Author's response to reviews

Title: Childhood socioeconomic position and adult leisure-time physical activity: a systematic review protocol

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Author's response to reviews:

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Alexander Tsertsvadze,
Associate Editor,
Systematic Reviews Journal

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Dear Alexander Tsertsvadze,

RE: MS: 1578357821138584 – Childhood socioeconomic position and adult leisure-time physical activity: a systematic review protocol

Many thanks for your email dated October 14th 2014. We thank you and the other reviewer for your very helpful comments. We have revised the paper in light of these; please see response below for details of the revisions made. All changes made are highlighted in red font in the revised manuscript.

I hope you now find the paper suitable for publication and I look forward to hearing from you.

Yours sincerely
Ahmed Elhakeem MPH
PhD Researcher
Reviewer 1

Protocol registration:
• Will the authors register the protocol with the PROSPERO? Once registered, please include a statement with the registration number in the beginning of Methods section.

Response: We prospectively registered the protocol with PROSPERO. This is now reported at the end of the abstract and also at the beginning of the methods section, page 4.

Methods/design – eligibility criteria:
• The authors presented their eligibility criteria (inclusion and exclusion) in a narrative fashion. Perhaps they could specify the same information in a bullet form by type of study design (e.g., cross-sectional, prospective cohort, retrospective cohort, case-control study), type of population, type of exposure (e.g., indicator of childhood socioeconomic status), and type of outcome (e.g., LTPI measures)?

Response: We thank the reviewer for this suggestion. We have revised our description and now include a list in bullet form of our key inclusion criteria, page 4.

Methods/design – study selection, data extraction, and quality assessment.
• The following statement (lines 131-133) needs to be moved from ‘quality assessment’ section to study selection and extraction sections, respectively.

Response: This statement has been moved and the relevant details are now reported in the study selection and extraction sections.

• Will the authors provide the PRISMA study flow chart (graphical depiction of study screening, eligibility, and exclusion processes)?

Response: A PRISMA study flow chart has now been added, Figure 1.

Methods/design – data synthesis:
• Will the authors provide more details on what will be the summary (statistical parameters) of association and variability measures for each individual study (e.g., risk ratio, odds ratio, mean difference)?

Response: We have added a statement giving examples of measures of association and variability, lines 139-142.
• If the authors planned any subgroup/sensitivity analysis in order to explore clinical and methodological sources of heterogeneity, please inform if there are any a priori selected factors which will be explored for their influence on effect estimates of associations between socioeconomic status and LTPI.

Response: We do plan to explore sources of between study heterogeneity and have selected factors which will be investigated a priori. This is now clarified, lines 163-166.

• The authors state that they would include only English-language publications and will exclude unpublished literature. These factors are known to produce effects of publication bias. The authors also state that they will examine funnel plots to assess the extent of publication bias. Will the authors apply any methodology to adjust or minimize the effect of this type of bias?

Response: We do intend to fully assess the possible extent of publication bias using funnel plots. We do not plan to use any statistical methods to adjust for publication bias as all available methods are based on assumptions and should only be considered as sensitivity analyses, especially as we expect considerable heterogeneity between studies (given that they are observational) and also that there will probably be only a small number of studies in any one meta-analysis. We do expect to minimise the bias as we plan to include all publications in which this research question has been addressed even where this was not the authors’ primary focus.

• Will the authors explain how they are going to analyze and synthesize relevant data for their secondary objective (i.e., determine the strength of this relationship, examine the extent to which any association is explained by the continuity of SEP from childhood into adulthood)?

Response: If possible, we will use meta-analysis to estimate the size of the overall association before and after adjustment for adult SEP. This is now clarified in the synthesis section, page 7.

• I would assume that adult socioeconomic status apart from childhood socioeconomic status would have an independent or mediatory effect on LTPI. Will the authors consider adult socioeconomic status in their analyses? If yes, how?

Response: We will consider whether adjustment for adult SEP in multivariable regression attenuates observed associations between childhood SEP and adult LTPA in studies where this adjusted analysis is presented. This is now highlighted in lines 166-169.

• Are the authors planning to assess an overall quality of evidence (‘strength of evidence’) for their primary outcome (i.e., association between childhood socioeconomic status and LTPI) using the GRADE system?

Response: We thank the reviewer for this suggestion, we chose against using a system such as GRADE because these scales do not tend to be sensitive
enough to detect meaningful variation in the quality of different observational studies (especially those which are testing smaller effects and are testing associations such as ours where a randomised controlled trial is not feasible). In addition, while it is possible to classify an observational study as high this is dependent on the detection of very large effects.

Discussion:

• Will the authors highlight strengths/limitations in identified evidence (e.g., amount, validity, applicability, etc…)?

