Reviewer's report

Title: Socioeconomic status and exposure to disinfection byproducts in Spain: a case-control study

Version: 1 Date: 3 June 2010

Reviewer: Elena Righi

Reviewer's report:

The manuscript evaluated the influence of socioeconomic status (education and income) on personal habits associated with exposure to disinfection by-products (DBPs) in drinking water. This is a specific aspect not well addressed up to now in this area of research, therefore the results of this article could be useful for other researchers in the field. However, before publication the authors should improve the manuscript by addressing some major and some minor essential limitations.

Major Compulsory Revisions

1. The authors used information collected form controls included in a wider Spanish case control study on bladder cancer and DPBs exposure, however this specific part is not a case control study, as cases and controls are not compared, it is more similar to a cross-sectional study: in my opinion this aspect should be better highlighted in the manuscript and the title should be changed.

2. Generalization of the results: are the subjects included in the study (hospital controls with a high frequency of low education and low income level) representative of the general population living in the investigated areas? This issue should be addressed throughout the article (at least in the discussion).

3. Overall, the discussion should be enlarged and other issues and aspects discussed (eg how different ways of DBP exposure could influence DBP uptake, the difficulties in recoding personal habits influencing DBP exposure, generalization of results to the Spanish general population, the potential influence of many missing data in the socioeconomic variables on the interpretations of the findings,.....)

4. References should be updated and improved as well.

Minor Essential Revisions

Background (and references)

1. the authors should update references on environmental inequity (most articles cited were published in the ‘90s)

2. references addressing association with adverse reproductive effects should be updated as well (more recent review on the subject have been published)

3. references addressing association with other types of cancer should be added.
(both references are on bladder cancer)

methods

study design and subjects

4. please indicate the study period

5. please add a reference about the Spanish Bladder cancer case-control study

6. the reference to table 1 here is not correct (table 1 do no show data on cases and controls)

7. How many inhabitants are living in the investigated areas? How was the issue of generalization of the results to the general population addressed? Is the investigated sample representative of the target population?

8. 88% of subjects completed a face to face questionnaire, 20% completed an abbreviated version of the questionnaire: the sum is 108%, please explain this data.

chlorination by-products exposure

9. Some exposure index described in the part are not used when reporting statistical analyses and results (e.g. the average daily water consumption, or the combination of duration of bathing/showering and intensity of THM exposure): please clarify this aspect

10. please give more information on validation of questionnaire on showering, bathing and swimming (e.g. number of subjects, specific agreement for the different habits,..)

Statistical analysis

11. could the authors explain why in the multivariate analyses they adjusted also for average THM levels?

12. the authors say that analyses of water source (and THM) were restricted to subjects with exposure information available at least for 70% of the exposure window examined (form 15 year of age until disease (????) or interview). Is this restriction important for the specific question addressed in this article? Moreover, in the results (table 2) authors refer to the current source of water of subjects not to the principal lifetime source of drinking water.

Results

13. second paragraph: according to table 2 subjects with primary school incomplete education level are exposed to high levels of THM as well: please consider also this data

14. second paragraph: Please clarify the cutoff choice (26 µg/l) in defining categories of average residential THM level exposure (low and high) and highlight the high number of missing values: (for instance, average THM exposure has been calculated for less than 800 subjects)

15. Second paragraph: the last sentence is unclear. I believe the meaning is: subjects with primary school education have a two fold higher probability to drink
bottled water than illiterate subjects and the more highly educated subjects have a 3 time higher probability to drink bottled water than illiterate subjects.

16. Third paragraph: the second sentence is unclear. I believe the meaning is: subjects with high school education have a tree fold higher probability to take bath/shower longer than 7 min/day than illiterate subjects and subjects with primary school education have a 1,6 higher probability to take bath/shower longer than 7 min/day than illiterate subjects.

17. Fourth paragraph: please indicate the statistical significance of the first two comparisons.

18. Fifth paragraph: please indicate what is included in the two levels of education included in figure 1. Are the differences observed statically significant?

Table 1

19. Source of drinking water: please explain other (spring+wells + other) and the meaning of DK (DK/missing)

Table2

20. Please indicate missing values

Figure1

21. Please indicate the meaning of “other”

Discretionary Revisions

Background

1. first paragraph second line: add word “exposure” after environmental pollution

2. last paragraph at the end of the sentence: substitute “,” with “.”

Results:

3. Last paragraph, last line: please add “an increase in” before educational level.

Discussion

4. First paragraph second sentence: please delete “in 2000”

5. First paragraph third sentence: I suggest to substitute “was” with “were”

Conclusion

6. First paragraph second sentence: I suggest to substitute “was” with “were”

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: No, the manuscript does not need to be seen by a
statistician.

Declaration of competing interests:
I declare that I have no competing interests