Author's response to reviews

Title: Individual and family environmental correlates of television and computer time in 10- to 12-year-old European children: the ENERGY-project.

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Version: 3 Date: 18 August 2015

Author's response to reviews: see over
Dear Editor,

We thank you for considering the publication of our manuscript entitled “Individual and family environmental correlates of television and computer time in 10- to 12-year-old European children: the ENERGY-project.” (MS: 1338059053172081). We thank the reviewers for their valuable comments which have enabled us to further improve our paper.

We have responded separately to each of the comments made by the reviewers and have indicated the changes that we incorporated in the manuscript. All changes are indicated in the manuscript. We hope that these changes have made our paper acceptable for publication in BMC Public Health.

Sincerely yours,
Maïté Verloigne

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Reviewer's report

Title: Individual and family environmental correlates of television and computer time in 10- to 12-year-old European children: the ENERGY-project.

Version: 2 Date: 25 June 2015

Reviewer: Alberto Grao-Cruces

Reviewer's report:
Dear Authors,
Reviewing your paper has been a pleasure for me. The manuscript addresses an interesting and important area of health behaviour in school age. Clearly a lot of work went into its construction. This kind of work are necessary because can help to choosing better public strategies for improve the health in this age and to consolidate the habits for developing healthier adults. It is a well written text and only a few corrections and improvements are needed. I show them below and hope that they help you to improve the manuscript.

Answer:
We thank the reviewer for the valuable suggestions that indeed helped us to further improve this paper. Please find below the answers to the specific questions and comments.

Minor Essential Revisions:
1. Keywords should not be included in the title of manuscript

Answer:
We have changed the keywords of this manuscript:

*Screen time; Children; Parents*

2. Page 4, lines 95 and 99: Please put each reference following the same criteria.

Answer:
We thank the reviewer for pointing this out; we have changed this in the manuscript:

*A previous study of Babey and colleagues [15](…) The investigated correlates in the study of Babey and colleagues [15](…)*

3. Page 6, line 131: Data collection was realized four years ago. Please include it in the limitation paragraph.

Answer:
We acknowledge that this could be a limitation, especially because of the evolving nature of screen-based behaviours. We have added this in the Limitations:

*Another limitation is that the data were collected four years ago. Since screen-based behaviours evolve rapidly because of new technologies, it might be that some correlates have evolved too and further research is warranted to assess correlates and potential determinants of other screen-based activities, for example related to tablet and mobile smart phone use.*
4. Page 6, line 132: One particular strength of the study is the large sample size of European children. However, the sample size in each country is not representative of children from this five countries. For this reason, data analysis for countries should be interpreted with caution.

Answer:
We agree with the reviewer, so we added this in the Limitation section:

Finally, there are some study aspects that limit the generalisability of the findings: although there was a relatively large total sample of children, the sample of children per country was not a random and thus representative sample.

5. Page 6, line 141: The study include television and computer time as screen-time behaviour. Nevertheless, future works should add the Smartphone time.

Answer:
We agree with this suggestion from the reviewer and have added this in the Discussion:

As the present study investigated only two screen time behaviours, future studies could also investigate differences in correlates of other emerging screen time behaviours (e.g. smartphone use) or other sedentary behaviours (e.g. passive transportation).

6. Page 9, line 200: In my opinion, sample characteristics should be in Methods section.

Answer:
We have now added the mean age and percentage of participating girls of the total sample in the Methods section. However, we have kept Table 2 in the Results section, as the table also included behavioural data.

In total, there were 2022 child-parent dyads with complete data across the five countries (54% girls, mean age 11.2 ± 0.8 years, mean parental age 40.5±5.1years)

7. Page 16, line 397: The spacing between paragraphs in these references is not homogeneous. Please review it.

Answer:
We have now added a space between reference 7 and 8.

