Reviewer’s report

Title: Household smoking and dental caries in schoolchildren: the Ryukyus Child Health Study

Version: 1 Date: 4 January 2010

Reviewer: Olalekan A Ayo-Yusuf

Reviewer’s report:

General comment:
This cross-sectional study demonstrated a positive association between household smoking and dental caries prevalence among a population of Japanese schoolchildren. The strength of the study includes the use of a large sample size and adjustment for known caries risk factors. This is a generally well-written paper, but there are some concerns that needs to be addressed to improve the paper:

Minor Essential Revisions

Abstract
1. To attend to minor grammatical/typo errors in the abstract.

Introduction
2. I do not think the authors have accurately reflected the findings in reference [7] by suggesting association between household smoking and dental caries was not shown in a previous study in Japan. That study results states ‘no statistically significant relationship was observed between household smoking and caries experience. However, smoking in the household was independently associated with an increased prevalence of decayed teeth.’
3. Given that other cross-sectional studies have demonstrated the relationship between household smoking and caries, in order to motivate the reader upfront, it is important for the authors to more clearly provide strong support of superiority of current study over others previous studies.

Major Compulsory Revisions

Method
4. Although the authors have correctly used PR for effect estimation since the outcome was common (caries rate), but of major concern is that the large number children examined were nested in schools, thus there is a potential for Type I error that may result from considerable intra-cluster (school level) correlation. Given that this could significantly change the study results, could the authors clarify if this cluster sampling was accounted for in their analysis? If so this should be more clearly indicated in the analytical plan. From the error estimates displayed for mean number of teeth affected and a considerably small
excess risk between those exposed and those not exposed, it will be important to
address this concern in order to refute that the results are not likely subject to
type I error.

5. Could the author confirm, if the quantity/intensity of cigarette smoking
measured are those smoked exclusively in the household or those smoked
generally as reported by the parents or the children themselves (in the case of
the older children)? Could this explain the fact that there was little or no exposure
dose-response effect demonstrated with regards quantity smoked?

Results

6. Other than just stating in a footnote, it will also be useful to display the full
models for caries prediction so as to support the validity of the study findings, as
some of the factors measured are known indicators of caries. This is also
particularly important since the instrument used for deriving sugar consumption
had not been routinely used in caries research. At minimum, a table showing the
bivariate relationship between these potential confounding variables and caries
rates in this population should be displayed.

Discussion

7. Could the authors provide an opinion on why other studies have found no
association between active smoking and caries (presumably in adult permanent
teeth) and yet this study showed an association between ETS and caries in
permanent teeth of children?

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

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