Author’s response to reviews

Title: Correlates of screen time among 8-19 years old Chinese students

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Author’s response to reviews:

Dear editor and reviewers,

Thanks for your valuable and important comments. We have revised the manuscript accordingly and provided our point-by-point responses as follows:

To editor:

1. The manuscript is poorly written, not well-structured, lacks coherence and good flow in presentation. Study poses two aims, although one of them (test-retest reliability) better fits for the materials part as the preparation phase, instead of being a separate aim.

Response: We have reorganized and rewritten manuscript, removed the contents of test-retest results, and changed the two aims into one aim (correlates of screen time).

2. The figures are of low quality and information in tables could be presented better.

Response: We have revised the figures and tables.

3. English and scientific language is poor, thus researchers need to seek assistance in these matters.
Response: The manuscript has been polished by a native English speaker.

4. The most unclear part relates to the multivariate statistics, e.g. Table 3 does not inform us what statistical method was actually used, the sequence of this testing is not clear either.

Response: We have provided more detailed information in the Statistical Methods section as well as the footnotes of the tables.

To reviewer 1:

Major

1. Page 4, pp3: The authors described that "Prolonged time spent in SBB" was "screen time >=2hour/day". However, "prolonged" originally means that "continued" or "sustained". I believe that the usage of "prolonged" in this manuscript is wrong. Please correct this appropriately.

Response: Thank you for your comments. The word “prolonged” was removed from this sentence to avoid confusion. However, consistent with the definition you provide above, prolonged time spent in SBB is still defined as “screen time ≥2 hour/day” in the Methods section. We believe that “prolonged” is a better word choice to express our meaning, and a native English researcher in our institute also believes that this word is acceptable in this case.

2. Page 4, Second paragraph: Review of literature is poorly organized and unfocused. Thus, it is not clear if the rationales of this manuscript would be reasonable and valuable. The main focus of this manuscript seems to identify factors associated with screen time on environmental aspect. If so, the authors should have deeply reviewed the relevant previous studies.

Response: The introduction section was revised accordingly and now provides discussion regarding the environmental aspects. However, the relevant previous studies have been reviewed more completely in our Discussion section.

3. Page 4, Second paragraph: It may not be appropriate that testing test-retest reliability is one of aims in this manuscript because these purposes are totally different and not related. At least, please describe more about need to report test-retest reliability as one of main purpose in this study, which should also include the review of previous literature. Otherwise, it is not
reasonable for the main aim of this manuscript and should simply report this information in the measurement of method section.

Response: We have removed it and reorganized the structure of manuscript.

4. Page 5, pp3: Is it appropriate that those aged 20 years were categorized as children? Please verify this point.

Response: We apologize for this confusion. In fact, all participants were aged less than 20 years; so, we have changed the age range to “8–19”.

5. Page 5, Participants: Please address why >=60 hour/wk of ST was defined as outliers and list relevant references.

Response: In the original materials, we assessed the possibility of errors by the participants while completing the questionnaire. We found that the calculated total ST duration time is wrong if the ST exceeds 60 h/w, which also was confirmed by response from some participants. Several participants filled in hours as minutes, which explains the error.

6. Page 5, Participant: Please address information about a research ethics committee. If you did not obtain any approval from the research ethics committee, please elaborate about ethical considerations more.

Response: The ethics committee approved the study. The relevant description is provided in the last sentence of the “2.1 Participants” section.

7. Page 5, questionnaire and measurements: whole description is confusing. Please change paragraph from SSB questionnaire to possible environmental correlates. Also, the validity on ASAQ should be listed. In addition, please add the citation of environmental correlates.

Response: This paragraph was reorganized. The validity of the ASAQ is found in the cited reference. For this particular study, the relevant environmental correlates (including media accessibility and parental factor) were our most interesting findings and thus represent potential intervention targets.
8. Page 6, Statistical analysis: I did not get why zero-mean normalization needed to be performed. Please add it. Also, the purposes of both "a mixed regression model" and "logistic regression" were really not clear. Please describe these more precisely.

