Author's response to reviews

Title: Associations between dental anxiety, sense of coherence, oral health-related quality of life and health behaviour - a national Swedish cross-sectional survey

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Author's response to reviews: see over
Dear Editor of BMC Oral Health

Thank you for your positive response to our submitted manuscript 1850435201601025. We have carefully read and considered the reviewers’ comments and suggestions to the manuscript “Associations between dental anxiety, sense of coherence, oral health-related quality of life and health behaviour - a national Swedish cross-sectional survey”. In this letter we give responses to these suggestions and explain the changes made in the revised manuscript. We hope that you will find these changes in accordance with your and the reviewers intentions.

Reviewer: Orachad Gururatana

Major Compulsory Revisions

1. The question posed by the authors needs to be clarified. Why more studies investigating the relationship between DA and SOC, OHQoL and health-related behavior are needed?

   - Revisions have been made to the last paragraph of the introduction on page 5 lines 106-113 in order to clarify this.

2. The abstract does not clearly address the problem. The rationale of the study needs to be stated in the abstract section.

   - Revisions have been made to the abstract in order to state the rationale of the study on page 2 lines 25-28.

Minor Essential Revisions

1. The authors mentioned a lot about the vicious circle of DA. Although there was a sentence that described the circle in the background section, would it be possible to add a figure of the circle to enhance understanding?

   - A figure of the vicious circle of DA has been added and is referred to in the text on page 4 line 81.

2. In the discussion section please explain why oral hygiene behavior was not related to DA in this study.

   - Revisions have been made to the discussion in order to explain these findings, page 15 lines 352-358.
3. The administration of short forms of the SOC and OHIP scales may affect the results of this study. This should be stated as one of the limitations.

- The following sentences have been added in the paragraph describing strengths and weaknesses: “Short scales consisting of one to five questions were used to capture the different concepts investigated. These measures may not be as precise as more elaborate measures, which may be considered as a weakness.” Page 15 lines 362-364.

Reviewer: Ulrika Lindmark

Major Compulsory Revisions

General comments

1. A central issue in the manuscript is the methodological choice of using the short form of the three instrument measuring Anxiety, the OHIP and more important the SOC. In the discussion section, the authors have some reflection about this. However, I suggest the authors to add some more considerations about methodological limitations using these short forms, including validity and reliability aspects. For example, there is just one earlier research group (Peck et al.) that have used SOC-3-items, but a lot more studies have used the more reliable versions 29- and/or 13-items. For DA, reference from 1990 is used. Hasn’t it been used more and later? As the authors express it “…to keep a questionnaire short to make data collection possible…”, is not enough. More specific comments about this below.

- The measure used for DA has been used more recently but the reference from 1990 is a validity study comparing it to a more elaborated measure of DA.
- The SOC-3 measure has been used by several research groups and the following sentence with a new reference was added on page 7 lines 147-149: “The scale has been used in a substantial amount of research and has been compared to Antonovsky’s original 29-item measure of SOC, showing a correlation of 0.72 between the two measures [33].”
- The following sentences have been added in the paragraph describing strengths and weaknesses on page 15 lines 362-364: “Short scales consisting of one to five questions were used to capture the different concepts investigated. These measures may not be as precise as more elaborate measures, which may be considered as a weakness.”

2. I suggest the author to consider when to use the words concept, construct and theory, throughout in the manuscript. Moreover, the method and material section need to be improved. See more in detail below.

- Changes have been made to the manuscript. Concept is now used consistently.

Comments based on each section in the manuscript

Abstract
3. I suggest the authors to consider the result part and the conclusion part. There is very little about
the results, which is more like a conclusion. The conclusion should be based on the results, not added
or complementary information. If words is needed, the background could be shorter.

- The sentence “Dental anxiety was not associated with oral health-related behaviour or
socioeconomic status” was added to the result section in the abstract on page 3 lines 44-45 in
order to more fully report the results.

