Neck pain and work productivity in office workers: effectiveness of a multi-component intervention

Background and aim:

Neck pain is a major burden for office workers, leading to discomfort and decreased work productivity. As the current literature does not provide a convincing approach to address this problem, the need to develop an effective intervention to reduce neck pain and associated productivity loss in office workers became evident. Furthermore, it remained unclear whether neck pain had changed in response to the COVID-19 pandemic and increased working from home. The aim of this thesis was therefore to design a cluster randomized ontrolled trial with a 12-week multi-component intervention publication 1) and to investigate the effect of this intervention on reducing neck pain-related work productivity losses in ffice workers (publication 2). In addition, a sub-analysis examined the effect of the COVID-19 pandemic (i.e., working from home) on neck pain intensity and neck disability (publication 3).

Methods: We conducted a stepped-wedge cluster randomized controlled trial between January 2020 and April 2021. Office workers aged 18 to 65 years and without serious neck pain were recruited from two German-speaking organizations in Switzerland. During the 12-week intervention period, office workers participated in neck exercises, health-promotion

information group workshops, and applied best practice workstation ergonomics. No intervention was offered during the control period. Neck pain-related loss of work productivity was assessed at five different measurement time points using the Work Productivity and Activity Impairment Questionnaire. Loss of work productivity was expressed as percentage of working time and converted into weekly monetary values. Additional information (e.g., COVID-19 pandemic-related data) was collected as part of the survey. For statistical analysis, (generalized) linear mixed-effects models were fitted to the data.

Results: A total of 120 office workers participated, the majority of them were women (71.7%) with a mean age of 43.7 years (SD 9.8). About 80% of office workers reported neck pain at baseline and neck pain-related loss of work productivity was 12% of working time. The intervention was able to reduce neck pain-related loss of work productivity by a marginal predicted mean of 2.8 percentage points (b = -0.27; 95% CI: -0.54 to -0.001, p = 0.049). The costs saved amounted to 27.40 Swiss Francs per participant per week. Our sub-analysis among participants in the control period of the study showed no clinically relevant effect of the COVID-19 pandemic (i.e., working from home) on neck pain intensity (b = -0.68; 95% CI: -1.35 to 0.00, p = 0.05) or neck disability (b = -0.05; 95% CI: -3.68 to 3.59, p = 0.98).

Conclusion: The effectiveness of a multi-component intervention in improving neck pain-related work productivity was confirmed by our study, with implications for multiple stakeholders. This is despite the adaptations of the original study design due to the COVID-19 pandemic. In addition, individual factors (e.g., physical activity, capabilities, motivation) and organizational

factors at work (e.g., number of breaks or hours spent at the computer) seem to have a stronger impact on neck pain than the actual place of work.

Details: https://www.zora.uzh.ch/id/eprint/219698/1/219698.pdf