Author's response to reviews

Title: An exploratory pilot study to assess self-perceived changes among social assistance recipients regarding employment prospects after receiving dental treatment

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Author's response to reviews: see over
Dear Editor,

Thank you very much for reviewing our manuscript entitled: “An exploratory pilot study to assess self-perceived changes among social assistance recipients regarding employment prospects after receiving dental treatment.” We have carefully considered the comments from the reviewers and have revised the manuscript by incorporating their valuable suggestions. All the changes are made using “track change” tool. With these changes we hope that the manuscript will be considered suitable for publication. The concerns raised by reviewers are in red font and authors’ responses are in black.

**Reviewer: Christopher Vernazza**

Dr. Vernazza states that this manuscript is well-written. However, he has some major and minor concerns regarding the study. The response to his concerns are as follows:

**Major compulsory revisions**

1. The manuscript and analysis are complicated by the multitude of measures used. The OHIP and JSS scores are key to the paper and so the "qualitative" aspects and non-validated 4 questions distract from the main findings. In addition the "qualitative" work is somewhat basic in its methodological robustness. I would recommend dropping the 4 non-validated questions and reducing the emphasis in the results on the qualitative aspects.

   Thank you for the suggestion. Although, the four questions corroborated the findings of validated questionnaires, have been removed as per the suggestion. Qualitative results component has also been modified.

2. The introduction is an excellent summary of the context and the authors should be congratulated on proposing a conceptual model, but as this is important the development of the model should be explained in a little more detail. The model also appears surprising in some elements; for example, I would expect a direct link between general and oral health (in both directions) and also a link between self-efficacy and employment (rather than passing through increased productivity). I would also expect a direct link between QoL and health improvements.

   Thanks for the encouraging words regarding the conceptual framework and also for the advice regarding its modification. The changes have been incorporated, hope the framework will look more convincing now.

3. The discussion mentions the small sample size but doesn't really address this as a weakness. In addition, the self-selecting nature of the population and the problems of having no control etc. are not discussed and should be.

   Limitations, regarding the issues mentioned, have been added in the discussion section.
Minor essential revisions
4. There are some quite colloquial phrases in the last paragraph e.g. "wicked" "piece of the puzzle" which should be replaced.
Addressed

Discretionary revisions
5. The "Instruments used" section of the methods should fall directly after the "Questionnaire design" section then followed by the "recruitment and sample" section.
Addressed
6. It would be useful to have a separate "Conclusions" sections (perhaps just inserting a sub-title before the last 2 sentences.
Addressed
7. The figure in Appendix 1 adds little to the text and could be dropped.
Dropped
8. Appendices 2 and 3 could be constructed to highlight the sub-domains of the instruments.
Appendix 3 has been modified to include subdomains. For Appendix 2, as per the suggestion by the other reviewer, sub-domains of OHIP scale have been removed.

Hope Dr. Vernazza finds the revised draft satisfactory.

Reviewer: Daniel Reissmann
Dr. Reissmann states that it is an interesting topic; however, has some major and minor concerns. Authors have tried their best to address the specific concerns. Hope Dr. Reissmann will be satisfied with the revised version.

Major Compulsory Revisions:
Major concerns:
1. As indicated in the title and the abstract, the authors assessed whether dental treatment induced changes in OHRQoL measured using the OHIP-14 is associated with changes in job-seeking self-efficacy. However, in the manuscript there is a large second part with respect to perceived barriers of the patients assessed using a qualitative approach. Hence this study applied a mixed-method approach. I think this is innovative and can provide a deeper insight in the investigated topic. However, the authors actually failed in successfully combining the qualitative and the quantitative part. Currently, both analyses are presented separately, making the manuscript long and hard to comprehend. In my opinion, both analyses are worth to publish, but not in the current form. Authors should consider either to better combine the two approaches in one manuscript or to publish two separate papers. I would prefer the latter.
Thanks for the suggestion; considering suggestions from both reviewers, qualitative component of the manuscript has been modified accordingly.

2. The authors calculated two scores (physical and psychosocial domain) for the OHIP-14. Even though they refer to a paper from Ozhayat 2013, this is neither a valid nor an internationally accepted OHRQoL model. There has been a lot of research regarding OHIP dimension, and looking into this research one can conclude that there is no final conclusion. The best available evidence suggests that the original seven-dimension model cannot be empirically proven and there might be a stable four-factor model with a strong general factor. However, not all items have strong loadings into the four factors. Therefore, the OHIP-14 summary score is currently the best option to analyse these data. If the authors really want to investigate dimensions, the seven-domain model is still an option, even though not the best one. However, the two-domain model should be not option at all.

The two domains of OHIP 14 have been dropped. Only OHIP-14 summary scores has been reported and correlated with JSS scores.

**Minor concerns:**

**Abstract:**

3. The abstract should give an insight into the entire study and not only in one part. If the authors wish to keep the qualitative part, they should present it in the abstract too. Thanks for mentioning; information regarding qualitative part is also provided in the abstract now.

