

# BMJ Open Investigating associations between physical activity and presenteeism: a scoping review protocol

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## ABSTRACT

**Introduction** Considering that physical activity plays a key role in the health of workers, a growing number of researchers are studying its relationship with various workplace outcomes, such as presenteeism. Numerous scientists recognise the relevance of further studying this relationship in order to improve our understanding of it. However, studies about the association between physical activity and presenteeism show some discrepancy in the results obtained. Disparity in the way of measuring presenteeism makes it even more challenging to compare results. In addition, it remains difficult to determine the optimal frequency, intensity, duration and type of physical activity to increase the productivity benefits of physical activity. In light of these issues, clarification through a scoping review of the literature on the subject is warranted.

**Method and analysis** A search strategy will be conducted in six scientific databases: MEDLINE, CINAHL, PsycINFO, ABI Inform Global, Web of Science and Business Source Premier. A screening process by two independent reviewers will lead to study selection. Quantitative and qualitative studies written in English about the relation between physical activity and presenteeism will be considered for inclusion. Data on the definition and measurement of presenteeism as well as the measurement of physical activity will be extracted. Additional data will be extracted to provide a descriptive overview of studies that have examined the relationship between presenteeism and physical activity.

**Ethics and dissemination** As this study will be based only on published studies, ethics approval is not required. Through the manner in which the included studies will be presented (categorised by their approach to presenteeism), this scoping review has the potential to improve our understanding of some of the inconsistencies observed in the literature. This review can also identify gaps in the existing evidence base and lead to new avenues of research.

## INTRODUCTION

'Being physically active is one of the most important actions individuals of all ages can engage in to improve their health'.<sup>1</sup> Physical activity is known to improve cardiorespiratory, metabolic, musculoskeletal, cognitive and mental health.<sup>1,2</sup> In addition, a large body of research has shown that physical activity reduces the risk of cardiovascular disease, including coronary heart disease and ischaemic heart disease.<sup>3–5</sup> However, the majority

## Strengths and limitations of this study

- This will be the first scoping review on the association between physical activity and presenteeism.
- Six scientific databases will be consulted.
- Data will be extracted and summarised in order to present what is currently known about this relation according to the definition of presenteeism.

of adults are not sufficiently active to achieve the health benefits of physical activity.<sup>1</sup> Physical inactivity is considered the fourth leading risk factor for mortality worldwide and workplaces have been targeted as an ideal place to promote physical activity.<sup>6</sup>

In addition to these many health benefits, physical activity would also benefit organisations. For example, deterioration in employee health due to lack of physical activity, overweight and musculoskeletal pain is associated with presenteeism<sup>7,8</sup> and absenteeism.<sup>7,9,10</sup> For organisations, employees with deteriorating health conditions (physical and mental) represent an increase in healthcare costs and a decrease in productivity.<sup>11,12</sup> As shown by the results of a recent study,<sup>13</sup> healthy behaviours, such as being physically active, may produce cost savings for the employer.

Considering that physical activity plays a key role in the health of workers, a growing number of researchers are investigating its relationship with various workplace outcomes, such as presenteeism. Numerous scientists recognise the relevance of further studying this relationship in order to improve our understanding of it.<sup>8,14–16</sup>

Studies that have examined the relationship between physical activity and presenteeism have used a variety of methodologies, making it difficult to compare study results.<sup>17–19</sup> There is also some discrepancy in the results obtained. For example, some studies have shown a negative relationship between physical activity and presenteeism,<sup>20,21</sup> while others have revealed no significant relationship.<sup>22,23</sup> It is therefore



essential to interpret these results with caution given the lack of consistency in the results,<sup>17</sup> the variability in the methods used in these studies (eg, the many ways of measuring presenteeism and considering a physically active vs inactive individual)<sup>15</sup> and sometimes the lack of scientific rigour (eg, uncontrolled analyses for health-related variables).<sup>24</sup>

One of the important findings of the review on the impact of physical activity on presenteeism<sup>15</sup> is the wide variation in how studies conceptualise and evaluate presenteeism. The authors note that given these issues, their review is limited by the fact that the keywords used in the initial search may not have found all articles of interest in the literature. The issues surrounding the definition and measurement of presenteeism were recently raised in a position paper written by a group of researchers interested in the presenteeism.<sup>25</sup> Moreover, Navarro and his collaborators<sup>26</sup> also stress the importance of comparing the results of studies on presenteeism with respect to the definition and conception of presenteeism, otherwise there is a risk that two completely different situations will be studied.

