Author's response to reviews

Title: Acculturation does not necessarily lead to increased physical activity during leisure time: a cross-sectional study among Turkish young people in the Netherlands

Authors:

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Author's response to reviews: see over
Dear Dr Lolu Da-Silva,

Thank you for your letter of 25th of May 2007, informing us that our manuscript entitled “Acculturation does not necessarily lead to increased physical activity during leisure time: a cross-sectional study among Turkish young people in the Netherlands”, may be considered for publication after suitable revision.

We are grateful for the kind remarks and useful suggestions of the reviewers and have revised the original manuscript accordingly. Below are the comments of reviewers (bold), our detailed responses to the reviewers’ comments (italic) and the changed text.

The formatting changes to the manuscript are described at the end of this letter.

We are looking forward to your response and hope that you will find this revised manuscript suitable for publication in BMC Public Health.

Yours sincerely, on behalf of the co-authors,

Karen Hosper
Niek Klazinga
Karien Stronks
Reviewer: Kathleen Wolin

Reviewer's report:

General
This study of the association between acculturation and leisure time physical activity addresses an important question in an understudied population – Turkish migrants in the Netherlands. The authors do a nice job of laying out the background and justifying the need for this study. The study is theoretically grounded. The results are clearly presented and the discussion well organized.

Major Compulsory Revisions

In the abstract, clarify in either the methods or results section who the reference group is that “cultural orientation” and “social contacts with native Dutch” are being compared to.

As suggested we clarified (in the method section) the reference group for the acculturation indicators:

Acculturation was indicated by level of ‘cultural orientation towards the majority culture’ and ‘social contacts with ethnic Dutch’ with persons being low oriented towards the Dutch culture and having few social contacts with ethnic Dutch as reference group.

In the introduction, the US Surgeon General’s Report is cited in the 1st and 3rd sentences. In the 1st sentence this should be supplemented with non-US references as the sentence makes a global reference. I also wonder if data more recent than 1996 is available regarding the percent of the population meeting recommended physical activity levels.

The following more recent non-US references are included in the 1st and 3rd sentences:


Figure 1 doesn’t add a lot to the paper. I believe the concepts in it can be concisely explained in the text.

Based on comments on earlier drafts of this paper we added this figure to the introduction. If it is possible we would prefer to leave the figure in.

The justification for limiting the population to ages 15-30 is unclear. It seems that distinguishing between children and adults is important, but, in that case, 18 would be a more appropriate cut off. This is reinforced on page 7 when the authors use separate physical activity recommendation cut offs for those over and under age 18. If the authors believe including those under age 15 is important, they should explore whether the associations differ for those over and under age 18.

We chose 15 as our lower cut-off because the greatest decline in physical activity is found in early adolescence (13-16 yr). Therefore, the levels of physical activity within the 10-14 year olds are more favourable compared to adolescents of 15 and older. Furthermore, as the aim was to explore i.e. the effect of acculturation, we thought it was less relevant to study this within children at this young age considering that activity patterns are influenced more strongly by other factors.

We adjusted the paragraph in the method section as follows:
We used 15 years as our lower age cut-off point because we expected acculturation to have less effect on physical activity among children below this age [45]. In addition, the greatest decline in physical activity is generally found in adolescence between 13-16 years of age [46,47].

In addition we would like to mention that 15 as a lower age cut-off is also used in other studies reporting on the level of physical activity on a population level (see WHO report on Physical activity and health in Europe: Evidence for action, 2006. Ref number 9).

The authors make reference to the physical activity recommendations. I assume this means the CDC/ACSM recommendations of 30 minutes of moderate or vigorous intensity activity on most days of the week. This recommendation is always operationalized as 30 minutes, 5 days per week. The authors need to justify their choice of 30 minutes one day per week.

In our study we used physical activity during leisure time as the outcome measure; this implies that we focused on only one aspect of physical activity. As a result we could not use the operationalization of 30 minutes, 5 days per week which is used to assess compliance to the international physical activity recommendations. Due to the finding that more than half of the participants were not physically active at all during their leisure time, we considered the distinction between persons without any leisure time physical activity versus the ones with at least one day, a relevant one.

To justify our definition we added the following paragraph to the method section:

The main reason for this definition is the fact that more than half of the participants were not participating in any leisure time physical activity. Therefore, we considered the distinction between any activity versus none relevant for this population.

In using the data from the Berry acculturation scale, the authors first tertile responses and then dichotomize those. Is this the recommended way to analyze the data? If not, the authors should provide justification for their choice and discuss the implications of using a validated scale in a non validated way in the discussion section.

