Author’s response to reviews

Title: A comparison of nutritional intake and daily physical activity of girls aged 8-11 years old in Makkah, Saudi Arabia according to weight status

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Author’s response to reviews:

The authors' response letter has been included as a supplementary file

Dear Dr Hinkley

PUBH-D-17-00611

Thank you very much for your detailed and constructive comments on the first submission of our paper entitled “A comparison of nutritional intake and daily physical activity of girls aged 8-11 years old in Makkah, Saudi Arabia according to weight status.” We have carried out additional analysis and made adjustments to the text, tables and figure as suggested by you and the two other reviewers. We have also included a detailed point by point response below to the suggestions raised.

I can confirm that all authors have approved the manuscript for submission and that the content of the manuscript has not been published, or submitted for publication elsewhere. We do not have any potential competing interests to declare.
I would like to thank you for your comments on the paper, which have been most helpful, and for allowing us the opportunity to submit a much improved revised version. I hope that you will now consider the paper suitable for publication in BMC Public Health.

Editor’s comments:

ABSTRACT

* please include what n had all data – this has been added page 2, lines 9-14

* please indicate analyses used – this has been added page 2, lines 14-17

* please make sure your conclusion considers the cross-sectional, and therefore non-causal, associations identified – this has been added into conclusion page 3, lines 10-13

BACKGROUND

* page 4, line 9: please provide some examples of the changes alluded to – this has been added page 4, lines 9-11

* page 4, lines 15-17 onwards: I would encourage the authors to include the impact of ow/ob on the child's psychosocial/mental health as well as their physical health in this section – this has been added page 4, lines 18-19

* Page 5, line 9: all of a sudden the focus shifts from 'all children' to just 'girls' without adequate rationale or introduction. Please justify why girls only were included in this study – this has been added page 5, lines 11-13 and 14-21
METHODS

* page 6, line 2: please indicate if consent was written or verbal for both parents and children. Were children able to withdraw consent even if parents provided consent? yes – this has been added page 6, lines 12-13

* page 6, lines 9-11: please confirm that the tanita scales actually did the BMI calculation? Or did they just measure weight and then BMI was later calculated? If the scales did the calculation, please indicate how the height data were included. This has been added page 6, lines 20-23.

* page 6: for all anthropometric measurements, please indicate how many times the measures were taken and what error was allowed before an additional measurement was taken – measurements were taken once – this is added page 7, lines 6-7.

* page 6, waist circumference: please indicate at what point the waist was measured – this is added page 7, line 6.

* for all measurements: please include details of training and reliability for assessor/s and validity for diet diaries – we have made it clear that one trained nutritionist took all the measurements (page 7, line 7) and interviewed the children to clarify items on the food diary (page 8, line 16). Also under-reporters were removed – see page 8, lines 16-21

* page 6, line 22: what adjustments were made? This has been added page 7, lines 11-13

* actigraph - please indicate reliability/validity of this instrument in this population; please indicate site at which the child wore the accelerometer This has been added page 8, lines 3-6
* Analyses - I would encourage the authors to undertake appropriate regression analyses with their data. Also, please include multiple covariates as appropriate. For instance, these might include a family indicator of SES (family income used), child maturation stage, (we do not have this data) child age (yes – incorporated), etc. Ideally, these data should be presented as multiple regression with all predictor variables entered simultaneously to better identify which behaviour has the most impact on child weight. We have included a regression analysis with these covariates – along with energy intake and TEE/kg to predict body weight. This has been added to abstract/methods (page 9) and results, (page 16).

* please indicate how steps were measured and how TEE was calculated? Please provide a justification for including TEE over just PA from the accelerometers. My preference would be to remove TEE. Steps were measured by the accelerometer – we have added this (page 8, line 7). We have also indicated how TEE has been calculated (page 8, lines 11 -14). We have left TEE in as the energy balance table (Table 5) does indicate the degree of positive energy balance experienced by the overweight and obese girls, and TEE/ kg of BW was significant in the regression. The intake and expenditure is estimated on the same subjects. However, we can remove it if you prefer.

RESULTS

* please make clear in the text and abstract that it was a sub-sample of the whole sample which completed each of the PA and diet measures. This is in the first paragraph of the results (page 9) and accompanying figure 1.

* please present some demographic characteristics of the participating children to help readers understand the sample Age is presented in table 1 and this was similar across the BMI groups. We have income group – and we have put this into the regression analysis. However, it is difficult to present on the Table as it is categorical and we can’t present a mean.

* please include how many participants had complete data for the analyses in which they were included This has been added to each table and figure 1.