In addition, it remains difficult to determine the optimal frequency, intensity, duration and type of physical activity to increase the productivity benefits of physical activity.<sup>15 27</sup> In light of these issues, clarification through a scoping review of the literature on the subject is warranted. A scoping review is of particular use when a body of literature exhibits a large, complex and heterogeneous nature<sup>28</sup> as have this field of research.<sup>15</sup>

The study will consider the existing literature of the relation between physical activity and presenteeism. Publication bias will be limited through the use of comprehensive literature searching and specific inclusion criteria. In order to broadly cover and highlight what the literature reveals on the subject, we are not going to limit ourselves to a single understanding of presenteeism. Thus, keywords representing the various currents of research on presenteeism will be used. As a wide variety of measures of presenteeism are noted,<sup>29</sup> the studies included will not be limited to some tool measurements or a tool explicitly derived from it (eg, translation of the tool). A scoping review will enable a better understanding of the strengths and limitations of the evidence to date and provide directions for future research.<sup>30</sup>

The aim of this study is to scope the literature on what is currently known between physical activity and presenteeism and answer the following questions:

1. What is known from the existing literature about the associations between physical activity and presenteeism over the past 20 years (2000–2020)?
2. How is physical activity measured in studies and in what context (ie, domains and intensity)?
3. How is presenteeism conceptualised and measured in those studies?
4. What do the results of the studies included in the review show?

## METHODS

We will conduct this study using the framework of Arksey and O'Malley<sup>31</sup> supplemented by recommendations and clarifications on advancing the methodology for scoping reviews.<sup>28 32</sup>

### Identifying relevant studies

This search strategy has been validated by one experienced researcher (CB) and one reference librarian. The identification of the relevant studies will be an iterative process that involved pre-testing many different combinations of subject headings, search terms and synonyms, to achieve the highest level of coverage. The primary searches will be conducted in six databases (MEDLINE via Ovid, CINAHL via EBSCOhost, PsycINFO via Ovid, ABI Inform Global via ProQuest, Web of Science and Business Source Premier via EBSCOhost) to identify peer-reviewed articles.

Additional studies will be identified by scanning the reference lists of suitable studies and in personal collections. Experts in presenteeism will also be contacted through a list of researchers who participated in the small group meeting on presenteeism of the European Association for Work and Organizational Psychology. The start date of searches was set to 2000 to match the beginning of the interest in presenteeism in the scientific literature.<sup>33</sup>

Table 1 presents the search terms and the research queries that will be used on MEDLINE (Ovid).

### Study selection

All search results will be downloaded and imported into a reference management software program (EndNote, V.X9) and then into the software Covidence to facilitate our process of screening for inclusion. The inclusion and exclusion criteria will be applied by two reviewers (VH and JD) to all potential studies at the title and abstract level. Where there is insufficient information to make an informed decision regarding a studies inclusion, then relevance to the next stage of the review process (full text assessment) will be assumed. The two reviewers will work independently using the inclusion criteria and meet to discuss any challenges or uncertainties related to study selection and to go back and refine the search strategy if needed. The remaining articles will be full text screened by VH and JD.

To be included in this review, studies will be required to be written in English. Studies that report new empirical data using a quantitative or qualitative design on association between physical activity and presenteeism will be included. The studies using health risk assessment, which measure health behaviours (such as physical activity), but not exclusively, will also be included. Studies that have some kind of physical activity (structured or not, during leisure-time or as a mean of transportation and so on) and to which the other criteria apply will be included. Studies dealing with non-working age populations such as elderly or children will be excluded.

