Author’s response to reviews

Title: Body weight, weight perceptions and food intake patterns. A cross-sectional study among male recruits in the Norwegian National Guard.

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Author’s response to reviews: see over
Dear Editor,

Thank you for your letter of 27 January with the reviewers suggestions for revision of our paper "Body weight, weight perceptions and food intake patterns. A cross-sectional study among male recruits in the Norwegian National Guard". We have now revised the manuscript according to the reviewers suggestions, as specified below.

Kind regards

Margareta Wandel

Reviewer 1: Marjaana Lahti-Koski

1. Seasonal variations and the two phases of the data collection

   We have now adjusted for seasonal variation caused by the two phases of data collection in the analyses for table 2 and 4. The data presented in table 2 (comparison of the recruits frequency intake of selected food items at home related to amount intake in the camp) have now been analyzed using ANCOVA with adjustment for the two phases of data collection. Furthermore, in order to account for seasonal variation in food scores, the scores for the three food patterns derived by PCA-analyses were divided into tertiles for each phase of data collection. These were then used in the multivariate regression presented in table 4. In order to account for seasonal variation in BMI, the multivariate regression with BMI as independent variable was re-run adjusting for phase of data collection, in addition to the other adjustments. Information about adjustments is now added to the Methods, p. 9 section 2 and 3 and to table 2 and 4.

2. Assessment of physical activity was poorly described. The limitations of such crude measurements could also be discussed in the discussion part.

   a. We have now included a description of how the questions on physical activity were formulated in the Methods, p 8. section 2:

   “The time that the recruits presently spent in light or hard physical activity was measured with the question: How would you describe your physical activity. Please give the average number of hours per week in each category of light and hard physical activity: Light activity (not sweating/out of breath); Hard activity (sweating/out of breath)”.

   b. Discussion of the crude measurements of physical activity has now been included in the discussion section, p. 16 section 1: “Another limitation of the study is the
crude measurements of physical activity, which also could have blurred the relationship between BMI and physical activity”.

3. **Food consumption at weekends and at weekdays. The authors should give a reason for these arrangements and discuss its possible effects in the discussion.**
   
a. The reason is now stated in the methods, p. 6, section 3: “The reason why only weekdays were included in the food consumption data in the military was that weekends were sometimes spent at home and sometimes in the military. In this study it was important to keep the setting the same for all recruits, and the consumption at home and in the military separate from each other”.

b. The possible effects are now discussed in the discussion section, p. 15 section 3: “Furthermore, the fact that the data on food consumption in the military was measured on weekdays, whereas the data on food consumption at home referred to the entire week may have attenuated the association between these two measures of food consumption”.

4. **In table 1, the distribution of weight/obesity status is given with one decimal but the information on physical activity with no decimals. I think the information should be given in the similar way across the table**
   
a. One decimal is now given on all the numbers throughout table 1

5. **It remains unknown if the 739 recruits all were eligible participants who started their military service at Værnes or was it a sample of a bigger group of recruits.**

   The 739 were the eligible recruits who started their military service at Værnes. This information has been included in the Methods, p 5 section 3. However, some of these dropped out during the study period, which is partly the reason for refusal to participate, as well as for incomplete data sets.

6. **The participants answered the questionnaire on the first day in the survey period. However it is not said for how long the participants had been in the military service before the study period and had been prone to food served at the military setting.**
The survey period started when the recruits had been in the military for 1 week for both groups of enrollment. This information is now included in the methods, p. 6 section 3.

7. Similarly, the time lag between military service (study period) and living at home remains unknown. The association could be assumed to be stronger in the earlier stages of the military service.

See point 6 above. In addition the following has been included in the methods, p. 5, section 4: “Most young men in Norway enroll in the military service directly after finishing high school and a life at home with their parents. Our data support this: 80% were 20 years or younger, and 94% had completed high school, but had no other education. Only 14 participants were above 23 years of age”. Furthermore the following sentence has been added, p. 7 section 1.” The participants did not report problems in remembering the frequency of consumption of the selected food items when still living at home”.

8. Smoking habits.

The former smokers have now been included in the category of “non smokers” in table 1, which would make the table more in concordance with the description in methods.

9. Quality of written English

We have gone through and made corrections to the English language.

Reviewer 2: Vanessa de Mello Laaksonen

1. Was the diary pilot study and re-test published elsewhere? What were the main results of the first pilot study and the conclusions?

The pilot study and the test-retest have not been published elsewhere. The pilot study indicated that it was fairly easy to respond to the questions in the questionnaire. Only small amendments of the wording of a few questions were required. The respondents meant that it was not problematic to remember the food consumption when still living at home. The test – retest showed fairly consistent results over a 3 weeks study period. Correlations between time 1 and 2 were from 0.11 to 0.55, however most responses were 0.50-0.55. This has been included in the methods, p. 7 section 1.
2. Methods: In the 6th section, 3rd paragraph, how did the authors assess the memory of the interviewed persons, in terms of time? Was the question related to which period of time in their lives? Was it the same among all subjects.