Major Compulsory Revisions:
1. The research problem was studied in previous studies. You should show clearly the novelty and relevance of your manuscript.
Correlates of screen time behaviours have indeed been investigated before, but the evidence was mostly inconsistent. One of the reasons that had been put forward is that some studies investigated correlates of television time and other studies correlates of total screen time (including television AND computer time). However, it could be that there are different correlates for television and computer time, since these are two separate behaviours for which different motivations and contexts may be relevant. Moreover, the diversity and cultural differences between European countries could also lead to other correlates of television watching and computer use in those separate countries. Babey and colleagues [15] have already investigated correlates of television watching and computer use separately, but in a US adolescent population. On the other hand, van Sluijs and colleagues [16] have specifically investigated correlates separately for four European countries, but they only investigated the correlates of one outcome, namely total sedentary time. Thus, the present study combines both research questions, namely by investigating separately the correlates of television and computer time for each of the five European countries. Moreover, an important difference with the study of Babey and colleagues [15] is that they mostly investigated non-modifiable correlates, whereas almost all correlates under investigation in our study were in principle modifiable (except parental educational level) and can thus directly inform interventions to reduce the two sedentary behaviours. We have now added more information in the Introduction:

Investigating non-modifiable correlates is useful to identify high-risk subgroups, however, investigating modifiable correlates is needed to inform future interventions on which factors they should focus in order to change the health behaviour. It is therefore important to also investigate a large range of potentially modifiable factors of television and computer time separately. (...) However, the authors only investigated correlates of one specific outcome (i.e. overall sedentary time). This suggests that it is also important to investigate if the correlates of television and computer time differ per country. (...) Therefore, the aim of this study was to examine which individual and family environmental factors are related to television and computer time separately in a large sample of 10- to 12-year-old children from Belgium, Germany, Greece, Hungary and Norway. Thus, we investigated the correlates of the two screen time behaviours separately within and across countries.

2. Pages 7 and 8, lines 154-182: Metric properties of the measurement of individual and family environmental factor was not good. Are these questions used in previous articles?
Most individual and family environmental factors in the ENERGY baseline intervention questionnaires were used from the ENERGY cross-sectional questionnaires (Singh et al., 2011 and 2012 – see reference list manuscript), except for ‘child agreement with rules’ and ‘child participation in setting rules’. The ENERGY cross-sectional questionnaires were developed from existing measures (questionnaires developed for the ENDORSE, DOiT, Pro Children study) and only contained questions related to television viewing, so they were adapted for computer use as well. Of the 29 family environmental variables that were used for the present study, 22 had good test-retest reliability (ICC>0.60) and 7 moderate test-retest reliability (ICC>0.40). Of the 12 individual variables, there were indeed only 3 variables with good test-retest reliability, while the other 9 had moderate test-retest reliability, although the ICC was above 0.50 for all individual variables. This is quite in line with other reliability studies of questionnaires that assessed possible correlates of physical activity and screen time behaviour (Hales et al., 2013; Huang et al., 2011) and dietary behaviour (De Bourdeaudhuij et al., 2004; Wilson et al., 2008), that all stated that the reliability was acceptable for their questionnaire. Nevertheless, we acknowledge that the metric properties could be improved, so we have added following information in the Limitations:

A second limitation is the possibility of social desirable responses because of the use of self-reported child and parental data. Although the individual and family environmental variables mostly had good (ICC>0.60 in more than 60% of the variables) or moderate (ICC>0.40) test-retest reliability, psychometric properties could be improved. Also, the item to assess computer time on weekdays showed weak construct validity.

Moreover, previous articles within the ENERGY-project have also used the same questions. For example, the following study examined mediating effects of family-related factors (e.g. monitoring, negotiation,…) on the intervention effect:


There are also several studies who have used individual and/or family environmental variables of the ENERGY cross-sectional questionnaire on which the current questionnaire was based on. An example is the study of te Velde et al. (2014) who investigated the influences of both parents and peers on energy balance-related behaviours:

References used for this answer:

3. Page 13, line 313: You do a good job situating your study in the existing literature, but I would like to see more discussion around why you found differences between countries.

