Reviewer’s report

Title: The impact of dental treatment and age on salivary cortisol and alpha-amylase levels of patients with varying degrees of dental anxiety

Version: 1 Date: 27 Jan 2019

Reviewer: Andre Wannemueller

Reviewer's report:

The manuscript "The impact of dental treatment and age on salivary cortisol and alpha-amylase levels of patients with varying degrees of dental anxiety" reports data which suggest differential stress responses in dental phobic and fearful children compared to healthy control children with no history of dental fear.

While the topic of the manuscript is interesting, the study still displays several major limitations. Therefore, despite the fact that there already has been a major revision round, I believe the manuscript still needs a thorough revision before it can be published:

1.) The authors should describe the study design in more detail. Particularly this refers to situational and temporal aspects of hormonal assessment. Has there been a standardized assessment that would allow to control the data for circadian variations of cortisol release? Moreover, given the delay in hormonal responding a more detailed situational description would help the reader to understand whether anticipatory or situational stress responses have been assessed. If there has not been a standardized assessment, the authors absolutely should mention this among the limitation section as this represents a huge source of error variance within the data. Moreover, the introduction and method sections both lack of any information concerning the aim and rationale as well as the procedure of heart-rate assessment. Furthermore, the authors should provide information on contents of pharmacological or non-pharmacological behaviour management techniques.

2.) What was the rationale behind conducting several ANOVAs in this longitudinal study? Instead, the authors could also run one repeated measures ANOVA which would allow to test for additional within-group effects. Moreover, the authors should explain the rationale behind conducting analyses in "homogenous subsets". How have subsets been composed? Please provide information on this.

3.) The authors should go into details about possible clinical applications of their findings. For example, do they recommend special interventions for children who display enhanced cortisol-release in dental-relevant situations?

Minor comment:

1.) Within the method section the authors mention post-hoc Scheffé tests had been made in case of significant ANOVA-results. However, in the result section always Tukey-test results are reported.
2.) Please provide units of measures in table headings.
3.) The manuscript would greatly benefit from a careful check of grammar and spelling as there still are some awkward wordings and spelling errors.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Yes

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Yes

**Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?**
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

**Quality of written English**
Please indicate the quality of language in the manuscript:

Needs some language corrections before being published

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