Reviewer's report

Title: Psychosocial outcomes of children with ear infections and hearing problems: a longitudinal study

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Reviewer: Elena de la Serna

Reviewer's report:

Review of Manuscript entitled: “Psychosocial outcomes of children with ear infections and hearing problems: a longitudinal study”

This is an interesting study which aims to describe the relationship between child ear infections and hearing problems and long-term psychosocial difficulties.

The authors have two previous studies (2013 and 2011) with the same sample that shows the longitudinal impact of ear infections on hearing problems in both indigenous and non-indigenous children and that those with hearing problems exhibit behavioural problems. In this paper, the authors follow the LSAC impressive cohorts again, which included 4242 children aged 0 to 1 year (cohort B) and 4169 children aged between 4 and 5 years (cohort K). To assess psychosocial outcome, the Strengths and Difficulties Questionnaire was answered by the children's parents. The study concluded that children who have ear infections or hearing problems at first assessment were more likely to have abnormal psychosocial outcomes at age 10/11 in the older cohort and at age 6/7 in the younger cohort.

General Comments:
Although clear and well written, this paper needs some changes in the abstract, methodology and discussion.

Specific comments:

a) Major Compulsory Revisions:
   1. Methods:
      - The authors divide both cohorts B and K into two groups depending on the presence of hearing problems or ear infections. If the objective of the study is to assess psychosocial outcome in these children the study would gain statistical power if both hearing problems and ear infections were considered as an one kind of problem. Moreover, the classification in one of these two groups depended on the parents’ opinion, not on the physician’s diagnosis, so probably this diagnostic category is not very reliable. I strongly recommend repeating the statistical analysis considering both hearing problems and ear infections as one variable.
      - If the authors have the SDQ scores of the non affected children, a MANOVA analysis between both groups, children with hearing problems/ear infections and healthy children should be performed. This statistical analysis would allow the
researchers to show if there are significant differences between those children who have and those who don’t have hearing problems/ear infections. With the current analysis the authors can only show that there is a relationship between having hearing problems and psychosocial outcome, but they can’t quantify it.

- I strongly recommend including in your results section the difference between groups (affected and healthy) analyzed via MANOVA (controlling parents education and Socio-economic status) and then the kind of relationship with the logistic regression.

b) Minor Essential Revisions

1. Abstract:
- The acronym LSAC is written directly in the abstract and it is the first time that the authors mention it. Please include the complete name.

2. Methods:
- The assessments are not clear in the methods section. The quantity of waves and the tests used in each assessment should be clarified in this section, above all in which wave parents were asked about hearing problems and ear infections (now they seem retrospective questions) and in which wave parents were given the SDQ.

2. Results:
- The authors should include a detailed section on “socio-demographic characteristics of the sample”. It is impossible for the reader to know what the characteristics of the sample are, the percentage of girls and boys, the mean age, the socio-economic status, etc.
- It might be recommendable to include the socio-demographic characteristics in a table.

3. Discussion: Globally, I think the authors correctly discuss all the results previously mentioned but in my opinion there is a lack of previous literature which supports their conclusions, above all in the first three paragraphs it is impossible to find any previous work cited. Please include some previous literature which supports your conclusions.

4. Tables:
- Please include other important data in table 1 and 2 (B, S.E., Wald, df, and p values)
- I strongly recommend including in tables 1 and 2 the average of the presence of each SDQ problem (pro-social score, hyperactivity score, emotional score, peer problems score and total score).

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable
**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests