last seven days, during the post-intervention period. Salvador, Bahia, Brazil. 2021.

Problems/Symptoms in the last seven days	Strategy		p-value
	Total 32(100%)		
	After the intervention		
	Control	Intervention	
	20(62.5%)	12(37.5%)	
Presented pain in the last seven days			
Yes	14(70.0%)	7(58.3%)	0.501
No	6(30.0%)	5(41.6%)	
Neck/Spine			
Yes	9(45.0%)	1(8.3%)	0.030
No	11(55.0%)	11(91.6%)	
Shoulders			
Yes	3(15.0%)	3(25.0%)	0.483
No	17(85.0%)	9(75.0%)	
Upper back (thoracic)			
Yes	5(25.0%)	3(25.0%)	1.000
No	15(75.0%)	9(75.0%)	
Elbows			
Yes	2(10.0%)	1(8.3%)	0.875
No	18(90.0%)	11(91.6%)	
Wrists/Hands			
Yes	6(30.0%)	2(16.6%)	0.399
No	14(70.0%)	10(83.3%)	
Lower back (lumbar)			
Yes	6(30.0%)	5(41.6%)	0.501
No	14(70.0%)	7(58.3%)	
Hip/Coxa			
Yes	3(15.0%)	3(25.0%)	0.483
No	17(85.0%)	9(75.0%)	
Knees			
Yes	9(45.0%)	1(8.3%)	0.030
No	11(55.0%)	11(91.6%)	
Ankles/Foot			
Yes	4(20.0%)	3(25.0%)	0.740
No	16(80.0%)	9(75.0%)	

Source: The authors.

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

DISCUSSION

The results reveal a profile predominantly characterized by female caregivers, of black race/skin color and belonging to the age group from 41 to 59 years old. The study describes a scenario marked by high dedication and economic vulnerability, as 90.6% of the sample earns family incomes of up to three minimum wages and has been in the caregiving role for more than two years, most of them devoting over 12 hours a day to this activity, mostly the aged individuals' sons and daughters.

The predominance of adult women in the caregiving role noticed in this study reflects a nationwide reality. This scenario evidences the gender inequality grounded in a historical construction of asymmetric power relations, which delegates care responsibility in the private sphere to the female gender. Such configuration triggers profound impacts on the social, affective and professional spheres, resulting in harms with repercussions in the entire social structure¹⁸.

Although Brazil and Europe have made progress in terms of implementing public policies to ensure aged people's rights¹⁹⁻²⁰, female caregivers do not enjoy the same support. In these families, gender and parental bonds act as *sine qua non* conditions in defining who will assume the greatest dedication burden in care¹⁹⁻²¹, which allows inferring that female caregiving transcends the cultural dimension and consolidates itself as a structural issue.

In addition, it was noticed that most of the participants self-declared as belonging to the black race. Added to the female caregivers' low schooling level, this condition is in line with national data produced in the last census conducted by the Brazilian Institute of Geography and Statistics²², where black-skinned people living in Brazil are found performing care-related activities^{19,22}. It is noted that it was only during the COVID-19 period that white-skinned individuals perceived the increased overload inherent to taking care of older adults, as already highlighted by scholars²³.

In addition to situating caregivers of aged individuals in the low social strata, with lower incomes and higher unemployment rates, international studies underscore that these people have informal jobs, are underemployed or develop unpaid household chores. As way of example, in countries such as the United States and Slovakia, these sociodemographic data converge with those detected in the study under discussion^{21,24}.

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

The long hours devoted to care evidences that these people are in a vulnerability situation. It is known that, in case the participants of this study were hired professionals duly remunerated for the care provided to the older adults under their responsibility, they could only perform this role for twelve hours with the right for meal/break times according to the Brazilian legislation¹⁹. However, the low schooling level found can be the very factor that leaves them unprotected in this sense.

In consonance with the findings detected in this research, some studies note that the spine is consistently the most affected body area among all the musculoskeletal system regions²⁵⁻²⁶. In this segment, the caregivers' overload proportionality is associated with more intense pain experiences, in addition to reduced strength in the lower limbs, factors that are potentiated in aged caregivers²⁷.