Answer:
We agree that this is an important matter and we have now elaborated on this in the Discussion:

*In Greece, the results suggest that it may be more important to target the more political environmental factors –i.e. rules and regulation related family environmental factors such as parental strictness, having parental rules, and parental negotiation- instead of the social environmental factors to reduce children’s television time. It is, however, difficult to explain this difference. It could be that that Greek parents have in general a more authoritative parenting style, characterized by more strictness and control on their children’s television viewing [30]. The reason why differences in correlates exist between countries might be the specific characteristics of a country, such as the cultural attitude towards screen time*
behaviour or the typical family structure or context that could influence individual and family environmental factors [31]. It has also been advocated that children from European countries where parents have a more permissive parenting style engage in more individual television viewing, whereas children from countries where parents have a less permissive parenting style watch more television in the presence of other family members [32]. Furthermore, it might be that the neighbourhood environment differs across European countries, which could also influence children screen time. For example, the presence of sidewalks and parks has been found to be inversely associated with children’s screen time [33]. It can thus be concluded that the differences found across countries is a complex matter that needs further investigation.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:** None declared

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**Reviewer's report**

**Title:** Individual and family environmental correlates of television and computer time in 10- to 12-year-old European children: the ENERGY-project.

**Version:** 2 **Date:** 28 June 2015

**Reviewer:** Aristides Machado-Rodrigues

**Reviewer's report:**

General Comments to the Authors

1. The study aimed to examine which individual and family environmental factors are related to television and computer time in children from some European countries.

2. The role of inactive behaviour in health is certainly a topic of great importance as we move toward a better understanding of the role that the physical, social and cultural environments have on our populations.
3. The abstract has a correct framework and, in general, summarizes the paper properly; however, further refinements in the results sub-section is need as well as a more pragmatic message of the conclusion sub-section.

4. The study appears to have been conducted well and the quality of writing is satisfactory; a number of specific revisions are suggested to aid clarity and readability.

5. This paper might have the potential to clarify the association between screen time activities and individual and family environmental factors, however, there are several clarifications and focus required in order to accept the conclusions of this manuscript.

Answer:

We thank the reviewer for the valuable comments that helped us to improve the paper. Please find below the answer to the specific and general comments.

Specific comments to the Authors:

- Specific comment 1: In the abstract, the main objective of the paper was stated clear and succinctly; however, refinements in the results and conclusion sub-sections should be included to make the scientific message more pragmatic. Furthermore, further information about covariates included in the statistical models should be added as well (..what are the dependent and independent variables? ..what is the exposure and outcome? ...).

Answer:

Based on the suggestions of the reviewer, we have added more information in the Methods section of the abstract and we have rewritten and/or restructured the Results section. We believe that we should be careful when reformulating the conclusion. The conclusion should be a brief summary of results and could include potential implications, but should not be merely an interpretation of the results. Therefore, we have made the conclusion more concise.

We hope that the abstract has now improved:

**Background:** The aim was to investigate which individual and family environmental factors are related to television and computer time separately in 10- to-12-year-old children within and across five European countries (Belgium, Germany, Greece, Hungary, Norway).

**Methods:** Data were used from the ENERGY-project. Children and one of their parents completed a questionnaire, including questions on screen time behaviours and related individual and family environmental factors. Family environmental factors included social, political, economic and physical environmental factors. Complete data were obtained from 2022 child-parent dyads (53.8% girls, mean child age 11.2±0.8years; mean parental age
40.5±5.1 years). To examine the association between individual and family environmental factors (i.e. independent variables) and television/computer time (i.e. dependent variables) in each country, multilevel regression analyses were performed using MLwiN 2.22, adjusting for children’s sex and age.

Results: In all countries, children reported more television and/or computer time, if children and their parents thought that the maximum recommended level for watching television and/or using the computer was higher and if children had a higher preference for television watching and/or computer use and a lower self-efficacy to control television watching and/or computer use. Most physical and economic environmental variables were not significantly associated with television or computer time. Slightly more individual factors were related to children’s computer time and more parental social environmental factors to children’s television time. We also found different correlates across countries: parental co-participation in television watching was significantly positively associated with children’s television time in all countries, except for Greece. A higher level of parental television and computer time was only associated with a higher level of children’s television and computer time in Hungary. Having rules regarding children’s television time was related to less television time in all countries, except for Belgium and Norway.

Conclusions: Most evidence was found for an association between screen time and individual and parental social environmental factors, which means that future interventions aiming to reduce screen time should focus on children’s individual beliefs and habits as well parental social factors. As we identified some different correlates for television and computer time and across countries, cross-European interventions could make small adaptations per specific screen time activity and lay different emphases per country.

- Specific comment 2: At the introduction section, the purpose of the study was stated clearly. However, in my opinion, there are some content of the introduction which could be used in the discussion section. On the other hand, as far as I can understand, the authors have identified potential mechanisms and related variables to justify that association between screen time and environment/social factors; however, some of that mediated variables were not included in the analytical approach of this study. Some content should be clarified and a better rationale needs to be provided.

