Reviewer’s report

Title: Trends and correlates of unhealthy dieting behaviours among adolescents in the United States, 1999-2013

Version: 0 Date: 26 Oct 2017

Reviewer: Diana Rancourt

Reviewer's report:

This study aggregated data from the YRBS from 1999-2013 to examine cohort trends in disordered eating behaviors, and associated sociodemographics and weight-related attitudes. While strengths of the study included data from multiple large cohorts, a variety of important weight-related outcomes, and the statistical power to test moderating effects, I had concerns with conclusions and interpretations of the existing literature and current results.

Introduction

1. Please use a "people first" approach - i.e., "adolescents with overweight/obesity" as opposed to "obese adolescents."

2. Statement that "current weight change programmes based on diet and exercise education are only minimally effective in children" is inaccurate. There is ample evidence that parent-focused weight loss prevention programs are effective for children (e.g., Janicke et al., 2014), and the Cochrane Review cited even suggests that there is strong support for obesity prevention programs targeting 6-12 year olds. Please revise/clarify this statement.


3. The citations that weight status perception are motivators for weight change use adult samples. My understanding of the adolescent weight status perception literature is that while there are associations between weight status perceptions and intention to lose weight, intention to lose weight is weakly correlated with/predictive of actual weight loss. What motivates adults to change their weight status likely is not the same as what motivates adolescents to engage in weight-related behaviors - either healthy or unhealthy.
4. The analyses include an interaction of age by race/ethnicity, but there was no rationale in the Introduction for this approach.

Methods

1. Technically, participants were asked to describe their weight status, as opposed to their weight. Please revise to reference "weight status perception."

Statistical Analyses

1. Please clarify how many models were estimated and for what DVs.

2. While I'm familiar with logistic regression analyses, I'm not as familiar with statistical techniques for examining aggregated cohort data. I understand that the authors are conducting a linear trend analysis with combined cohort data, but additional explanation would be helpful. For example, on what basis was it decided that the trend would be linear across the 8 cohorts? How are findings interpreted more generally? What does it mean if an AOR is significant since these data are being examined in terms of time trends?

3. Why stratify models by gender instead of exploring gender as a possible moderator of associations?

Results

1. Were the gender differences in sociodemographics significant? What were the effect sizes of these differences?

2. Were the proportions of participants who accurately/underperceived/overperceived weight status significantly different across time points?

3. The logistic regression tables, while easy to read, are confusing in terms of how the reader should interpret the findings. The authors are assessing linear trends in cohorts, but my immediate default is to read those logistic regression tables as changes in individuals over time. How are AOR interpreted for differences across cohorts? In the text the findings are described in a way that doesn't include any time trends (e.g., "Black/African-Americans were more likely to perform all UDBs except taking diet PPL compared to Whites.").
Discussion

1. How do these findings suggesting that racial/ethnic minorities are endorsing significantly more disordered eating behaviors compared to White/Caucasian adolescents fit with the larger literature? Are these findings consistent with those of other large-scale studies (e.g., GUTS, Project EAT)? While the authors include a citation for Project EAT, there is no discussion as to whether the current findings are consistent with, or divergent from, other epidemiological study findings. If they are divergent, why might that be?

2. The finding that weight loss intentions are more common among females than males has been documented. Males who report wanting to gain weight typically are interested in gaining muscle mass/achieving a muscular physique, which may be associated with problematic weight change strategies including disordered eating behaviors and steroid use.

3. In the vast majority of weight status perception work, inaccurate weight perception is protective against disordered eating behaviors and weight gain. Given that this was not the case in the current samples, this deserves discussion. Further, the suggestion that "abating weight misperception" might reduce disordered eating behaviors seems discordant with the current weight status perception literature.

4. What is meant by "causative link for higher prevalence of these EDs in racial minorities compared with Whites"? It is my understanding that prevalence rates of EDs in racial/ethnic minority women are scarce and this statement seems to imply that racial/ethnic minority women have higher rates of AN and BN than White women.

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 recommend additional statistical review

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

Acceptable

**Declaration of competing interests**
Please complete a declaration of competing interests, considering the following questions:

1. Have you in the past five years received reimbursements, fees, funding, or salary from an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
2. Do you hold any stocks or shares in an organisation that may in any way gain or lose financially from the publication of this manuscript, either now or in the future?
3. Do you hold or are you currently applying for any patents relating to the content of the manuscript?
4. Have you received reimbursements, fees, funding, or salary from an organization that holds or has applied for patents relating to the content of the manuscript?
5. Do you have any other financial competing interests?
6. Do you have any non-financial competing interests in relation to this paper?

If you can answer no to all of the above, write 'I declare that I have no competing interests' below. If your reply is yes to any, please give details below.

I declare that I have no competing interests.

I agree to the open peer review policy of the journal. I understand that my name will be included on my report to the authors and, if the manuscript is accepted for publication, my named report including any attachments I upload will be posted on the website along with the authors' responses. I agree for my report to be made available under an Open Access Creative Commons CC-BY license (http://creativecommons.org/licenses/by/4.0/). I understand that any comments which I do not wish to be included in my named report can be included as confidential comments to the editors, which will not be published.

I agree to the open peer review policy of the journal.