Some of the strategies used in this study to reduce musculoskeletal pain in the neck/spine and knee areas showed significant improvements in the Intervention Group when compared to the Control Group, with $p=0.030$ in both cases. The pain frequency values remained similar across the strategies and without statistically significant differences in the other body regions, such as shoulders, back, wrists and ankles. The same result was signaled in a research study conducted with caregivers of post-stroke patients, where the group that took part in the home ergonomics program for pain reduction and quality of life enhancement presented an improvement in terms of pain in the spine, shoulder and knee regions when compared to the Control Group²⁸.

Some authors advise that proper ergonomic postures during care-related activities avoid unnecessary strain in the joints⁸. In addition to that, practicing physical exercises (also present in the instructional manual) strengthened the muscles, thus reducing the load applied to the joints, improving flexibility and reducing joint pain²⁹.

International studies confirm that applying educational technologies contributes positive results, enhancing knowledge and promoting improvements in people's quality of life, especially in the physical, mental and social spheres³⁰⁻³². Without due intervention, pain can become chronic, continuous or even recurrent. A study warns that chronic pain affects the female gender and people over the age of 65 more, which justifies health professionals paying attention to the care provided to this population group³³. A research study conducted with in-home caregivers noticed that confinement during the COVID-19 pandemic favored musculoskeletal pain intensification in different parts of the body,

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

related to improper postures, high workloads or even sedentary lifestyles³⁴. Therefore, targeting strategies based on educational interventions emerges as an effective resource to mitigate these pain conditions.

Considering the self-care needs, it is essential to implement actions that encourage caregivers to practice physical exercise, thus preventing discomforts resulting from the long hours devoted to care. Coping and prioritization strategies are fundamental; in addition, it becomes relevant to deepen on the best support modalities according to each context³⁰.

When assessing the effectiveness of the educational actions targeted at caregivers, it was noticed that the interventions based on support and guidance on care and self-care resulted in reduced overload and in improved health status, promoting enhanced well-being^{31,35}.

It is worth noting that accumulation of functions is a common reality, especially among female caregivers. In addition to providing direct assistance to their older adults, most of these women assume household chores such as cleaning, washing and cooking³⁶⁻³⁷. During the pandemic, this scenario was worsened by a significant increase in workload, both due to the longer hours devoted to care and to the intensity of the tasks arising from social isolation. Musculoskeletal pain complaints were intensified in this context, reflecting the reduction in terms of external mobility to avoid contagion³⁸. The fact that health services prioritized respiratory cases was added to the above, denying assistance to those presenting other pathologies³⁹. However, it is worth noting that musculoskeletal pain is a chronic problem among caregivers regardless of the pandemic period⁸. Consequently, caregivers require constant self-care guidance.

Even if the change in pain intensity was not statistically significant in all body segments, the weekly two-month follow-up with self-care guidelines exerted positive effects, as it drove the caregivers to practice physical exercise and modify their body postures while providing care. A research study conducted in China with 110 caregivers of people affected by stroke concluded that health education and progressive muscle training for 12 months reduced the anxiety, overload and depression levels. It also assisted in developing self-confidence and care skills³².

In addition to correcting postures for care, this intervention indicated how to perform exercises that contributed to reducing pain in the Intervention Group, as well as

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

another pilot clinical trial that followed-up 33 caregivers with a mean age of 54.64 years old. Here, musculoskeletal pain reductions were observed in joint segments after applying ergonomic interventions such as posture guidelines, combined with kinesiotherapy and home adaptations²⁸. In order to reduce musculoskeletal discomfort, the current study contributed knowledge on physical self-care by means of a manual with guidelines to be implemented at home, given the caregivers' difficulty finding time for themselves. A number of studies warn that they lack time for self-care, as they prioritize assisting their older adults^{4,8-9,30}. Therefore, educational technologies such as manuals, booklets and apps (among others) are recommended to assist them both in care and in self-care, for being facilitating tools whose use can be instructed via telephone calls or at home, thus providing autonomy and empowerment⁴⁰.

A literature review on caregivers' health problems evidenced issues associated with illness, physical disabilities and symptoms experienced in the care routine, oftentimes preventable⁴. However, prevention is not always feasible since, in addition to not finding time for themselves, caregivers generally do not receive any guidelines or training from professionals, who are focused on the functionally dependent individuals.

