Reviewer's report

Title: Physical activity is associated with a low prevalence of musculoskeletal disorders in the Royal Norwegian Navy: a cross sectional study

Version: 1 Date: 27 November 2006

Reviewer: Linda A Merlino

Reviewer's report:

General

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Statistical Methods

Page 6, paragraph 1. This whole section describing the how the scale was computed is not clear enough. I was never able to determine how the scale was constructed to create an 18 point scale. This lack of understanding then leaves one mystified when trying to determine how to interpret the beta for the regression equation even though an explanation was provided. Regarding the statement that the relationship between physical activity and MSD was tested by linear association how were the very small numbers in many of the cells (Table 2) accounted for in the analyses? Did you collapse categories?

A discussion about the very low response rate (especially among the civilian responders) and the effect that may have had on the results needs to be included.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

The Nordic questionnaire inquires as to pain. Since no clinical examination was conducted, the use of the term musculoskeletal disorder in the title and throughout the paper should be changed to more accurately reflect the outcome of the study, i.e., musculoskeletal symptoms or complaints.

The term “physical workload” implies heavy work demands whereas it really seems to reflect awkward postures and lifting. Physical stressors may more aptly convey the hazard. Regarding this point, which is mentioned in the background section, delineating the concepts regarding types of physical activity (i.e., aerobic fitness activity or sports vs physical stressors) may help the clarity.

Methods

First paragraph. In referring to the 5-point scale range, please specify the scale rather than the range.

Results

Please also provide the median values for the physical activity variable for civilians and military.

Pg 8 – second paragraph, first sentence under Physical activity and musculoskeletal disorders. In the logistic regression …. Physical activity was inversely (not negatively) associated …

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Discretionary Revisions (which the author can choose to ignore)

Background and significance

Line 6 - … a high degree of variability into measurable units. Do you mean "of" rather than "into"?
Second to last sentence before study aims: “The higher physical activity could, in turn, lead to …”. A suggested change to the sentence to read “Improved physical fitness should help prevent MSDs. However injuries resulting from increased participation in sports or other physical activities may slightly attenuate the benefits of improved fitness in the development of MSDs.

Methods
Page 6, Second paragraph. A physical work index comprised the scores of all 6 items “from the physical workload question” and transformed …

Discussion
First paragraph: A suggested change to the first sentence:
The study demonstrated a slight protective relationship between higher levels of physical activity and self-reported musculoskeletal symptoms.

Although the findings were significant, the magnitude of the effect appears small. However, due to the lack of understanding in how the scale of physical activity was constructed and the greater magnitude of effect presented in the discussion, I may be incorrect in this assessment.

Page 10, last paragraph. Suggested rewrite of the first sentence: In the Navy, civilians had a higher prevalence of MSD than military personnel. An association between being civilian and having an MSD persisted for the neck. …

Good job in noting the selection bias!

Methodological considerations

Second paragraph. I would suggest moving the last sentence of the paragraph (However, a questionnaire…) to after the first sentence (Physical activity was measured by questionnaire …)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Quality of written English: Acceptable

Statistical review: No

Declaration of competing interests:

I declare that I have no competing interests