We thank the reviewer for mentioning this point. We apologize for being unclear within the method section, but we did not use a validated scale of Berry, however, our indicators were based on the theoretical assumptions of Berry’s two-dimensional model of acculturation. We tertiled the responses on the acculturation indicators to see whether there was a ‘linear’ association across the three groups (with the outcome measure), which there was. In order to be able to stratify our analyses and have large enough numbers of participants in each stratum, we chose to compare the upper third with the remaining two third.

The following text was added to the method section:

To distinguish between the lower and the higher acculturated persons, the upper third was categorized as being high acculturated and the remaining two third as being low acculturated. Using this categorization we had large enough numbers of participants to perform stratified analyses.

Minor Essential Revisions

On page 13, middle of the page: the authors state that the barriers measured in the study are more prevalent in adults than adolescents. A citation is necessary.

The following citations have been added (a national report on the integration of ethnic minorities in the Netherlands):
The paragraph was slightly changed:

We further expect that our results could also be generalized to older populations than those included in our study. Because some of the barriers such as ‘having children’ and ‘participating in occupational physical activity’ are in general even more prevalent among adults, who belong more often to the first generation with on average a greater number of children and having more often a lower socioeconomic position (i.e. more job related physical activity) than the young population that we studied [61].

Table 3: clarify the reference group in a footnote.

The reference group was mentioned in the title of the Table, but as suggested we replaced this by a footnote:

b The reference groups are respectively the participants with a low cultural orientation towards the Dutch culture and few social contacts with ethnic Dutch.
Reviewer: Per Wändell

Reviewer's report:

General
This is an important and interesting study on the association between acculturation and physical activity in Turkish immigrants in the Netherlands. However, after reading this manuscript some questions arise, especially regarding methods. The manuscript needs clarification and revision regarding those points.

Major Compulsory Revisions

1. The ages in the original sample were 10-30 years, i.e. some were still children, others were educating, and some had married and settled down. Are all presented with the same questions? With the restricted age group in the actual study still some subjects are below 16 years, i.e. some are classified as “children under the age of 16”.

We used a different questionnaire (language and answer categories were simplified) for the children aged 10-14 (language and answer categories were simplified), but the topics were similar to those for 15-30 year old.

We chose to exclude the 10-14 years old from the present study as within this age category the participation in physical activity during leisure time is generally more favourable compared to adolescents of 15 and older. Furthermore, as the aim was to explore i.e. the effect of acculturation, we thought it was less relevant to study this within children at this young age considering that activity patterns are influenced more strongly by other factors. See also our comments on reviewer 1.

In addition, 15 as a lower age cut-off is also used in other studies reporting on the level of physical activity in a population (see WHO report on Physical activity and health in Europe: Evidence for action, 2006. Ref number 9).

We added/adjusted the following paragraph in the method section:

We used 15 years as our lower age cut-off point because we expected acculturation to have less effect on physical activity among children below this age [45]. In addition, the greatest decline in physical activity is generally found in adolescence between 13-16 years of age [46,47].

2. The response rate: have any analysis of non-responders been performed? How are the non-responders distributed in different groups, e.g. age groups?

The non-response rates were similar in different age categories (15-19, 20-24 and 25-30). Except for Moroccan males, we found that non-response was slightly higher in the oldest age group (25-30 yr.) compared to the younger age categories (15-19 and 20-24 yr.).

The other ethnicity-sex subgroups were representative according to age, sex, generational status and city district for the total 15-30 year old population in Amsterdam.

3. Country of birth is set at Turkey or the Netherlands; however, arriving at the new country in pre-school age may be a factor of importance for acculturation. Are there any data on this, and have this been analyzed?

We do have data on age of arrival. However, this information would be only applicable to the participants of the first generation (being born in Turkey). More important is the fact we were interested in socio-cultural aspects of acculturation. In our opinion the objective (stable) indicators
(such as age of arrival or generational status) precede the social and cultural aspects of acculturation. Exactly those aspects were central to the analyses we did.

4. How were the contextual barriers selected?

The barriers are selected on the basis of results from other studies that showed that these factors are negatively associated with physical activity. In addition, these barriers are considered to be relevant in particular in lower SES and migrant populations (see explanation in the introduction section).

5. Statistical analyses: the authors stratified the analyses (Table 3) as regards factors of acculturation and contextual barriers. Was this stratification performed due to the results found when entering all factors in a model, i.e. interactions were found, or was this analysis defined in advance? Besides, some non-significant differences were found due to a rather low number of subjects in some sub-groups, however, on an equal or even higher level than the significant findings. This is not commented in the text.

Prior to the stratified analysis we assessed whether there were interactions between the acculturation indicators and the barriers. However, due to small sample size we did not find any significant interactions, only trends in expected direction. On the basis of these trends we decided to stratify the analyses by the barriers in order to find indications for interaction.

