Reviewer's report

Title: Occupational sitting time and its association with work engagement: results from the Stormont Study

Version: 2 Date: 10 October 2014

Reviewer: Arnold B Bakker

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Review BMC Public Health

This is an interesting study about sitting time and work engagement. I liked the overall idea, but was a bit disappointed in the design of the study, which is basically cross-sectional. This means that its unclear what is the cause and what the effect. The paper is also limited in terms of theoretical contribution – it is not clear at all WHY engagement would be related to sitting time. Are enthusiastic individuals more likely to walk around and explore? Or does that depend on the type of work (e.g. software programmer versus sales person). Below, I give an overview of my concerns, with the aim to help the authors.

1. In the abstract you write: “men with high work engagement of vigor (OR = 0.49, 95% CI 0.34-0.98) and dedication (OR 0.68 95% CI 0.47-0.98) and in active jobs (OR = 0.49, 95% CI 0.49-0.90) were less likely to have prolonged sitting time. Women with high work engagement of high vigor (OR = 47 0.62, 95% CI 0.45-0.84) were also less likely to have prolonged occupational sitting times and women with high absorption (OR = 1.29, 95% CI 1.01-1.65) were MORE LIKELY to have prolonged sitting times.” Further, on p.14 you write: “Overall, this study showed that being actively engaged in one’s work is associated with lower occupational sitting times for men (vigor and dedication) and to a limited extent for women also (vigor and absorption). This is inconsistent. Are women with higher levels of absorption more or less likely to sit?

2. p. 3, line 69. What is METs? Please introduce abbreviation.

3. p.3, line 76: “Other studies have examined the influence of the job demand and control on leisure-time physical inactivity and report that poor psychosocial work environment is associated with a slight increase in risk of physical inactivity.” Please check sentence.

4. Your study is cross-sectional. You mention previous research showing that sitting has detrimental effects on well-being. Do you expect sitting time to undermine work engagement, or does work engagement lead to less sitting time? One theory could be that work engagement is an active, positive state that leads to approach behavior and openness to new experience. This could imply (perhaps depending on occupation, and tasks) that engaged employees are more likely to stand up and do something active.
5. Do you expect differences between the three dimensions of work engagement regarding their relationships with sitting time?

6. What do you mean with the sentence: “…as well as job performance and job demand and job control as measures of organizational health indices…” (p.4, line 96). Are job demands and job control really indicators of organizational health? Do you mean hindrance job demands or challenge job demands? What is your definition of organizational health? This is ambiguous.

7. Your response rate is fairly low (20%), and you removed data of participants with missings, even further reducing the size of the original sample approached. Could there be differences between the sample and the dropouts regarding the model variables? Those with less sitting time are less likely to respond, because they are less likely to respond to emails in the first place?

8. Please check the manuscript for small mistakes and typos. At some places, words seem to be missing, like in this sentence on p. 8 (line 218): “There were no significant differences in the proportion of men and women reporting work vigor, or being jobs classed as low strain, active or passive.”

9. I missed hypotheses in the Introduction about gender – still you conducted analyses for men and women separately. Do you expect differences? In what direction are the effects, and why?

10. The study seems somewhat limited in the sense of theoretical and empirical contributions. It may be worthwhile to conduct a second study, in which employees high or low in general work engagement and high or low in daily work engagement are followed over the course of several days, and to assess their sitting time. This would also offer an opportunity to assess possible mediators of the effects, like number and length of interactions with colleagues; and to control for type of occupation, because that would be a within-person analysis.

Good luck with your work!

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No competing interests