Author's response to reviews

Title: Individual and work-related risk factors for musculoskeletal pain: a cross-sectional study among Estonian computer users

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Version: 1 Date: 20 April 2014

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The Biomed Central Editorial Team


Thank you for consideration of our manuscript for publication in your journal. We have reviewed the above manuscript according to your reviewer’s comments.

Reviewer # 1 (Helen Harcombe)
Minor essential revisions
Abstract
1. Check the % reported after shoulder pain – should it be 30%? See the later comment relating to Table 1.
Yes, it should be 30%. Change has been made.

2. Please make it clear that the ‘most consistent risk factors’ were not necessarily statistically significant. Alternatively you could consider only commenting on statistically significant findings in the abstract.
The abstract of the article has been changed as the reviewer indicated.

Background
3. 4th para: ‘Until recently…’ Please clarify if this referring to another study (in which case reference and discuss) or is this referring to the current study?
This is referring to the current study. The CUPID study is the first one in Estonia that assesses the prevalence of musculoskeletal pain and investigates the association of MSP with work-related risk factors and personal characteristics among the computer users. To clarify this, a sentence has been corrected.

Methods
4. Study design and subjects 3rd para: I suggest moving the information about responders/response rate to the results section.
Has been changed as the reviewer suggested.
5. Please add additional information to the statistical analysis section about what was adjusted for in the analysis of risk factors.
Additional information has been added as the reviewer suggested.

Results
6. To be consistent with Table 2 and the Discussion, I suggest the results section refers to the lower odds with left handedness/both handedness rather than higher odds with right handedness.
Has been changed as the reviewer suggested.

7. Please make it clear that the ‘…patterns of association…’ are not necessarily statistically significant findings.
Has been changed as the reviewer suggested.

Discussion
8. Line 2: Again, make it clear to the readers that these are not necessarily statistically significant.
Has been changed as the reviewer suggested.

9. 3rd para: Clarify – this says 25% but the results said 40%.
Yes, 40% is correct. 40% had consulted a medical practitioner about pain at one or more of the four sites, and 25% of respondents who had neck pain. It has been changed.

10. 3rd para: I do not think the findings (25% consultation) justify saying that ‘…symptoms were often more than trivial…’ when potentially 75% did not involve consultation. Couldn’t this mean that in fact most symptoms may have been trivial? Please amend or justify. In addition, there could potentially be a range of reasons not to consult other than ‘…participants may have felt that medical consultation was unlikely to be useful.’ I suggest adding a sentence to that effect.
The 25% has been corrected to 40%. Additional information has been added as the reviewer suggested.

11. 3rd para: In the section referring to not receiving sickness benefits, please be
more explicit about how this is of relevance to non-consultation. Has been improved as the reviewer indicated.

12. 6th para: Please add the appropriate year after Delisele et al. Has been added as the reviewer indicated.

13. 6th para: Please comment on why low job support may have been associated with lower odds of neck pain. Additional information has been added as the reviewer suggested.

14. 8th para: Add references after ‘other similar investigations.’ Has been changed as the reviewer indicated.

15. 8th para: Although the authors refer to ‘other similar investigations,’ couldn’t the alternate explanation for the association with work attribution beliefs in this study be that participants came to have these beliefs after they and/or colleagues experienced MSDs at work? I feel additional comment should be added to reflect this. Has been changed as the reviewer indicated.

Table 1
16. Spell out the abbreviation in the title. Change has been made as the reviewer indicated.

17. Check the calculations: Should shoulder pain lasting longer than x1 day be 30%, frequent low back pain 9% and frequent neck pain 14%? Yes, changes has been made as the reviewer indicated.

Table 2
18. Add additional information to footnote ‘b’ to say what it is mutually adjusted for to make it clear why some of the variables are/are not in the mutually adjusted results. Change has been made as the reviewer indicated.
References

19. These should all be checked for accuracy e.g. spelling errors in references 14, 15 and 22.
Has been corrected as the reviewer suggested.

Discretionary revisions

20. Abstract: If you are able to within the word count, I suggest adding the % after ‘Most respondents…’
Change has been made as the reviewer indicated.

21. Methods - Variables: Although you have referred to the CUPID study earlier, it could be helpful if there was another reminder here in relation to further information about the questions participants were asked. Consider adding something like: ‘Many of the variables have been described in detail previously (reference). In brief,….’
Change has been made as the reviewer indicated.

22. Results Para 2: I suggest either adding ‘participants’ after ‘49’ and ‘31’ (lines 2 and 3) or changing to 24% (n=49). (Ensure any changes are consistent throughout paragraph).
Change has been made as the reviewer indicated. Word ‘participants‘ has been added after numbers.

23. Results Para 3: Please check and ensure that the risk factors are referred to in the text in the same order that they are listed in the table.
Change has been made as the reviewer indicated.

24. Should there be a comment about somatising tendency and neck pain in the results?
Change has been made as the reviewer indicated.

25. Should there be a comment about emotional exhaustion and low back pain when commenting on the mutually adjusted model in the results?
Change has been made as the reviewer indicated.
26. Results: There are several findings that have 95% confidence intervals with lower limits very close to one in mutually adjusted models, e.g. low job security and low back pain OR 2.29 (0.99, 5.32) and work attribution beliefs and wrist/hand pain OR 2.07 (0.97, 4.45) which may warrant commenting on.

Change has been made as the reviewer indicated.

27. Discussion Line 1: I suggest using the word ‘prevalence’ instead of ‘frequency’ to be consistent with the wording in the aims. (Also in the next para).

