Reviewer’s report

Title: Physical activity and health related quality of life

Version: 2 Date: 5 April 2012

Reviewer: Elisa Marques

Reviewer’s report:

Major Compulsory Revisions

Comments to authors:

1- General comment:
This is an interesting study, which examines the relationship between HRQoL and PA, mainly because authors explore the potential differences that might exist according the method used to capture PA (objective and subjective measures). In addition, the sample used was a large representative national survey, which is also a major strength of this study. Although the study is carefully conducted and reported there is a major flaw, which needs to be addressed: no information is provided regarding the methods used to assess PA, both objectively and subjectively (afterwards I will address this issue in more detail).

2- Specific comments
1. Abstract- is well written. Authors have to choose if physical activity is fully written or use the abbreviation (PA); both forms are used in the text. Within the methods section (lines10-11), please eliminate the sentence “and examine how this relationship differs across objective and self-reported measures of physical activity” as this is the aim of the study, repeated from an earlier sentence. In this section more details must be provided, mostly sample characteristics (such as, age, gender prevalence) and the methods used for HRQoL and PA assessment (reporting key elements of monitor use in the present study). Also results should the described in more detail (e.g. regression numerical data).

2. Keywords- Different and better keywords should be included, representing the main content of the article.

3. Introduction – Use square brackets for references.
Authors must be aware that the work from Hamer and Stamatakis (9) is not the only that used accelerometer data to explore the association between objectively assessed PA and subjective measures of well-being. In fact others, such as Wanderley et al. 2011 (Wanderley FA, Silva G, Marques E, Oliveira J, Mota J, Carvalho J. Associations between objectively assessed physical activity levels and fitness and self-reported health-related quality of life in community-dwelling older adults. Qual Life Res. 2011 Nov;20(9):1371-8) used physical activity monitors to address this relation.

If the authors are only interested in the literature published in adults, this should
be clearly mentioned in the text. Moreover the reasons to focus on this specific age group should also be justified in the introduction; the authors justify later at the methods section.

4. Methods – Reliability of the EQ-5D questionnaire was assessed? If yes results should be reported, if not, this should be justified and mentioned as a study limitation.

Regarding PA assessment, the description provided is poor and key elements of monitor use are lacking. It seems that accelerometry was used; however this was only briefly mentioned at the discussion section (page 11). Matthews et al. 2012 (Med. Sci. Sports Exerc., Vol. 44, No. 1S, pp. S68–S76) proposed the following checklist for reporting use of physical activity monitors in population-based studies:

1. State the rationale for selecting a particular monitoring system and which behavioral characteristics were of primary interest in making the measurements.
2. Report the reliability (inter- and intra-instrument) for the instrument selected (if available) and also validity information for the activity estimates of interest (e.g., direct measures or predicted values).
3. Report the method and location of monitor attachment.
4. Indicate the a priori goal for the sampling periods observed (i.e., number of hours per day, number and type of days).
5. Describe the method(s) for estimating wearing time in sufficient detail so that others can replicate the method.
6. Provide information about the quality control checks that were implemented and specify the type of action taken when data were determined to be invalid.
7. State clearly the compliance criteria to define a valid day of observation and the number and type of days required to be included in the final analytic sample. These criteria may vary according to the needs of a particular study and/or certain study populations.
8. Describe the methods used to generate key summary variables, including references to any prediction methods or classification decisions used.

The authors should provide this type of information in the methods section. Several studies in the literature are available reporting this type of information, which authors should examine and use for orientation. In addition it is not clear how walking, and sports and exercise were measured; objectively or subjectively? Please clarify.

Table 1 can be eliminated because it does not add new and clearer information; the explanation provided in text (after improved according the previous specifications) should be sufficient.

5. Analysis – Is well written and with the appropriate detail. Power calculation should be included.

6. Results
Page 10 – regression models

Why not explore the association between the individuals who were ‘physically active’ via sports and exercise plus walking? It would be interesting to see if those individuals had better HRQoL than active individuals (via sports or via walking) and the inactive individuals.

Table 4 - Results of statistical analysis should include confidence intervals.

7. Discussion and conclusion are well written.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.