

Author's response to reviews

Title: Reliability of self-report measures of correlates of obesity-related behaviours in Hong Kong adolescents for the iHealt(H) and IPEN Adolescent studies

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Authors' response to Editors' and Reviewers' comments

EDITOR:

Your manuscript "Reliability of self-report measures of correlates of obesity-related behaviours in Hong Kong adolescents for the iHealt(H) and IPEN Adolescent studies" (AOPH-D-17-00070) has been assessed by our reviewers. Based on these reports, and my own assessment as Editor, I am pleased to inform you that it is potentially acceptable for publication in Archives of Public Health, once you have carried out some essential revisions suggested by our reviewers.

OUR REPLY:

We are very pleased with the feedback we received on our manuscript. We thank the reviewers and the Editor for their interest in our work. We have now considered all recommendations and made appropriate changes to the manuscript as outlined below.

REVIEWER #1**COMMENT 1.1:**

Dear author, you have done a commendable job. Besides a few minor mistakes, overall it was a well written article and you have already discussed the shortcomings in your limitations heading.

OUR REPLY:

We thank Reviewer 1 very much for her appreciation of our work.

COMMENT 1.2:

However, it would further add interest to the article if you calculate simple frequencies and percentages of the responses gender wise.

OUR REPLY:

Perhaps this was not very clear, but, with a few exceptions, the responses we reported are scores on a scale. They represent continuous rather than categorical outcomes. Hence, they cannot be reported as frequencies and percentages. We have presented scores on each of the examined scales by gender in Table 2 and also tested for between-gender differences in mean scores (none of these were statistically significant, as reported on page 10 of the original manuscript). To clarify, on page 8 of the revised manuscript, we have now noted that:

“As measures represented scores on a scale (i.e., they yielded continuous data), ...”

COMMENT 1.3:

Page 4: Ecological models posit behaviours (positive ?)

OUR REPLY:

Here we meant ‘posit’ not ‘positive’. Hence, we do not need to make any correction regarding this comment. ‘To posit’ is a verb that means ‘put forward as fact or as a basis for argument’.

COMMENT 1.4:

Participants and procedures: Hong Kong adolescents were recruited from local secondary schools. Four schools were contacted and consented to participate (please define sampling clearly, was it convenience sampling? if stratified sampling then also give a brief overview).

OUR REPLY:

We used random stratified sampling to select the four schools. We have now clarified the sampling strategy on pages 5-6 of the revised manuscript:

“Hong Kong adolescents were recruited from local secondary schools. Using random stratified sampling, four schools were selected based on the level of walkability and socio-economic status of their census administrative area. Area walkability was defined using Geographic Information Systems data on dwelling density, street intersection density and land use mix [35], while area socio-economic status was defined using Census data on median household income. All four schools that were contacted consented to participate. They were located in one of the following area types: high walkable, high socio-economic status; high walkable, low socio-economic status; low walkable, high socio-economic status; and low walkable, high socio-economic status.”

REVIEWER #2:

COMMENT 2.1:

Statistical and methodological reviewer's comments: The aim of this study is to establish measurement properties (reliability and internal consistency) of several scales of correlates of obesity-related behaviours in Hong Kong adolescents. These scales were, firstly, translated and adapted for Chinese-speaking Hong Kong adolescents. This manuscript is of interest. Some minor comments should be addressed.

OUR REPLY:

We thank the Reviewer 2 for her encouraging comments and interest in our work.

COMMENT 2.2:

Concerning the assessment of reliability, the authors used ICC (an appropriate technique) with an interval of 20 days between the both administrations (which is an appropriate time delay, according the literature). Can the authors state why they not assessed item-by-item agreement (using Kappa test)?

OUR REPLY:

We did not assess item-by-item agreement for two main reasons. Firstly, most of these measures have been previously validated in other samples of adolescents. Secondly, the projects in which they will be used (iHealt(H) and IPEN Adolescent) will employ composite multi-item scores on the scales rather than responses on single-item as correlates of obesity-related behaviours .

Hence, we were primarily interested in the performance of the whole scales rather than individual items. We have now explained this on pages 8-9 of the revised manuscript:

“Item-by-item test-retest reliabilities were not assessed because most measures had been validated in previous samples of adolescents and, within the context of the iHealt(H) and IPEN Adolescent studies, our main interest was in the performance of the total scores on the scales rather than individual items.”

COMMENT 2.3:

Internal consistency was examined using the Cronbach α , which is an appropriate method. However, it was not adequate for some of scales which were multi-dimensional. This point should be mentioned.

OUR REPLY:

On page 9 of the revised manuscript we noted:

“Cronbach’s α was used to estimate the internal consistency (i.e., unidimensionality) of measures supposed to represent a unidimensional construct (e.g., self-efficacy or social support). ... Multi-item measures consisting of checklists of equipment, rules and policies were treated as indices (rather than scales gauging unidimensional latent constructs) and, hence, their internal consistency was not assessed [45].”

Also, on page 15 of the revised manuscript, we state:

“Measures of perceived barriers to PA and neighbourhood crime safety had high levels of internal consistency, which is in line with previous studies [41, 43]. This was not the case for the six-item measure of perceived neighbourhood traffic safety comprising statements describing positive (e.g., ‘There are crosswalks and signals on busy streets’) as well as negative aspects of neighbourhood traffic (traffic speed and volume). This scale was originally taken from the NEWS-Y [43], which is the youth version of one of the most frequently used instruments of perceived attributes of the neighbourhood environment related to walking and PA [53, 54]. While the factorial structure of the NEWS-Y has yet to be established, several studies have examined the structure of the NEWS for adults and older adults [53-56]. Confirmatory factor analyses conducted in Australia [55] and Hong Kong [56] showed that the responses on five of the six items included in the perceived traffic safety scale examined in the present study were explained by three different weakly-to-moderately correlated latent factors: traffic safety/hazards, traffic speed/load and pedestrian infrastructure. In the USA, these items were found to be associated with two latent factors: traffic safety/hazards and infrastructure and safety

for walking/cycling [56, 57]. These findings suggest that the current measure of perceived neighbourhood traffic safety is a multi-dimensional instrument similar to a checklist of traffic safety elements rather than a set of items gauging the same construct. Future studies on larger samples will need to assess its factorial structure.”

COMMENT 2.4:

The authors not assessed « construct validity » (which represents the extent to which the results of the questionnaire are related to the theoretical concept to be measured), as well as the « floor and ceiling effects ». Can the authors explain the reason why these both measurement properties were not performed?

OUR REPLY:

Information on the construct validity of these measures will be derived from the main findings of the iHealt(H) and IPEN Adolescent studies as the main aim of these studies is to examine associations of the measures included in this manuscript with adolescents’ dietary, physical activity and sedentary behaviours. Additionally, the multi-country IPEN Adolescent study will be an excellent platform for the proper assessment of floor and ceiling effects related to the investigated measures as it will maximise the variability in scores by providing data from a variety of cultures and geographical settings. We have now commented on these issues on page 16 of the revised manuscript:

“Future studies ... also need to examine the construct validity (e.g., association of the examined measures with adolescents’ ORBs) and potential floor and ceiling effects of the measures, which is within the scope of the iHealt(H) and IPEN Adolescent studies.”