



## The longitudinal relationship between control over working hours and depressive symptoms: Results from a population-based cohort study

Sophie C. Albrecht<sup>1</sup>, Göran Kecklund<sup>1,2</sup>, Kristiina Rajaleid<sup>1</sup>, Constanze Leineweber<sup>1</sup>

<sup>1</sup>Stress Research Institute, Stockholm University, Stockholm, Sweden, <sup>2</sup>Behavioral Science Institute, Radboud University, Nijmegen, The Netherlands

### Background

Mental health problems such as depression are the top cause of sickness absence from work in Sweden. A number of work-related factors affect depressive symptoms. However, research is unclear if the perceived flexibility to self-determine working hours (work-time control, WTC) is associated with depressive symptoms. Only few studies have investigated effects and even fewer applied a longitudinal design. We investigated if either sub-dimension of WTC, control over daily hours and control over time off, was related to depressive symptoms over time and examined causal, reversed-causal, and reciprocal pathways.

### Methods

The study was based on four waves of the Swedish Longitudinal Occupational Survey of Health which is a follow-up of representative samples of the Swedish working population. WTC was measured using a 5-item index. (Two items on control over daily hours, three items on control over time off). Depressive symptoms were assessed with a brief subscale of the Symptom Checklist. A number of covariates were considered. Latent growth curve models and cross-lagged panel models were performed in Mplus.

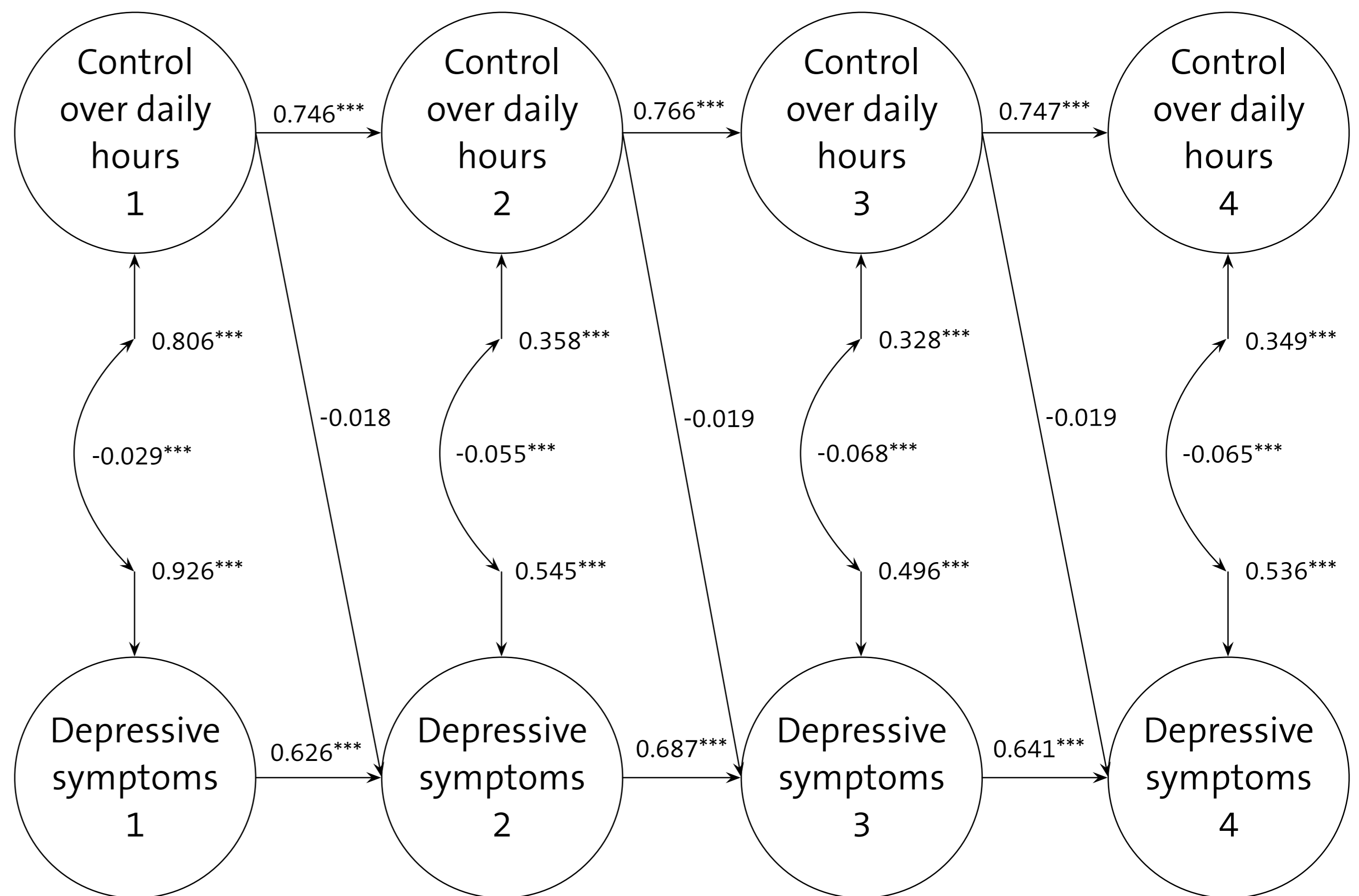
### Results

Best fit was found for a model with correlated intercepts (control over daily hours, correlation coefficient=-0.277,  $p < 0.001$ ,  $\chi^2 = 3087.757$ ,  $df = 760$ ,  $RMSEA = 0.033$ ,  $CFI = 0.957$ ) and both correlated intercepts and slopes (control over time off, intercept correlation coefficient=-0.145,  $p < 0.001$ , slope correlation coefficient=-0.222,  $p = 0.004$ ,  $\chi^2 = 2780.259$ ,  $df = 759$ ,  $RMSEA = 0.031$ ,  $CFI = 0.962$ ) between WTC and depressive symptoms, with stronger associations for control over time off. Causal models estimating effects from WTC to subsequent depressive symptoms were best fitting (Figure 1 & 2), but these paths were significant for control over time off only (standardised coefficient=-0.042,  $p < 0.001$ ).

