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# **Review Paper**

# The effectiveness of physical activity interventions in improving well-being across office-based workplace settings: a systematic review



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#### ABSTRACT

Objectives: Although the benefits of regular physical activity (PA) are widely accepted, most of the population fails to meet the recommended levels of activity. Public health bodies such as the World Health Organisation emphasise promoting PA within workplaces as a key intervention setting to reach the health and well-being of the working population. Given the importance of well-being in workplace settings, it seems worthwhile to explore the evidence of effectiveness in the literature. This systematic review aims to assess the effectiveness of PA interventions for improving psychological well-being in working adults. It provides a review of current evidence, assesses the quality of the research into this topic area and identifies issues and recommendations for future research.

Study design: A systematic review guided by the Cochrane Handbook was conducted. Methods: PsycINFO, PubMed, ScienceDirect, Web of Science, Embase, MEDLINE and Cochrane Library literature searches were conducted from 2007 to April 2017. Using the keywords 'Physical Activity'; 'Exercise'; 'Wellbeing'; 'Employee' and 'Workplace', five articles were obtained that fit the inclusion criteria. Inclusion criteria were a workplace setting, an intervention including a PA intervention and an outcome measure including well-being. Extraction of articles and quality assessment of the articles were performed independently by two authors using the Cochrane's data extraction form and the Cochrane's risk of bias. Owing to heterogeneity in population characteristics, intervention components, outcome measures and the durations of interventions, a narrative synthesis was conducted.

Results: The review identified five office-based workplace PA interventions in promoting psychological well-being in 1326 participants. The included studies varied substantially in sample size characteristics, methodological quality, duration of follow-up, types of interventions and assessed outcomes. Three of the five included studies were of high quality. The types of PA intervention included yoga, exercise and three studies focussing on walking interventions. The findings evidenced that exercise, yoga and walking interventions improve well-being as measured across workplace settings compared with no

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intervention. Some studies did not include a placebo control group and therefore, a form of PA intervention regardless of the type may be better than no intervention at all.

Conclusion: This review found mixed evidence that PA interventions can be effective in improving well-being across office settings. Although, the findings are promising, because of methodological failings, there is no conclusive evidence. Current evidence indicates that employees can improve their psychological well-being by participating in any form of PA interventions in an office setting.

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### Introduction

Workplaces have been established as one of the priority settings for health promotion in the 21st century. They have been shown to directly influence the physical, mental, economic and social well-being of employees and as a result, the health of their families. Regrettably the concept that the workplace is an important area for health campaigns of many kinds, as well as basic occupational health and safety programmes, may not yet be widely accepted. The concept of promoting health in the workplace is becoming increasingly relevant as more organisations recognise the importance of a healthy workforce to obtain success across their organisation. There are several benefits for employers in investing in the health of their employee, such as reduced sickness absence, increased productivity and better staff retention.

Physical activity (PA) interventions have been shown to be cost effective across workplaces. 4-6 Numerous studies have conveyed the importance of PA in improving health and wellbeing. 7-10 According to the Department of Health, 11 terminology around well-being is often used interchangeably and sometimes incorrectly. Well-being refers to an individual realising his/her own capabilities and being able to feel good and function well with the normal stresses of life while working. 12 The World Health Organisation recognises that well-being is an important marker of health and plays an important role in employee and employer relations as well as job satisfaction and productivity. 13,14

It has been widely emphasised that workplace PA strategies to improve mental well-being and employee productivity should focus on reducing sitting time by increasing PA across workplaces. However, a systematic review examined workplace health interventions for increasing PA and found the evidence to be inconclusive. As evidence on workplace PA interventions is unclear, this review aims to provide clarity on the effectiveness of PA interventions across workplaces.

Although the benefits of PA in promoting well-being are widely accepted, links between PA interventions and well-being across workplace settings remain unclear and often anecdotal. This is the first review to the authors' knowledge where the effectiveness of PA in improving well-being is synthesised. Given the importance of well-being in workplace settings, it seems worthwhile to explore this emerging area. This systematic review aims to assess the effectiveness of PA interventions for improving well-being in working adults. It provides a review of current evidence, assesses the quality

of the research into this topic area and identifies issues and recommendations for future research.

#### **Methods**

This systematic review guided by the Cochrane Handbook was conducted to assess the effectiveness of PA interventions for improving psychological well-being in working adults in an office setting. This review was registered prospectively to the PROSPERO register. Registration number CRD42017068826.

#### Data sources

A systematic literature search was performed for English language articles from 2007 to April 2017 in PsycINFO, PubMed, ScienceDirect, Web of Science, Embase, MEDLINE and the Cochrane library using the following search terms and keywords: 'Physical activity'; 'exercise'; 'wellbeing'; 'work'; 'workplace'; 'worksite'; 'employees' and 'employee'. Additional reference lists of included studies and related systematic reviews were manually checked for further relevant articles.

## Study selection

The approach of this systematic review was based on the Cochrane handbook for systematic reviews of interventions<sup>15</sup> and PRISMA flowchart shown in Fig. 1. This approach ensured that this systematic review consisted of limited bias and the evidence provided in this review was of a reliable nature. The search of the databases and the exclusion and inclusion of relevant studies based on titles were performed by the first author (S.A.). The full text of the remaining studies was reviewed by S.A. and a second reviewer (R.W.) considering the eligibility criteria. Any disagreements were resolved by discussion. Data were extracted by two authors (S.A. and R.W.), and it was planned that the third author (J.B.D.) would assess should there be no agreement in discussions between the two authors.

## Types of studies

Study designs of all types were eligible if they met the criteria of inclusion. Studies were limited to published, peer reviewed articles written in English language.

## Types of participants

Studies had to represent adults in a office-based workplace environment.

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