Author’s response to reviews

Title: Do parents' support behaviours predict whether or not their children get sufficient sleep?: A cross-sectional study

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Author’s response to reviews:

Natalie Pafitis
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Dear Natalie Pafitis,

Thank you for the prompt return of our revised manuscript (PUBH-D-16-03001R2), entitled “Do parents' support behaviours predict whether or not their children get sufficient sleep?: A cross-sectional study,” co-authored by Dr. Daniel Harrington and Dr. Heather Manson. This document describes how we have responded to the reviewer’s comments below (in bold font). We appreciate your decision to approach a sleep medicine expert for their review, as we feel that the resulting changes have strengthened the manuscript. We sincerely thank you for the opportunity to publish in BMC Public Health.

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This paper reports on the relationship between parenting behaviors around sleep hygiene in children (5-17 yrs). The authors suggest that children of parents with rules around bedtime were more likely to achieve recommended sleep while simply encouraging these sleep behaviors was not (negative association). This was true for weekday sleep while parenting behaviors had no impact on weekend sleep.

The primary conclusion was that parent boundaries contribute to child sleep but it depends on the type of support, weekend v. weekday, and age. Interestingly, it takes some digging through the text to interpret these statements. While the results section does clarify the direction of the predictions between enforcing/encouraging and sleep (enforcing=positive; encouraging=negative) and that this is only true on weekends, the role of age group is not discussed here nor in the Conclusions (one has to go to the model). Yes, the authors discuss that fewer adolescents meet the recommendations, but that is not surprise, this paper's focus is the role of parenting across these age groups and the authors do not discuss this interaction much (that the role of parent rule-setting on sleep changes across ages).

We thank the reviewer for this feedback. While we certainly agree that child age is a very important variable to consider—and one which was accounted for in the logistic regression models—the role of age group in the parental support/child sleep relationship was not the main focus of the study. Nevertheless, the reviewer’s feedback revealed the need to emphasize this point in the Limitations section, as shown below (line 1, page 19).

“Finally, the complex relationship between parental support behaviours, child sleep, and child age is important to consider in future studies. This study does not attempt to form conclusions about the role of child age; for example, we cannot assert that the influence of parental support on child sleep varies across ages. More research on this relationship, with a main focus on child age, is warranted.”

Moreover, the reviewer’s feedback prompted us to reconsider how child age was highlighted in the Conclusion opening sentence (line 8, page 19), as well as the Abstract Conclusion (line 22, page 1). In order to be consistent with the point above added to the Limitations section, we have removed “child age” from the aforementioned Conclusion sentences.

Second, an emphasis of this study is to understand when sleep meets recommendations in the Canadian 24-hr Movement Guidelines. The definitions of sleep and ages of study are dictated by this. Yet, important in those guidelines is that sleep be UNINTERRUPTED. Indeed, sleeping for 9-11 hrs uninterrupted is very different than sleeping that amount with sleep fragmented by night time wakings. There seems to be no measure or accounting of this even though it is in their basic definition (Table 1).
The reviewer’s point here is well taken and is a topic we presented in the Limitations section (line 1, page 18):

“The Canadian 24-Hour Movement Guidelines for Children and Youth specify “uninterrupted” sleep; however, because sleep continuity could not be measured, the use of sleep duration data allowed for clear comparisons with these sleep recommendations in order to construct the primary outcome variable.”

The feedback from the reviewer helped us to recognize the need for further transparency regarding the limitations of the study’s measure of child sleep. Accordingly, the following was added to the Limitations section (line 4, page 18):

“It should still be noted that because this study’s measure of child sleep is based on parent report, we cannot know whether the hours of sleep are fragmented or truly uninterrupted.”

Third, the study lacks hypotheses. While the study objective is presented, how the measures were selected and what the hypotheses were is not stated. Importantly, to select just screen time as the one variable on parents' promotion of healthy sleep environment is very limited.

We appreciate the reviewer’s feedback on these two points. First, the inclusion of an objective—but not hypotheses—is intentional, as this is an exploratory study. Second, this study used the only measure of screen time found within the Parent Computer Assisted Telephone Interview (CATI) survey, which contained many other questions on various health behaviours. We recognize that there are a number of factors affecting parents’ promotion of a healthy sleep environment, which would be informative to investigate. Nonetheless, the variables used were not developed for the purpose of this research study; rather, they were part of the Parent CATI survey developed by Public Health Ontario for an evaluation of a community-based program designed to reduce the prevalence and prevent childhood overweight and obesity. In other words, it was not research questions that incited the development of survey questions, but rather the survey questions that prompted the research questions.

Finally, given that the difference between motivation and enforcement is key to the results, it seems important that the respondents agreed to the definitions of 'encourage' and 'enforce rules'. How does one define 'enforced rule'? Must it have a consequence? Or does this simply mean 'I have a specific bedtime' (as opposed to an encouraged bedtime)? This is absolutely important as this paper seems to encourage rule enforcement around bedtimes when we know this to be absolutely detrimental to pre-teens and teens as it leads to stress and anxiety prior to bed (which leads to insomnia). Parents could respond positively because they do more than encourage a set
bedtime (they tell the child to go to bed now) but 'enforced rule' implies a punishment (as opposed to bringing them back to bed calmly should they get out).

We appreciate the reviewer’s inquiry, and take their point that how a parent defines ‘encouragement’ and ‘rule enforcement’ may affect how they respond to questions of parental support. The survey did not provide definitions of these words, and as such, parents’ perceptions of these words informed the measures of parental support for child sleep. To ensure that this point is made clear, we have added the following to the Limitations section (line 6, page 18):

“Third, parents were asked the extent to which they agreed with statements starting with “I encourage…” and “I enforce rules…” (Table 2) without being provided with definitions of encouragement and rule enforcement. Thus, parents’ perceptions of these words informed the measures of parental support for child sleep.”

The reviewer’s feedback on age-specific, negative effects of rule enforcement is also appreciated, and further supports our addition (see response to reviewer’s first comment) highlighting the importance of child age as a focus of future studies.

In consideration of the reviewer’s feedback, we have also made the following addition to the study’s Discussion section (line 9, page 16):

“The present study includes a range of child ages—not one particular age—when looking at the effect of bedtime rule enforcement on child sleep. Age-specific investigations are warranted to determine if these findings hold true in different age groups.”

In regards to the analysis, the paper needs to be consistent in groupings. The definition separates 5-13 from 14-17. Table 3 separates 5-9 and 10-17. But figures treat age as a continuous variable. If analyses are done as a continuous variable, to interpret figures as they are, it is important to know the sample size, gender distribution, etc, for each age.

We thank the reviewer for their consideration of the analysis. The sleep guidelines from the Canadian 24-Hour Movement Guidelines for Children and Youth are, indeed, divided into two age groups, 5-13 years and 14-17 years (Table 1). The logistic regression models (Table 4 and Table 5) are consistent with these guidelines, and simply split the 5-13 age group into 5-9 years and 10-13 years. Table 3 (mentioned by the reviewer) presents the characteristics of the study sample alongside that of the Ontario population. As stated in footnote b, the child age categories presented [5-9 years, and 10-17 years] are based on the available Statistics Canada Census data. The census data was required to fulfill the purpose of Table 3: to assess the representativeness of the study sample.

With regard to Figure 1 and Figure 2, they were included to provide some context to paper in terms of child age. If the reviewer feels that inclusion of the figures creates more questions than
answers, we can remove them from the paper. However, we hope that they aid in creating a more complete picture of children meeting the sleep guidelines, and parents supporting them to do so.

We sincerely thank the reviewer for their valuable feedback that has enhanced this manuscript.