



A workplace exercise versus health promotion intervention to prevent and reduce the economic and personal burden of non-specific neck pain in office personnel: protocol of a cluster-randomised controlled trial

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Abstract

Introduction: Non-specific neck pain is a major burden to industry, yet the impact of introducing a workplace ergonomics and exercise intervention on work productivity and severity of neck pain in a population of office personnel is unknown. **Research question:** Does a combined workplace-based best practice ergonomic and neck exercise program reduce productivity losses and risk of developing neck pain in asymptomatic workers, or decrease severity of neck pain in symptomatic workers, compared to a best practice ergonomic and general health promotion program? **Design:** Prospective cluster randomised controlled trial. **Participants and setting:** Office personnel aged over 18 years, and who work > 30 hours/week. **Intervention:** Individualised best practice ergonomic intervention plus 3 × 20 minute weekly, progressive neck/shoulder girdle exercise group sessions for 12 weeks. **Control:** Individualised best practice ergonomic intervention plus 1-hour weekly health information sessions for 12 weeks. **Measurements:** Primary (productivity loss) and secondary (neck pain and disability, muscle performance, and quality of life) outcome measures will be collected using validated scales at baseline, immediate post-intervention and 12 months after commencement. **Procedure:** 640 volunteering

office personnel will be randomly allocated to either an intervention or control arm in work group clusters. **Analysis:** Analysis will be on an 'intent-to-treat' basis and per protocol. Multilevel, generalised linear models will be used to examine the effect of the intervention on reducing the productivity loss in dollar units (AUD), and severity of neck pain and disability. **Discussion:** The findings of this study will have a direct impact on policies that underpin the prevention and management of neck pain in office personnel.

Trial registration: Australian New Zealand Clinical Trials Registry (ANZCTR). **Registration number:** ACTRN12612001154897. **Was this trial prospectively registered:** Yes. **Funded by:** National Health and Medical Research Council Project Grant. **Funder approval number:** APP1042508. **Anticipated completion:** 2016. **Correspondence:** Dr Venerina Johnston, School of Health and Rehabilitation Sciences, The University of Queensland, St Lucia, Australia. Email: v.johnston@uq.edu.au

Full protocol: Available on the eAddenda at doi:10.1016/j.jphys.2014.08.007

<http://dx.doi.org/10.1016/j.jphys.2014.08.007>

Commentary

Recent data highlights the rising problem of musculoskeletal conditions with neck pain now the fourth most burdensome condition globally in terms of years lived with disability.¹ With the combination of more people in sedentary office work and intensification of work practices, it is critical to effectively address musculoskeletal conditions in the workplace.

The protocol by Johnston and colleagues can be seen as a significant development on previous research. They propose to investigate a combination of best practice ergonomic interventions with exercise for the upper quadrant, compared with a combination of ergonomic intervention and health promotion sessions.

The design of the study is impressive. The exercise programs are individualised and progressive, following best practice guidelines in exercise prescription.² Importantly, the comparison group in this study will receive an intervention equal in time to the exercise-training group. The comparison group, receiving health promotion information sessions, may gain health and productivity benefits from these sessions (eg, on stress management and keeping active; both of which have been identified as influential in neck pain).³ In deciding whether to opt for expensive and intensive supervised

exercise programs or health information sessions, this comparison is particularly relevant.

A key strength of this protocol is the plan to both assess health outcomes for individuals and to conduct a cost-benefit analysis for productivity. For health interventions to be meaningfully translated into policy and practice, they must be economically viable. Given the intensive nature of the combined ergonomic and exercise intervention to be studied, weighing the cost of intervention against the productivity of employees will be pivotal in deciding whether such interventions should be recommended in the workplace.

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