

Kinesiophobia dilemma for older adults: a systematic review

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Abstract

Kinesiophobia is one of the pain complications which eventually might cause disability. Several studies showed correlation between age-related problems with kinesiophobia.

The objective was to investigate clinical trials about managing kinesiophobia among older adults aged +65 years until March 2020.

PubMed, CINAHL, Google Scholar, and PsycINFO databases were electronically searched until March 2020. All studies about kinesiophobia, with clinical trials, and randomized trials study design among older adults aged +65 years were included in the review. Two set of searching terms including ‘*kinesiophobia AND intervention*’ and ‘*fear of movement AND intervention*’ were used.

From a total of 2669 articles, after excluding for different reasons, only three articles with total of 87 participants, mean age 68.5, all from Turkey related to the objectives of this study remained. Two of them were evaluated using two different physiotherapy approaches to manage neck pain and low back pain and one of them was regarding falls. Kinesiophobia was used as measure for the effectiveness of treatments.

Older adults with routine and properly designed exercise and activity are healthier, with a lower probability for disability and therefore higher quality of life and longer healthy life. But to reach those goals, age-related diseases and barriers should be investigated.

Introduction

Kinesiophobia is one of the pain complications which eventually might cause disability.^{1,2} Based on the definition given by Kori *et al.*, kinesiophobia is *an excessive, irrational, and debilitating fear of physical movement and activity resulting from a feeling of vulnerability due to painful injury or*

reinjury.³ In simple words, individuals suffering from pain might not involve in activities because they might think of re-injury and aggression of original injury. The importance of kinesiophobia on lowering function and performance of older adults and eventually disability is more than beginning pain itself for the number of researchers.⁴

Several studies showed a correlation between chronic pain,^{5,6} low back pain,^{1,2,7-9} neck pain,^{2,7-9} cardiovascular diseases, pulmonary diseases,¹⁰ depression¹¹ and fall^{8,12-15} with higher kinesiophobia and lower quality of life (QoL). On the other hand, factors influencing the level of physical activity among older adults are not unimodal and beside sex, age, physical impairments, and smoking, elements such as pain and its characteristics and kinesiophobia should be considered.⁶ For example, patients with low back pain have a lower level of physical activity.¹⁶ Larsson *et al.* showed a significant correlation between pain, kinesiophobia and physical activity⁶ and Swinkels-Meewisse *et al.* showed that personal and social activities could be improved by intervening with the kinesiophobia.¹⁷

Aging is accompanied with osteoporosis,¹⁸ cognitive impairment, cardiovascular and pulmonary diseases such as chronic obstructive pulmonary diseases,¹⁹ diabetes, depression, musculoskeletal disorders²⁰ such as low back pain^{7,21} and neck pain,⁹ fall,^{13,14,22,23} frailty,²⁴ and chronic pain.⁶ Most of these problems result in reduced functional capacity, decreasing their performance in activities of daily living, increasing dependency and finally lower QoL.^{2,4,5,7,19}

In addition to increasing the population of older adults by 2050,^{20,25-27} this group compared to individuals younger than 60 years old faces more physical limitations and disabilities²⁵ and in addition to medical problems, this group has many social, political and economic concerns.¹²

Studying kinesiophobia among older adults needs to be considered by researchers because of the abundance of medical problems among older adults, the correlation between kinesiophobia induced problems and the level of physical activity, the complexity of the physical activity, the fact that individuals at any age with high physical activity have improved health,²⁸ and benefits of physical activity⁶ on prevention from those problems such as falling.^{22,23} An adequate response to the needs of older adults is possible through proper and comprehensive assessment and providing better situations for healthy aging.^{12,20} Therefore, the main objective of this review is to investigate clinical trials about managing kinesiophobia among older adults aged +65 years until March 2020.

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Materials and Methods

Search strategy

Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P, 2015 statement) was selected as a search protocol because this protocol is comprehensive and has researchers consensus about its advantages.^{29,30} PubMed database was electronically searched until March 2020. To have as much as possible numbers of articles, search terms including *kinesiophobia and intervention* were used. Restrictions including *aged +65 years, humans, and clinical trials* on the PubMed database were applied. Other sources and databases including CINAHL, Google Scholar, and PsycINFO were searched. Fear of movement is considered as a synonymous for kinesiophobia, therefore searching with terms including *fear of movement AND intervention* and same restrictions on PubMed was conducted.

Selection criteria

All studies about kinesiophobia, with clinical trials, and randomized trials study design among older adults aged +65 years were included in the review. All other systematic reviews, meta-analysis, longitudinal study without intervention, editorial, case reports, cross-sectional, and descriptive studies were excluded. All studies was read by the author.

