Reviewer's report

Title: Feeding practice and smoking habits as cumulative risk factor for early childhood caries in toddlers. A retrospective study.

Version: 2 Date: 26 December 2012

Reviewer: Gerardo Maupome

Reviewer's report:

The manuscript 'Feeding practice and smoking habits as cumulative risk factor for early childhood caries in toddlers. A retrospective study.' has been reviewed. The manuscript offers a large scale study attempting to establish the strength of association between smoking, breastfeeding, fluoride supplementation, and ECC in a birth cohort of Italian babies who were examined once for dental status at ages 21-30 months. The study is a retrospective evaluation of an existing dataset, possibly undertaken for other research or public health objectives (this is not clarified in the manuscript), using solid procedures for data collection and many positive aspects to maintain strong methodological approaches. The authors assert that positive smoking and negative breastfeeding in mothers operate in a biological way to increase the likelihood of more carious lesions, and/or more severe decay, in toddlers -- with no detectable effect of fluoride supplements administered, and in the absence of data about post-eruptive fluoride exposure.

1. Is the question posed by the authors well defined? Yes, it is.

2. Are the methods appropriate and well described? Not appropriate, although well described. The major and fatal flaw of the research is that authors acknowledge en passant that there is a possible influence of other variables modifying caries experience (the latter measured as ECC) but failed to examine the role of such variables. This is disconcerting, considering the affiliation of various authors with dental academia and oral epidemiology departments, and is puzzling to this reviewer. The following two issues stand out:

Knowing the well established fact that poor health behaviors 'travel in packs', finding that mothers smoked even while being in a position to affect the baby ought to prompt an in-depth assessment of what socio-demographic variables and health behaviors might have affected the outcome of interest. Jumping to the conclusion that tobacco smoke has a direct effect on ECC is counterintuitive.

Also puzzling is the fact that breastfeeding -- also a behavior moderated by social class or socio-economic status -- is brought into the picture without questioning an hypothesized direct effect on ECC.

3. Are the data sound? They probably are -- except for an innovative way of
measuring fluoride supplementation in ppm, and failing to measure post-eruptive fluoride exposure. It is hardly surprising that the authors found no effect of fluoride over ECC.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition? Yes.

5. Are the discussion and conclusions well balanced and adequately supported by the data? No.

6. Are limitations of the work clearly stated? No.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished? No.

8. Do the title and abstract accurately convey what has been found? Yes.

9. Is the writing acceptable? There are several aspects of English language that would benefit of editing by an expert reviewer. These shortcomings are particularly apparent in the Discussion section; however, since this section must include major improvements before the manuscript is ready for publication, editing of the current Discussion is not needed.

Comments:

- Discretionary Revisions:
The figure describing the sequence of the research cohort throughout the study fails to convey the information it purports to offer.

- Minor Essential Revisions:Thorough editing by an English language reviewer.

- Major Compulsory Revisions:In its present version the manuscript lends excessive weight to a rather tenuous association between two variables and ECC, when statistical adjustment for other variables such as social class or socio-economic status would most likely eclipse the findings reported.

**Level of interest:** An article of limited interest

**Quality of written English:** Needs some language corrections before being published

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

'I declare that I have no competing interests'.