Reviewer’s report

Title: Community based study to compare the incidence and health services utilization pyramid for gastrointestinal, respiratory and dermal symptoms

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Reviewer: Tomomi FUJISAWA

Reviewer’s report:

Based upon the data of a randomized controlled trial that addressed whether untreated rainwater intake as a risk for gastroenteritis, the authors investigated three major classes of symptoms, gastrointestinal, respiratory and skin symptoms. Several issues are concerned and the followings are suggested.

Major Compulsory Revisions;

#1. Given that the original study was going to address whether untreated water intake could be associated with risk for gastroenteritis, it is highly likely that the study members were more sensitive to gastrointestinal symptoms than to the other two classes of symptoms. Moreover, the family members would be more likely to visit doctors on episodes of gastrointestinal symptoms than on those of the other two. Therefore, the results are likely biased with possible overestimation of the GI-related episodes and especially of GI-related doctor visits. Hence, if the present analysis merely focused on the other two symptoms, it would be adequate. However, this is not the case and the main findings on the GI symptoms could not be supported by the present analysis.

#2. As the data were collected from the families taking rainwater in a tank as drinking water, the results are not likely to reflect a general population. Thus the present results may not be generalized, as discussed as a study limitation. The authors would rewrite abstract and discussion with paying more attention to this point.

#3. The conclusion should be more concrete that was reasonably supported by the findings they obtained in the present analysis.

Minor Essential Revisions

#4. From the “social burden” point of view, it is reasonable to analyze to combine time off due to his/her own physical condition and that to take care of another family member, especially in a family with kids. However, from the “epidemiological” point of view, it may be better to distinguish the two. Readers will be somewhat confused with the present description, which could be written more clearly.

#5. The result descriptions on the comparison of the three classes of symptoms are unclear. In the descriptions of symptom-positive weeks and doctor visits, respiratory symptoms was compared to those of GI and dermal symptoms, whereas the hospitalization was described with the respiratory symptoms and GI
symptoms in comparison with that of dermal symptoms. As in the Table, the descriptions could be consistent with a reference fixed, which may make the context more understandable for the readers.

#6. The hospitalizations for GI and respiratory were described “higher” than that for dermal symptoms, the RRs per se shown in the results were less than 1.0, because of the reference class of symptoms were GI and respiratory one, instead of dermal one.

#7. The authors need to make it clear whether the ethical committee approved merely the original analysis, or it approved the subsequent analysis adopted in the present study. Also, it is not clear in the present manuscript the present analyses were predefined. The authors are strongly suggested to make these points clear. If the present analysis was not initially approved, the authors may well think of the necessity for the approval of the present analysis.

Discretionary Revisions

#8. Figure 1 might be rewritten; redundant expressions can be deleted, and characteristics could be larger, provided that the published figure would be smaller.

Level of interest: An article of limited interest

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' below.