



Detailed and specific shift work exposures, sleep and fatigue in a representative sample of Swedish shift workers.

Sundelin, T.^{1,3}, Olsson, A.², Lekander, M.^{3,4}, & Axelsson, J.^{2,4}

¹Department of Psychology, Stockholm University, ²Department of Clinical Neuroscience, Karolinska Institutet, ³Stress Research Institute, Stockholm University, ⁴Osher Center for Integrative Medicine, Karolinska Institutet. Stockholm, Sweden.

Take-home message

Sleep deprivation affects the way we react to how other people treat us, specifically by making us feel more meaningless when socially excluded.

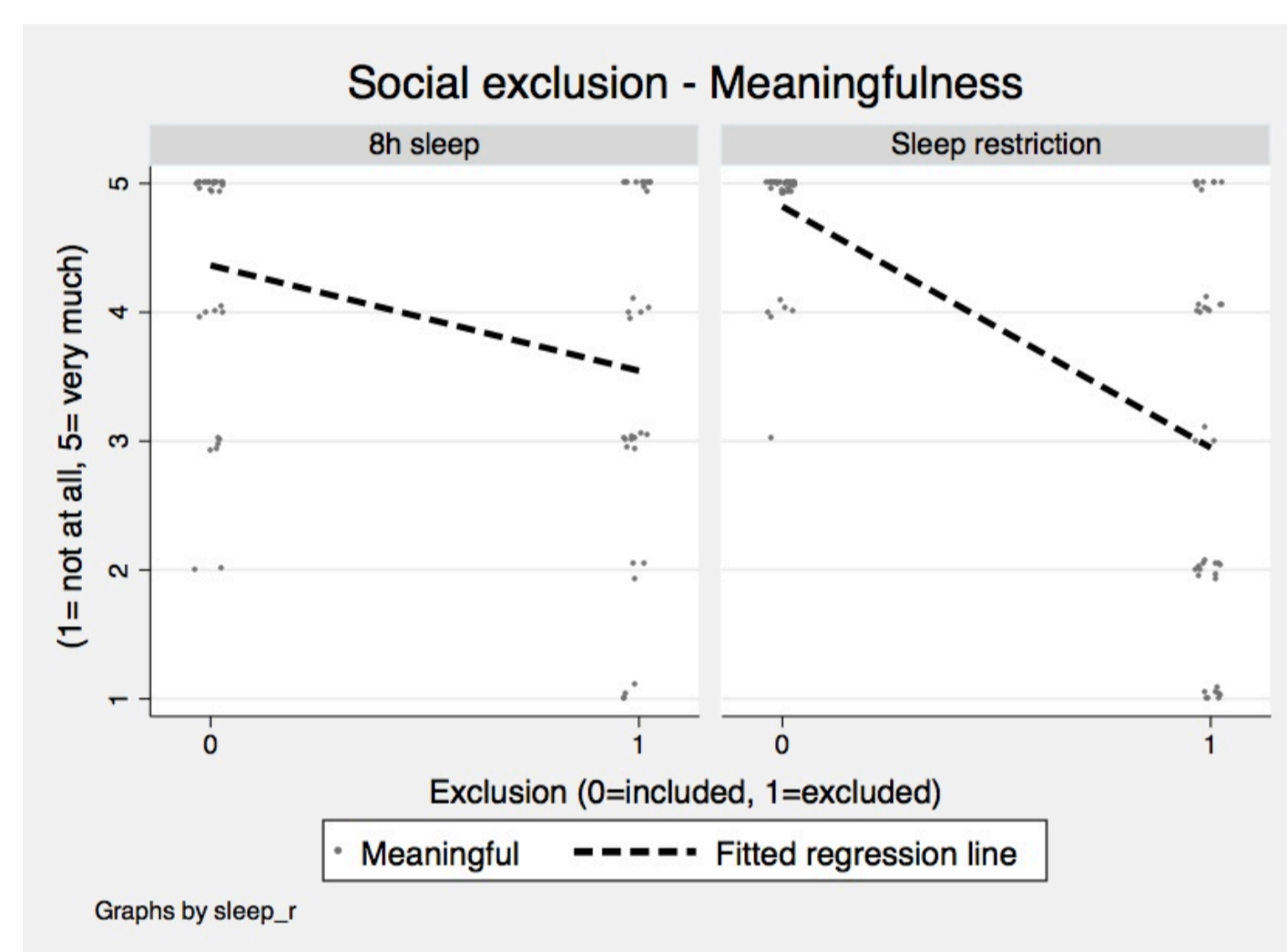
Background

Sleep loss is related to several affective aspects, such as emotional memory, emotion perception, and emotional reactivity. Recent fMRI data shows an amplified amygdala response to negative emotional stimuli when sleep deprived, as well as a loss of functional connectivity with the medial prefrontal cortex. Taken together, this suggests less rational social judgments in sleep-deprived individuals, particularly when under emotional distress.

