

Abstract

Favourable changes in physical working conditions and the risk of all-cause sickness absence: A pseudo-experiment

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Background: We determined whether favourable changes in physical workload and environmental factors reduce sickness absence (SA) days using observational cohort data as a pseudo-experiment.

Methods: The data from the Finnish Helsinki Health Study included three cohorts of employees of the City of Helsinki (2000/2002-2007 [N=2927], 2007-2012 [N=1686] and 2012-2017 [N=1118], altogether 5731 observations). First, we estimated the propensity score of favourable changes (reduction in exposures) in physical workload and environmental factors during each 5-year follow-up period on the baseline survey characteristics using logistic regression. Second, we created and stabilized inverse probability of treatment weights for each participant using the propensity scores. Lastly, we used generalized linear model and fitted negative binomial regression models for over-dispersed count data to estimate whether the favourable changes decrease the risk of short-term (1-3 days), intermediate-term (4-14 days) and long-term (>14 days) SA using employer's register data.

Results: During a 5-year follow-up, 11% of the participants had favourable changes in physical workload factors, 13% in environmental factors, and 8% in both factors. The incidence of short-term, intermediate-term and long-term SA were lower in employees with favourable workplace changes compared to those without such changes. The reductions were largest for long-term SA. Reporting favourable changes in both workload and environmental factors reduced the number of

SA days by 41% within one year after the changes and by 32% within two years after the changes.

Conclusion: This pseudo-experimental study suggests that improving physical working conditions reduces SA.