Response: We do plan to highlight strengths and limitations of included evidence and this is now clarified lines 183-185.

• Will the authors highlight strengths/limitations of their review (any limitations in the review methods)?

Response: We have added a statement to confirm our plan to assess this, line 183-185.

• Will the authors compare their findings with those from other systematic reviews that explored the same or similar question?

Response: We do plan to compare our findings with those of other relevant systematic reviews and this is now highlighted, line 185.

• Will the authors highlight future research and policy implications of this review?

Response: We do intend to consider the future research and policy implications of our review and this is highlighted on lines 186-188.

Reviewer 2

This paper describes the study protocol for a systematic review on childhood socioeconomic position (SEP) and adult leisure-time physical activity (LTPA).

I agree that LTPA is an important health behavior and that it is of considerable interest to understand its association with childhood SEP.

Discretionary revisions:

(1) Methods/Design, Eligibility criteria: The definition of “childhood SEP” could be more specific and detailed. Income measures and other common measures of childhood SEP such as the Family Affluence Scale (FAS) are not mentioned in the manuscript.

Response: We thank the reviewer for this comment. We have defined childhood SEP as any recognised resource or prestige-based measure of position within a societal structure referring to participants’ early life. We have added other common indicators of childhood SEP including income to our list of examples, lines 98-99.
(2) Methods/Design, Eligibility criteria: The primary research question is “to assess whether an association exists between childhood SEP and adult LTPA”. The eligibility criteria “minimum age of 25 years at measurement of physical activity” will lead to an exclusion of studies which publish results for adult populations 18+ years. I understand that from 25 years onwards SEP is less likely to change and that this cut-off is used in some longitudinal studies to define “own adult SEP” which is used for adjusting the association between childhood SES and adult LTPA. This is also a secondary objective of this study. However, I see here a bit of a conflict between the secondary and the primary aims when defining the eligibility criteria. The authors need to make sure that they do not exclude studies they have to include to adequately test their primary hypothesis (because they select the eligibility criteria based on a secondary objective).

Response: We thank the reviewer for highlighting this. Our primary reason for selecting a minimum age of 25 years for the assessment of LTPA, which ensures a minimum of 7 years between ascertainment of childhood SEP and adult LTPA, is because we are specifically interested in exploring the long-term influences of childhood SEP. We have reworded our description in lines 106-110 to clarify this.

(3) Methods/Design, Eligibility criteria: Studies can be representative even if they are not based on “community dwelling samples” (e.g. telephone samples). This eligibility criterion could be defined more generally (e.g. population-based samples).

Response: We have changed our description from ‘community-dwelling’ to ‘population-based’, line 93.

(4) Methods/Design, Eligibility criteria: The direction of the association between SEP and LTPA appears to differ among countries with different income levels (positive SEP-LTPA relation in high-income countries, negative SEP-LTPA relation in low-income countries). It could be reasonable to define an eligibility criterion for the country income level or to consider this issue during the analyses.

Response: We thank the reviewer for this suggestion, country/region of origin is one of the factors which we have selected a priori as a potential source of heterogeneity. We have now added a comment under data synthesis to highlight the role of country income level in lines 165-166.

(5) Methods/Design, Search strategy: The paper would benefit if the full search strategy is presented for at least one database.

Response: We thank the reviewer for this suggestion and a search strategy for the OvidSP database interface has been added as Table 1.

(6) Methods/Design, Study selection: The authors could explain how duplicate publications will be handled.

Response: We have added a statement under study selection in lines 126-128 to
clarify how duplicate publications will be handled.

(7) Methods/Design, Data extraction: The authors could use common data extraction templates such as the Cochrane Consumers and Communication Review Group’s data extraction template.

Response: We did consider existing data extraction templates but found that none of these allowed us to capture all of the relevant data for the purposes of our specific research question. We therefore chose to use a tailored form to ensure that we were able to capture all relevant data in a consistent way (Figure 3).

(8) Methods/Design, Quality assessments: The authors also could use other common study quality assessments such as the STROBE guidelines to evaluate the study quality.

Response: We carefully considered a range of options for the assessment of study quality. We made a final decision to adapt a commonly used quality assessment form that is specifically tailored to appraising the key aspects of study quality for the purposes of our review.

(9) Methods/Design, Synthesis: The authors could define which effect measures studies need to report to be included in the meta-analysis.

Response: We have now provided examples of effect measures in lines 160-161.

(10) Discussion, first sentence: The terms used in this sentence are confusing. I suggest that the authors clearly define childhood socioeconomic position and adult leisure-time physical activity in the background or the methods section and use these terms consistently throughout the manuscript.

Response: We have changed the terms used in the first sentence of the discussion so that our use of terminology is consistent throughout the protocol. The terms now used are defined in an earlier section of the protocol, pages 4-5.