Results

From a total of 2669 articles, after excluding because of different reasons (Figure 1), only three articles with a total of 87 participants, mean age 68.5, all from Turkey related to the objectives of this study remained (Table 1).

Those studies were with a small sample size (less than 80 individuals). Two of them were evaluated using two different physiotherapy approaches to manage neck pain and low back pain and one of them was regarding falls. Kinesiophobia was one of measuring of the effectiveness of treatments. These studies used one type of blinding in their study design. Only one of those studies assessed the correlations between outcome measurements. All of the studies evaluated mostly physical variables related to the problem and mental and psychological variables were not examined independently.

Sociodemographic characteristics of the samples were not fully presented in none of the included studies. Although most of the articles were excluded because of reasons such as study design and different sample ages, there were studies in which sample

age included individuals with age +65 years but none of them showed any specific results. Some characteristics of the included studies that can produce bias are shown in Table 2. Most of the studies with search terms *fear of movement AND intervention* were regarding fall and fear of falling that was not study's objective.

Discussion and Conclusions

This review was designed to investigate interventions and treatments regarding kinesiophobia among older adults aged +65 years until March 2020. Only three studies were found in relation to the objective of this review, all of which were from Turkey, with sample sizes of less than 80 participants. Although all of the studies had a comprehensive perspective and insight on the effectiveness of their treatment plan besides measuring other criteria such as pain severity, range of motion, and QoL, in this review we had only three studies, two of which about pain and a third one regarding exercise among older adults.

We need to consider the facts that, modern life and decreasing mobility as a result

of new technology and communication system lead to lower needs for physical activity³¹ and older adults suffer a number of age-related physical and psychological problems, therefore, other problems should be investigated in the future.

All three included studies were about older adults between 65 and 80 years old but individuals aged +80 years were not considered. Since the goal of most of the health-care systems and societies is to expand life span and have healthier older adults, these group should be studied.

Study setting for two of three studies was at the university which might make bias in recruiting sample. There are older adults in the normal population and people who are marginalized as a result of different reasons such as living in rural and sub-urban areas, with many medical problems, poverty, and living alone. Including groups of disadvantages and hard to participate would have more normal and generalizable results.

We face varying presentations of kinesiophobia among older adults,³² with a variety of health-related symptoms including medical, psychological, social, economic, and cultural.³³ This suggests a need for more holistic assessment and evaluation for this age group. Adding the population of dependent older adults to lower birth rate and a smaller population of younger adults considered as the production force, could be a nightmare for politicians and bring challenges for all sectors of society,²⁶ especially for the healthcare system.³² Milenkovic *et al.* showed lower activity of daily living and therefore higher dependence among older adults with a higher level of kinesiophobia.⁴ Hence, underdiagnosed and untreated kinesiophobia could lead to an increasing number of dependent older adults. To improve the health of older adults and their independence at later ages, researchers, therefore, need to look at kinesiophobia and other age-related problems from a broader biopsychosocial view.²⁸

Benefits of adequate exercise for older adults include: i) positive physical changes such as lower obesity, higher physical and functional capacity and healthier musculoskeletal components; ii) mental changes such as increasing psychomotor performance, the lower rate of depression and anxiety which both of those benefits result in a better QoL.²³ But to reach those goals, as many as possible diseases and barriers related to aging should be investigated.

This is the first review of interventions on kinesiophobia among older adults. All studies were in English and review was done by one author which decrease level of possible bias because of varying view.

