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: 2 Date: 11 April 2007

Reviewer: Linda A Merlino

Reviewer's report:

General
The manuscript has been substantially improved.

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

Abstract Results: The third sentence would be more precise if written as follows: "After adjustment for confounders, high physical activity was inversely associated with musculoskeletal disorders for all body sites except elbows, knees, and feet".

Methods
Physical Activity - pg 6

To improve the clarity for determining the computation of the physical activity score on page 6, the following sentence revision is suggested for after the question: "...(average per week)?" Two scales were provided, (1) heavy activity with sweating and heavy breathing and (2) light activity without sweating and heavy breathing. The respondent was asked to tick off one of the following options for each scale: "none", "less than 1 hour", "1-2 hours", "3 hours and more". The same question was repeated...

Statistical Methods (pg 8). It is stated that the Pearson chi square test tested the linear by linear association. Usually, the Mantel Haenszel chi square test is used for this purpose. In SPSS, this statistic may not be specified thus leading to the misstatement even though the computation may be accurate. Is that the case?

The next paragraph second line has "adjusted for variables known as risk factors for MSD". Technically, these are confounders for the association between MSDs and physical activity and the sentence may be more aptly written as "adjusted for known confounders"

Methodological considerations

If the data is available, it would be nice to add some data regarding the target population for comparability purposes to see how representative the sample is. For example, what percentage of the Norwegian Navy are women and men. Eleven percent of the respondents were female in this survey are they 50% of the Navy? What is the gender split by military status? What is the mean age of all military and civilian employees (not just those surveyed)? If the data is presented and the case is made that the sample is representative of the target population, then the statement about selection bias not being a major issue is more factual than speculative.

Table 2 and Figure 1 should have the same source for computation yet the N for figure 1 is 2250 and for table 2 is 2258. A more descriptive title for Figure 1 would be "Musculoskeletal .... the past 12 months stratified by military status ..."

Discretionary Revisions (which the author can choose to ignore)
Methods
Statistical Methods, Second paragraph, page 8. The sentence starting "Differences between", the sentence is more grammatically correct if written as "Differences in MSD between military and civilian, age, BMI, ...

**What next?:** Accept after minor essential revisions

**Level of interest:** An article of importance in its field

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

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests