Reviewer's report

Title: Psychological distress and its correlates among dental students: a survey of 17 Colombian dental schools

Version: 2 Date: 7 November 2012

Reviewer: Katarzyna Ludka

Reviewer's report:

1/ The research is impressive in terms of collected data, and interesting in terms of results obtained through analysis. However, there are several general problems relating to this potential publication.

Overview comments:

3/ There is no clear hypothesis. (Major)

4/ The methods have been chosen appropriately; however, neither their choice nor the methods themselves were not clearly explained to less oriented reader, as discussed in detail below. (Major)

5/ The paper does not clearly explain what the results are and what they mean, particularly in the discussion section were the obtained coefficients should be more explicitly presented for the reader. Particularly, that the statistical methods are complex. (Major)

6/ The writing is inadequate and it is the major compulsory revision suggested. Certain parts of the paper could be more concise and focused, such as justification for using GSI scores for the SCL-90-R. Some others parts are underdeveloped, like for example missing description of measures other than SCL. There are occasional grammar and punctuation errors. (Major)

7/ There is a major issue with the structure of the subsections in this report; headings do not match the contents. (Major)

Detailed Comments:

11/ Sub-section “Measures” should also indicate, which measures are independent and dependant variables. (Major) I believe the justification for the use of particular demographic data as predictors is missing either here, or as mentioned, in the Introduction section.

16/ It seems there is no reference to results from the Maslach Burnout Inventory, self-efficacy results, or perceived sources of stress. If the data was collected as it is said in the Methods section, why were they not included in the analysis? If they were not presented for a reason it would be advisable to provide it. If they were non-significant, it would be advisable to explain that. (Major)
19/ Discussion. The first paragraph informs that student and institution-level predictors influenced the level of distress, but authors did not specifically indicate which ones. There is no reference to hypothesis. What exactly are the insights that are provided by this report? (Major)

9/ Introduction. Introduction could be more informative of potential measures that were collected in the study with a justification from the literature. The authors indicate that their aim was to indentify the school and student-level correlates of psychological distress. In my opinion it should be based on verification of chosen (therefore already identified) predictors of psychological distress. (Minor)

11/ The Measures sub-section focuses on SCL leaving other measures out. Also there is no indication as to what scores will be used in the analysis (T-scores) and no explanation to what they are for less oriented users. In further analysis/results sections only SCL is used ,which leaves the question of why other measures were introduced in the first place. (Minor)

12/ Analytical approach subsection would benefit from clear structure (headings). There is no information on how the split for t-test was made, plus there is no reference to the central limit theorem, which could be useful for less statistically experienced readers. Elbow method for choosing the number of factors is usually a very rough method. In my opinion it would be better to inform the reader on how many factors had an eigenvalue bigger than 1 and advise the % of explained variance cumulatively by these factors. The value of that variance is not given. Further down in the text the authors advise that there is one factor present. From Figure 1 (scree plot) it actually looks like the second factor is still above 1 and seems to be relevant even if the % of variance is smaller than for factor 1. The use of multilevel regression for the national study is understandable, but the ‘chunk’ tests are not well explained nor are referenced. It would be advisable to avoid colloquial terms and perhaps the use of the formal Composite Tests term would be a better choice. In the last sentence of that paragraph it is unclear which inferences the authors mean. Indication of using a mixed model requests that a description is provided, i.e. which terms in the model are at which level, and which are treated as fixed or random and why. (Minor)

13/ In the paragraph devoted to log-binomial regression there is no explanation on the choice of this method. What were the benefits of using this method rather than logistic regression? Also, the term “cases” is very misleading. (Minor)

15/ In the section on GSI there is a confusion with Table numbers. (Minor)

17/ In the section devoted to multi-level regression it is unclear what is the adjustment performed on the data and what are “all important covariates”. The multi-level model in table 5 does not account for geographic region indicated earlier as one of the levels. Why? (Major) Description of the findings is not sufficiently clear. (Minor)

18/ The paragraph devoted to “Caseness”. The term caseness is not an
appropriate term and may be confounding. There is no direct explanation of what precisely the prevalence ratios obtained by the model are and what they mean.

(Minor)

20/ The discussion of exact results of this study should be presented straight after reminding readers of the hypothesis. What was found and how it should be interpreted. The part where authors recall why it is expected that there will be a higher stress could be an insert into the introduction, with only a reference in the discussion. (Minor) There is a reference to US studies, but no explanation what are the values of coefficients. Are these betas or correlations? Additionally there is no comparison here. (Minor)

21/ Discussion. Paragraph three. Which instrument authors mean? (Minor)

23/ The aim of this study is explicit, however, I believe it is badly worded. Identifying predictors suggest searching from a pool of potential predictors, while what has been done in this study is confirming the statistical significance of a set of chosen characteristics. That choice of the set of characteristics is not well justified. (Minor)

8/ Abstract. Results do not indicate which were the important covariates. Conclusions could contain more precise statements for the benefit of potential readers. Also the use of a phrase “pronounced gradients” may be unknown or unclear for the readers. The word “covariates” is misleading too; predictors would be a more precise term. (Minor/ Discretionary)

2/ The title uses the words correlates while in fact, based on the methods chosen for analysis, they are rather predictors. It is for authors to decide, however, if they wish to keep it this way (Discretionary).

10/ Methods. The structure headings of this section are not corresponding to the contents of the paragraphs. Study population contains description of the dental education system, while the sample is described in the Results section. Study instruments and procedures heading does not cover for the exact procedure the data was collected in, plus it overlaps with measures and variables. These sub-sections could be just one. (Major) The term “eligible students” is not clear. Who was eligible? (Discretionary)

14/ Results. The participants section contents should in fact be in the sample description section. (Major) The number of participants in each year could be presented in a form of a table. Authors mention “few differences”, but explain three, which suggest it was something more than just trivial differences. (Discretionary)

22/ Conclusions. Final conclusions need revision, particularly in the terms of recommendations. (Discretionary).

Level of interest: An article whose findings are important to those with closely
related research interests

**Quality of written English:** Not suitable for publication unless extensively edited

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.