### Conclusions

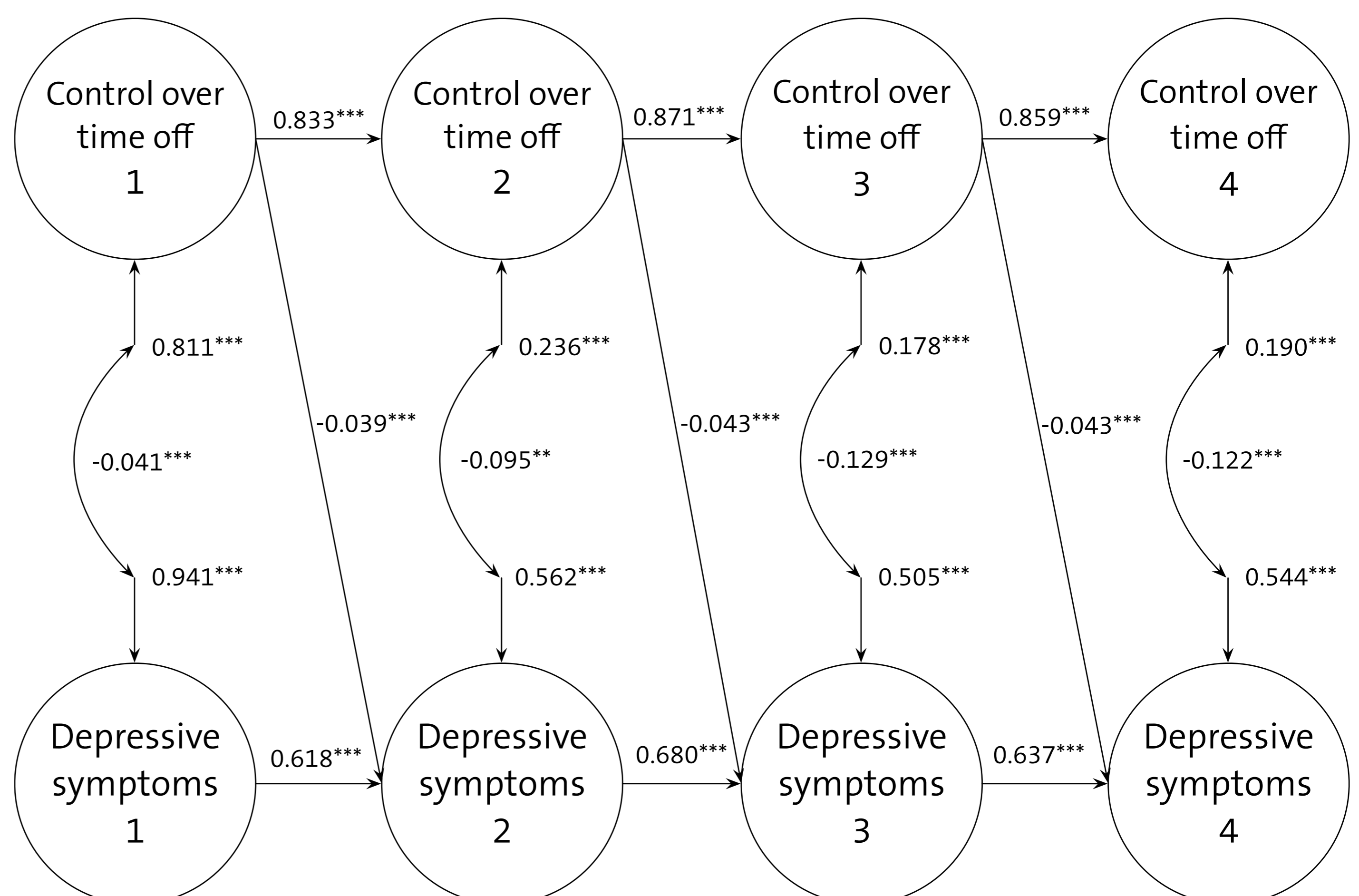
Higher levels of WTC were related to fewer depressive symptoms over time albeit small effects. Giving workers control over working hours – especially over taking breaks and vacation – may improve working conditions and buffer against developing depression, potentially by enabling workers to recover more easily and promoting work-life balance.

Figure 1



Best fitting cross-lagged panel model with standardised coefficients between control over daily hours and depressive symptoms. Observed variables, covariates and non-significant paths are not displayed. (\*\*\*)  $p < 0.001$ ,  $n = 2791$

Figure 2



Best fitting cross-lagged panel model with standardised coefficients between control over time off and depressive symptoms. Observed variables, covariates and non-significant paths are not displayed. (\*\*\*)  $p < 0.001$ ,  $n = 2791$