A systematic review indicated that the prevalence of chronic pain in the adult population varies between 23.02% and 42.33%, with an overall mean of 35.70% (95%CI: 30.42-41.17). The high data heterogeneity ($I^2=98\%$; $p=0.01$) detected reinforces that therapeutic care is frequently neglected until the conditions are already installed and become chronic⁴¹. As way of example, the Family Health Strategy lacks human, material and structural resources targeted at pain prevention activities for the population. In addition to that, its minimum nuclear team does not include a professional physical therapist⁴².

This gap reinforces the importance for the country to seek changes in the medical- and hospital-centered culture still targeted at curative treatments, with little investment in prevention. Physiotherapy has been considered as a merely rehabilitating instrument in Brazil even when, according to the Reassessment of Health Technologies Report, other technologies in addition to medications can be incorporated to the Unified Health System⁴³. Physiotherapy is indicated to minimize and even prevent chronic pain in adults, mainly in risk situations such as the case of caregivers.

Physical therapists can also work in health promotion and disease prevention areas, whether individually or collectively. However, Physiotherapy still faces barriers to

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

consolidate its practice in Basic Health Care, as it is still stigmatized as a mere rehabilitation area⁴⁴.

The role played by Physiotherapy as an agent of preventive proposals in Brazil is limited to Multiprofessional Teams (*Equipes Multiprofissionais*, eMulti) in Primary Health Care, a service that has recently been expanding its coverage in several municipalities of the country. Its advancement not only depends on efficient work organization and properly sized teams but also on adequate working conditions and on continuous investment in professional qualification processes⁴⁵.

One of the study limitations corresponded to the follow-up, retention/discontinuation losses, as data collection and the intervention were conducted during the COVID-19 pandemic and all the stages were developed in a remote fashion. That condition contributed to caregivers refusing to participate, as they were not familiar with new technologies. Nevertheless, the recommendation for future research studies is to assess the participants' and caregivers' satisfaction with the intervention tested. As the population is more familiar with online tools, it is believed that acceptance will be higher in terms of participating in future remote studies.

Although only a pilot, this study contributed to the caregivers' learning, allowing them to gain self-confidence in developing home-based care.

The implications of this study reveal that the instructional manual is a feasible tool to promote caregivers' health, bridging scarcity of technical guidelines and encouraging the prevention of occupational injuries in the home environment. Implementing this resource favors autonomy and appreciation of the caregiving role, enabling continuity of the care provided to aged individuals with less physical overload.

**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

CONCLUSION

The intervention with the instructional manual, explanatory video and two-month follow-up evidenced improvements in musculoskeletal pain in the knees and spine regions among caregivers of aged individuals. In addition to that, it was relevant for the educational process targeted at adapting new routines and performing home-based practices. Such findings reiterate the importance of self-care as a fundamental cornerstone to preserve caregivers' health, evidencing that safeguarding physical integrity of the caregiver-aged person dyad is essential for quality of life sustainability in the home context.

As it has developed a low-cost illustrative technology product with simple language, this research favors democratic access to information among caregivers of aged individuals. Consequently, the study intends to support new public health policies targeted at preventing musculoskeletal diseases, promoting that caregivers are duly appreciated and empowered, their confidence in developing care practices, and reductions in terms of assistance-related costs.

In addition, the results set precedents for future research studies to explore new gaps inherent to this population group and to direct the creation of soft health technologies, essential to ground decisions in terms of social welfare and family health policies.

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CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

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CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

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CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

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**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

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Nildete Pereira Gomes: Conceptualization. Data curation. Investigation, Project administration. Data validation. Data presentation design. Writing – Original draft. Writing – Review and editing. Larissa Chaves Pedreira: Conceptualization, Project administration, Supervision, Data validation, Writing – Review and editing. Rute dos Santos Sampaio: Writing – Review and editing. Marimeire Moraes da Conceição: Writing – Review and editing. Daniel Dominguez Ferraz: Writing – Review and editing. Emanuela Santos Oliveira: Writing – Review and editing. Catarina Santos Araújo: Writing – Review and editing. Mansueto Gomes Neto: Formal analysis, Supervision, Data validation, Writing – Review and editing.
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**INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY**

