Reviewer’s report

Title: The Importance of Health Behaviours in Childhood for the Development of Internalizing Disorders during Adolescence

Version: 0 Date: 02 May 2017

Reviewer: Haruo Fujino

Reviewer’s report:

The manuscript titled "The Importance of Health Behaviours in Childhood for the Development of Internalizing Disorders during Adolescence: A Population-Based Cohort Study" aims to examine association between health behaviours and internalizing disorders in adolescence using Canadian database. This study suggested that low dietary variety, low physical activity, and increased time spent on use of computers and playing video games in childhood (10-11 years old) are associated with health care encounters with diagnosis of internalizing disorders.

The findings are largely in line with previous studies, but this study adds some evidence for mental health in children. However, several issues require addressing to strengthen the quality of the paper.

Major concerns:

1. The primary purpose of the study presented in Introduction does not align with the primary analysis and results presented in Table 3. The purpose was 'to investigate the effect of the health behaviours in childhood on diagnoses of internalizing disorders in adolescence.' The main results were 'the association between health behaviours and "number of health care encounters" with diagnosis of internalizing disorder.' Please revise purpose and introduction or analysis and results in a consistent way. Diagnoses of internalizing disorders and number of health care encounters reflect different aspects of the mental health problems (e.g., severity of symptoms).

2. The numbers of diagnoses' were reported in Abstract; however, I cannot find the information in Results section in main text. Did the authors analyse the number of diagnoses as a primary outcome in this study? Please revise the abstract or methods and results in a consistent manner.

3. As commented above, diagnosis and number of health care visits with a diagnosis may be different. The results of logistic regression would provide useful information for readers.

4. Students who did not visit or receive the health care services were not evaluated in current study even if they had psychiatric disorders in the period. Substantial proportion of the individuals with psychiatric disorders do not visit hospitals (Merikangas et al. 2011 J Am Acad Child Adolesc Psychiatry). I think this could be a major limitation which was result from the study design.
Minor comments:

5. The first sentence of the last paragraph in Introduction section (P3) needs a reference.

Methods

6. Include information for missing rate of the variables.

7. Please show the significant threshold in Methods section.

8. Please explain the reasons to analyse two models in Methods clearly.

9. The last sentence in Internalizing disorders section seems redundant.

10. Energy intake is not explained in Confounders section but included in the analysis as a confounder.

Results

11. Sentences in first paragraph in Results section described differences between demographic variables and behaviours. Were those descriptions based on statistical analysis? Please describe all the analysis methods used and provide statistics (e.g., p-value).

12. I think the expression in last sentence of first paragraph ('more use of computers…') is incorrect because Table 2 does not show dose-dependent increase in percentage of internalizing disorders.

13. In Table 3, DQI-I variety: middle tertile (univariate model) is significant?

Are the methods appropriate and well described?
If not, please specify what is required in your comments to the authors.

No

Does the work include the necessary controls?
If not, please specify which controls are required in your comments to the authors.

Yes

Are the conclusions drawn adequately supported by the data shown?
If not, please explain in your comments to the authors.

No
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

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