Has been corrected as the reviewer suggested.

28. Discussion 2nd para: Here, and possibly elsewhere in the manuscript, I suggest putting the references beside the aspects they are referring to rather than all together at the end of the sentence.

Change has been made as the reviewer indicated.

29. Table 1: Although it can be calculated, consider adding the total ‘n’ to the table.

Change has been made as the reviewer indicated.

Minor issues not for publication
Methods, Variables Para 3: add the word ‘were’ after ‘examined’
Table 2: Check formatting for emotional exhaustion/shoulder pain.
Note that for references 12 and 15 the spelling should be Derrett in the list of authors.
Change has been made as the reviewer indicated.

Reviewer #2 (Eleni Solidaki)
Minor essential revisions:
1. There are missing values in the column of mutually adjusted Ors (table 2). Were they not included in the model or was there a problem with calculations? It is not clear to the reader how the multivariable model was constructed. A clarification should be made about this in the methods section.
In the mutually adjusted model only significant risk factors from the first model was used and added in table 2. Additional information has been added in the ‘Methods’ part.

Discretionary revisions:
1. The association of low job support with a much lower risk for neck pain is an interesting finding. Is there a theory that could illuminate this association? You could add this to the discussion section.
Additional information has been added in the ‘Discussion’ part (6th para).

Reviewer # 3 (Prawit Janwantanakul)

Abstract
•The authors should mention that the prevalence investigated in this study was the 12 months.
Change has been made as the reviewer indicated.

•More information about the number of office workers approached and accepted to participate, the way of data collection, and risk factors should be included.
Change has been made as the reviewer indicated. The number of sent questionnaires was added. Risk factors were specified (`individual and work related` was added).

•The way that the authors reported the findings seems to me that the authors believed MSP in office workers, regardless of body regions, would cause by same risk factors. This hypothesis is not supported by recent evidence.
Has been corrected as the reviewer suggested. `In different anatomical sites` has been added.

Introduction
•My main concern relates to the reason for conducting this study, i.e. no such study has been conducted in Estonia. The reason for conducting the study should relate to a gap in the literature or, in other words, the contribution of the study to the literature.
Has been corrected as the reviewer suggested.

Methods
•Some details about how data were collected should be provided.
Change has been made as the reviewer indicated (2\textsuperscript{nd} para).

•Please provide a diagram used in this study to illustrate the body parts.
The diagram has been published earlier (Coggon D et al: The CUPID study: methods of data collection and characteristics of study sample. PLoS One 2012, 7(7):e39820, Appendix S2) and it does not give the additional value to this article.

•I wonder about the reliability of information regarding the number of days experiencing pain in the past year. It relies heavily on memory. Should this be one of limitations of this study? In fact, the authors collected several subjective data. Another limitation of the study?

Change has been made as the reviewer indicated (discussion 7\textsuperscript{th} par).

•Justification for collecting data regarding somatizing tendency would be useful.

Change has been made as the reviewer indicated. `Questions were taken from the Brief Symptom Inventory' has been added.

•I am not sure what the difference between mental health and psychological risk factors is. Please clarify.
The mental health was assessed by the questions from SF-36 questionnaire. It described the consequence of psychosocial risk factors. The psychological risk factors are factors that influence the mental health (the reason of worsening mental health).

•I am quite surprised that the authors chose to eliminate the prevalence of knee and elbow pain at the point of data analysis. What was the point for collecting such data at the first place?

Since it was a part of CUPID study, the same questionnaire was used in every country and among every occupational group. The knee and elbow pain prevalence was quite low (30\% and 15\% respectively) and not significantly associated with individual and work related risk factors. And also in statistical analysis section it is mentioned that `Knee and elbow pain were excluded from consideration because knee pain has not been linked with use of computers and the prevalence of elbow pain was relatively low`.

•More details regarding statistical analysis should be added, i.e. how the
regression was carried out in step-by-step fashion, the level of statistical significance, number of missing data and its management.

Additional information has been added in the ‘Methods’ part.

Results
• Please describe the meaning of ‘mutually adjusted analyses’, probably in the statistical section.

Additional information has been added in the ‘Methods’ part.

• Some descriptive information regarding individual and work-related risk factors would be useful.

Some descriptive information about individual risk factors is described in results (2nd para).
The other descriptive information of risk factors is shown in table 2 (n).

Discussion
• Some discussion for the differences in the findings between the present and previous studies is required for the 12-month prevalence and the associations between MSP and risk factors.

It is already done in discussion section (2nd para, 3rd para, 4th para, and 5th para).

• Regarding the findings of impact of experiencing MSP (i.e. medical consultation, sickness absence), I don’t understand the hypothesis that the authors proposed. Did you say that it was relevant to the law in your country?

Additional information has been added and this has been clarified.

• I thought that using statistical analysis would reduce a chance occurrence. Would you have another explanation for reduced risk of experiencing MSP in current smokers and right-handedness?

In the mutually adjusted model the smoking was not statistically risk factor any more, but in the first model (adjusted for gender and age) it was significant. So it could be a chance occurrence in the first model.
The right-handedness remained the significant risk factor also in the mutually adjusted model. But because this association is difficult to explain biomechanically, it may have observed occurred by chance.
• When the authors claimed that one of the strength of this study was employing validated and widely used questions to ascertain MSP and several risk factors, more information should be provided in the method section to demonstrate its validity.

Additional information about used questionnaire has been added in the ‘Methods‘ part.