Reviewer's report

Title: Adolescent Digital Perception of Self Questionnaire: Instrument development and testing

Version: 2  
Date: 3 December 2014

Reviewer: Glenn A Melvin

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Major Compulsory Revisions

Thank you for the opportunity to review this manuscript about the development and initial testing of the Adolescent Digital Perception of Self Questionnaire. The development of such a measure seems a worthwhile goal given rates of obesity and overweightness particularly in western countries and the potential insight that such a measure could provide. The use of a health behaviour theoretical model is a strength. However the measure assesses an ambitious amount – attitudes about bodies and body parts, perceived norms, personal agency about change in their body, intentions to change their bodies and current and preferred avatar creations.

The introduction focuses primarily on the constructs of the model that underlies the measure. These are dealt with separately and could use greater integration. Some attempt to review existing measures including body mass index and figure drawings is included however as this is a manuscript about a new measure I was expecting to see a greater focus on justifying why a new measure of attitudes, perceived norms and agency is needed.

The study recruited adolescent males aged 11-14 years which covers about half of adolescence and at a time when there are rapid bodily changes associated with puberty. Was this age group selected deliberately for this (or other) reason(s)? I expect that it could not be automatically assumed that older adolescents would respond in the same way as younger adolescents. The current upper limit of height also limits its use with the taller, older adolescents. Therefore I wonder about the accuracy of the naming of the measure as an “adolescent” measure when, at present, its development has focused on early adolescence. Alternatively, if the ultimate aim is to examine the measure with older adolescent too, the limited age range of the current study should be highlighted as a limitation. And while discussing the name of the measure, I wondered why the word “digital” was included, was that to reflect the computer based nature of the measure? If so, it could be more precise.

In terms of the psychometric properties, intra-class correlation is the appropriate test for test-retest reliability rather than Spearman correlations. Regardless, the average to poor test-retest reliability using Spearman correlations has implications and may suggest that the constructs are unstable or that taking the test influences the results of a subsequent administration. The lack of stability
over time limits the measures application in examining change following an intervention. Hence it needs to be clarified how the measure “may be sensitive to change” (page 19, line 24-25). Given this and the author’s plans to further develop the measure (“attitude items may need to be reevaluated and tested for future use” p 18, line24-25), I wonder whether it would be worth completing this further refinement of the measure first before publishing the current findings, to avoid the possibility of having two quite different versions of the test available.

In some ways the findings were a bit mixed, for example finding from Figure 2 suggest that, on average, adolescent’s perception of the body size (current avatar) and their preferred body size (preferred avatar) are about the same. However, three-fourths wanted to gain muscle by eating healthy food. These findings need to be reconciled and may mean that statements such as “We found that these adolescent boys wanted to change their bodies” need revision p 20 line 12.

The potential use of the measure in primary care seems overstated given its level of development and scope. In its present form the measure seems too long for screening (40 IBM items and 18 avatar ratings) with the main application of the measure seeming to be for research purposes (which is not to diminish its worth). Further to this point, consideration of cost and benefit, for screening “all” adolescents is needed, if such a recommendation is to be included.

The titles of the figures 2-4 do not allow interpretation of the figure content. It needs to be made clear how the difference is calculated as is explained on page 14 (e.g., CurAv subtract PrefAv). In Figures 3 and 4 and elsewhere, the term “accurate avatars” is used but this appears to be actual or objective measurements of the participants body dimensions and therefore not an avatar, hence this term should be modified accordingly.

Minor Essential Revisions

On page 4, line 9-10, I was unclear that was meant by the sentence “Obesity prevention interventions may have limited success due to misperceptions of overweight”.

The introduction finishes with a section with purpose and aims section which contains information that would be better suited to the method section; see page 7 lines 15-21.

There is a quotation mark missing after the word weight on page 9, line 9.

Page 12, line 26 provides percentile definitions for the weight categories. This should be included earlier when describing the sample of study 1 at the top of page 8.

Page 19, line 4. In what way is the topic of weight and body image “unique” in boys?
Level of interest: An article of importance in its field

Quality of written English: Acceptable

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.