Reviewer’s report

Title: Characteristics of dental fear among Arabic-speaking children: A descriptive study.

Version: 3  Date: 20 July 2014

Reviewer: Cameron Randall

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MAJOR COMPULSORY REVISIONS

1a. At the end of the Background section (and in the Abstract), the authors outline the aims of the study. It seems that a key aim is not articulated: To assess the factor structure (and other psychometric properties) of the Arabic CFSS-DS. Including this as a primary aim, perhaps listed first, would provide a more accurate introduction for the study. Also, the manuscript would be stronger if the aims (hypotheses), results, and discussion had more congruency.

2a. Given the way it is described in the Methods section, it is unclear whether the Arabic version of the CFSS-DS was created (i.e., back-translated) for the purposes of this study or if this version was previously utilized and published on by the current or other investigators. Please state explicitly whether the version of the CFSS-DS utilized in the present study has been used before. If it has, the Methods section would be made clearer by removing some of the details related to the translation of the CFSS-DS from English to Arabic. Noting, simply, that the Arabic version was created using back-translation, and that it has good psychometric properties, as demonstrated by previous work (as was done on page 7), may prevent confusion.

3a. Given that the authors suggest that future research identify dental fear norms in Arabic-speaking children using the Arabic version of the CFSS-DS (Discussion), it may be that there do not already exist published norms. However, if there are published norms, the presentation of this study’s results would be improved by including a comparison between observed means (for total sample, girls, and boys) and previously published norms. Even if norms are not available for the Arabic version of the CFSS-DS, providing comparison to norms observed for other versions may provide relevant and helpful context. At the very least, the results section could be enhanced by providing description of the distribution of CFSS-DS scores (and comment on whether this distribution is characteristic of dental fear as it is distributed in the general pediatric population).

4a. The authors should provide additional details, if available, related to the sample’s demographics in the Results section. For instance, have study participants had much contact with dentists? What is the socioeconomic status of study participants? Do study participants have dental insurance and/or access to public dental care?
5a. The authors offer an excellent and cogent description of Principal Components Analysis (PCA), which is appropriate for this journal’s readership; however, some of the assertions made given the PCA results presented are either not completely accurate or are too strong, given available data. For example, the authors use PCA results to “determine which aspect of dental treatment was associated with the greatest amount of dental fear in Arabic-speaking children” (page 9). PCA does not allow for this question to be tested. PCA allows researchers to determine how many distinct factors comprise a measure and can allow for the identification of the factor onto which most items on the scale load. That is, PCA tells researchers how items of a measure hang together. Thus, the authors are not able to determine which aspect of dental treatment is associated with the greatest amount of dental fear, generally. For instance, if important items (which would tap those aspects of dental treatment actually most strongly associated with dental fear) were missing from the measure, PCA would not allow us to identify those aspects and thus would not allow us to achieve the stated research goal. The authors should carefully re-read and revise the manuscript to ensure that study results and conclusions drawn from those results are presented within the limits of the chosen analysis. Certainly, PCA is an appropriate statistical test for this study; the authors simply should use caution in describing the results of such an analysis. The manuscript would benefit from a more accurate portrayal of results in the Discussion section (e.g., “factor analysis was performed on the Arabic version of the CFSS-DS to determine the factor structure of the instrument and to determine the factor accounting for the majority of the variance in dental fear, as measured by the CFSS-DS”). Addressing this issue is perhaps the most important revision to be made.

6a. The authors indicate that high internal consistency “suggests the children were able to understand and answer the questionnaire” (page 9). This is not necessarily true. A high correlation between answers to different items on the scale suggests that the items hang together, generally, and that the instrument may thus tap a well-defined and cohesive construct. A different assessment strategy is necessary to determine whether children were able to understand and answer the questionnaire. The authors should adjust their discussion on the measure’s high internal consistency to more accurately and conservatively describe the meaning of the result.

7a. On page 12, the authors write that “girls in the present study ranked ‘fear of strangers’ as Factor 2, while boys ranked it as Factor 5.” This statement is incorrect; participants did not rank components of dental fear as more or less fearful than others. A PCA tells us how items on an instrument hang together (i.e., identifies factors) and tells how much variance in the general construct each factor accounts for. The authors should use caution in interpreting PCA results and should make conclusions within the limits of PCA. Though this and a few other interpretations of PCA results are inaccurate (see 5a, above), the paper is relevant and important, and study design and choice of statistical tests are appropriate. However, the paper needs to be edited in a few places so that
assertions made based on statistical tests and results are accurate.