“Most young men in Norway enroll in the military service directly after finishing high school and a life at home with their parents. Our data support this: 80% were 20 years or younger, and 94% had completed high school, but had no other education. Only 14 participants were above 23 years of age”. This information has been included in the Methods, p. 5 section 4. Furthermore the following sentence has been added, p. 7 section 1.” The participants did not report problems in remembering the frequency of consumption of the selected food items when still living at home.”.

3. Results: 3rd section, how many of the subjects that thought it was important to have good health also answered that it was important to be slender? Besides BMI, waist circumference should be also used in the analyses as body dissatisfaction seems to be associated with fat distribution.

The following information is now included in the results, p.10, section 3, p. 11 section 1: “Thirtyseven percent of those who strongly agreed that it was important for them to have good health also strongly agreed that it is important for them to be slender”. We do not have data on waist circumference.

4. Further clarification on type of bread is needed. They should be analyzed separately when testing for PCA in order to retrieve the scores. Moreover, pasta and type of cereals should also be specified.

Most of the bread served in the military camp was semi-whole grain bread. Some of this was brown because it was coloured with malt extract. The participants therefore had difficulties to know which bread was semi-whole grain and which was whole grain. Very little white bread was served in the military mess. Therefore, we did not enter different types of bread into the PCA – analyses. Pasta did not load on the three factors in the analyses. The cereals that loaded on the 3rd factor were breakfast cereals. This information is now shown in table 3.

5. Discussion should be re-written. A brief summary of the main findings should be given as a first paragraph. The 6th paragraph should be shortened and added to limitations and its last sentence is inappropriate.

The discussion has been re-written. A brief summary of the main findings is now given in the first paragraph of discussion, p. 12: “The data from the present study showed that slenderness was a highly valued attribute among the recruits; 66% agreed (strongly or to some extent) that it was important for them to be slender. Although the attitudes towards slenderness had more bearing on physical activity than on food behaviour, BMI was negatively associated with the intake of a plant food pattern defined using a principal component analysis”.
The 6th paragraph has been shortened and added to limitations, p. 15 and 16. The last sentence has been removed.

6. The authors infer that the guidance offered for completing the dietary could have assured the accuracy of the data collected. However, how the authors handled possible weight change during the week that diet was collected and what to which extent this could have influenced data collection? Please comment on that.

We do not quite understand the question. If the reviewer refer to weight change among recruits, this would have been very small during the 4 consecutive days that the data were collected. Weight change of the food is possible, but since dietary data always have rather large errors, I think that our data collection was more accurate than most dietary data.

7. The message of the last sentence in the 8th paragraph of the Discussion section should be re-written, because there is no much sense the way it is now.

The entire 8th paragraph has been re-written, p. 15, section 2.

8. The authors should emphasize their main findings and highlight their new contributions for the literature, and not only discuss them based on previous findings and similar findings.

The Discussion section has been revised to highlight the findings from this study.

Minor points:

1. The authors should revise minor grammatical mistakes in the text before eventual publication

The text is now revised for grammatical mistakes.

2. In the abstract, please also give the age range instead of only the mean in the first sentence of the Methods paragraph, and remove the 3rd sentence. Please also comment something about the assessment of food patterns at home in the past as compared to the food patterns in the military service.
The age range is now given in addition to the mean. The third sentence is removed. We have also commented on the assessment of food patterns at home in the past both in abstract methods and in abstract results.

3. **In the background, a reference for the statement in the 3rd sentence of the 1st paragraph is missing.**

   References for the statement has been put in, p. 4 section 1.

4. **Background: In the 3rd paragraph, specify better the population (e.g. military service of…… Norway).**

   “The military service of Norway” has been added, p. 4 section 3.

5. **Methods. In the 3rd section, a reference is required for the classification of BMI.**

   A reference for the classification of BMI has been put in, p. 6 section 2.

6. **Methods: In the 4th section, please specify if the days of the dietary record kept by the subjects were to be consecutive or not.**

   They were consecutive. This has been added to the text, p. 6 section 3.

7. **The sentence before the last sentence in the 2nd paragraph of the Discussion section should be removed.**

   The sentence has been removed.

8. **The first paragraph of the Discussion section should be shortened and added to the paragraph concerning the limitations of the study.**

   This paragraph has been shortened and added to the paragraph concerning the limitations, p. 15.

9. **Methods: The word weight preferences could be confusing in this context, please keep the word weight perception throughout the text.**

   The word weight preferences has been changed to weight perceptions p. 8 section 2.