Response: Zero-mean normalization is an appropriate method to change variables with abnormal distribution into variables with normal distribution. In the study, the normal test for age and ST is significant. We revised these sentences (statistical models) accordingly.

9. Page 7, Results, individual characteristics in boys and girls: Did "total ST" come from? The authors did not explain how to calculate it. Please add it in the method section.

Response: In fact, "total ST" equals "ST". Therefore, the “total” was deleted in the text to avoid potential confusion.

10. Page 7, Results, individual characteristics in boys and girls: In the statistical analysis subsection, it said that gender differences in variable were examined. However, grade differences were also reported. Please ensure consistency.

Response: Sex and grade were both examined in our study, and the manuscript has been revised accordingly.

11. Page 7, Results, Environmental correlates of leisure ST: at first, what is leisure ST? Please operationally define it in the method section. Also, the need to examine the interaction should be explained in the statistical analysis of the method section.

Response: Based on our definition, “computer use for school-related studying” is excluded from “leisure ST”. We have thus more clearly defined leisure ST and revised this in the Methods section.

12. Page 8, Environmental correlates of leisure ST: How did the authors calculate "Prolonged ST"? Is this equal to leisure time ST? Please clarify these. Also, is the expression of "prolonged ST" 2hr/day or "14hr/wk? Please keep consistency.

Response: Prolonged ST was defined as ≥2 h/day according to previous evidence, as cited in the manuscript. The “14 h/wk” was replaced by “2 h/day” in text for avoiding potential ambiguity.
13. Page 8, Discussion: in general, the discussion were poorly supported by the objective data and citations and basically consisted of personal view, especially, about the differences in results between Chinese and other western countries.

Response: We thank the reviewer for this comment. We have revised the relevant sentences and have cited more references based on previous evidence.

14. Page 8, Discussion, second paragraph: The possible reason for the result that 25% of the items did not reach an acceptance is not reason, totally unclear. Why it was uniquely happened on the study-based computer use for only boys and leisure-based computer use for only girls? Are there gender-specific external factors?

Response: We have reorganized the Discussion section and removed the “second paragraph” to avoid confusion regarding this matter.

15. Page 11, pp3: Is third limitation related to this study?

Response: We have deleted this limitation.

Minor

1. Page 1, pp19: correlates and determinants were different. The authors might be confused to use. Please use these appropriately.

Response: The word “determinants” was replaced by “correlates” in the text.

2. Page 7, pp4: "see table 1" is not appropriate to describe in text. Please correct it.

Response: The "see table 1" was replaced by “(Table 1)”.

3. Page 8, pp3: (CP) owner (R=1.051) ⇒OR?

Response: Thank you for pointing this out. We have corrected this in the revised manuscript.
To reviewer 2:

Abstract

1. Page 2, lines 3-6: “…in previous studies…” can be placed at the end of the sentence.

Response: To make this sentence more readable following English language editing assistance, we have changed it to “Previous studies have shown that prolonged time spent in screen-based sedentary behavior was significantly associated with lower health status in children, independent of physical activity levels.”

2. Page 2, lines 7-13: This study has two purposes. Which one is primary and which one is secondary study objective? If both objectives are equally important, the description of these objectives should be consistent (in terms of order) throughout the paper. For example, in the title, test-retest reliability was mentioned first whereas in the abstract, screen time correlates were mentioned before test-retest reliability. The methods section also describes participants/analytic methods for reliability test and then for correlates.

Response: We have reorganized the manuscript and mainly focused on the purpose of the research, which was to examine correlates of ST.


Response: Thank you for pointing this out. We have removed this wording.

4. Page 2-3: Please also provide a definition of screen time to clarify:


Response: We have provided the definition of screen time in the Methods section and cited the above reference.
Introduction

1. Page 3, line 7: Where the “prolonged time spent in SSB (screen time, ≥ 2 hours/day) cut-off is coming from? None of the citations followed by this sentence include the definition of “prolonged screen time” and that it is equal to or more than 2 hours/day. Please add appropriate citation to support this threshold.