MINOR ESSENTIAL REVISIONS

1b. The authors open the manuscript (and Abstract) by stating that “dental fear in children is a behaviour management problem.” While it is true that dental fear can produce behaviour that is challenging for the dental professional (and parents) to manage, it probably is best not to characterize dental fear this way, especially when first introducing dental fear (i.e., dental fear should not first be described as a behaviour management problem). Importantly, dental fear is a problem associated with (as, in part, the authors point out) poor oral, systemic, and psychological health and that impacts utilization of dental treatment. Dental fear also happens to have the POTENTIAL to complicate dentist-patient interaction and/or require specialised behaviour management strategies. Given that patient levels of dental fear fall on a continuum, most pediatric dental patients likely would benefit from the use of some or many of these management strategies. It is important to normalize dental fear and to talk about it in ways that make dental professionals more comfortable with, and less averse to, encountering it (i.e., discuss dental fear as an situation for the use of specialised behavioural intervention, not as a problem that must be dealt with by the dental professional). Thus, the paper would be enhanced by first describing dental fear as worthy of study because of its implications for health and treatment seeking, and then by noting that dental fear also is relevant when considering that it MAY require special behaviour management strategies, and not first that it just is a behaviour management problem.

2b. The Background section is well written and concise, while quite comprehensive. The section also is interesting. Four notable minor revisions would improve this section: (1) The CFSS is a large battery that includes many subscales/modules and so it should be noted that the CFSS-DS is one of those modules (i.e., drawn from a larger, comprehensive battery and frequently used singly to assess dental fear in children). It might be worthwhile to point out that the CFSS is the gold standard for assessing specific fears/phobias in children. (2) The authors state that the “CFSS-DS is the most commonly used psychometric method of measuring dental fear in children.” Please clarify whether it is most commonly used in research or clinical practice (or both). (3) The last sentence on page 4 would be more accurate if it read, “These rearing patterns may result in different CFSS-DS factor structures for boys versus girls.” (4) The Background section may be enhanced with the inclusion of more explicit discussion/delineation of the importance/significance of the study, as well as explicit discussion/delineation of reasons the study is novel and relevant.

3b. As it is written, it seems that all patients of the study clinic, who consecutively accessed the clinic during the study window, agreed to participate in the study. Is this true? If not, please disclose the total number of patients accessing the clinic during that time period (e.g., 220/XXX). If it is true that 220 patients consecutively accessed the clinic during the study window, then please change “were invited to participate in this study” (page 5) to “participated in this study.” Additionally, the Methods (Subjects) section would be enhanced by noting how the number of
included participants was determined. The sample size is large enough for the study to have appropriate statistical power; but, was this exact size determined a priori or was it a function of the length of the data collection window (or was it determined some other way)?

4b. One of the inclusion criteria was “healthy with no mental or communication disorders.” Please note how this was operationally defined and assessed. Additionally, note whether there were mental or communication disorders that were not ‘serious’ enough to warrant a participant’s exclusion.

5b. In the Methods section, the authors state that a “receptionist observed questionnaire completion to ensure parents did not influence the children’s responses.” Please provide a bit more detail here. What, exactly, was the receptionist looking/listening for? Were any data thrown out because of parental influence?

6b. The authors note in the Results section that there was one case removed due to missing data. Were there any other missing data (i.e., incomplete questionnaire responses, perhaps single items missing)? If so, how were missing data accounted for?

7b. The portion of the Discussion section describing the limitations of the study is thorough. One important limitation is missing, though. The authors should note that order effects may have impacted participant responding on the CFSS-DS. It may be that administering the instrument after a dental procedure primes participants to report more (or less?) dental fear. Additionally, it may be that type of procedure performed differentially impacts participant responding. This is an important issue that is worthy of comment, perhaps most appropriately where discussing other study limitations.

8b. In the Abstract (Background), consider how Aim(s) of the study are presented (see comment about study aims above).

DISCRETIONARY REVISIONS

1c. In the Abstract and Background, consider indicating that dental fear has not only “been linked to poor dental health in children,” but also persists across the lifespan, if unaddressed, and can continue to affect oral, systemic, and psychological health.

2c. The second sentence of the second full paragraph on page 4 begins with “However, it is unclear whether the CFSS-DS structure…” The word “However” should be removed here.

3c. The last sentence of the Subjects section should read “the child and/or his/her parent could read Arabic.”

4c. “Principle component analysis” should be spelled “Principal Component Analysis” and may be abbreviated “PCA.”

5c. Generally, the Discussion is excellent. Relevant, important and interesting
points are raised and are discussed with conviction and appropriate supporting evidence. Additionally, the Discussion provides some thought-provoking comment on and extension of the results. The Discussion and/or Conclusion section(s) might be improved with the mention of future directions for related research.

6c. The word “the” should be removed from the title of Table 2 (page 19).

7c. Throughout the paper there are, albeit infrequent, minor grammar and punctuation issues that, if addressed, would improve the paper.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.