Keywords

4. These words should be in alphabetic order. A recommendation is to not use the same words as in
the title in order to have a broader search area. Use Mesh-terms if possible.

- The keywords are now in alphabetical order.

Background

5. P4, line73: Shouldn’t it be “several oral health-related outcomes.”? If so, add “oral” in the
sentence.

- Dental anxiety is also related to sick-leave, symptoms of anxiety and psychiatric disorders, so
this sentence is meant to be broad not only limiting to oral health.

6. P4, line83: “These concepts…” What does this refer to? Is it referred to the oral health-related
outcomes? Please clarify.

- This has been clarified in the manuscript on page 4 line 85.

7. P4, line 87-88: “…the sense of coherence (SOC) construct.” SOC can either be seen as a concept,
including in the salutogenic theory. Also, it can be described as an instrument, measuring an
individual’s SOC. In that context, the SOC construct can be described. Based on this, my
interpretation is that it should be expressed as “…the sense of coherence (SOC) concept”, and not
construct.

- Construct is changed to concept in this sentence.

8. P5, line93 and line 96: “According to the theory..” Which theory do the author refer to?

- This sentence has been changed to “According to Antonovsky…” in order to specify that
this comes from his thoughts about the SOC.

9. P5, line 96: Also, “…a salutogenic concept,…”. As at the page before and above about the words,
concept and theory. This is inconsequent. I suggest the authors to discuss what is meant to be
written and to be consequent. A concept is one thing and a theory is another.

- No changes are made to the sentence since theory is no longer mentioned in the previous
comment. This should make the manuscript more consequent.

10. P5, line98: The letter s is missing in behavior(s)
We have had the language checked by a professional translator and she recommended that we wrote behaviour.

Material and methods

11. P5, line 112: The second “…was carried out by…” may be another words in order to not be repeated in the same sentence. A suggestions could be “…was made by…”.

The beginning of the sentence is now changed to “The data collection was carried out as a telephone survey performed by TNS-SIFO”.

Subjects

12. P5-6, line 112-119: In this section, I miss a lot of information. When did the telephone interviews performed? Period? One time or several? Who did the interviews? Was it one or several persons? Are these person(s) use to ask about sensitive questions like some of these are? How was the data collection performed in more detail? Database? How did the person(s) who collected the data handle the data? Confidentiality? How about the ethical aspects for this kind of data collection? I strongly recommend the authors to add some more information about the data collection and ethical aspects on this. The Swedish TNS-SIFO is not known international, and need to be explained more.

The information that the data collection was conducted in May 2013 has been added to the manuscript on page 6 line 118. The TNS-SIFO uses professional interviewers used to asking personal questions in their surveys. The TNS-SIFO uses several teams of interviewers in their surveys. The current study has been approved by an ethical review board and TNS-SIFO handled the data in accordance with the ethical approval, Swedish law and the Helsinki declaration. We therefore consider the current reporting to be sufficient.

13. The sample included 3500 individuals, and the responds rate was 48.7%. How many individuals were offered the interview? If there is information about the non-respondents, this should be added. Please clarify.

Changes have been made to clarify the text on page 6 lines 120-126. We have no information about the non-responders but we have made a participation analysis. The title “Non-participation analysis” on page 9 line 202 has been changed to “Participation analysis”.

Instruments

14. P6-7, line 139-141: Even if the authors refer to an earlier study about the reliability, I suggest the authors to test for Cronbach alpha for this study, as is made for the OHIP. As written before, I suggest the author to consider the choice to use the SOC-3 items as well as the other short forms (OHIP, DA), in the discussion part. Also, analyzing the SOC scale, why have the author used a score from 0-6 instead for 1-7, as in the original scale? To refer to an earlier study, is not enough.

In references 31-33 used in that section the SOC-3 scale is scored from 0-6. The reliability in the reference 31 is not calculated as Cronbach’s alpha but as test-retest and weighted Kappa. In the last paragraph of the discussion on page 15 lines 362-364 the sentences “Short scales consisting of one to five questions were used to capture the different concepts investigated.”
These measures may not be as precise as more elaborate measures, which may be considered as a weakness” has been added.

