Reviewer's report

Title: Epidemiology of Periodontal diseases - Position Paper

Version: 1 Date: 3 February 2010

Reviewer: Thomas Dietrich

Reviewer's report:

This paper is a review mainly of methodological issues associated with epidemiologic studies of chronic periodontitis. Overall the review is thorough and makes several timely and important observations. However, I have several concerns that I would classify as 'minor essential revisions' as follows.

1. I think the title is too broad (both 'epidemiology' as well as 'periodontal diseases') and should be changed to reflect that this review is really concerned with methodological issues of epidemiologic studies of periodontitis.

2. page 4, last paragraph: the statement that the CDC/AAP working group was appointed to develop a standardised case definition for periodontitis is factually incorrect. The group was appointed to investigate/develop methods for periodontal disease surveillance at population level using self-reported measures. As part of this task, the group recognised that in order to compare accuracy of self-reported measures across studies, a robust gold-standard definition (based on clinical exam) including a consistent definition of periodontitis was required. The proposed definitions of periodontitis published by the group in 2007 were the result of these considerations and importantly (as appropriately stated by the authors) was intended only for use in periodontal disease surveillance.

3. page 7, third paragraph: I feel that this paragraph should either be deleted, or the authors need to expand on this. I am not sure what 'clustering' the authors are referring to in the first sentence ('several scores in one subject'?). The second sentence regarding multilevel nature of data is also too generic, i.e., it is not clear to the reader what has been 'overlooked' in previous research and to what extent this has been a problem. I guess the authors refer to some etiologic studies that have looked at tooth or site level outcomes where clustering has not been accounted for appropriately. In most surveys subject level summary measures are calculated (this is what the discussion of case definitions is all about) and this is not a problem.

4. page 8. first paragraph - the authors may wish to elaborate on the 'inappropriate consolidation of index scores' as the only reference (thesis) is not easily accessible to readers.

5. page 9, last 2 sentences of paragraph on 'limitations of CPITN' need references
6. I agree with the recommendations for the future which really outline important work what needs to be done before improvements in the design of epidemiologic studies can be improved. However, I disagree strongly with the fourth recommendation, which in my opinion anticipates what should be left for epidemiologists and periodontists to agree (as per recommendations 1 and 5). For example, the authors present no evidence for or against the use of bleeding on probing. I therefore suggest this recommendation to be deleted.

Discretionary revisions:

The authors may wish to delete the reference to 'national data' on page 3, first paragraph. It is unclear what 'national data' the authors are referring to and the statement is not necessary.

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

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.