Author's response to reviews

Title: Ethnic differences in perceptions of body satisfaction and body appearance among U.S. schoolchildren: a cross-sectional study

Authors:

Rafael T Mikolajczyk (miko@bips.uni-bremen.de)
Ronald J Iannotti (iannottr@mail.nih.gov)
Tilda M Farhat (farhatti@mail.nih.gov)
Vijaya Thomas (thomasv2@niaid.nih.gov)

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Author's response to reviews: see over
Ethnic differences in perceptions of body satisfaction and body appearance among U.S. schoolchildren: a cross-sectional study

Authors’ Responses to Reviewers’ Comments

[Please note that authors’ responses are listed below in boldface following each comment. Apart from purely linguistic changes all modifications in the manuscript are highlighted]

Reviewer’s report
Reviewer: Kirsi Pietiläinen

Reviewer’s report:
This manuscript examined age, gender, and ethnic differences in body satisfaction, perceived body appearance and BMI in a large HBSC 2001 cohort. The authors found that body dissatisfaction is observed already at age 10. Females have more body dissatisfaction and at lower BMI levels than boys. Substantial differences in perceived appearance and body satisfaction across were found for the three ethnic groups examined. The ms was fluently written and interesting.
I did not find major concerns.
Minor comments:
The sampling protocol was a bit difficult to understand. Estimates of what? “The sample was designed to provide estimates within 3 percent at 95 percent confidence with sample design effects approximately 1.4 times greater than that of a simple random sample.”
The sample size refers to estimation of prevalence. We added this explanation.
In the figures, please show legends and provide an even more clear explanation on the different lines, colors and patterns.
We displayed now legends and improved the descriptions.

Reviewer’s report
Reviewer: Eivind Meland

Reviewer’s report:
The paper is well written and clear, and highlights an important perspective for adolescent health. I have some suggestions for improvements of the paper:

1. Be consequent with the naming of the groups that are surveyed. "Whites" and "non-hispanic whites" are used inconsistently.

We use now consistently “Non-Hispanic Whites” through the manuscript.

2. BMI is standardized according to age and gender. The paper emphasizes that afro-americans are more satisfied with greater body size. However, this might be an effect of within-group comparison. If dissatisfaction across groups should be examined, a standardization according to group would have been appropriate. If this standardization is not made, you need to discuss it more in the discussion section.

We added this aspect in the discussion.

3. The authors point to the loss of positive perceived appearance among african-american boys as the most important health problem found in the present study. Why not the consistent and highly prevalent dissatisfaction with appearance and body among hispanic and whites?
The question is what distribution should be expected if there is a five point scale from “not at all” to “very good” – probably the majority should respond “about average”. From this point of view responses of Whites and Hispanics are more “realistic” (Table 2). Conversely, perceptions of Blacks are overoptimistic. Black girls maintain their positive perception, while black boys are losing it between the ages of 11 and 17. The loss of positive perceptions among boys is the most impressive, but we agree that the loss of positive perceptions among White and Hispanics girls is also a concern – especially as it is also too pessimistic, when considering objective distribution. We added this comment among the findings and in the discussion.

4. The discussion of how to remedy the health threats the study reveals is unspecific and not based upon evidence. The authors should survey the literature more comprehensively in order to make suggestions for policies, public health care and specific school based interventions.

We discuss now more in detail the issue of interventions.

Quality of written English: Needs some language corrections before being published

Language of the manuscript was reviewed by the native speaker who is coauthor of the manuscript.

Reviewer’s report
Title: Ethnic differences in perceptions of body satisfaction and body appearance among U.S. schoolchildren: a cross-sectional study
Reviewer: Frank Elgar
Reviewer's report:
Major Compulsory Revisions
1. The literature review is far too brief to identify the knowledge gap that the researchers have tried to address. There are many studies on ethnic and racial differences in body dissatisfaction, BMI and underweight/overweight. The aim of this study could be more convincing with a systematic review of what is known and what is now known about how these variables interrelate.

We added a section reviewing the current evidence in the literature and motivating the current study.

2. The survey methods from the HBSC study are described well. But it is unclear why physical appearance was truncated from an 5-point ordinal variable to a dichotomous variable, or why “very good looking” responses were compared against “quite good looking, about average, not very good looking, not at all good looking” responses. Wouldn’t the middle category (about average) be a more logical cut-point?

The main reason for dichotomisation is that the physical appearance variable cannot be treated as interval and thus using standard ANOVA would violate its assumptions. Instead of logistic regression, ordinal regression could be also used but it requires the relatively strong assumption of proportional odds. Furthermore, the non-parametric part for the assessment of differences across age was best implemented in logistic regression. Whether the cut off for dichotomisation is chosen in the middle of the scale or on its upper end is an arbitrary choice. It is partly a personal preference and partly has a somewhat different interpretation – in one case the midpoint tendency, in the other an extreme value is addressed. We added a comment on this aspect in the discussion.
3. Same question for body dissatisfaction “…much too thin, a bit too thin, about the right size, a bit too fat, much too fat. For the analysis, this variable was dichotomized into too fat (a bit too fat and much too fat) versus the three remaining categories.”

In general the issue of dichotomisation follows the same explanation as above.

The introduction refers to ASSOCIATIONS between these variables, so why not test their associations, perhaps using an ordered probit model?

Given the large sample size many differences which may not be meaningful, would come out as statistically significant – we therefore focus on effects which are large rather than on statistical significance. Using the displayed results, readers could infer the magnitude of the differences.

4. The following statement on Page 5 is inaccurate “Self-reported BMI correlates with measured BMI making it suitable for examining associations in population studies [12-14]” The correlation statistic does not test validity – it measures the significance of association between two variables. The 3 studies cited here actually found that self-reported BMI is grossly inaccurate and probably should not be used at all. Limitations of self-reported BMI data should be acknowledged.

We maintain that high correlation between self-reported and measured BMI would support studies of association based on self-reported BMI (at the price of a loss of precision). We agree that correlation does not mean validity of self-reported BMI (which means that self-reported values can be systematically biased), but correlation suggests that relative values can maintain the true relation. In response to the concern expressed by the reviewer, we removed the sentence on page 5 from the method section, rephrased it and included it among the limitations.

5. It is not obvious how to interpret age differences in ZBMI given that BMI was converted to age- and gender-adjusted Z-scores (Page 5). On page 6 the authors write, “Across the age groups studied, there was no increase by age in the mean z-transformed BMI, apart from a slight increase in the proportion of overweight White girls (data not shown).”

Basically our results mean that the studied sample did not differ from what is considered standard for the US population with respect to the trend by age. Such differences would be possible as we use an external standard to calculate zBMI. Since these results are not important for the paper and to avoid further confusion we removed the sentence from the manuscript.

7. Finally, I could not find the statistics that support the description of trends and differences in the Discussion. Figure captions refer to significant trends and logistic regression models, but where are the results?

We added the p-values in the foot notes of the figures.

Minor Essential Revisions
1. This sentence needs editing for greater clarity: “age was calculated from the date of birth and date of the completion of the questionnaire and rounded to one decimal place.” The statement is ambiguous because the unit of measurement is not specified (One decimal place of what? Months?)

Thank you for pointing this out. The statement refers to age in years. We added this information in the manuscript.

Quality of written English: Needs some language corrections before being published
Language of the manuscript was reviewed by the native speaker who is coauthor of the manuscript.