* figure 1 - please include a summary of the reasons why participants were excluded in the appropriate boxes and how many were excluded for each reason given This has been done.
* for the tables, I would strongly encourage the authors to extend their analyses and determine which groups with significantly different from which other groups, rather than just that there was a difference and present these data in the tables. Such data will provide valuable information for those working with girls and in program planning for future studies Post hoc tests have been carried out and inserted into the tables.

* Table 4: please report data in the following order: SB, light PA, mod PA, vig PA, MVPA, steps This has been done.

* Table 5: I seriously question the validity of including these data. The paper reports that sub-samples of children reported EI and EE - therefore EB cannot be calculated in the same children accurately. I recommend removing Table 5 and any related data. The estimation of energy intake and expenditure was carried out in the same 78 participants who collected both intake and expenditure data. We think this highlights the degree of positive energy balance occurring and thus prefer to leave it in, but we could remove if you would prefer.

* please use "moderate- to vigorous-intensity physical activity" or "MVPA" throughout. This has been changed as suggested

DISCUSSION The discussion has been re-written considering your general comments.

* please remove results from the discussion to avoid repetition - This has been done.

* please make sure discussion not only situates the current study's findings within existing literature, but also goes further by providing extrapolation of meaning/possible mechanisms/implications/use for future research/etc. At present this is missing and the discussion is weak as a result. The discussion has been re-written to address this.
* page 17, lines 11 on: please provide appropriate evidence to support your claims and to help non Saudi readers to better understand the context within which the examined behaviours occur. We have extended the explanation here and added a reference (page 17, lines 13-18)

* page 19, lines 2-3: how is it that this study confirms the need for attention by government to address childhood obesity? to do that, the study would need to investigate the impact of obesity on children's health and developmental outcomes and it does not do that. This has been re-worded to reflect the need for government/ schools to address lack of activity and poor diet.

* please include limitations of cross-sectional data also in the limitations section We have added a sentence to this effect.

Reviewer 1: Palma Chillón, PhD

1. To provide a more comprehensive data about the sample and to have more information about the sample who did not report all the data, it is suggested to include a sensitive analysis to detect differences between the sample who completed all the data (i.e. including diet diary and accelerometry) and those who completed the anthropometric measurements (i.e., 266). This analysis can be exposed in methods and in results in the 1st paragraph. We have added a comparison between those who undertook just the anthropometry and those who went to on to collect the dietary information. We have put the results of a T- test between the two groups for age, height, weight and waist circumference. We felt it should come a little later in the results section (page 10, lines 15 – 22). It is also mentioned in the methods of statistical analysis (page 9, lines 6-9) and in the limitations (page 20, lines 13-17).

2. It is suggested deleting the information about recommendations include in the results (pg 12, lines 8-9, lines 11-12). It would fit more appropriately in the discussion section. Agree – we have removed this.
1. Title of the manuscript: too lengthy and much more informative We would prefer to keep it as it is – could perhaps remove ‘in Makkah’ –otherwise I do not see what we could remove.

2. In result of abstract: 30% were classified obese or overweight. This information was written in discussion part also. Obese and overweight has certain criteria to be classified as such. How can you use obese or overweight? I don’t really understand the comment – obesity in children is classified according to BMI percentiles (we have used CDC) and we have explained this lines 1-2 page 7. 30% obese is just written in the results.

3. Keywords of abstract: is excessive and arrangement should be in alphabetical. The number is acceptable as per instructions to authors – I have arranged in alphabetical order.

4. Page 5: Tacking obesity term must requires second look I don’t understand this – but we have rewritten parts of the introduction now.


6. Result: Requires uniformity in language as well as presentation of tables

   a. Between table number and table heading, there is one line spacing somewhere and no spacing in other, We have adjusted this so there is no line between.

   b. include total number of sample as n or N uniformly in every table heading  - We have carried this out.

   c. Use variable name uniformly with its units in bracket in every table where required. We have also done this as requested.
d. P value should be mentioned in separate column. There is not room to do this—we have been consistent with * signifying p values.

e. p<0.001 should be mentioned as highly significant; p<0.05: significant. This has been added where appropriate.

f. Interpretation of p value should include 'statistically' word before mentioning significant or highly significant. This has been added where appropriate.

g. If using underweight, mention as underweight or UW in table uniformly in every table required. We have adjusted this accordingly.

h. In table 3 heading omit unnecessary information like mean and ranges. Or if you are using it, use such for all tables. We have removed this from table 3.

7. Exercise level is decreased with increased food intake with increase in BMI. However how total energy expenditure is increased in increased BMI. Yes because the BMR increases with weight—so this is expected.