

The Associations Between Leisure-Time Physical Activity and Psychological Distress: Moderation by Age in Two Cohorts

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Purpose: Higher levels of physical activity are associated with better mental health. However, there is mixed evidence on the role of age in moderating this association. The present study investigates how age moderates the prospective associations between different intensities of leisure-time physical activity (LTPA) and psychological distress.

Methods: The study was conducted on survey data from 2017 and 2022 from two different cohorts of the Finnish Helsinki Health Study: the working age employees' and the ageing employees' cohort ($n = 8,307$). The working age employees were between 19 and 39 years old and the ageing employees between 55 and 75 years old at baseline. LTPA was measured as metabolic equivalent hours (MET-hours) across three intensity levels (light, moderate, vigorous) in 2017. Psychological distress in 2022 was measured using the emotional wellbeing subscale from the RAND-36 questionnaire. General linear models were used to examine whether age moderates the association of light, moderate, and vigorous LTPA with psychological distress. The models were adjusted for baseline psychological distress and covariates, including sociodemographic factors and health related behaviour.

Results: The working age employees and the ageing employees averaged 61.4 and 30.6 MET-hours of total LTPA per week, respectively. The working age employees reported, on average, slightly more psychological distress compared to the ageing employees. Higher moderate LTPA was associated with less psychological distress, $\beta = -0.04$, $t = -3.0$, $p < .01$. Similarly, higher vigorous LTPA was associated with less psychological distress, $\beta = -0.03$, $t = -3.1$, $p < .01$. However, only the association between moderate LTPA and psychological distress was moderated by age, $\beta = -0.002$, $t = -3.6$, $p < .001$, such that the association between higher moderate LTPA and less psychological distress became stronger with increasing age.

Conclusion: Moderate and vigorous LTPA appear beneficial for managing psychological distress, with the benefits of moderate activity potentially increasing with age. Therefore, age should be considered when designing physical activity interventions aimed at supporting mental health.

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