

Exercise for Chronic Insomnia: Current and Future Perspectives

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Chronic insomnia is one of the most prevalent sleep disturbances around the world affecting around 15% of the general population [1]. Insomnia is characterized by difficulty falling or staying asleep, waking up too early, or experiencing sleep dissatisfaction for at least 3 months [2,3]. Insomnia affects daytime functioning and causes deficits in attention, concentration, and memory, as well as fatigue and negative mood, decreasing the quality of life of patients.

In many countries, the pharmacotherapy is the first-choice treatment, although of its association with mortality, adverse side effects, tolerance and dependence, withdrawal effects [4], and high costs [5]. In the last decades, many alternative treatments have been studied on sleep, and mood consequences of chronic insomnia [6,7]. Cognitive Behavior Therapy (CBT) is the most studied and well-established technique to decrease insomnia symptoms [8]. In the last years, new techniques have been proposed. Exercise is a promising alternative treatment to improve sleep on insomniacs [9]. Considering it is a low cost, easy access and no side effects alternative therapy [10] improving immune function, quality of life and general health of insomnia patients [9], its clinical use have been be encouraged.

Acute and chronic effects of exercise have been studied in adults and older patients. In middle-aged patients, the evaluation of acute effects of exercise on chronic insomnia showed that moderate-intensity aerobic exercise is effective to improve sleep and reduce pre-sleep anxiety in adults with chronic insomnia. No significant effects were observed after high-intensity aerobic exercise or moderate-intensity resistance exercise [11]. Corroborating, acute morning exercise can improve nocturnal sleep quality in older adults with insomnia [12]. Studies have investigated the effects of exercise training on adults with chronic insomnia

showed significant effects of moderate-intensity aerobic exercise [13] and moderate-intensity resistance exercise [14] on sleep. Improvements on positive mood and quality of life were observed after moderate aerobic exercise training [13], but not after resistance exercise [14]. Alternatives focusing the lifestyle-integrated exercise also have been studied on sleep of patients with chronic insomnia and have impacted positively the acceptability and exercise compliance and reducing insomnia severity in inactive adults with insomnia disorder [15]. In addition, regular aerobic exercise improves self-reported sleep and quality of life in older adults with insomnia [16].

The current horizons for research regarding the use of exercise to chronic insomnia need to be broadened. Future studies comparing and/or combining exercise with other non-drug and drug conventional therapies are necessary to establish its potential effect as an adjunct therapy and/or establish its effectiveness as a dose reduction therapy. Some preliminary effects have been observed after exercise combined with sleep hygiene [16], sleep restriction therapy [17], and music [18] in patients with chronic insomnia.

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