15. P7, line 162-163: “(less often than every other year,...”). This could be every third year, is that irregular today? Maybe a minor consideration about this in the discussion part.

- We needed to make a dichotomization and usually revision controls by dentists or dental hygienists are every one to two years. Also we do not have more specific information about the dental visiting patterns of the subjects.

16. P8, line 176-183: According to the missing items, a reflection is why? The study is based on telephone interview, i.e. a person ask for their answer on each question. Were the questions difficult to answer? Sensitive? Again, I suggest the authors to add a non-response analysis, and also add some reflection about both external and internal non-response in the discussion part.

- In a pilot study the questions were not perceived as difficult or sensitive. We have added a non-response analysis regarding the SOC-3 in the results section on page 10 lines 231-236. Also the following sentence has been added in the discussion, pages 15-16 lines 364-366: “Missing items on the SOC-3 scale was associated with older age, which may indicate difficulties in answering the SOC-3 questions among older individuals”.

Results

Dental Anxiety

17. P9, line 208-210: These results about the significance is not clear in the table (Table 1). As a reader, it is difficult to see and understand if the results refer to between the groups or within the group. A suggestion is to add a column, p-value high DA vs low DA.

- An explanation has been added to the legend of Table 1.

18. P9, line 210: According to the results about Age, “...and younger...” Was it female and younger in combined or is it refer to the whole group? Please clarify, since this is not obvious and can’t be seen in the table.

- The results of two different statistical tests are reported in the text (one for age and one for gender) and this is clearly referred to in Table 1. It should be clear that these refer to comparison between the high and low DA groups for age and gender but not for testing the combination of age and gender.

SOC/DA

19. P10, line 225-229: This is an interesting result. However, for the reader, I suggest the authors to add in the manuscript, that this data is not shown in the table.

- Since Table 1 is not referred to we think the current reporting of the results in the text is sufficient.

Discussion
20. As suggested before, I miss reflections about ethical considerations.

- *We have an ethical approval for the study and have followed the regulations in the Swedish research ethical law and the declaration of Helsinki. We therefore believe that there is no need to further discuss this matter in the Discussion part.*

21. As suggested above, I recommend the authors to reflect on the use of the short versions of the instruments used in this study. I agree that to study the same phenomena with different measurement is often of a value. However, to minimize established scales (as in current study), and compare with studies using the original versions, must be considered in the discussion. Would the authors recommend further studies with these shorter versions instead of the originals? If so, a motivation for that?

- *We agree that using different scales may present a problem when comparing studies. A sentence describing this difficulty has been added on page 14 lines 322-323.*

22. P13, line 304: “...the theory in three....”. I suggest to change to the word concept, instead of theory.

- *The sentence has been changed to ...the SOC concept...*

23. P14, line 328: “This study also...”. What does “This study” refer to? I suggest the author to reformulate this sentence.

- *The beginning of the sentence has been changed to “The current study also...” as a clarification*

24. P15, line 338: “established scales”, based on earlier comments on this, I don’t agree. I recommend the authors to be easier on this assumption.

- *We do consider the scales to be established. OHIP is a very well used scale and the short version used in the current study has been evaluated in the Swedish general population. The SOC-3 has also been used in a number of previous studies and an extra reference concerning the SOC-3 has been added to the methods section. Single questions are often used in epidemiological surveys to measure DA and the DAQ has been tested for validity.*

25. P15, line 352: I think this sentence is more like a final point in the discussion rather than in the conclusions.

- *The sentence has been removed*

Tables

26. P20, Table 1: See earlier comments on recommendation about an extra column to clarify. Moreover, a reader must understand the Tables without reading the text in the manuscript. Sometimes also an extra note about relationships need to be done under the tables.

- *A clarification of the statistical analysis has been added to the legend of Table 1.*