Reviewer's report

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

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Reviewer: Sylvaine Cordier

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The concept of environmental inequity has rarely been applied to exposure to water disinfection byproducts and this work contributes to knowledge in this field.

The presentation of the paper however suffers from imprecision and the message is not clear.

Major comments

There is a mix in the time references used in the water variables across the paper: source of drinking water is the current source, residential THM level appears to be average for all the residences over age 15, but current THM have also been measured...

I think this analysis should be cross-sectional (last residence only for instance). Trying to correlate present behaviour (bottled water consumption) with past average exposure (THM levels) does not make sense.

Specific comments

- Why mention “a case-control study” in the title since only the control population is studied? Same in the “study design” section.
- Discussion 3rd paragraph: it is stated that “subjects with a higher socioeconomic status, who tended to live in areas with elevated DBP, had a lower exposure from ingestion (because of elevated consumption of bottled water)”. This statement is not supported by the results: exposure from ingestion is tap water consumption times THM levels and these figures are not presented in Table 2.
- Numbers of subjects drinking bottled water differ widely between Table 1 (n=285) and Table 2 (n=160). I think lines 2 and 3 in the Total column of Table 2 have been switched.
- The interpretation of Figure 1 is difficult: it shows increased bottled water consumption with time among subjects with high education but the simultaneous trend in THM levels is not taken into account (mentioned at the beginning of the discussion for the first time).

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

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