Author’s response to reviews

Title: Lifestyle factors associated with underweight among Japanese adolescents: a cross-sectional study

Authors:

Hirotaka Ochiai (h-ochiai@med.showa-u.ac.jp)
Takako Shirasawa (shirasawa@med.showa-u.ac.jp)
Hinako Nanri (nanrih@med.showa-u.ac.jp)
Rimei Nishimura (rimei@jikei.ac.jp)
Shohei Nomoto (s_nomoto0731@yahoo.co.jp)
Hiromi Hoshino (hhiromi@med.showa-u.ac.jp)
Akatsuki Kokaze (akokaze@med.showa-u.ac.jp)

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Author’s response to reviews:

Archives of Public Health
Dear Prof. Dr. H. Van Oyen:

We authors would like to submit our revised manuscript entitled
Lifestyle factors associated with underweight among Japanese adolescents:
a cross-sectional study
for publication in Archives of Public Health as research articles.

We would like to thank you for considering our manuscript for publication.
We would also like to thank the reviewers for their feedback that helped us improve the manuscript. We have revised our manuscript according to your comments and reviewers’ comments. In this revised manuscript, the revisions were highlighted in red color. The revised manuscript was edited by a native English speaker.
Our responses to their comments are described below.

We would be grateful if this revised manuscript could be reviewed and considered for publication in Archives of Public Health.

We are looking forward to hearing from you.

Sincerely,

Hirotaka Ochiai, Takako Shirasawa, Hinako Nanri, Rimei Nishimura, Shohei Nomoto, Hiromi Hoshino, and Akatsuki Kokaze

Corresponding author: Hirotaka Ochiai
Department of Public Health, Showa University School of Medicine,
1-5-8 Hatanodai, Shinagawa-ku, Tokyo, 142-8555, Japan.
Phone: +81(JPN)-3-3784-8134, FAX: +81(JPN)-3-3784-7733,
E-mail: h-ochiai@med.showa-u.ac.jp

Reviewer 1
Dear Dr. Frayon,

Thank you very much for your review and detailed comments.

We have revised our manuscript according to your comments. In this revised manuscript, the revisions were highlighted in red color. The revised manuscript was edited by a native English speaker.

Our responses to your comments are described below.

Reviewer #1: General comments

1. Interpretation of odds ratio (OR) value needs correction. An odds ratio is a value to determinate if an event (being underweight in this case) were more likely or less likely to
occur in a group compare to another one. In this context, the value of OR cannot 'increase'
has mentioned in several occasion in the manuscript. See for example Mary L. McHugh. The
Please modify carefully in all sections.

Response: According to your comments (including your comment in Abstract), interpretation of
odds ratio was modified (“lines 44-47, P3-4” and “lines 178-191, P11-12”).

2. Underweight is known to be more common in low income country because of the
undernutrition but i think this is not the case in this town in Japan. Even if the socioeconomic
profiles of the students is not know, general comment about Japan and this town need to be
add. The other factors leading to underweight is commonly the social pressure to be thin and
body image perception. However, these points are not discuss in the study.

Response: General comment regarding socioeconomic factors was added (lines 275-278, P17).
In addition, we discussed social pressure to be thin and body image perception (lines 272-273,
P17). We appreciate your comment.

3. The lifestyles factors used by the authors (snaking, skipping breakfast, eating speed) are
commonly associated with overweight and not with underweight. The use of this lifestyles
factors in this context is more uncommon and authors should present their hypothesis about
that: did they expect that underweight adolescents were less likely to have snacking and less
likely to skip their breakfast for example (because this behaviors had been associated with
overweight)? Please explain and add references.

Response: We presented our hypothesis and added references to Introduction (lines 78-81, P6).

4. Same concern regardless birthweight: why the authors used this indicator? There is no
reference in background section and no explanation of what the authors expect about this
variable. A low birthweight was associated with overweight in some studies: what the
authors expect studying this variable?

Response: The reason why we put birthweight in the model was written in Methods (lines 137-
138, P9).
5. Concerning factors associated with underweight, a gender effect cannot be found because of the statistics used. However, underweight and desire to be thin are more common in girls than boys and several behaviors were linked to gender in table 1. I recommend to add an analyze of the whole population in the logistic regression models, including gender as variable.

Response: According to your comment, we conducted the analysis in total participants (boys and girls). The results were shown in Results (lines 185-191, P12) and Table 6.

7. What the authors suggest to take into account their results?

Response: The suggestions based on our study results was described in Abstract (lines 49-51, P4) and Conclusions (lines 285-287, P17).

Abstract

The abstract must be improved avoiding repetitions. For example in the first sentence "Because underweight in adolescents poses several health problem, it is important to prevent underweight in adolescence.". In the next sentence, the word 'risk' is repeated 3 times. Please check carefully.

