Reviewer’s report

Title: Energy Balance-Related Factors Associating with Adolescent Weight Loss Intent: Evidence from the 2017 National Youth Risk Behavior Survey

Version: 0 Date: 01 Aug 2019

Reviewer: Leandro dos Santos

Reviewer's report:

The main purpose of this study was to examine the association between sedentary, physical activity and dietary behaviors with the intention to lose weight in children and adolescents of the 2017 US National YRBS. In addition, it secondarily analyzed a subpopulation of overweight self-declarations for these associations.

Major review points:

Q1. The thematic is relevant in the context of public health, however, I have concerns about the analysis model and the form as results were reported. This is a cross-sectional study and one of the relevant aspects in the interpretation of the results is the reverse causality bias, which makes it impossible to determine the causal relationship between exposures and outcome.

In view of this, I would like to reflect on the outcome "intention to lose weight", I believe that the variable fits more as an exposure factor than the main outcome. Taking, for example, the relationship between the intention to lose weight and the weekly consumption of salads, in this study, people who eat salads one or more times a week were more likely to be trying to lose weight. Considering the potential causality between these variables, it is plausible to believe that the subjects who intend to lose weight increased the consumption of salads and not the opposite. That is, the intention to lose weight is that it models the consumption of salads. The same may be true for the other variables. Maintaining the current outcome is not incorrect, but the results and conclusions should be cautious and consider such notes.

Q2. For data analysis, it was used the binary logistic regression, with dichotomous categories for all variables. However, I believe the language and manner of reporting findings and conclusions could be reviewed.

Taking, for example, the conclusions described in the abstract:
There was an inverse association between physical activity and breakfast consumption with weight loss intent but a direct association between video game playing and salad consumption with weight loss intent in a representative sample of adolescents.

As the findings are reported, they denote a dose-response relationship that was not tested in the study because it would be necessary for the independent variables to be polyatomic and/or continuous to infer the magnitude of potential causal relationships. My suggestion is that the results and discussion be reviewed and focus on probabilities rather than inferences about potential causalities.

Minor review points:

Q1. In the abstract, it would be important to present in the methodology section a usual term for study design (e.g. cross-sectional study), as well, to present the mean age values of the sample to facilitate understanding of the study design and population.

Q2. In the introduction section, the author provides pertinent information about obesity, the importance of multidisciplinary interventions and the lack of information on the subject, however, I missed the background of the behaviors that will be studied, their prevalence in this population and their influence on them in health and adulthood.

Q3. In the methods, it would be important to bring more detail about the variable breakfast consumption, as it was obtained and categorized, considering that it is presented in the results and in the discussion.

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

Yes

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:

Acceptable

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