Effect of exercise on sleep quality and insomnia in middle-aged women: A systematic review and meta-analysis of randomized controlled trials (Review)

- Rubio-Arias, J.Á.,
- Marín-Cascales, E.,
- Ramos-Campo, D.J.,
- Hernandez, A.V.,
- Pérez-López, F.R. Email Author

- Department of Physical Activity and Sports Sciences, Faculty of Sports and Research Center for High Performance Sport, Catholic University of Murcia (UCAM), Murcia, Spain
- School of Medicine, Universidad Peruana de Ciencias Aplicadas (UPC), University of Connecticut/Hartford Hospital Evidence-based Practice Center, 80 Seymour St, Hartford, CT, United States
- Department of Obstetrics and Gynecology, University of Zaragoza Faculty of Medicine and Lozano-Blesa University Hospital, Domingo Miral s/n, Zaragoza, Spain

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Objective We assessed the effects of programmed exercise (PE) on sleep quality and insomnia in middle-aged women (MAW). Methods Searches were conducted in five databases from inception through December 15, 2016 for randomized controlled trials (RCTs) evaluating the effects of PE versus a non-exercising control condition on sleep quality, sleep disturbance and/or insomnia in MAW. Interventions had to last at least 8 weeks. Sleep quality was assessed with the Pittsburgh Sleep Quality Index (PSQI) and insomnia with the Insomnia Severity Index (ISI). Random effects models were used for meta-analyses. The effects on outcomes were expressed as mean differences (MDs) and their 95% confidence intervals (CI). Results Five publications reported data from four RCTs on PE effects during 12–16 weeks on sleep quality (n = 4 studies reporting PSQI results) and/or insomnia (n = 3 studies reporting ISI results), including 660 MAW. Low-moderate levels of exercise significantly lowered the PSQI score (MD = −1.34; 95% CI −2.67, 0.00; p = 0.05) compared with controls. In a subgroup analysis, moderate PE (aerobic exercise) had a positive effect on sleep quality (PSQI score MD = −1.85; 95% CI −3.62, −0.07; p = 0.04), while low levels of physical activity (yoga) did not have a significant effect (MD-0.46, 95% CI −1.79, 0.88, p = 0.50). In three studies (two studies of yoga, one study of aerobic exercise), there was a non-significant reduction in the severity of insomnia measured with the ISI score (MD −1.44, 95% CI −3.28, 0.44, p = 0.13) compared with controls. Heterogeneity of
effects among studies was moderate to high. Conclusion In middle-aged women, programmed exercise improved sleep quality but had no significant effect on the severity of insomnia. © 2017 Elsevier B.V.

Author keywords

- Exercise
- Insomnia
- Insomnia severity index
- Middle-aged women
- Pittsburgh sleep quality index
- Yoga

Indexed keywords

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