As suggested, we added a comment in the result section on the non-significant results on a equal or even higher level than significant results (Table 3):

However, in some cases the odds were on an equal or even higher level than within the group without the barrier, though not significant. This was found amongst others for the effect of cultural orientation within the group with occupational physical activity.

6. The authors have described some of the limitations in the study. When considering the difficulties in the study, the authors should be cautious with their interpretations and conclusions.

We agree on this, therefore we made some adjustments to the text within the discussion section and formulated the implications more carefully.
Reviewer: David Berrigan

Reviewer's report:
General: Neat topic, but the presentation is not so compelling

Major Compulsory Revisions

I am not convinced by this paper that you have measured the three simple constructs illustrated in Figure 1 in a discrete way that allows your stratified logistic regression models to test the scheme outlined in said figure. I think that cultural orientation and contextual barriers as you define and measure them are likely to be all mixed up and correlated in some complex way.

Given that, Maybe a simpler and more descriptive approach would work better. E.g. "Leisure time PA increases with language acculturation in turkish immigrants except in respondents with children". So I would say a bit more work is needed to make your results more transparent and compelling. Along these same lines 'contextual barriers' seems to include at least two very different things i.e. children vs occupation vs built environment. Why not just treat and discuss each separately? e.g. "Three factors moderated the association between acculturation and LTPA: 1) Children... 2) Occupational PA... and 3) Neighborhood characteristics... " Then you could discuss and explain these in turn.

As suggested by the reviewer we used a more descriptive approach in the text within the results and discussion section. Instead of referring to contextual barriers, we treated and discussed the barriers separately.

I wonder where the 4 met cutoff for vigorous activity comes from (p.8), many other authors use 6 or 7.

The reviewer refers to the description of occupational physical activity in the method section. We apologize for using the word 'vigorous' in the first sentence. We adjusted this paragraph and hopefully we clarified that we categorized persons as 'having occupational physical activity' when the activities were of 'moderate intensity'. The age adjusted cut-off values (4 MET) are suggested by the Compendium of Ainsworth as well as the Dutch guideline for physical activity (see method section).

Sometimes you say 'Dutch people' and sometimes you say 'ethnic Dutch people' are turks living in Holland Dutch? What about the children or grand children of immigrants? better be very careful to be consistent about this and think carefully about what you want to communicate, implicitly and explicitly.

Thank you for pointing this out. Throughout the manuscript we now use “ethnic Dutch” when we refer to the people who are born in the Netherlands as well as both of their parents.

The concept of language alone as a measure of acculturation has been criticized. So you might be a little more scholarly in your discussion of this concept in reference to your measure of acculturation (e.g. on p.13)

It seems that the reviewer assumes that our measure of acculturation is based on language items, this is not the case. We are aware of the fact that language use as a measure has been criticized. Therefore we developed a broader overall measure of cultural orientation, in which language was only one aspect. The other items were on shopping preferences, media use, and emancipation, as an example of Western norms and values. We added the following paragraph to the discussion section:

In contrast to most other studies we used a broader measure of acculturation than language use or language proficiency alone, instead we included items on shopping preferences, media use, and emancipation as well, in an attempt to cover a more general ‘cultural orientation’. The use of
'language proficiency' or 'language use' as indicators of acculturation have been criticized by others as it would not necessarily reflect the migrants’ adherence to the values and norms within the majority culture [53]. Though the majority of studies on acculturation use these indicators as they seem to be strongly related to several health related outcomes[54].

Minor Essential Revisions

Your reference list is a bit sloppy, minor point, but it calls into question the care you take with the rest of your work. For example, you forgot to delete the "RefType: Report output of RefMan and are all the refs you cite needed?

My apologies for the mistakes in the previous version of the reference list!

Discretionary Revisions

Finally you could cite a couple of my salient papers (if you want)

Thank you for the interesting references. I included the second one (on language acculturation and PA) within the introduction section.
Formatting changes to the manuscript:

Lay out
_Lay out of the manuscript is formatted according to the template._

Ethics and consent
_We included the following statement within the method section:_

This study has been approved by the Medical Ethical Commission of the Academic Medical Centre in Amsterdam, the Netherlands.

Competing interest and authors’ contributions
_The following sections are included following the conclusions:_

Competing interests
The authors declare that they have no competing interests.

Authors’ contributions
KH carried out the data-collection, performed the data-analysis and drafted the manuscript. NSK was involved in the design of the study and commented on earlier drafts of the manuscript. KS contributed to the conception and design of the study, participated in interpretation of the data and commented on drafts of the manuscripts. All authors read and approved the final manuscript.

References
_The reference list is formatted in the journals style using Reference Manager (version 11)._

Figures
_The legends of the figures are included following the references._