Reviewer’s report

Title: Effects of deployment on diet quality and nutritional status markers of elite U.S. Army Special Operations Forces Soldiers

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Reviewer: Lisa Ranzenhofer

Reviewer's report:

This paper examined changes in self-reported intake patterns and nutritional markers in a small sample of SOF soldiers from pre- to post-deployment. Results suggested decreases in fruit, milk (dairy), calcium, and vit D intake, and increases in empty calorie intake. There was also a significant decrease in total Healthy Eating Index scores, reflective of overall poorer diet. Changes in nutritional markers, including PTH (increased), ferritin (dec) and sTfR (inc) were also observed and thought to reflect decreased iron and calcium stores (and greater bone resorption).

Overall this paper addresses an important topic that has to date been under researched. They use validated and objective measures. The data is clearly presented in tables 1 and 2. I think the paper would benefit from a few improvements including shifting prior research (such as the UK studies) to the introduction, provide rationale for no statistical correction for high number of comparisons, and addressing what are the next steps (research directions in particular), needed to determine the best (if any) clinical intervention. Although the authors offer a few potential clinical interventions, it is not clear from the discussion whether these would be appropriate based on their small data set, or if more research is needed. Comments are as follows:

Introduction

1. Nice and concise but it would be helpful to address the prior research (e.g., the studies from the UK) in the intro instead of discussion.

2. Possibly helpful to move some of the description of typical deployment diet (E.g., what foods are eaten when, what is a MRE) from methods to intro.

Method

1. Good explanation of factors contributing to attrition

2. Acknowledge small sample size, note whether adequately powered
3. Did the authors consider correcting for multiple comparisons since ~20 t tests were performed?

4. Note prior to discussion that decreases in empty calories are actually reflective of increased intake of these items. Until the discussion, it seemed that there was actually a decrease in empty calories consumed.

5. Does the FFQ allow examination of total kcal and macronutrients? If so, authors should justify why not included. If not, perhaps state this.

Results

1. Tables are very clear

2. Is the sample (> 30 y o, married, some college) generalizable to SOF? Seems a bit different than average combat soldier but perhaps this is representative of SOF population.

Discussion

1. I think the discussion would benefit from a clearer explanation of what the next steps would be. Although some clinical interventions are noted, would the authors recommend them at this time (e.g., supplementing vitamin D) or is more research needed?

2. Note small sample (~33 who did pre and post?) as a limitation.

3. Although empty calories increased, did it increase above a specific threshold that would be considered harmful?

Level of interest

Please indicate how interesting you found the manuscript:

An article of importance in its field

Quality of written English

Please indicate the quality of language in the manuscript:

Acceptable
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