Results section must be rewritten to avoid the term 'increased' when analyzing odds ration as previously notified. For example: 'Girls who did not exercised were more likely to be underweight than those who exercised (OR : ...)'  

Response: Based on your comment, we revised the sentences (lines 31-33, P3). In addition, Results section was rewritten according to your comment (lines 44-47, P3-4).

Background

Page 5, line 35 : The authors argue that BMI in adolescence is a strong predictor of adult BMI. Then, they suggest that underweight adolescents become underweight adults. Is this really the case? This point must be clarified with others references. Please note that in the reference cited, "Tracking was less pronounced or lacking among those who were not yet fully sexually mature at baseline, indicating that tracking is more pronounced after puberty when the growth spurt is over." Because of the age of the participants, another reference may be useful or the affirmation that underweight adolescence become underweight adult must be nuanced.

Response: According to your comment, another reference was added to Introduction and we revised the sentence (lines 63-65, P5).
What is the prevalence of underweight in Japanese adolescents? Is this prevalence higher in Japan than elsewhere in the world?

Response: Based on your comment (including your comment in Discussion), we described it in Discussion (lines 209-225, P13-14).

Please reformulate the sentence because the word 'factors' is repeated 3 times.

Response: We reformulated the sentence (lines 70-71, P5).

In this paragraph, the order of argumentation need some adjustments: I suggest to present in a first step what lifestyles factors are associated with BMI (including eating breakfast, snacking and others variables used in the analyses). In a second time, present what have been previously done by others. Finally, present what this research can add.

Response: Based on your comment, we adjusted the order (lines 70-81, P5-6). Thank you for your comment, which helped us improve our manuscript.

Methods

Concerning ages of participants, it is unclear in which format the ages were obtained. Did the authors asked the birthdates and used it to calculate age at the physical examination date? Did the ages is asked as a single round value? Moreover, ages in tables looked like a dichotomous variable (12 or 13) and not like a continuous variable (age ranking from 12.0 to 13.0). If this the case, age must be analyzed as dichotomous variable and not as a continuous variable.

Response: Subjects were asked to fill in their age (lines 105-106, P7). Therefore, age was written as a continuous variable. We appreciate your comment.

How many junior high schools had been concerned by the study? How the schools has been selected?

Response: In this study, all three Ina-town’s junior high schools were selected (line 89, P6).
Concerning the questionnaire, it is unclear why the authors asked the birthweight of the participants. In the same manner, why the birthweight has been dichotomized at the 2500 g value point? Which reference has been used?

Response: Because birthweight was reported to be associated with body mass index, birthweight was asked and adjusted (lines 137-138, P9). Based on the reference “Yu ZB, Han SP, Zhu GZ, Zhu C, Wang XJ, Cao XG, et al. Birth weight and subsequent risk of obesity: a systematic review and meta-analysis. Obes Rev. 2011;12:525-542.”, birthweight was dichotomized as <2500 g or ≥2500 g (line 110, P8).

Results

Page 9 lines 44-51: Please indicate the difference observed concerning anthropometric characteristics (who is taller and heavier than who) and weight status classification.

Response: Based on your comment, the differences were indicated (lines 154-159, P10).

Page 10, last paragraph: please reformulate avoiding the word 'increase' when analyzing odds ratio value.

Response: According to your comment, we avoided the word “increase” (lines 178-184, P11-12).

Page 11 lines 9-13: How the 'p for trend' was obtained? The dose-response relationship is not clear in my opinion: there is no difference between the 'daily exercise' and the 'sometime exercise' categories (p=0.331).

Response: Thank you for your comment. P for trend was obtained by performing the test for trend. We described the detail of the test for trend (lines 142-144, P9).

Discussion

Page 11, lines 35-8: this sentence sound like lifestyles factors could changes underweight status: please modified carefully avoiding causal-effect suggestion. As pointed by the authors, this is a cross-sectional study and no causal-effect should be evoked.

Response: Based on your comment, the sentence was revised (lines 198-200, P12-13).
Body composition is not known in the study so it's difficult to discuss this point. Moreover, the fact that there is some anthropometric difference between boys and girls during adolescence is not a goal of this study. I think it's better to discuss the prevalence of underweight in boys and girls in Japan compared with other countries.

Response: We deleted the sentence and discussed the prevalence of underweight in Discussion (lines 209-225, P13-14).

The sentence is too long and difficult to understand.

Response: We revised the sentence (lines 231-233, P1).

Is there any reference for that affirmation?

Response: References for the affirmation were specified (lines 242-244, P1).

The association found by others is always that eating fast leads to overweight. Please be more precise when discussing results found by others.