ANNEX: INSTRUCTIONAL MANUAL

 MANUAL PARA O AUTOCUIDADO DOS CUIDADORES DOMICILIARES Salvador - BA 2021	AUTORAS: Nildete Gomes Larissa Chaves Rute Sampaio 1ª Edição Gomes, Nildete Pereira MANUAL PARA O AUTOCUIDADO DOS CUIDADORES DOMICILIARES/Salvador, 2021. Orientadora: Larissa Chaves Pedreira, Universidade Federal da Bahia, 2021. 1. Postura. 2. Respiração. 3. Alongamento. 4. Relaxamento. 5. Exercícios. 6. Posicionamento e Transferências Universidade Federal da Bahia - UFBA Programa de Pós-graduação em Enfermagem e Saúde - PPGENF Escola de Enfermagem ECUFBA - Campus Universitário do Canela, Rua Basílio da Gama S/N, 7º andar Bairro: Canela, Salvador Bahia, CEP 40110-907, Telefone: (71) 3283 7631																						
APRESENTAÇÃO A produção deste manual surgiu através da motivação em poder tornar esse material acessível para todos. Se trata de uma adaptação em animação do "Manual para o autocuidado dos cuidadores domiciliares". Este, é voltado para cuidadores familiares de idosos, onde contém orientações de exercício de respiração, atividades direcionada para os grandes grupos musculares do corpo, técnicas de relaxamento, posição adequada ao transferir a pessoa que está sendo cuidada, de maneira a evitar danos ao corpo como um todo. Bom, agora que VOCÊ já sabe do que se trata este manual, que tal conferir este material? O sumário irá lhe guiar, APROVEITE! Nildete Pereira Gomes Fisioterapeuta. Doutoranda em Enfermagem e Saúde	SUMÁRIO <table border="1"> <tr> <td>TRABALHAR A RESPIRAÇÃO</td> <td align="right">05</td> </tr> <tr> <td>ATIVIDADE PARA CABEÇA E PESCOÇO</td> <td align="right">05</td> </tr> <tr> <td>ATIVIDADE PARA OS BRAÇOS</td> <td align="right">07</td> </tr> <tr> <td>ATIVIDADE PARA O TRONCO/COLUNA</td> <td align="right">08</td> </tr> <tr> <td>ATIVIDADES PARA AS PERNAS</td> <td align="right">09</td> </tr> <tr> <td>AUTOMASSAGEM</td> <td align="right">10</td> </tr> <tr> <td>MUDANÇAS DE POSICIONAMENTO DO IDOSO</td> <td align="right">12</td> </tr> <tr> <td>TROCA DE FRALDA OU LENÇOL</td> <td align="right">15</td> </tr> <tr> <td>TRANSFERÊNCIA DO LEITO PARA A CADEIRA OU CADEIRA DE RODAS</td> <td align="right">17</td> </tr> <tr> <td>REFERÊNCIAS</td> <td align="right">21</td> </tr> <tr> <td>CAÇA - PALAVRAS</td> <td align="right">22</td> </tr> </table>	TRABALHAR A RESPIRAÇÃO	05	ATIVIDADE PARA CABEÇA E PESCOÇO	05	ATIVIDADE PARA OS BRAÇOS	07	ATIVIDADE PARA O TRONCO/COLUNA	08	ATIVIDADES PARA AS PERNAS	09	AUTOMASSAGEM	10	MUDANÇAS DE POSICIONAMENTO DO IDOSO	12	TROCA DE FRALDA OU LENÇOL	15	TRANSFERÊNCIA DO LEITO PARA A CADEIRA OU CADEIRA DE RODAS	17	REFERÊNCIAS	21	CAÇA - PALAVRAS	22
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INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

Oi, tudo bem? Espero que sim, estarei guiando você ao longo deste manual. Aproveite!

AO ACORDAR: TRABALHE SUA RESPIRAÇÃO

MUITO SIMPLES!

De olhos abertos ou fechados, puxe o ar pelo nariz (Figura 1) contando até 4 e solte o ar pela boca (Figura 2). Repita 3 vezes.




ATIVIDADE PARA CABEÇA E O PESCOÇO

Se sentir tontura, PARE!

Para realizar os próximos alongamentos, prefira ficar sentado.




Levante a cabeça olhando para o teto e permaneça por 20 segundos. Depois abaixe a cabeça olhando para o chão e permaneça por 20 segundos nesta posição.

5

Com a ajuda da mão, incline a cabeça para um lado como se fosse encostar a orelha no ombro e conte até 20. Faça a mesma coisa do outro lado.







Gire lentamente a cabeça para um lado e conte de 1 até 20 e depois repita do outro lado.

