Author’s response to reviews

Title: Inequalities in public water supply fluoridation in Brazil: an ecological study

Authors:

Marilisa CL Gabardo (marilisagabardo@e-odontocom)
Wander J da Silva (wanderjose@e-odontocom)
Marcia Olandoski (bio.estatistica@pucpr.br)
Simone T Moyses (simone.moyses@pucpr.br)
Samuel J Moyses (s.moyses@pucpr.br)

Version: 2 Date: 27 October 2007

Author's response to reviews: see over
We would like to thank the reviewers for their comments. We are sure that they will be of great use to help our article to become clearer in its hypothesis and methodologically more robust.

In reply to the major points raised by the reviewers, we would like to make the following observations:

Reviewer 1:

The reviewer refers to just one principal issue. To get straight to the point, our article is different to the two articles referred to (Peres MA, Fernandes LS, Peres KG. Inequality of water fluoridation in Southern Brazil – the inverse equity hypothesis revisited. Social Science and Medicine 2004, 58(6):1181-9) and (Gabardo MCL, da Silva WJ, Moyses ST, Moyses SJ. Water fluoridation as a marker for sociodental inequalities. Community Dentistry and Oral Epidemiology 2007, in press), since in both these articles the emphasis is regional, with analysis of the data relating to two Brazilian states, namely Santa Catarina and Paraná. Our study has a national approach and uses a sample that is representative of the entire country (data from the most recent national epidemiological survey). With regard to the third article mentioned (Peres MA, Antunes JLF, Peres KG: Is water fluoridation effective in reducing inequalities in dental caries distribution in developing countries? Sozial und Präventiv Medizin 2006, 51(5):1-9), although we recognize that this is also a study that uses national data, our approach is different both from the point of view of the hypothesis formulated and also the methodology used. Whereas the article by Peres et al. (2006) uses individual data and correlates water fluoridation with oral health outcomes (DMF-T), our study elects ecological analysis units (Brazilian cities) and centres its analysis on the issue of inequalities in access
to/implementation of water fluoridation, taking human development, population size and the macro-region of the respective cities studies as independent variables.

Our contribution intends to reveal inequalities in terms of the presence (or otherwise) of one of the principal oral health prevention measures and the length of time it has been implemented, namely: the fluoridation of the water supply. It presents clear evidence of the need for strategic public policies to ensure that fluoridation is extended to socially and economically less privileged places, with the expected reduction in oral health inequalities. This problem is of great interest to the area of oral health, bearing in mind that this situation appears to be found not only in Brazil but also in other regions of the world.

Furthermore, we would like to raise another matter. There is invariably a long delay between a post-graduate research project being carried out and its being published. Although we had already submitted part of our study for publication (Gabardo MCL, da Silva WJ, Moyses ST, Moyses SJ. Water fluoridation as a marker for sociodental inequalities. Community Dentistry and Oral Epidemiology 2007, in press), the conclusion of the analysis/discussion of the complete database, which we are now submitting to BMC Oral Health, took nearly two and a half years. It would appear to be obvious that, as it is a subject of interest to oral health, other researchers have undertaken similar studies in parallel, as the case of the excellent publication by Peres MA, Antunes JLF, Peres KG: Is water fluoridation effective in reducing inequalities in dental caries distribution in developing countries? Sozial und Präventiv Medizin 2006,51(5):1-9.

Reviewer 2:
We reiterate our thanks for the valuable contributions offered by the reviewer. Following the same order, our replies are:

1) We agree with the reviewer regarding the title and, as such, we present a new version of the article in which the title has been altered, in the hope that this will satisfy the recommendation made. The inference with regard to the impact on oral health outcomes is indeed merely deductive, based on literature on the matter, but we have not included oral health outcomes in our analysis.

2) As to the aspects relating to the format of the text, they are in accordance with the journal’s norms, including the “portrait” format of the tables. We have not found in the instructions for authors a requirement to number the pages. The references have been checked and other typing mistakes or incorrect use of received English have been corrected.

3) Alterations have been made to the wording of the conclusion of the abstract, which now reads as follows: “The findings suggest that the aim of treating water with fluoride may not be being adequately achieved, requiring more effective strategies so that access to this measure can be expanded equitably.”

4) We agree with the reviewer regarding the need to be more specific in the text as to the term “inequality”, by qualifying it as social and geographic inequality, on an ecological level, avoiding possible confusions with the individual level. We are indeed looking at the issue of inequality of access to and the municipal implementation of the water fluoridation policy, according to our database, and we are doing this on an ecological level.

5) Regarding the introduction (specification of the concept of inequalities), we have written a new concluding paragraph, as follows: “In the light of the above, the general purpose of this study has been to verify how social and geographic inequalities are interfering with Brazilian public water supply fluoridation policy.”
6) In relation to the variables, our independent variables are possibly related to oral health outcomes, as stated earlier, based on theory. However, so as to deal strictly with the data effectively used, this supposition will no longer be made in the text.

7) As to the use of the sub-indices, we agree with the reviewer and we have removed them from the tables. The sub-indices were presented in the first version of the article owing to the fact that they had been examined in earlier phases of analysis when indeed a high correlation was noted between them.

8) As the reviewer observes, we state in the introductory explanation that Brazil’s North and Northeast regions have worse average oral health indicators and greater social privation. However, the relationship between fluoridation and social privation had not been sufficiently explored and understood prior to this, and our statement is merely a foretaste of our own analysis. As such, we consider it to be more appropriate to relocate this text and include it as part of the discussion.

9) With regard to additional knowledge provided by our study, we have already given our reply to the first reviewer. Our study does indeed bring additional knowledge, bearing in mind that the analysis of data regarding inequality in the implementation of the measure on a geopopulational level was not sufficiently well known, denounced or combated politically.

10) In relation to the two independent variables, we would like to argue in favour of their being maintained, since 1990 was an historical landmark in the change in Brazil’s public health policy, with the implementation of the new National Health System. We were interested precisely in verifying whether this fact generated any substantial alteration to the implementation of fluoridation with effect from this cut-off year.