Reviewer's report

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

Version: 1 Date: 29 December 2010

Reviewer: Marjaana Lahti-Koski

Reviewer's report:

Major compulsory revisions

My major concern relates to seasonal variation that may have had an effect on the results and that has not been taken into account in the analyses. The data for the study were collected in two phases, the first taken place in January (winter) and the second in July (summer). Food consumption pattern has been shown to differ between summer and winter time, especially in the northern countries and especially concerning vegetable and fruit consumption. In addition, a Dutch study has shown seasonal variation in BMI. Therefore, e.g. the inverse association between vegetable consumption and BMI could be due to lower BMI and/or higher vegetable consumption among those participating in the study in summer time compared with the participants in the winter time. The authors need to investigate whether there were differences between those two groups, and to control for the seasonal variation in the analyses. Seasonal variation may have an effect also on results concerning food consumption at home, and the comparisons between home and military settings (results presented in table 2), especially given that food diaries were kept during the fixed period of time whereas questions on food consumption at home were general, not e.g. asking of the consumption during the previous week. I think that more sophisticated analyses than analyses of variance without any adjustments are needed to the comparison (table 2).

Assessing physical activity was poorly described. It remains unknown whether questions on physical activity relates to time living at home or being in the military service. I assume that the questions relate to leisure-time physical activity but this information is not given. It would be useful to report how the questions were formulated. This part of the methods needs to be described in more detail. In addition, the limitations of such a crude measurement for physical activity could also be discussed in the discussion part, especially given that relationships between BMI/weight perceptions and PA/food pattern were compared in conclusions.

Given that food consumption differs between weekdays and weekend days I was surprised to notice that the food diaries were completed on working days only, whereas as far as I am aware, the questionnaire on food consumption at home did not make a difference between weekdays and weekends. For example, snacks and fast food consumption may be higher during weekends.
The authors should give a reason for these arrangements, and discuss its possible effects in the discussion.

Minor revisions

In table 1, the distribution of weight/obesity status is given with one decimal but the information of physical activity with no decimals. I think the information should be given in the similar way across the table.

Discretionary revisions

In the methods, it was said that a total of 739 recruits were asked to participate in the survey. It remains unknown, however, if these 739 recruits all were eligible participants who started their military service at Vaernes or was it a sample of a bigger group of recruits.

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. Similarly, a time lag between military service (study period) and living at home remains unknown. The associations between food consumption at home and in the military could be assumed to be stronger in the earlier stages of the military service. The authors could consider discussing this issue in the discussion. Referring to the very first point that I raised, I assume that the timing of the study period (re the start of the service) was about the same in both groups (January/July).

In the methods, it was said that smoking habits were recoded either to current smokers or non-smokers. However, in the results (+ table 1) also former smokers were mentioned, although the prevalence seems to be pretty low. Anyway, methods and results should be in concordance re variables used.

**Level of interest:** An article whose findings are important to those with closely related research interests

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

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.