Author’s response to reviews

Title: Effects of a cognitive ergonomics workplace intervention (CogErg) on cognitive strain and well-being: a cluster-randomized controlled trial. A study protocol

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Author’s response to reviews:

Dear Darren Byrne,

Attached please find our revised manuscript PSYO-D-19-00080 (Original title: CogErg: A group-level cluster-randomized controlled trial to evaluate the effects of a cognitive ergonomics intervention on cognitively straining working conditions, workflow, and well-being in knowledge work).

We thank the editor and the reviewer for their constructive and helpful comments. We have now considered all the comments and have carried out the suggested revisions, as described below in more detail.

We hope that you find the revised version of our manuscript suitable for publication in the BMC Psychology.
Sincerely,

Virpi Kalakoski

Responses (R) to the Editor comments

1) Please state in the Funding section of the Declarations that the manuscript was peer-reviewed by the funding body.

- R1: This information was added, Funding section line 27, page 25.

2) Please state in the title that this is a study protocol.

- R2: “Study protocol” was added to the title, page 1. The title was also shortened as suggested in the Reviewer comment 1 below. However, if the editorial view prefers the original longer but more informative title, please let us know if the title should be replaced by the previous one or if there are other comments.

  o New title: Effects of a cognitive ergonomics workplace intervention (CogErg) on cognitive strain and well-being: a cluster-randomized controlled trial. A study protocol.

  o Original title: CogErg: A cluster-randomized controlled trial to evaluate the effects of a cognitive ergonomics intervention on cognitively straining working conditions, workflow, and well-being in knowledge work. A study protocol.

3) Please move the trial status and study monitoring sections from the Declarations.

- R3: Trial status has been moved to and combined in section Materials and Methods, line 16-17, page 7.

- R3: Study monitoring has been moved as a subsection to line 18-27, page 7.

Responses (R) to the Reviewer comments:

(1) The title of the paper is very long. I recommend shortening it to 12-15 words max.

- R1: The title is shortened and it is now stated that this is a study protocol (See Editor comment 2) and response 2 above)
(2) In the introduction, you could provide a bit more information on the intervention program, and how it expands and related to existing programs in order to further stress the contribution of your study.

- R2: We have now restructured the Introduction subsection ”Improving human performance and well-being with ergonomics” page 4-6.
- R2: Furthermore, we have stated more explicitly in this subsection how our study expands and relates to the existing programs. Line 23-25, Page 4. Line 6-8, page 5. Line 18-39, page 5.

(3) Concerning the choice of secondary outcome variables, please provide a little bit more explanation.

- R3: We have expanded the section Aims and Hypotheses; we connected it more explicitly with the themes in the introduction which provides more explanation for the choice of secondary outcomes. Section Aims and Hypotheses, line 9-12, page 6. Line 22-27, page 6.

(4) In addition, especially for the proposed moderators (participation percentage, commitment of supervisors, participants' responses to the intervention) I missed arguments why you chose to look at these three aspects, and not others.

- R4: We refer now more explicitly to the intervention process evaluation, which defines the three relevant themes. Since the data will be qualitative, we can only give examples under the three process evaluation components (context, implementation, and the mechanisms of impact). We hope the revision clarifies that it is about the components, and that the aspects mentioned are examples; the analyses can also find other aspects under these themes. This has also been clarified in the analyses sections. Section aims and hypotheses, line 36-37, page 6 and line 1-2 page 7.

(5) Please number your hypotheses consecutively.


(6) When describing the study design on p. 6, please also describe the number and timing of measurement points, as well as the frequency and process of the interventions. You can also refer to figure 1 already here. This would make the following sections easier to comprehend.
- R6: We have added the required information and reference to the figure and relevant tables on line 33-37, page 7.

(7) It is fine for me to present the instruments in a table, but I would recommend to include one sample item each as well as information about Cronbach’s Alpha.

- R7: We have expanded the section Outcome measures line 36-38 page 18 and line 1-38 page 19 and line 1-9 page 20. We have included sample items and we have commented on the reliability and we have included Cronbach’s Alphas if these were citable. This information is added in the main text in order to keep Table 4 compact.

- R7: However, we did not expand the general description of Study questionnaire modules in line 16-24, page 11. The reason is that the study includes many variables that are not critical to the intervention design and outcomes; we thus kept Table 1 compact. We think that, in the context of a study protocol, the most relevant aspects are the description of the design and the intervention, and the primary and secondary outcomes variables. All items for these variables are listed in Table 4 and now also some details are added to the main text as described in the previous response. However, other study questionnaire modules will be described in more detail in other contexts when results including those instruments and variables are reported.

(8) In order to keep the overall manuscript comprehensible you may decide to focus your analyses on certain aspects.

- R8: We have added in the manuscript that analyses and results will be reported in multiple articles dedicated to specific aspects of the study. Section Plan of analysis line 15-16, page 20.