Reviewer's report

Title: Are standardised caries risk assessment models effective in assessing actual caries status and future caries increment? A systematic review.

Version: 0 Date: 18 May 2018

Reviewer: Sergio Uribe

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OHEA-D-18-00084 Are standardised caries risk assessment models effective in assessing actual caries status and future caries increment? A systematic review

This systematic review is about caries risk models and their ability to predict caries. Since dental caries is the most prevalent human disease this is a relevant research. There are missing information that prevent a proper evaluation of the report, hence there are major changes required.

1. As stated in the first paragraph, there are narrative and systematic reviews about CRA available. The manuscript should indicate clearly what is already know and the gap of the knowledge that a new systematic review about CRA will fill. This information could be in any part of the introduction, preferably at the end.

What do we know already:

- In view of the multifactorial nature of caries etiology and the complexity of the prediction of individual caries-risk, a multivariate approach is necessary (1)
- The scientific basis for caries risk assessment, prevention and treatment on an individual patient basis requires further development, specification and continuing validation. (2)
- The evidence on the validity for existing systems for CRA is limited (3)
- Baseline caries prevalence was the most accurate single predictor in all age groups. (4)
- There is a great need to standardize study design, outcome measures and reporting of data in studies on caries risk assessment (5)
- CRA still has great potential to enhance patient care (6)
2. Indicate which data were extracted and the process of extraction.
3. The methods sections could be greatly improved with the adherence to the PRISMA guideline (7)
4. The supplementary files are useless without the information of the current report. For example, the Quality Assessment Tool for Observational Cohort and Cross-Sectional Studies is already available. What is necessary and could be an addition to the knowledge is the tabulated data from all the papers included in the current report.
5. Add a comment about the reasons of exclusion of so many papers with the reason "Different outcome".
6. A good result could be a clear graph with the mean standardized value of the CRA and the caries status at 1, 2, 3, n years later. If the manuscript can't show this, at least add the tabulated data from table 3 as supplementary material or publish elsewhere, as osf.io or figshare.
7. Even with the declaration that "different indices used to measure carious lesions" (page 14, lines 43-48), a quantitative synthesis could be done grouping articles with similar outcome.
8. Repeat the last subanalysis grouping by quality
9. In case of high heterogeneity, omit the meta-analysis, but show the graphs with the information required in the previous points 7 and 8.

References


**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.

No

**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:

Acceptable

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