6

ATIVIDADE PARA OS BRAÇOS




Abra os braços e gire para frente (conte 10 vezes) e depois para trás e conte novamente.




Com a mão no cotovelo, traga o braço em direção ao peito e mantenha por 20 segundos e faça o mesmo com o outro braço.

Estenda o braço para frente, segure a mão virada para cima e conte até 20. Agora com a mão virada para baixo faça o mesmo.




7

Parabéns! Agora que você aprendeu algumas atividades para a cabeça, pescoço e braços, vamos aprender o que podemos fazer com o tronco e as pernas!

ATIVIDADE PARA O TRONCO/COLUNA




Em pé, coloque as duas mãos na cintura e gire 10 vezes para um lado e depois para o outro.

No chão, com um colchonete, deite de barriga para cima. Abraze uma perna tentando encostar o joelho no peito, mantenha por 20 segundos. Faça o mesmo com a outra perna e depois com as duas juntas. E conte também, de 1 até 20.




8

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

ATIVIDADE PARA AS PERNAS



Com a perna esticada coloque uma faixa no pé e levante. Deixe a outra perna dobrada e mantenha a posição por 20 segundos. Depois faça o mesmo com a outra perna.



Apoiada numa cadeira dobre o joelho e segure no pé, permaneça por 20 segundos. Faça o mesmo com a outra perna.

Neste momento, a coluna precisa estar ereta!

9

Você sabia que é possível fazer massagem em si mesmo?
E sabe como se chama? AUTOMASSAGEM!
É isso mesmo! Muito fácil de fazer, vamos aprender?
E você pode fazer sempre, principalmente nos dias estressante.

AUTOMASSAGEM



Sentada na cadeira, coloque suas mãos na cabeça e com a polpa dos dedos faça movimentos circulares, para frente e para trás.



Agora, com as mãos na testa, deslize seus dedos do meio para as laterais e repita 5 vezes. Depois faça o mesmo em volta dos olhos.

10



Com as mãos na bochecha faça movimentos circulares para trás, repita 10 vezes. Com as mãos no queixo, deslize com os dedos para trás, repita 5 vezes.

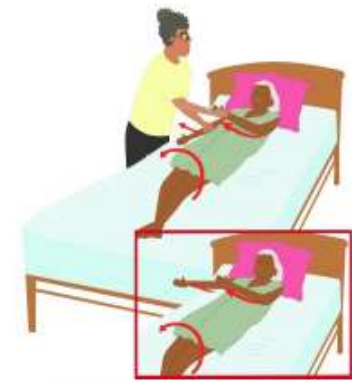


Ao final dos exercícios, pode ser feita uma automassagem nos pés ou em qualquer parte do corpo com o auxílio de uma bola pequena, por 3 minutos. Deslize para frente, para trás, para os lados e faça movimentos circulares.

Bom! Vejo que você já aprendeu muitas orientações de autocuidado. Agora, vamos treinar o cuidado com o idoso, assim, sua sobrecarga física reduzirá...

11

MUDANÇAS DE POSICIONAMENTO DO IDOSO



CUIDADOR: ATENTAR-SE PARA MANTER A COLUNA RETA

- Cruze os dois braços da idosa, sobre o peito (fazendo um X);
- Depois dobre os joelhos;

Se a pessoa idosa for acamado, deve-se mudar de posição a cada 2 horas para evitar lesões por pressão (feridas).

12

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

- Coloque uma mão no ombro e outra atrás do joelho da idosa.

- Vire-a lentamente e com cuidado para o lado desejado.

Importante sempre estar na frente da pessoa idosa!




- Arrume o ombro que ficou por baixo do corpo.

- Observe a postura da cuidadora: sempre com os pés afastados, joelhos levemente flexionados e as costas retas!

13

Depois coloque uma almofada nas costas da idosa para manter a posição.

Coloque almofadas entre os braços e pernas.




POR QUE COLOCAR ALMOFADAS?

As almofadas servem como auxílio para garantir o conforto, o alinhamento postural e segurança do idoso.

14

TROCA DE FRALDAS OU LENÇOL



Primeiro, desprenda o lençol do colchão.

- Com o lençol a ser trocado solto:

- Dobre as pernas da idosa e cruze os braços em forma de x. E depois gire para o lado desejado.




