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LETTERS TO THE EDITOR

What Are the Effects of Physical Activity on Sleep Quality and Low Back Pain in Older Adults?

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Regular practice of physical activity has been recommended for healthy aging because of the many benefits it has for older adults in several areas, including the prevention of functional limitations,[1,2] cardiovascular,[3] musculoskeletal,[4] and pulmonary diseases.[5] The World Health Organization recommends that older people should do at least 150 minutes of moderate aerobic physical activity or at least 75 minutes of vigorous aerobic physical activity a week or an equivalent combination of moderate and vigorous activity.[6]

Physical activity can even influence quality of sleep. It is known that the aging process may affect sleep patterns.[7] Sleep disorders are very prevalent in older people, with approximately 50% of them reporting complaints related to initiating or maintaining sleep.[8] In addition, with advancing age, awakenings at night and naps during the day, which can impair nighttime sleep, become more frequent.[9] Evidence from cross-sectional and longitudinal observational studies has shown that older adults with high levels of physical activity report higher rates of sleep quality.[10,11] Different types of physical activity, such as walking, physical activity at work and recreational physical activity have been shown to promote significant improvements in sleep quality.[11] Although there is limited evidence in relation to the effects of different types of exercise on sleep, a systematic review of randomized clinical trials has demonstrated that interventions consisting of aerobic or strengthening exercises are most effective in improving sleep quality in older adults.[12]

It is estimated that 60% of patients with low back pain also complain of sleep problems.[13] According to the Global Burden of Disease Study 2015, low back pain is the leading condition in respect of years lived with disability.[14] In addition, low back pain is responsible for generating significant economic and health care costs and is very prevalent in older people.[15,16]

In addition to the relationship between physical activity and sleep quality, it is known that physical activity can also directly impact clinical outcomes in individuals with chronic low back pain. Evidence from a longitudinal study of patients with chronic low back pain has shown that patients who engage in moderate-vigorous physical activity reported lower levels of pain and disability at a 12-month follow-up.[17] This suggests that physical activity is a modifiable factor that can play an important role in the prognosis of low back pain in adults.

One way to assess the level of physical activity in older people is through the Modified Baecke Physical Activity Questionnaire,[18] a version of the original questionnaire adapted for use with older adults. The modified questionnaire evaluates three domains of physical activity (daily tasks, sports and leisure). This instrument has been validated by means of a physical activity log and a pedometer, both of which showed high correlations.[18] This questionnaire could be a useful tool that can be easily applied in older populations.

Given the fact that that there is strong evidence to show that physical activity can improve the prognosis of adults with low back pain, we were surprised to find that there are few studies specifically investigating this subject in relation to older adults. Studies often exclude adults over the age of 65, and in the majority of studies that do include older adults the mean age is below 65, calling into question the applicability of the results of these studies in relation to older populations.[19] Moreover, the vast majority of studies examining the ability of physical activity levels to improve sleep quality were performed in healthy older adults.[18]

Therefore, there is a lack of evidence on whether physical activity plays the same role in older people with low back pain as in younger adults, or whether it can help to improve poor sleep quality. Physical activity encompasses different domains and understanding the influence of these domains on the clinical outcomes of pain and disability, as well as on sleep quality in older people with low back pain, can advance the understanding of the role of physical activity in the clinical course of low back pain. It can also help to develop improved interventions for older adults with low back pain and poor sleep quality. Therefore, future studies are important to understand the role physical activity as a prognostic factor in relation to sleep disturbance and pain.

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