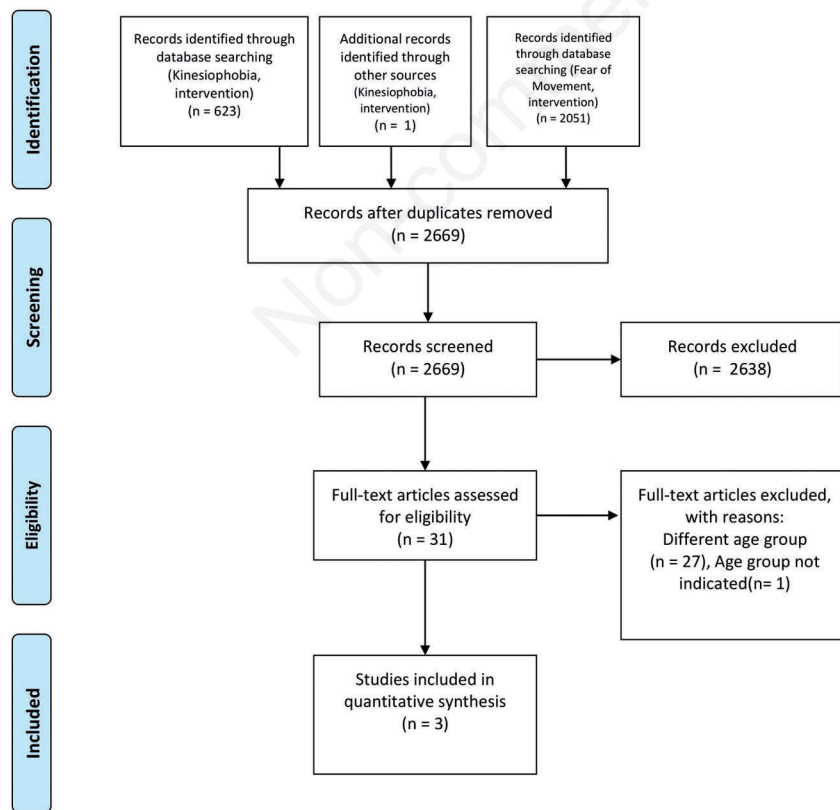


Figure 1. Flowchart of selected studies.

Table 1. Baseline characteristics of the eligible studies.

Article	Study design	Setting	Objective	Age	Sample size: n	Measuring	Conclusion
The Effects of Myofascial Release Technique Combined With Core Stabilization Exercise In Elderly With Non-Specific Low Back Pain, Ozsoy <i>et al.</i> , 2019	A Randomized Controlled, Single-Blind Study	-	Myofascial Release Technique with a roller massager combined with core stabilization exercises in elderly with non-specific low back pain	+65	45	Pain, low back disability, lower body flexibility, kinesiophobia, core stability endurance, spinal mobility, gait characteristics and quality of life	Better effects of Myofascial release technique with a roller massager combined with core stabilization exercises
The Effect of Mulligan Mobilization Technique in Older Adults with Neck Pain, Buyukturan <i>et al.</i> , 2018	A Randomized Controlled, Double-Blind Study	University Rehabilitation and physiotherapy center	Traditional physiotherapy <i>vs</i> traditional physiotherapy-Mulligan mobilization technique	+65	42	Pain, range of motion, functional level, kinesiophobia, depression, and quality of life	Better effects of Mulligan Mobilization Technique in combination with traditional physiotherapy
Impact of exercise on quality of life, body awareness, kinesiophobia and the risk of falling among young older adults, Erden <i>et al.</i> , 2018	A single-center, single-blinded clinical trial	A Family Health Center	The effects of exercise on quality of life, body awareness, kinesiophobia and falling risk among young older adults	+67	74	The SF-36 Quality of Life Questionnaire, the Body Awareness Questionnaire, the Tampa Kinesiophobia Scale, and the Denn Falling Risk Scale	Positive effects on the quality of life and body awareness in the older adults

Table 2. Summary of characteristics of included studies related to possible bias: based on author judgment.

Article	Study design	Socio-demographic characteristic of sample	Kinesiophobia as main objective	Objective	Measuring psychological measures in relation to pain	Aged: +65 years	Sample size >200	Results of correlations between outcome measurements
The Effects of Myofascial Release Technique Combined With Core Stabilization Exercise In Elderly With Non-Specific Low Back Pain, Ozsoy <i>et al.</i> , 2019	A Randomized Controlled, Single-Blind Study	Age, sex	-	The effects of Myofascial Release Technique with a roller massager combined with core stabilization exercises in elderly with non-specific low back pain	In quality of life questionnaire	+	-	-
The Effect of Mulligan Mobilization Technique in Older Adults with Neck Pain, Buyukturan <i>et al.</i> , 2018	A Randomized Controlled, Double-Blind Study	Age	-	Traditional physiotherapy and traditional physiotherapy-Mulligan mobilization technique	In quality of life questionnaire	+	-	-
Impact of exercise on quality of life, body awareness, kinesiophobia and the risk of falling among young older adults, Erden <i>et al.</i> , 2018	A single-center, single-blinded clinical trial	Age, Sex, Education	-	The effects of exercise on quality of life, body awareness, kinesiophobia and falling risk among young older adults	In quality of life questionnaire	+	-	+

Although the electronic search of large databases was conducted, there is a possibility of unpublished studies, or published but not in connection with databases that might change the results. Lack of standard keywords might affect the study.

In conclusion, functional capacity of older adults is low. A society with a higher rate and number of dependent older adults would have economic and social problems to provide adequate formal and informal support.⁴ Older adults with routine and properly designed exercise and activity are healthier, with a lower probability for disability and therefore higher QoL and longer healthy life.²³

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