Reviewer's report

Title: Oral health status and behaviours of preschool children in Hong Kong

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Reviewer: Eli Schwarz

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Manuscript BMC PH 1635396148693820: Oral Health Status and behaviours of preschool children in Hong Kong

The study aimed to describe the dental caries experience and associated factors in a randomly selected group of preschool children in Hong Kong. The study is considered a ten-year follow up to a previous survey in Hong Kong.

Background: The most striking aspect of the background description is its lack of breadth. Naturally, the background focuses on the local situation in Hong Kong. But the oral health situation of preschool children has attracted a considerable attention in many industrialized countries during the last ten years. A reversal in previous decades continuous improvement in dental caries in children has been demonstrated in many countries simultaneously especially among preschoolers.

Thus, is the last ten years development in Hong Kong part of this pattern or is it indeed different and mostly caused by an influx of Chinese immigrants as indicated?

What is the comparable prevalence and severity of dental caries in Mainland Chinese preschoolers in China proper?

Is it reasonable to imagine that a proportion of 6% of the population born in China as in this study is able to affect the overall caries pattern in the Hong Kong population?

In general the background description is thin on references; a number of statements are made without any support in the literature, especially in paragraph 2 and 3 (Without proper care of primary teeth lifelong teeth health could be detrimentally affected), and some seem to preempt
(extending the SDCS to preschool children). A certain level of local jargon, such as Handover (with a capital H) of Hong Kong may not be readily understood by an international audience which may not be engaged in Hong Kong’s history.

Materials and Methods: There are essentially four components in this section, the selection of the children and the power analysis; the clinical examinations; the questionnaire survey; and the statistical analysis. The way these have been mixed sequentially in between each other makes the section difficult to follow.

It is not clear from the text why children with congenital heart disease were excluded. Why was this group picked out, is it a special risk group, is that condition especially prevalent? There is just no clue as to what moved the authors to prioritize this group.

Results: The results are provided in four straightforward tables and one graph. In terms of the range of independent variables tested it might be useful to understand why certain variables were selected and others not. In the statistical analysis a series of variables were used but it was not clear what considerations directed the analysis, since both significant and non-significant variables from the bivariate analysis were used in the ANOVA analysis. Was a model based regression analysis considered?

Some of the descriptions are not easy to understand. The Bonferroni comparison is not described in the methods section and it is not explained what this signifies. Assumingly the larger than/smaller than signs indicate the direction of the dmft? For family income, the comparison is reversed (a, b < c) even though it would seem that children of families with smaller incomes have higher dmft?

Discussion: For a paper of this size it seems that the discussion takes up almost half the paper, which should probably be reduced. Based on international comparisons it would not seem that the dmft levels
are dramatic, but only a couple of very selected countries are mentioned. Since the paper is a follow up of a study carried out ten years earlier it is disappointing and slightly misleading to not mention this previous study. Compared to that study the dmft level among the Hong Kong born children has increased whereas the dmft level among the China born children has decreased. That outcome would seem to be regression towards the mean and in itself worth mentioning and explaining. This is contrary to what the authors claim in the discussion, but it is unclear whether this statement is based on other figures than the ones presented. It is also claimed (on p.9) that an increase in mean dmft of 1.5 was found from age 4 to age 6, whereas table 1 indicates that the difference is 0.7 dmft. Other strange statements are also found which do not in fact find support in the data presented. An interesting difference in dmft is found between those children who have attended dentist and have never attended dentist (Significant lower dmft in non#attenders). The discussion comment suggests that children only seek dental treatment when there is dental pain? How was that established, there is no other information about dental pain or reasons for dental visits. It might have been interesting to see the breakdown of dmf according to dentist attendance to see if the difference is more due to the conversion of d to f, when attending dentists. In conclusion, this is a study that is well carried out on a somewhat loose analytic framework. In terms of language and descriptive ability it comes across as slightly sloppy with several incongruences between what is presented and what is written about it. Language can be strengthened. It needs considerable rework to align some of the data presentations with possible explanations, reconsider the analysis method, and tighten the discussion.