Answer:
We have now added information in the Discussion section on the study findings of Babey and colleagues [15] and van Sluijs and colleagues [16], as these studies were cited in the Introduction. However, we only compared our study implications with their general findings, since we cannot compare our found correlates with those studies, because they examined other correlates and/or other outcome variables. Also, we did not delete any information in the Introduction, as the other reviewer suggested to underline the relevance of our study.

Following information was added in the Discussion:

This is in accordance with the study findings of Babey and colleagues [15] who stated that understanding the differences in correlates of different screen time behaviours can inform more effective interventions and with the study findings of van Sluijs and colleagues [16] who advocated that a single strategy to reduce sedentary behaviour is less likely to be effective across Europe.

Regarding the second part of the reviewer’s comment, we are not completely sure if we correctly understand the comment. It was not our intention to identify potential mechanisms of the association between environmental factors and screen time behaviour by investigating mediating variables. It is, however, correct that in the Discussion section, we explained that parental educational level was not significant anymore in the multivariate model, which could be due to the influence of other environmental variables. Therefore, we recommended that future mediation analyses could further explore this hypothesis by investigating if the inverse relationship between parental education and screen time behaviour is mediated by social or political environmental variables. Nevertheless, this was not the aim of the present study: the aim was to investigate both individual and family environmental variables, since socio-ecological models state that both can influence a person’s behaviour. Therefore, we treat both groups of variables similar in the analyses, both as independent variables. We have added a sentence in the Introduction to underline their equal importance.

Socio-ecological models [9-11] posit that both individual and environmental level factors are associated with a person’s health behaviour. This suggests that an intervention aiming to improve a person’s health behaviour is more likely to work if it focuses on changing both individual and environmental factors [11].

Based on the suggestions and comments of both reviewers, the Introduction is now expanded and we hope that it has therefore improved.
Specific comment 3: At the introduction section, some content related to studies which were cited could be complemented with rates and with further information about the specific country where those studies were developed, as well as specific characteristics of those samples. Furthermore, which is the hypotheses of the study?..perhaps that information could be also added to the manuscript.

Answer:
The two most important studies cited in the Introduction were the study of Babey and colleagues [15] and the study of van Sluijs and colleagues [16]. Therefore, we have added more information on the populations of those studies:

A previous study of Babey and colleagues [15] among more than 4000 12- to 17-year-old US adolescents has specifically examined correlates of television viewing and computer use separately to determine differences in correlates of the two screen time behaviours. (...) A study of van Sluijs and colleagues [16] examined behavioural correlates (e.g. television viewing after school) as well as parental correlates (e.g. parental BMI) of overall sedentary time among more than 2000 children (9-10 years) and adolescents (14-15 years) in four different European countries (Denmark, Estonia, Norway and Portugal). Results demonstrated that there were different correlates across countries.

We also added our hypothesis in the Introduction:

We hypothesised that other correlates would be found for children’s television and computer time and for the five European countries.

General Comment 4. The methods section is detailed and balanced (i.e. in terms of its content) when viewed in a holistic perspective of that manuscript. However, there are some methodological decisions that must be clarified (for example, among others, how data may be generalized??; in other words, authors stated some exclusion and/or inclusion participants/criteria but my main concern is related to differences between excluded and included participants and selected schools of that study, especially in terms of the analysed variables for the statistical models used. Therefore, more important is needed to clarify how missing data was treated; when there is a large number of excluded participants it would be useful to compare some biological and behavioural variables to see if the final sample is bias. Did the authors test for differences between those children included vs. excluded? What, if any, were the differences? Please, provide these data.

Answer:
We agree with the reviewer that it is important to investigate differences between included and excluded participants. Unfortunately, we did not have any information on the schools that did not want to participate or on the children that did not have consent from their parents to complete the questionnaire. Therefore, we examined the differences between children in the final sample and children that completed the questionnaire, but were excluded from the analysis because their parents did not complete the questionnaire. We have added the information in the Methods Section:

In total, there were 2022 child-parent dyads with complete data across the five countries (54% girls, mean age 11.2 ± 0.8 years, mean parental age 40.5± 5.1years). We compared the children in the final sample with children who were excluded from the analyses because their parents did not complete the questionnaire. Boys were more likely to be excluded and children who were excluded had higher levels of television (103.7 ± 61.1 min/day versus 97.1 ± 58.5 min/day) and computer time (81.5 ± 68.9 min/day versus 66.0 ± 59.0 min/day).

