Reviewer’s report

Title: The effect of gender and age on the association between weight status and health-related quality of life in Australian adolescents

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Reviewer: Silvia Bel-Serrat

Reviewer’s report:

This study investigates the association between weight status, age and gender and the health-related quality of life in Australian adolescents by multiple linear regression. Health-related quality of life was associated with age and gender but not with weight status in this sample of adolescents. The paper is well written and findings are interesting. There are some issues, however, that the authors should address prior to publication.

Major Compulsory revisions

1) The authors should explain how the schools were selected and if the selection was based on any specific criteria i.e. by SES, among others.

2) Please, add how BMI was calculated to the “Anthropometry” section.

3) As stated by the authors, not all measurements, i.e. anthropometric measurements, were taken in all the individuals and sample size varies across the included variables. Did the authors check whether there was any difference in terms of baseline characteristics among the different sample sizes? That should be mentioned in text.

4) As acknowledged in the limitations section, this is a cross-sectional study and causal associations cannot be drawn. For that reason, please, avoid any reference to cause-effect relationships as the term “effects” appears several times along the text.

5) The authors claim that environmental, economic and cultural factors affect well-being and could explain the lack of results with weight status. However, they also support their findings with studies conducted in other countries different from Australia. It could be interesting if the authors make any reference to the fact that, in spite of cultural differences, among others, results remain similar. That would even add more power to the obtained findings. Related to this, the authors also make reference to the country in which the study from Bonsergent et al. was conducted.

6) The authors stated that the employed questionnaire was validated, but a reference is needed in this regard. Was it validated in adults or in adolescents? Which might be the implications of adapting a questionnaire designed for adults for use in adolescents? Please, give more insights about this and state any potential limitations that might be related to that.
7) Discussion section, seventh paragraph: it is stated that “the findings indicate that while overweight adolescents had equivalent levels of HRQoL…”. It is not possible to draw this conclusion form multiple linear regression analyses. The following sentence claims that “this situation was altered when…”. The findings may change but the situation cannot be altered. Please, interpret and rephrase the results properly.

Minor Essential revisions
1) Abstract, methods section: please, replace “M” by “mean”.
2) Introduction, first paragraph: use “type II diabetes” instead of “type two diabetes”.
3) Introduction, third paragraph: “…with poorer HRQoL experienced by children…” it seems that it lacks a “were” after HRQoL.
4) Methods section, first paragraph: spell SES like socio-economic status or socioeconomic status.
5) Methods section, second and fourth paragraphs: refer to the websites as a references by adding them to the reference list.
6) Methods section, fourth paragraph: the sentence “BMI was calculated and standardized…” should be placed under the third paragraph “Anthropometry”.
7) Results section, third paragraph: replace “this effect persisted” by “even”, and “of the covariates” by “among the covariates”.
8) Discussion section, fifth and sixth paragraphs: it lacks a reference to the study conducted by Bonsergent et al. (2012).
9) Discussion section, sixth paragraph: it lacks “that” after “autonomy” in “… a process of individuation and autonomy is very important”.
10) Refer to SES instead of level of disadvantage.
11) Table 1: delete or put in brackets the percentage of males and females. As the sample size varies according to the variables, it would be very informative to have the sample size for each variable under study. It is not clear among which groups there are significant differences, please, clarify using other symbols/superscript letters or adding further symbols.
12) Table 2: please, add in the legend the sample sizes for those variables with different number of subjects.
13) Table 3: state if beta coefficients are standardized or unstandardized. Replace “coef” by the beta symbol. It would be also informative to also add p values to complement CI.

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