Response: We have revised this sentence and added relevant references in the Methods section.

2. Page 3, line 15: “…independent of recommended physical activity” is missing some words and thus, lacks clarity. To improve readability, it can be edited to “…independent of meeting or not meeting the recommended level of physical activity…”

Response: We appreciate the reviewer’s comment and have revised the wording accordingly.

3. Page 3, lines 41-60: These sentences provide the rationale of this study. However, the intro that sets up for this lacks the thorough review of the currently available literature. The following references were the ones that I was able to identify by simply searching in google scholar:


I am not expecting the authors to review all the available references but, at the current state, the present study appears to be missing some key references in the intro or discussion that are highly relevant. It is recommended that authors should review the literature carefully and incorporate into their paper.

Response: We have carefully reviewed above literature and other relevant evidence and revised relevant sentences in the Introduction and Discussion sections.

Methods

1. Page 5: Please add information about ethics approval.

Response: We have added this to the Methods section.

2. Page 5, line 42: playing (what) on a computer, …playing (what) on a cell phone or tablet. Please be specific.

Response: We have added “for recreation or leisure” after “playing”.

3. Page 6, line 2: “A-four-point Likert…” In other similar cases, numbers were presented using numeric values not letters.

Response: Using relevant letters is a general method to represent a value for better understanding to participants. In addition, this is more natural because of the use of Chinese characters.

4. Page 6, line 5: Typo; I believe it is “Quite a lot” not “Quit a lot”
Response: Thank you for pointing this out. We have changed this in the revised manuscript.

5. Page 6, line 12: what do you mean by analyzing the data synthetically? Please expand or clarify.

Response: We have removed this sentence.

6. Page 6, lines 24-27: As mentioned previously, please add an appropriate reference to the screen time definition/cut-off. In addition, there is an updated systematic review from Reference # 18. Please consider updating the reference to the following one:


Response: Thank. The above reference has been cited after the relevant sentence.

7. Page 6, line 34: “(categorical)” not “(categories)”

Response: Thank you for pointing this out. We have revised this accordingly.

8. Page 6, lines 29-54: Providing the strength of test-retest reliability will be helpful. For instance, what are the values for weak, moderate, good, and excellent test-retest reliability? Please also provide a supporting reference.

Response: We have added this information and provided a supporting reference.

Results

1. Page 8, lines 1-18: I believe that 95% CIs should be presented rather than p-values with OR. In addition, please distinguish significant vs non-significant findings and present separately.

Response: Thank you for pointing this out. We have added the 95% CIs and reorganized the contents accordingly presenting significant and non-significant results separately.
Discussion

1. Page 8, line 22: “weekend ‘TV’ viewing”
   
   Response: We have added this as indicated.

2. Page 8, line 41: This sentence can be moved to the methods section.
   
   Response: We have moved this to the Methods section.

3. Page 9, lines 41-59: Discussion with regard to parents seems to be over-stating the findings of the present study and thus highly speculative. The survey measured the presence of parent while watching TV. This does not necessarily mean co-participation (e.g., watching TV together actively) or role modeling (e.g., parent’s TV watching time).
   
   Response: Based on the Chinese meaning, the word “presence” includes the possibility of co-participation or role modeling. We have edited these sentences for clarity and have provided relevant references.

4. Page 10, line 29: Please check for the author’s name for Xiaoxiao et al.
   
   Response: The author’s name is Jiang XX; we have revised it accordingly.

5. Page 10, line 46: “caution should be exercised…” No, authors simply cannot claim any causality and no generalizability.
   
   Response: The word “exercised” was replaced by “noted” to avoid potential confusion.

6. Page 10, line 48: “because this is a …”
   
   Response: We have removed the word “self-reported”.

Thank you very much.

Sunyue Ye