

# INPLASY

## Effects of different exercise interventions on job burnout: a systematic review and meta-analysis

INPLASY202440083

doi: 10.37766/inplasy2024.4.0083

Received: 21 April 2024

Published: 21 April 2024

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### ADMINISTRATIVE INFORMATION

**Support** - No.

**Review Stage at time of this submission** - Preliminary searches.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202440083

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 21 April 2024 and was last updated on 21 April 2024.

### INTRODUCTION

**Review question / Objective** The aim of this meta-analysis was to investigate the effects of physical activity on job burnout and to further investigate the effects of various exercise styles and intensity levels on job burnout.

**Condition being studied** Burnout is a health problem with significant societal implications, but it is often not fully understood. Although the relationship between physical exercise and job burnout has been reviewed in the literature, it is regrettable because of the early publication time and lack of intervention research papers. Therefore, this study aimed to conduct a systematic review of intervention studies to find evidence on the association between physical exercise and burnout.

### METHODS

**Participant or population** People suffering from occupational burnout. The participants may be employees, athletes, students and non-employees. Exclusion: The participants in the study had very severe mental illness or were unable to participate in physical exercise.

**Intervention** Physical activity.

**Comparator** No treatment is given.

**Study designs to be included** Randomized controlled trial.

**Eligibility criteria** The inclusion criteria according to PICOS principles included: (1) Population(P): People suffering from occupational burnout. ; (2) Intervention(I): physical activity; (3)

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Comparison(C):no treatment is given;  
(4)Outcome(O): Maslach Burnout Inventory scale and its adapted scale; (5) Study design(S): randomized controlled trial.

**Information sources** The data included in the study will be independently screened and extracted by two researchers. Differences will be resolved by the entire research group through in-depth review and discussion until consensus is reached. English data are mainly from Pubmed;Cochrane Library;EBSCO;Web of Science ;Embase;Elsevier Science Direct, while Chinese data are from CBM;CNKI;CSTJ;and CSPD.

**Main outcome(s)** Maslach Burnout Inventory scale and its adapted scale.

**Quality assessment / Risk of bias analysis** Study quality will be independently assessed by two reviewers. The Cochrane Risk of bias tool will be used for randomized controlled trials.

**Strategy of data synthesis** The meta-analysis will be conducted in the Review Manager 5.4. The overall effect of the exercise intervention on the primary outcome will be quantified by calculating a standardized mean difference of 95% confidence intervals (CI). Together with the SMD results, we will also report aggregated average differences to increase the interpretability of the results. In addition, we will use an inconsistency test ( $I^2$ ) to assess heterogeneity among included studies. A random effects model ( $P < 0.1$  or  $I^2 \geq 50\%$ ) or a fixed effects model ( $P \geq 0.1, I^2 < 50\%$ ) is used depending on the values of  $P$  and  $I^2$ . The sensitivity analysis was carried out by comparing the SMD difference between the fixed effects model and the random effects model. In addition, funnel plots will be used to assess publication bias.  $P < 0.05$  was considered statistically significant.

**Subgroup analysis** We intended to perform subgroup analyses by gender (male/female), type of exercise (aerobic/anaerobic), and intensity of exercise (low, moderate, and high).

**Sensitivity analysis** A sensitivity analysis was conducted to assess the influence of each study on the overall effect by excluding one study at a time, followed by the generation of pooled Standard Mean Difference (SMD) for the rest of the studies. No significant change was observed after the exclusion of any individual study, suggesting the results were robust.

**Country(ies) involved** China.

**Keywords** Burnout;Maslach Burnout Inventory; Exercise.

#### **Contributions of each author**

Author 1 - Da Zhi Song.

Author 2 - Lei Ma.

Author 3 - Rui Xue Guan.