Due to these differences, we have added this as a limitation:

... Finally, children who were excluded from the analyses because their parents did not complete the questionnaire were more likely to be boys and had higher levels of both television and computer time.

- Specific comment 5: At the Methods (Statistical analysis and Tables), authors set the different models of the analysis. In addition, it should be described in more detail the statistical analysis and models in that section. Also, how confounders were included in the model (i.e. continuous or categorical)?

Answer:
We have added more information in the Statistical Analyses section, we hope that it is now more clear:

For each country, bivariate associations were examined first between each individual and family environmental factor (i.e. the independent variable) and television or computer time (i.e. the dependent variable) without adjusting for any variables. The results of the bivariate associations are reported in Additional file 1. The next step was that all individual and family environmental factors with a p-value of less than 0.05 (95% confidence intervals (CI)) in the bivariate models were entered into a multivariate model, after checking for multicollinearity. In total, there were ten multivariate models (one model for television time and one model for computer for each of the five countries), all adjusted for children’s sex (dummy variable).
and age (continuous variable). For both the bivariate as well as the multivariate results, we report the $\beta$-values, standard errors and significance levels.

- Specific comment 6: In general, in developed countries there are some lifestyle and socio-cultural variables which are quite well related. Were socioeconomic position and area of residence included in the models? If so, did authors check multicollinearity?

Answer:
The area of residence was not included in the model. The questionnaire did not include questions on the neighbourhood environment, so we had no information on the area of residence. This could indeed have been interesting, therefore, it was stated that future research could investigate the neighbourhood environment and its attributes as potential correlates of children’s screen time behaviours. Socioeconomic position was only measured at the individual level, that is by assessing the educational level of the parents in the parental questionnaire. Parental education was the family economic environmental factor that was investigated as a potential correlate of children’s television and computer time. In the bivariate models, this factor was significantly associated with children’s television and/or computer time in Belgian, Greek and Hungarian children, but not in German or Norwegian children. However, the factor did not remain significant in the multivariate model in any of the countries.

- Specific comment 7: The results section (pages 8-10) has a quite range of good content with important findings.

Answer:
We thank the reviewer for this comment.

- General Comment 8: In general, the discussion clearly mentioned the main findings and compared them with findings from previous research and some potential reasons for some discrepancies in these findings. However, I would like to see the authors discuss potential differences by age-group youth and discuss some other correlates of sedentary behaviours such as the built environment variables (i.e. what is rural?? What is urban??; which environmental variables are different from those 2 geographical communities??). Furthermore, it would be useful for the reader, if authors could include in that discuss to role of objective methods of sedentary behaviour on the associations between the afore-mentioned variables used in the present study.
Answer:

We thank the reviewer for the feedback on the Discussion section. We did not want to elaborate too much on the other correlates of sedentary behaviour, such as neighbourhood or built environmental factors, as this study specifically investigated the family environment. However, we have added some sentences about this topic in the Discussion section to explain why differences might exist between countries:

_Furthermore, it might be that the neighbourhood environment differs across European countries, which could also influence children screen time. For example, the presence of sidewalks and parks has been found to be inversely associated with children’s screen time [33]. It can thus be concluded that the differences found across countries is a complex matter that needs further investigation._

Furthermore, the reviewer also asks to discuss potential differences by age group. In the manuscript, we have tried to compare or explain our findings with studies involving the same age group (e.g. although the number of televisions in the household and having a television in the bedroom have previously been identified as important correlates of sedentary behaviour in this particular age group [12,13]). Also, we did not compare our findings with the findings of Babey and colleagues [15] and van Sluijs and colleagues [16], as there were differences in investigated correlates and/or other outcome variables, so we could not discuss differences by age for those studies. However, we thought it would be relevant to add a reference in the Discussion about parental co-participation in watching television, as it appears that watching television together as a family remains to be a family activity even when children grow into adolescence. We think this is important information with regard to future interventions:

_On the other hand, a specific strategy to reduce television time could focus on changing the parental social environment, for example by informing parents on fun alternatives to do as a family or even by organising such family activities. It appears that even when children grow older, watching television together remains an important family activity [29], so targeting this factor already in childhood could be important._

- General Comment 9: The discussion would be clearly benefit if the authors could integrate further limitations of the present study and discuss them accordingly (i.e… how generalized are the present data??…the use of sedentary behaviour objective methods…and so on!!).