Comece a dobrar o lençol sujo até as costas da idosa e deixe lá.

15

Em seguida, posicione o lençol limpo também nas costas da idosa, de maneira que o sujo e o limpo fiquem próximos. Depois vire a idosa de lado por cima do lençol limpo.





Com a idosa virada para o outro lado, retire o lençol sujo e estique o lençol limpo para forrar a cama e depois prenda no colchão. É importante deixar o lençol esticado, para evitar lesão por pressão (ferida) na idosa.

16

INSTRUCTIONAL MANUAL FOR MUSCULOSKELETAL PAIN REDUCTION AMONG IN-HOME
CAREGIVERS OF AGED INDIVIDUALS: A RANDOMIZED CLINICAL TRIAL PILOT STUDY

TRANSFERÊNCIA DO LEITO PARA A CADEIRA OU CADEIRA DE RODAS



- Coloque os dois braços no peito (em X) e dobre as pernas.
- Mantenha-se sempre na frente da idosa durante as transferências, assim evita-se o risco de queda.



- É importante sempre estar em contato com o idoso.
- Com uma mão no ombro e outra no joelho, vire para o lado desejado.
- Mantenha sua coluna alinhada durante o processo: os pés afastados e os joelhos levemente flexionados.

17



- De frente para a idosa, coloque seu braço em volta do pescoço e outra mão na parte de trás do joelho.
- Em um só movimento, gire, levantando a idosa para a posição de sentada.

É importante durante o processo descrito acima, prestar atenção na segurança do idoso e na sua postura.

Se você não conseguir levantar o idoso, deixe-o sentado na cama, com os travesseiros ao redor para apoiá-lo, garantindo que não vire ou caia.



- Com a idosa sentada na cama, coloque os braços dela em volta do seu pescoço e coloque suas mãos na cintura dela.
- Ao mesmo tempo, com suas pernas, prenda a perna mais fraca da idosa e se prepare para levantar.

18



- Em pé, segura firme na idosa, e mantenha suas pernas presas na da idosa (joelho com joelho), como demonstrado na imagem ao lado e coloque suas mãos cintura dela.
- Gire a idosa em direção a cadeira posicionada ao lado da cama (próxima imagem).

- De frente para cadeira de rodas travada, sente a idosa na cadeira.

IMPORTANTE!

Coloque a cadeira bem próxima da cama para não precisar andar com a idosa, somente girar e senta-la com mais facilidade.



19

- Neste processo, sente a idosa com todo cuidado na cadeira.
- Pode ser uma cadeira comum, que você pode colocar contra a parede ou pedir para alguém segurar por trás, desta forma, a cadeira está fixa.



OBSERVAÇÃO:

Só realize transferência da cama para cadeira caso sinta-se seguro, evitando assim que o idoso caia.



- Deixe a idosa confortável na cadeira e leve-a para dar um passeio dentro ou fora de casa.

20

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21

VAMOS EXERCITAR A MENTE!

N R O F G U A B D A G M R O G H I
G K E V C U Q E S A U D A V E L O S P E V
N A I P A R E T O I S I F V C O S S X V
E B A J E A V O F A O T T A C O S X V
D J L X X U M O A O C E C A Q O S T A
O T N E N A O H O C E C A Q O S T A
A Q E I C R A O B E C C O H E J O B T
E O A I O D A O U O E I O J T A N V J
H G U A S O A J A H B A V T O H D E U V
B C T L A O I E G Q Q M O P I O I O I T
E O K P C A M I N H A D A P I O I O I T
O A O V A O S E U J O O I S I O O O G
I A U O J U R A E S E P E L O A C O O G
V P I O O U A X V L O E L O A C O O G
M F H O O R O C L O X F U H Q Q A D E F
E A G I E X O F A O Q U A L E X A D E F
V B I O E X S L O C I L E X A D E F
D A I O O T N E M A X A L E X A D E F
L D F R D T O O C X Q U D B D C S J S

(?) SAÚDE
(?) EXERCÍCIO
(?) FÍSICO
(?) ALIMENTAÇÃO
(?) SAUDÁVEL
(?) FISIOTERAPIA
(?) ALOJAMENTO
(?) CAMINHADA
(?) RESPIRAÇÃO
(?) RELAXAMENTO
(?) QUALIDADE
(?) VIDA

22

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23

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24