

# A physiotherapy-directed occupational health programme for Austrian school teachers: a cluster randomised pilot study

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## Abstract

**Background** Although physiotherapists have long advocated workplace health, school teachers have not traditionally been a focus of study by these professionals. However, classroom teaching contributes to a range of occupational health issues related to general health as well as ergonomics that can be prevented or addressed by physiotherapists.

**Objectives** To undertake a pilot study to explore the potential effects of a physiotherapy-directed occupational health programme individualised for school teachers, develop study methodology and gather preliminary data to establish a ‘proof of concept’ to inform future studies.

**Design** Cluster randomised pilot study using a convenience sample.

**Setting** Eight Austrian regional secondary schools.

**Participants** Schools and their teachers were recruited and allocated to an intervention group (IG,  $n = 26$  teachers) or a control group (CG,  $n = 43$  teachers). Teachers were eligible to participate if they reported no health issues that compromised their classroom responsibilities.

**Interventions** The IG participated in an individualised physiotherapy-directed occupational health programme (six 30-minute sessions) related to ergonomics and stress management conducted over a 5-month semester. The CG had a pseudo-intervention of one oral education session.

**Main outcome measures** Primary outcomes included scores from the physical and mental components and health transition item of the Short-Form-36 Health Survey questionnaire (SF-36), and emotional well-being and resistance to stress items from the work-related behaviour and experience patterns questionnaire. Data were collected before and after one semester.

**Results** The primary outcome measure, the SF-36 physical component score, showed a reduction in the CG and no change in the IG, meaning that the CG deteriorated over the study semester while the IG did not show any change.

**Conclusions** A physiotherapy-directed occupational health programme may prevent deterioration of physical health of school teachers in one semester (proof of concept). This pilot study provided valuable information to inform the design of replication and extension studies related to this work.

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**Keywords:** Health promotion; Health status; Occupational health; Stress management

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## Introduction

As defined by the World Health Organization (WHO), occupational health services are viewed as multiprofessional and focus on protecting and promoting the health of

workers, physically, mentally and socially [1]. Compared with occupations that are highly physical and potentially dangerous, professions such as teaching have received relatively little attention in the occupational health literature. Further, although occupational health is a sub-specialty in physiotherapy, little, if any, research related to the needs of school teachers has been undertaken.

International studies have reported that teachers experience physical as well as psychological workplace strain,

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and primarily identified work-related strain and stress as major problems for teachers [2]. Of note, within the WHO's Health Behaviour in School-aged Children Study [3], a sub-study was commissioned by the Austrian Federal Ministry of Education to examine the health of Austrian school teachers [4]. Its aim was to elucidate the status of teachers' health as a basis for developing and implementing occupational health programmes within the workplace. Commonly reported complaints included fatigue, exhaustion and pain (low back, neck and shoulders). Studies on the health of teachers in other countries have reported similar findings [5–9]. Overall, school teachers have worse general health compared with other professional groups [4].

Physiotherapists have seldom been involved in occupational health programmes for teachers, yet alone those encompassing general health promotion and prevention. The fact that contemporary physiotherapists are professionals who aim to practice holistically [10–13] (i.e. address physical issues and related psychological and social concerns) makes them well qualified to address contemporary health priorities based on advances in health service policy related to a holistic model of care [14–18]. Such practices are consistent with the adoption of the WHO's International Classification of Functioning, Disability and Health, which is based on the WHO's holistic definition of health. This thrust has led to the use of global health measures within the profession, often in favour of impairment-based measures and outcomes [10,11]. Further, in terms of health behaviours, physiotherapists are becoming strong advocates of not only increasing general physical activity within the general population, but reducing prolonged periods of inactivity. Chronic sedentary behaviour is a well-documented independent risk factor for ischaemic heart disease [19].

Given the paucity of literature on the topic, the authors' aim was to conduct a pilot study designed to examine the effect of a physiotherapy-directed occupational health programme for Austrian school teachers. It was hypothesised that such a targeted programme tailored to the needs of individual teachers may have a positive influence on health outcomes over one semester (September to January), including health-related quality of life (QOL) (potentially secondary to improved ergonomics) and reduced psychological stress. Given that this study was designed as a pilot study, its main purpose was to develop the methodology and gather preliminary data to establish a 'proof of concept' to inform future studies.

## Methods

### *Study design and data collection*

The authors designed a pilot study with a cluster randomised design, with each participating school serving as

a unit of randomisation. Schools, rather than teachers, were allocated to the intervention group (IG) or the control group (CG) because the planned intervention was not only behaviourally oriented to the individual but also oriented to the organisation, given that organisational support is essential if such programmes are to be implemented. Another reason for randomising the schools rather than the teachers was related to their potential interaction. It was not possible to rule out the possibility that teachers from one school would talk to each other about the intervention that they received in the study. Therefore, a cluster randomised design was followed. Furthermore, all schools in the town in Lower Austria where the study was conducted were included. Specifically, participating schools were randomised using eight sealed, opaque envelopes, each containing a number representing each school. A research assistant, who was independent to the research study and process, chose the envelopes. The teachers of each given school were then assigned to either the IG or the CG.

Although cluster randomised designs increase the complexity of research methodologically and require more participants to achieve statistical power, the characteristics of potential participants in this study, who were dedicated to specific schools, only allowed for cluster randomisation. To evaluate changes in the outcomes of interest over a 5-month semester within each group, pre- and post-measures were recorded at baseline and at the end of the semester. Ethical approval for this study was obtained from the Ethical Approval Commission of the Regional Government of Lower Austria. All participants provided written informed consent.

### *Setting and participants*

Secondary schools were chosen as the settings for this study because their teachers have been reported to experience more health issues than teachers from other types of schools [8]. All eligible schools were recruited in an Austrian city with a population of approximately 50,000. The schools were comparable in terms of socio-economic demographics. The principals and teachers of the schools ( $n = 8$ ) were invited to participate and provided informed consent. The teachers of the participating schools were informed in detail about the study and interventions. All schools were informed that a health promotion project would be conducted in the whole city and that all the participants would have the same opportunities but at different time points. Teachers in the control group received the intervention after the study was finished. They were recruited between March and August 2010. Teachers were eligible to participate if they self-reported being in sufficiently good health to perform the role and responsibilities of a full-time teacher. A version of the Consolidated Standards of Reporting Trials (CONSORT) (flow diagram shown in Fig. S1,

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