Response: According to your comment, the sentences were revised (lines 227-231, P1).

The study cited (Rerksuppaphol et al., 2010) doesn't report that poor appetite leading to poor weight gain but only claim that point without reference in the introduction. The work of Rerksuppaphol is not focused on the appetite and weight gain directly. Moreover, the sentence in the author manuscript overlaps with this publication ("Poor appetite leading to poor weight gain is a characteristic finding among underweight children without underlying pathological conditions.") Please find a better reference for that part of the discussion.

Response: Based on your comment, we added another reference to Discussion (lines 236-237, P1).

This sentence doesn't make sense. Please reformulate.

Response: The sentence was reformulated (lines 248-249, P1).
The authors proposed to explain relationship between low physical activity and underweight by the effect of exercise on lean mass. However, there is no arguments for this causal relationship so the authors may proposed alternative suggestion. Underweight may cause several health problems and indirectly less physical activity (for example see (Kantanista and Osiński 2014).


Response: We proposed another suggestion and added it to Discussion (lines 258-262, P16).

Tables

In table 1, BMI cannot be compared between boys and girls because of sex-specific cut off : please used percentile or BMI z-score using LMS reference of Cole et al. for gender comparison of BMI. Please precise that p value is for comparison between boys and girls.

Presentation of all models used in the logistic regression add little because ORs and p value were very similar in all cases. Please keep only the third model and then collapse data from table 4 and 5.

Response: We calculated the BMI z-score and compared it between boys and girls (“lines 125-126, P8”, “lines 155-156, P10”, and Table 1). Furthermore, we revised Table 4 and 5 according to your comment.

We thank you again for your helpful comments. We really appreciate your review.

Reviewer 2

Dear Dr. Lazzeri,

Thank you very much for your review and detailed comments.

We have revised our manuscript according to your comments. In this revised manuscript, the revisions were highlighted in red color. The revised manuscript was edited by a native English speaker.
Our responses to your comments are described below.

Reviewer #2: Better explain the project from which the data originate and insert reference

Response: We added the explanation and inserted the references (lines 92-95, P7). Thank you for your comment, which helped us improve our manuscript.

Enter the number of children for each of the seven years in which the data were collected and insert it as a limitations

Response: The number was added to Study subjects (lines 89-91, P6-7) and we inserted it as a limitations (lines 278-280, P17). We appreciate your comment.

row 114 Is was made a standardization of the operators for the anthropometric measurements?

Response: Standardization of the operators for anthropometric measurements was performed. Therefore, we described it in Methods (line 119, P8).

row 121: justify the use of the median and interquartile range. A test was performed to normality? If yes indicate which.

Response: We used the Shapiro-Wilk test to test the normality of distribution for each continuous variable. Therefore, we specified it in Data analysis (lines 128-130, P9).

row 143: in this case Chi square evaluate the association between sex and physique or excercise and not a difference because you did not specify a comparison mode among those possible in physique and exercise

Response: According to your comment, we revised the sentence (“lines 156-157, P10” and “lines 159-160, P10”).

row 145: Enter "Yes" after breakfast, television and books otherwise it is not clear which mode you are referring to and, if not even in this point it would be an association and not a difference between males and females

Response: Based on your comment, we revised the sentence (lines 160-163, P10-11).
row 156 is association and not a difference
Response: We revised the word (line 173, P11).

row 161: it is not clear with respect to who is the increase in the OR because we have three models that differ only in the adjustment variables. Perhaps the author meant an increase of underweight associated with eating slowly.
Response: Thank you for your comment. We deleted model 1 and 2, and showed the results in model 3 (“lines 178-184, P11-12” and Tables 4-5).

row 165: same as above: an increase of underweight associated with not exercising.
Response: We revised the sentence (lines 180-181, P11-12).

Correct these last two points also in the Abstract.
Response: We revised the Abstract according to your comments (lines 44-47, P3-4).

We thank you again for your helpful comments. We really appreciate your review.

Dear Prof. Dr. H. Van Oyen,

Thank you very much for your review and detailed comments.

We have revised our manuscript according to your comments. In this revised manuscript, the revisions were highlighted in red color. The revised manuscript was edited by a native English speaker.

Our responses to your comments are described below.

Comments of the Editor-in-Chief
1.
Titles of tables should refer to place, time and study
Response: According to your comment, we revised titles of tables (Tables 1-6). We appreciate your comment.

2.
data are presented stratified by gender.

did you investigate if there is an effect modification of gender.
Response: We investigated if there is an effect modification of gender. As a result, there was no effect modification of gender. Therefore, we described it in this revise manuscript (lines 140-142, P9). Thank you for your comment, which helped us improve our manuscript.

We thank you again for your helpful comments. We really appreciate your review.