Reviewer's report

Title: Development and Validation of Psychosocial Determinants Measures of Physical Activity among Iranian Adolescent Girls

Version: 2 Date: 10 December 2007

Reviewer: David Conroy

Reviewer's report:

This manuscript reports an investigation into the psychometric properties of a battery of measures translated into Persian. The measures assess psychosocial determinants of physical activity. The research question is important because changes in the items and the population being sampled preclude assumptions that scores will have equivalent meaning to those from the original measures. The sample size is large and certainly sufficient for this type of non-experimental work. The authors appear to have taken adequate care in the translation of the items.

Major Compulsory Revisions

1. The authors use exploratory factor analysis to test the factor structure of responses to each translated measure individually. Given that these measures have been studied previously (albeit in another language), it seems that confirmatory factor analysis is the more appropriate analytic approach. If there are concerns about the need for model modifications, the sample is large enough that the data could randomly split into calibration and cross-validation samples.

2. A related concern was the authors' decision to factor analyze responses to each measure individually, instead of analyzing the responses as a whole. The latter approach would provide a much more rigorous test of factorial structure and discriminant validity. At the very least, the authors should justify their piecewise approach.

3. The manuscript would be stronger if it provided a thorough comparison of psychometric properties of scores from the translated measures with those from the original measures.

4. The Discussion of limitations was very superficial. I encourage the authors to consider more deeply the nature of their evidence for construct validity and the forms of evidence that are missing.

Minor Essential Revisions

1. Some background information on construct validity would be useful for framing the purpose of this investigation (e.g., Messick, 1995).

2. What is the status of physical activity in Iran? Some background on trends in this area would help to establish the significance of this work.

3. Please clarify whether the expert panel had experience in physical activity
research, and whether they were given a priori definitions of the factors before conducting their review.

4. More detail about the psychometric properties of the original scores should be provided.

5. I could not see how some of the measures were used in the data analyses (e.g., enjoyment, activity choices, perceived environment). If these measures are not relevant, they should be deleted from the description of Instruments. Also, single item scales are notoriously problematic in terms of having low reliability and narrow sampling of a domain. If the authors do use these measures, it will be important to justify the use of single-item measures.

6. The form of reliability assessed by the intraclass correlation coefficient should be explained. Also, was there a reason why the entire sample did not complete the retest procedures?

7. Please add a full correlation matrix for items.

Discretionary Revisions

1. The manuscript should be edited to remove redundancies that appear in the Results section.

2. It would be informative to highlight any changes that were made to the measures to make them more culturally-sensitive.

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

Level of interest: An article of limited interest

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.