**Table 1** Search terms and the research queries that will be used on MEDLINE (Ovid)

Search	Keywords	Concepts
S1	(Employee* or work* or labo?r or loss* or job* or on?the?job or personnel or impair*) adj2 (productivity or performance or capacit* or efficienc* or abilit* or disabilit*)	Productivity
S2	*Efficiency/ or *work engagement/ or *work performance/	Productivity (MeSH)
S3	Presenteeism	Presenteeism
S4	(work* or "attend* work*" or job* or employee* or personnel) adj4 (ill* or sick* or loss* or limitation* or health?related?problem* or "health problem*" or impair* or "health impair*" or "impair* health")	Presenteeism
S5	S3 OR S4	
S6	Presenteeism/	Presenteeism (MeSH)
S7	S1 OR S2 OR S5 OR S6	
S8	(health* or unhealth* or health?related or life?style or life?style?related) adj2 (risk* or assessment or change* or life?style or behavio?* or factor*)	Health behaviours
S9	*health behavior/ or exp health risk behaviors/ or *healthy Lifestyle/	Health behaviours (MeSH)
S10	("Physical* activ*" or active or physical or fitness or sedentary) adj2 (leisure?time or domestic or travel or transport* or housework or occupational or work?related or life?style or training or conditioning or fitness)	Physical activity
S11	Sport or "cardiorespiratory fitness" or "structured exercis*" or aerobic*	Physical activity
S12	S10 OR S11	
S13	Sedentary behavior/ or *exercise/ or exp physical conditioning, human/or *physical fitness/ or exp cardiorespiratory fitness/	Physical activity (MeSH)
S14	S8 OR S9 OR S12 OR S13	
S15	S7 AND S14	

MeSH, Medical Subject Headings.

## RESULTS

### Data extraction

Data will be extracted by one reviewer (VH), and a random subset of at least 25% of the selected studies will be checked by another reviewer (JD) to verify repeatability and accuracy. To answer research questions #2 and #3 of this study, data on the definition and measurement of presenteeism as well as the measurement of physical activity will be extracted. To answer question #4, the important results of the included studies will also be described. Finally, additional data will be extracted to provide a descriptive overview of studies that have examined the relationship between presenteeism and physical activity (author(s), year of publication, study location, study design, study populations).

### Data synthesis

The results will be categorised according to the understanding of presenteeism of the studies to give a better idea of how this phenomenon is studied in relation to physical activity. This will help to address one of the issues raised by Navarro and colleagues,<sup>26</sup> namely the difficulty of comparing studies since they do not view presenteeism in the same way. This will allow us to describe what we

know about the relationship and answer question #1 of this study.

### DISSEMINATION

The results will be published in a peer-reviewed journal in the field of organisational health. The results of this review will be important for theoretical reasons and, more generally, knowledge advancement. First, through the manner in which the included studies are presented (categorised by their approach to presenteeism), this scoping review has the potential to improve our understanding of some of the inconsistencies observed in the literature. It will be easier to compare the results since it will be possible to quickly distinguish studies by the way presenteeism is defined and measured. As mentioned by other researchers,<sup>15 26</sup> the heterogeneity in the ways in which presenteeism is measured also limits the interpretation of the results of empirical studies. Second, the results of this review may contribute to the expansion of current literature on physical activity and presenteeism by including the domains of physical activity. Leisure-time physical activity has been largely investigated in relation with presenteeism, but little is known about

the other domains (eg, transportation, occupational, domestic). The underlying mechanisms of how physical activity may contribute to presenteeism are as well very little documented. Finally, this review can identify gaps in the existing evidence base and lead to new avenues of research. For example, physical activity could be studied as an individual resource that promotes a more functional type of presenteeism. Karanika-Murray and Biron<sup>34</sup> recently proposed a typology that considers presenteeism as an adaptive behaviour aimed at meeting work and performance demands during impaired capacity owing to ill-health (p.6). Physical activity could be an important resource used by employees to balance the demands of performance and health. This has important implications for interventions given that organisations can promote physical activity in the workplace by providing access to facilities, offering activities during work hours and promoting healthy lifestyle.

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**Contributors** VH is the principal investigator of the study. VH planned and designed this study protocol and wrote the first draft. CB supervised the writing of the manuscript and brings expertise in presenteeism. All the authors revised and approved the final version of this manuscript. JD will also be the second reviewer.

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