We hypothesized that sleep restricted individuals would be more sensitive to social emotional distress than would their well-rested peers.

Method

24 healthy individuals (mean age 24,3) with a habitual sleep need of 7-8,5h/night were randomly divided into two groups: sleep restriction and control.



Meaningfulness was measured by the statements "I felt invisible", "I felt meaningless", and "I felt non-existent". There was a significant interaction effect of sleep deprivation and exclusion. $p < 0.01$



Belongingness was measured by the statements "I felt disconnected", "I felt excluded", and "I felt like an outsider". There no significant interaction effect of sleep deprivation and exclusion. $p > 0.01$

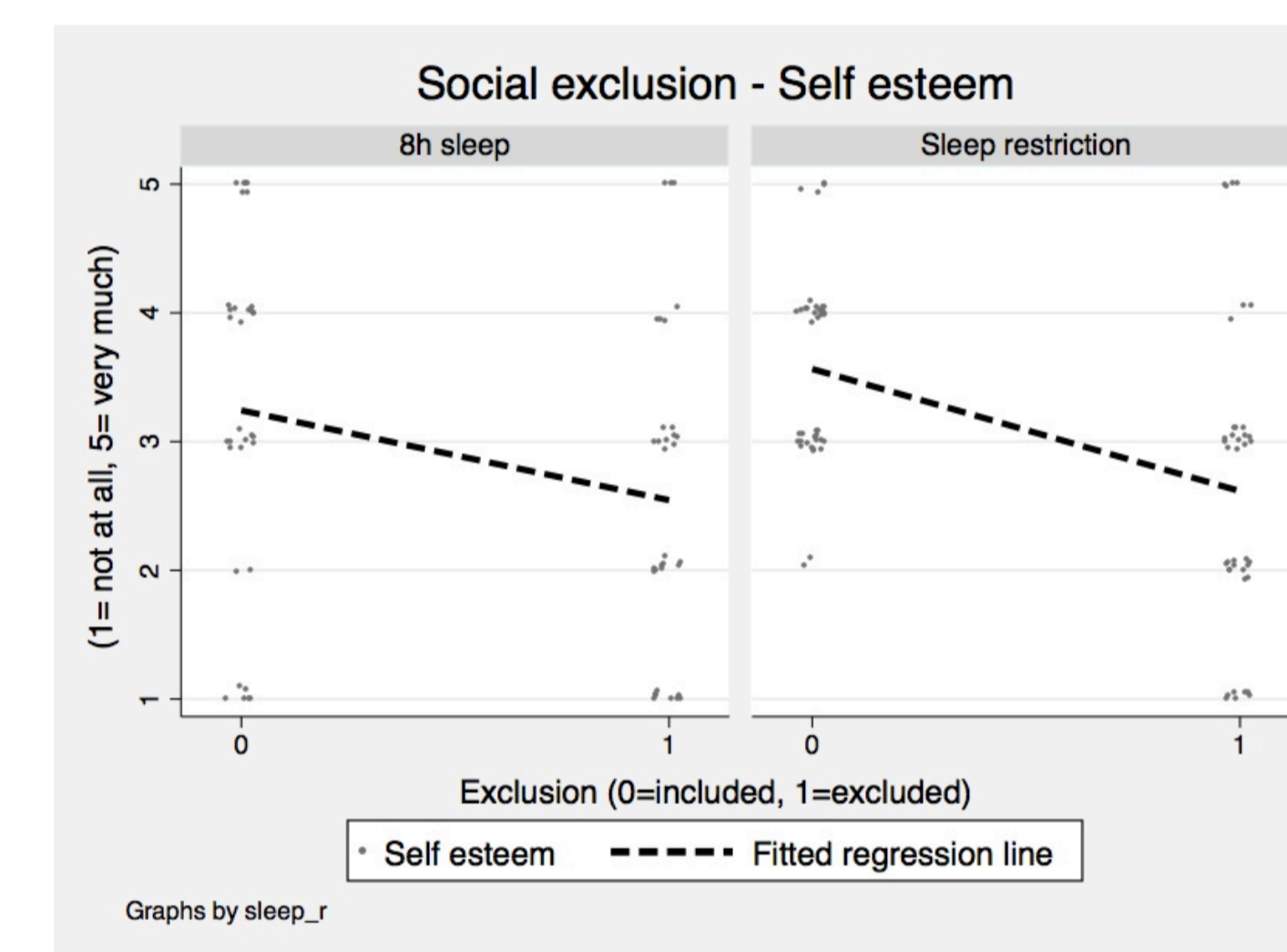
The sleep restriction group slept 4h/night for two consecutive nights and the control group spent at least 8h in bed on two consecutive nights before coming into the lab at 1300h or 1430h.