Answer:
These limitations indeed warrant a more in-depth discussion, so the limitations section was expanded:

The current study has some limitations that are further discussed below. First, using cross-sectional data rules out the possibility to draw conclusions about causality. A second limitation is the possibility of social desirable responses because of the use of self-reported child and parental data. Although the individual and family environmental variables mostly had good (ICC>0.60 in more than 60% of the variables) or moderate (ICC>0.40) test-retest reliability, psychometric properties could be improved. Also, the item to assess computer time on weekdays showed weak construct validity. Despite these shortcomings that are inherent to questionnaires, they are common and often the only possible method in studies to assess screen time behaviours because of their low cost and participant burden [34]. Objective measurements such as accelerometers would not be useful for the present study, because they only measure the total sitting time and do not have the ability to assess specific sedentary activities, such as television and computer time. Another method that can assess screen time behaviours and that overcomes some of the problems associated with questionnaires such as recall bias, are diaries and ecological momentary assessment methods [34]. However, compliance with such methods may be low because of the high participant burden which could especially be challenging in large cross-European studies such as the ENERGY-project. Another limitation is that the data were collected four years ago. Since screen-based behaviours evolve rapidly because of new technologies, it might be that some correlates have evolved too and further research is warranted to assess correlates and potential determinants of other screen-based activities, for example related to tablet and mobile smart phone use. Finally, there are some study aspects that limit the generalisability of the findings: although there was a relatively large total sample of children, the sample of children per country was not a random and thus representative sample. Moreover, the findings are restricted to children aged 10 to 12 years. Finally, children who were excluded from the analyses because their parents did not complete the questionnaire were more likely to be boys and had higher levels of both television and computer time.

- Specific Comment 10: The conclusion is quite long. This section will clearly benefit from being cut back by stating the scientific “go home message” in a pragmatic way.

Answer:
We agree that the conclusion is quite long. However, similar as to the abstract conclusion, we believe that we need to be careful that the conclusion is a reflection of the results found in this study. Nevertheless, the conclusion has been made shorter and has been slightly reformulated in order to make a better statement:

Children’s and parents’ perception of the screen time recommendations were related to children’s television time in all countries, suggesting that a generic European intervention focusing on increasing the knowledge and awareness regarding screen time behaviour could be relevant. Most evidence was found for an association between screen time behaviour and individual and social environmental factors among 10- to 12-year old European children, although somewhat more individual factors were related to children’s computer time and more parental social environmental factors to children’s television time. It could thus be important to take the different correlates of television and computer time into account when developing an intervention to reduce screen time. Although most correlates of screen time behaviour were similar across countries, cross-European interventions could lay different emphases per country in order to match the identified correlates.

- Specific Comment 11: The references are appropriate.
  
  **Answer:**
  We thank the reviewer for this comment. Some additional references were added, based on the comments and suggestions from both reviewers (see reference list manuscript).

- General Comment 12: In general, the quality of writing is satisfactory but in some places could be improved.
  
  **Answer:**
  We have aimed to improve the language and writing.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:** 'I declare that I have no competing interests'

Editors' comment:
The paper has been critically reviewed by 2 reviewers which raised some points (please see the reviewer's comments) that need to be clarified before the paper is suitable for possible publication. I kindly request that you follow all the comments and questions and respond them accordingly. Please be aware that in case you decide to send your revised manuscript there is no previous assumption of acceptance.

Answer:
We agree that addressing the comments of both reviewers have definitely helped us to further improve the paper. We hope that these changes have made our paper acceptable for publication.

Editorial Request:
-Copyedit: We recommend that you copyedit the paper to improve the style of written English. If this is not possible, you may need to use a professional language editing service.

Answer:
Two authors went through the entire paper again to improve the style of written English. We hope that the paper has now been improved.