



Effect of partial sleep deprivation on self-rated health and sickness

Gustav Nilssonne^{1,2}, Sandra Tamm², Paolo d'Onofrio¹, Johanna Schwarz¹, Göran Kecklund¹, Torbjörn Åkerstedt¹, Håkan Fischer³, Mats Lekander^{1,2}
¹ Stockholm University, Stress Research Institute, ² Karolinska Institutet, Department of Clinical Neuroscience, ³ Stockholm University, Department of Psychology

Background

Subjective health is a predictor for morbidity, mortality, and health care consumption even after correcting for disease burden. Determinants for subjective health have been studied mainly using observational designs rather than with experimental manipulation of the independent variables. Predictors of interest include sleep, fatigue and subjective sickness. Here, we aimed to investigate the effect of partial sleep deprivation on self-rated health and sickness.

Methods

18 healthy volunteers participated in a functional magnetic imaging experiment on the effect of partial sleep deprivation on emotional regulation. Participants rated their subjective health and sickness at 3 time points: at baseline, in the evening following a night of normal sleep, and in the evening following a night of shortened sleep (3 h). In the short sleep condition, participants were instructed to go to bed 3 hours before their usual wake-up time. We used three questionnaires to measure subjective health and sickness:

- Self-rated general health was rated using one question with a Likert-type scale (1 - 5).
- Self-rated health today was rated using one question with a Likert-type scale (1 - 7)
- Self-rated sickness was measured using the novel Sickness-Q scale. The scale encompasses three subscales measuring fatigue, pain, and negative affect (Nixon Andreasson et al, in prep.)

Results

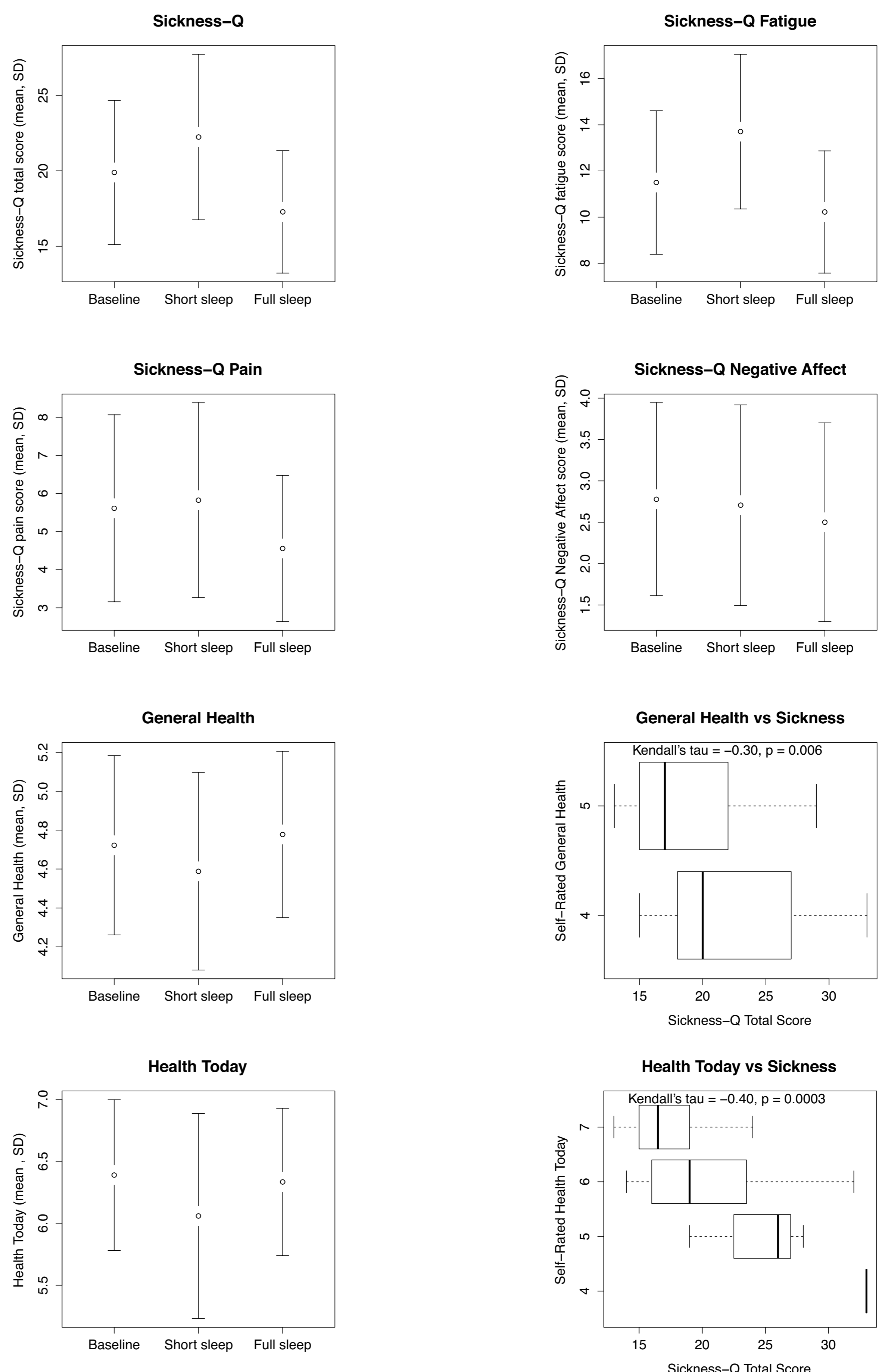
Partial sleep deprivation caused a non-significant decrease in general health compared to normal sleep ($p=0.09$) and to baseline ($p=0.08$), and a borderline significant drop in health today com-

pared normal sleep ($p=0.05$) and to baseline ($p=0.06$). Partial sleep deprivation caused higher self-rated sickness compared to normal sleep ($p=0.0002$) and to baseline ($p=0.005$). These changes were mainly due to higher ratings on the SQ fatigue subscale after PSD compared to both normal sleep ($p=0.0003$) and baseline ($p=0.01$). Ratings on the SQ pain subscale were also higher after PSD compared to normal sleep ($p=0.009$), but not significantly higher compared to baseline ($p=0.13$). Ratings on the SQ negative affect sub-

scale were not significantly higher after PSD compared to normal sleep. Self-rated general health and health today correlated to self-rated sickness.

Conclusions

Partial sleep deprivation caused increased self-rated sickness and a borderline significant decrease in self-rated health. Both measures of self-rated health were inversely correlated to sickness across sleep conditions.



CONTACT

Gustav Nilssonne, Stress Research Institute, Stockholm University
E-mail gustav.nilssonne@stressforskning.su.se Phone +46 8 5537 8934