Abstract

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Effect of a physical training program using the Pilates method on flexibility in elderly subjects.

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Abstract

The adaptations of the human body resulting from the aging process especially loss of flexibility can increase the risk of falls and the risk of developing other health conditions. Exercise training, in particular the Pilates exercise method, has become an important form of physical activity that minimizes the deleterious effects of aging on flexibility. Few studies have evaluated the effect of this training method on body flexibility among elderly. We aimed to evaluate the effects of physical training using the Pilates method on body flexibility of elderly individuals. Eighteen elderly women and two elderly men (aged 70 ± 4 years) followed a 10-week Pilates training program. Individuals were recruited from the local community via open invitations. At study entry, none of them had limited mobility (walking requiring the use of walkers or canes). Furthermore, those with neurologic, muscular, or psychiatric disorders as well as those using an assistive device for ambulation were excluded secondary to limited participation. Flexibility assessment tests (flexion, extension, right and left tilt, and right and left rotation of the cervical and thoracolumbar spine; flexion, extension, abduction, and lateral and medial right and left rotation of the glenohumeral joint; flexion, extension, abduction, adduction, and lateral and medial rotation of the right and left hip; and flexion of the right and left knee) were performed by a blinded evaluator using a flexometer before and after the training period. All assessments were carried out at the same time of day. There was an observed increase in flexion (22.86%; $p < 0.001$), extension (10.49%; $p < 0.036$), and rotation to the left side (20.45%; $p < 0.019$) of the cervical spine; flexion (16.45%; $p < 0.001$), extension (23.74%; $p = 0.006$), lateral bending right (39.52%; $p < 0.001$) and left (38.02%; $p < 0.001$), and right rotation (24.85%; $p < 0.001$) and left (24.24%; $p < 0.001$) of the thoracolumbar spine; flexion (right--8.80%, $p = 0.034$; left--7.03%, $p = 0.050$), abduction (right--20.69%, $p < 0.001$; left--16.26%, $p = 0.005$), and external rotation (right--116.07% and left--143%; $p < 0.001$ for both directions) of the glenohumeral joint; flexion (right--15.83%, $p = 0.050$; left--9.55%, $p = 0.047$) of the hips; and bending (right--14.20%, $p = 0.006$; left--15.20%, $p = 0.017$) the knees. The joint with the greatest magnitude of improvement was the thoracolumbar spine. Thus, this type of training may minimize the deleterious effects of aging and may improve the functionality of elderly individuals, which would reduce the likelihood of accidents (especially falls).

KEYWORDS: Aging; Elderly individuals; Flexibility; Physical training; Pilates method

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