**Introduction:**

4. The authors designed a conceptual model how dental treatment might affect job-seeking efficiency and, furthermore, employment outcomes. In my opinion, this model is not correct and not supported by evidence. There are several associations that are highly questionable, e.g., why should appearance affect general health, why should all effects from the dental treatments on self-efficacy been mediated by general health, and why is there no direct link between general health and quality of life, just to mention some of my concerns. Furthermore, what is the benefit of this model? But most important, as this model presented in the introduction seems to be a hypothesis, where is the validation of the model? I cannot find any data in the manuscript that support the entire model nor is there any adopted or revised model. With the data the authors have assessed, it seems almost impossible to validate the model anyway. I would recommend to drop the model or present a simplified one that is easily verifiable. The model has been modified, hope it is acceptable
Methods:

5. Provide more information on how the qualitative data were assessed. How many questions were asked? Was the interview structured (or semi-structured)? Who has defined the topics for the interviews?
   
   It was a semi-structured questionnaire and themes were generated; more information in this regard is now provided in the manuscript.

6. Provide the reference number of the ethical approval.
   Provided

7. Who has developed the “ad-hoc questions”?
   
   Ad-hoc questions have been removed as per the suggestion of the other reviewer.

8. According to Cohen, an effect size of .5 is considered moderate, not .4! Please correct.
   Corrected

9. The investigation of the association between changes in OHIP and JSS would benefit from a more profound analysis. This should start with the test whether the summary scores (not change scores) are correlated. This could be visualized with a plot of both summary scores. Furthermore, linear regression analyses for the assessment of the impact of changes in OHIP scores on changes in JSS scores would allow to compute confidence intervals and could be controlled for potential confounders.
   
   Thanks for the suggestion. However, being a small sample, this analysis was restricted to being descriptive in nature and no regression analyses were performed. Hope this sounds reasonable.

10. Provide more informant on the processing of the qualitative data. What systematic methodology has been applied, e.g., Grounded Theory?
   Grounded theory was not used for our qualitative component. More details are provided.

Results:

11. Do not discriminate between quantitative and qualitative results. Especially, since the first two paragraphs are basically a description of the sample (and could be moved to the method section).
   Qualitative and Quantitative headings in the results section has been removed.

12. According to the central limit theorem, a normal distribution of the OHIP and the JSS data can be assumed and no testing is necessary. Furthermore, the sample is derived from the general population where a normal distribution of the scores seems reasonable. Therefore, the use of parametric test statists is justified.
   Thanks for the suggestions and on the same note, authors considered conducting Pearson test vs. Spearman test. However, being a small convenience sample with only thirty participants, authors opted for conducting a test of normality. Hope this seems reasonable to the reviewer.

Discussion:
13. Considering the large amount of results presented, the discussion is too short and does not sufficiently and critically debate the findings and the study’s methodology. Please add more comparisons to the literature and extend the strengths and limitations paragraph.

   Results section has been shortened and the discussion section has been lengthened including strengths and limitations.

14. The conclusion should refer only to the findings and not overgeneralise the study’s results.

   Conclusion is edited accordingly.

Minor Essential Revisions:

Tables:

15. Tab 1. This table is hard to comprehend. Please structure the table. How is “Child <= 4 years,” “Single with children,” and “No children” related? Are these district categories, i.e., are they mutually exclusive? What about a single without a children? Please clarify.

   There were two separate questions:
   1) Child<=4 which had two options: yes or no
   2) Family structure which had four options: single with children, single without children, couple with children and couple without children

   Table 1 has been modified

16. Tab 2. As the two OHIP domains are not valid (see above), this table should be either modified or removed.

   Table 2 modified

Figures:

17. Fig 1. See comment above. I would recommend to omit it.

   Thanks for the suggestion; also considering comments from the other reviewer, the figure has been modified.

18. Fig 2. Should be presented in a table (e.g, Tab 1) instead of a graph.

   Figure 2 is transformed in a table (Table 2)

19. Fig 3. See comment re OHIP domains.

   As the two domains have been dropped, figure 3 is removed and the relevant information about total OHIP scores is provided within the text.

20. Fig 3&4. Present 95%-CI for differences. Actually a table would be more appropriate for these findings.

   Figure 3 is dropped. Figure 4 is converted in the table format (Table 3) and revised accordingly.

21. Fig 5. Could not find the reference in the text.
Figure 5 is dropped.

Discretionary Revisions:
Additional files:

22. There is no need to present the OHIP-14 or the JSS. Furthermore, there is no need for a “Vicious cycle of unemployment and self-efficacy” as a figure. Should be removed. The figure “Self-perceived changes after dental treatment” is identical to Fig 5 in the manuscript. If you consider the table “Pearson correlation between teeth/smile and barrier for job interview or confidence in finding work” important, incorporate it in the manuscript. An appendix should contain additional informant and not that one that is considered an important finding of the study.

Addressed