Reviewer’s report

Title: Associations of Body Mass Index, Weight-related Concerns and Behaviors With Eating Disorders Among Non-clinical Chinese Adolescents

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Reviewer: Lien Goossens

Reviewer’s report:

This manuscript aimed to assess the prevalence of overweight and obesity, weight-related concerns and behaviors and eating disorders (EDs) among a large sample of adolescents, and the relation between the body weight, concerns, behaviors and EDs. Because of its focus on weight related concerns in youth, this study tackles an important feature for the development of eating problems. This indicates the relevance of the current study for both the eating disorder as well as the obesity domain.

Major concerns:

However, there are some important concerns. First of all, the manuscript lacks of a sound rationale/theoretical framework. It is indeed so that the prevalence of eating and weight related problems is increasing and that the one may influence/cause/maintain the other. However, to investigate underlying mechanisms by which EDs may arise, a sound theoretical background on how body weight, weight concerns, weight control behaviours and ED symptoms may be related is needed.

Also, I have some difficulties with separating unhealthy weight control behaviors from eating disorder symptoms (as measured with the EDI) since those behaviors can already be considered ED symptoms.

Another major concern regards the methodology. By using (or narrowing) almost each variable as a categorical variable, the sample is divided into many subcategories which will not only increase the risk of ‘labelling’ youngsters, but this procedure also limits the statistical possibilities (e.g. odds ratio’s only provide information regarding the chances or odds that someone will fall into a certain ‘box’ or ‘category’). Using continuous variables would make it possible to determine whether for example larger BMI is associated with more drive for thinness (with the use of bivariate correlations, linear regression analyses).

I will now focus in detail on these concerns and some other minor problems in the manuscript:

Critical comments

ABSTRACT
-p2, line 1: to investigate (delete ‘d’)
-p2, line 1: provide some more general (theoretical) background information in
the abstract, instead of solely reporting the research questions
-p2, line 7: insert the name(s) of the questionnaire(s) as well
-p2, line 8: the authors state that they used a questionnaire to assess EDs. However, the EDI rather assesses eating disorder pathology (or disordered eating attitudes and behaviors as also stated on lines 12-13), instead of real ED diagnoses (assessing ED diagnoses would imply the use of a clinical interview). Thus, the use of the term EDs throughout the manuscript may be confusing for readers, so therefore it is suggested that the authors reframe their terminology and use the concept ‘disordered eating attitudes and behaviors’ rather that EDs.
-p2, line 13: this result is unclear: was BMI category significantly or not significantly related to weight-related concerns? The sentence on line 13 mentions a significant relationship, but the sentence on line 16 mentions a non-significant relation? Please clarify this discrepancy.
-p2, line 12-…: the authors here talk about bulimic behaviour, but what about the other EDI scales?

BACKGROUND
-p 3, line 12: It is suggested that the authors specifically mention in this sentence that the overweight and obesity prevalence rates that are provided are those coming from studies in the Chinese population (reference number 7, 8). Also, it might be interesting in this paragraph to compare these rates with those from American/European countries.
-p 3, line 15: this paragraph concerning EDs should be more structured. Please provide separate references for each research finding (e.g. which study found that obesity is a risk factor for EDs? Which study found that EDs are risk factors for obesity?)
-p 3, line 21: ‘A number of studies… and body dissatisfaction’: this sentence is not well written and should be rephrased.
- p 4, line 1: delete the second ‘for’ (after anorexia nervosa)
-p 4: this first paragraph is too long. Please use inserts (tabs) to indicate the beginning of new paragraphs. Also, the authors provide prevalence rates of unhealthy weight control behaviors, but they should also provide rates of unhealthy weight related concerns
-p 4, line 13-15: many overweight…eating habits: this sentence is not well written and should be rephrased
-p 4, line 21: clarify ‘these disorders’
-p 5, line 6-8: Additionally…between BMI and EDs: Isn’t there already some evidence for the fact that overweight is a risk factor for EDs? (e.g. Stice, 2002). On line 11, the authors mention ‘previous studies’ but they should also add some references here.
-p 5, line 20: There are some questions regarding the rationale of this study: based on which theory (or previous research) do the authors assume that weight-related concerns and behaviors will mediate the association between BMI
and EDs? It is suggested to include this background information in the introduction section. Moreover, the authors should explain whether and why they expect weight related behaviors to have another/a different influence on EDs than weight related concerns? Moreover, how (and why?) do the authors distinguish between weight control behaviours and EDs, since many (unhealthy) weight control behaviors like vomiting, intensive exercising, fasting are considered symptoms of EDs?

METHODS
-p 6, line 3: please add the word ‘selected’ after ‘randomly’
-p 6, line 13: the authors mention the age and sex-specific BMI standards, but in their BMI calculation, they use the ‘adult’ BMI formula, without accounting for sex and age. Could the authors comment some more on this method? e.g. did they look for each child separately whether he or she falls in the overweight, underweight or normal weight category in comparison with a child of his/hers own age and gender?
-p 6, line 24: could the authors provide the alpha coefficients (internal consistencies) for the EDI-subscales in their own study?
-p 7, line 9: please provide some more explanation regarding the use of these cut-off points: does for example a raw score larger than 16 on DT subscale imply a clinical drive for thinness?
-p 7, line 13: were the items assessing the weight-related concerns and behaviors developed by the authors themselves or were they adapted from an existing questionnaire? Is there evidence available regarding the reliability of these items?
-p 8, line 6: why were female and lower grade level used as referent categories?

RESULTS
-p 9, line 3: this first paragraph is unclear. First of all, the first sentence reads very difficult. Also, the authors mention parent questionnaires, but these were not mentioned in the Methods section.
-Table 1 and Table 2: please try to make sure each table fits only one page. Also, it is suggested in both tables to add a column including the relevant F, t or chi-square-statistics (to indicate possible sex-differences) and the levels of significance (*) should rather be mentioned in this extra last column
-p 10, line 4: based on which analysis do the authors conclude that among girls, perceived weight status was in accordance with actual weight status?
-p 10-12: this part of the Results section is very lengthy. Also, Table 3 and 4 are very extensive and therefore difficult to interpret. What’s the rationale behind these two tables? What’s their added value to the manuscript? Maybe, the analyses would be more straightforward if the EDI subscales were just used as a continuous variable (instead of categorical variable)? Then for example, the authors could just calculate correlations between BMI (as a continuous variable) and EDI subscales (as continuous variables).
DISCUSSION

-p 13, line 1: it is suggested to start this discussion with a short overview of the main aim(s) of the present study.

-p13, line 1: 'in the current sample' (delete 'term of')

-p13, line 4-7: this sentence reads difficult.

-p13, second paragraph: it is unclear which findings are directly resulting from this study and which findings are from previous research. The discussion section should be structured and built up more clearly (for example by using subtitles referring to the different research questions).

-p14, line 12-13: The finding that...variables: this sentence is not well written

-p14, line 20: the authors mention the cognitive behavioural theory of EDs in this paragraph, however, they should already mention this relevant theory much earlier (introduction section). This theory may also be applicable to distinguish between the possible effects of the weight related concerns and the effects of unhealthy weight control behaviours.

-p 15, line 8: which other studies? Please add some references

-p 15: could the authors provide some more information regarding the strengths of this study and clinical implications of their results?

-p 16, line 4: ‘support the inclusion OF weight related concerns’

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