They then played a computerized ball tossing game, ostensibly against two other players over a network. The game was played in two sessions and during the second session the other two "players" started excluding the participant by not throwing him/her the ball.

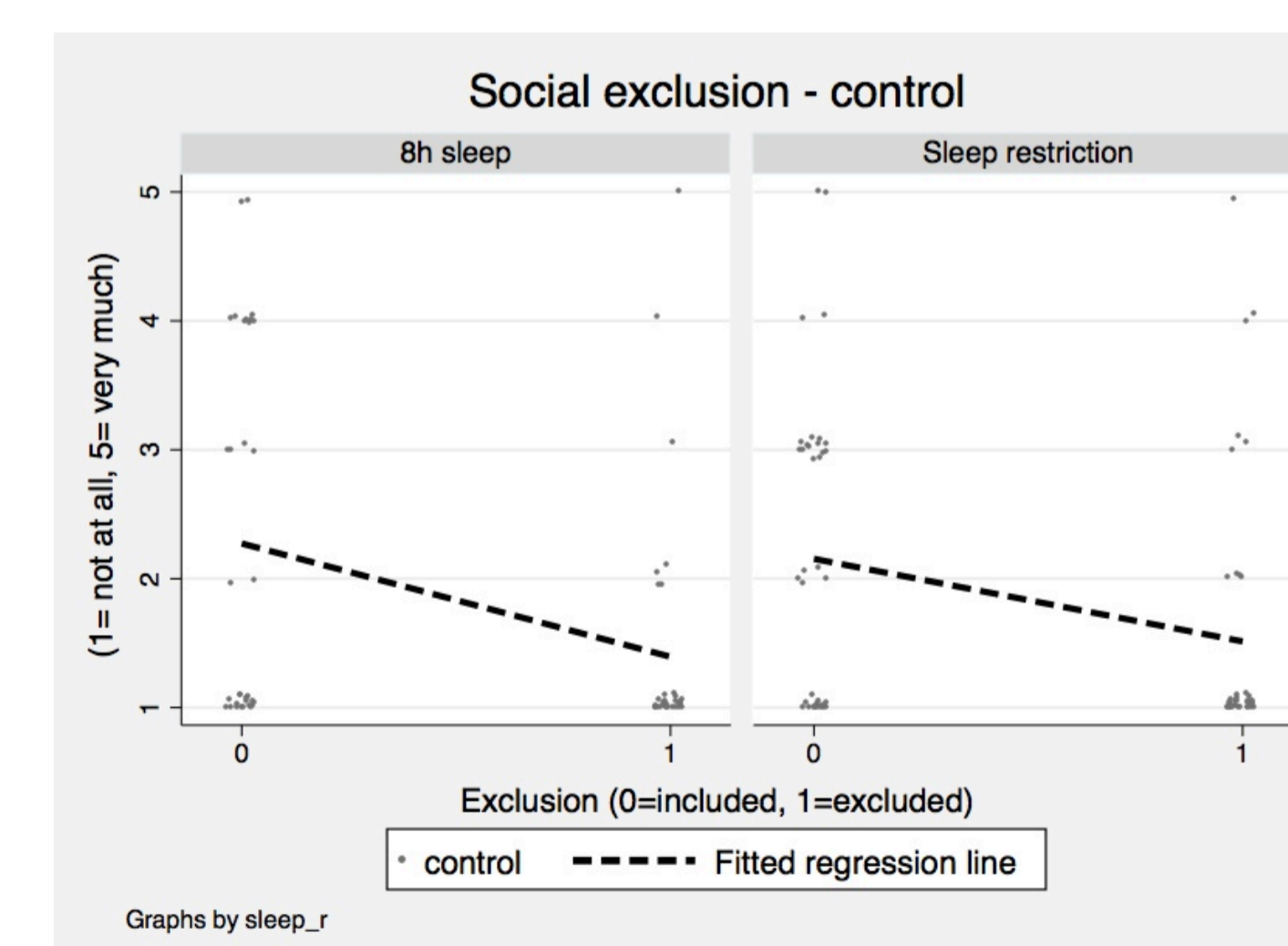
A questionnaire was completed after both sessions, assessing participants' feelings of belongingness, meaningfulness, perceived control, and self-esteem on scales from 1-5 (not at all – very much).

Results

The sleep-restricted group was more negatively affected by exclusion in terms of feeling meaningless ($p < 0.001$). The groups did not differ significantly in belongingness, control, or self-esteem.



Self-esteem was measured by the statements "I felt good", "I felt liked", and "My self-esteem was high". There no significant interaction effect of sleep deprivation and exclusion. $p > 0.01$



Perceived control was measured by the statements "I felt powerful", "I felt like I was in control", and "I felt superior". There no significant interaction effect of sleep deprivation and exclusion. $p > 0.01$

CONTACT