Author's response to reviews

Title: Associations of short sleep duration with prehypertension and hypertension among Lithuanian children and adolescents: a cross-sectional study

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Associations of short sleep duration with prehypertension and hypertension among Lithuanian children and adolescents: a cross-sectional study

Dear Editors and Reviewers,

Thank You for your comments, suggestions and all questions. In accordance to your comments and suggestions we made some changes in the manuscript. You can find point by-point responses to the reviewers and editors concerns below.

With kind regards,

Authors:

Dr. R. Kuciene
Asoc. Prof. Dr. V. Dulskiene

Answer to reviewer’ reports

Reviewer: Apolinaras Zaborskis

General comments:
Arterial blood pressure has powerful influence on health, and the study of factors influencing the level of blood pressure in everyday life is of particular importance. Such information on impact of sleep duration in childhood is especially valuable, since this is the age when most habits are developed and fixed. 1. The question posed by authors: “examine the associations between short sleep duration and risk of prehypertension and hypertension in Lithuanian children and adolescents aged 12 to 15 years” is well defined and very clear. 2. The work is presenting some of results of the national study with research methods of which are well described as well as correctly used in the presented work. 3. Abundant information from 6,940 subjects aged 12-15 year is analyzed and presented on suitable and clear way. 4. The work was done according to highest publication standards. 5. Discussion is firmly supported by the data and has close
connection with introductory remarks and review of the literature. Conclusions are logical continuation of results and discussion. 6. Very sincere and complete description of the limitations of the work is clearly stated. 7. Before the list of 41 well cited references there are very informative acknowledgements. 8. The title and abstract clearly describe the essence of the work. 9. The authors’ contributions are precisely described after the statement that there was no competing interests. 10. The results of the work may indicate possible interventions in families giving an advise for parents to control children’s sleep duration. 11. Altogether, the writing is more than acceptable. The size of the article and the number of tables is adequate.

Answer to comments: Thank you for your general comments. Thank you for high evaluation of our study.

Minor Essential Revisions: author can be trusted to make these. For example, missing label on figures, the wrong use of a term, spelling mistakes. 1. As elevated blood pressure seems to be a dependent variable and sleep duration as an independent variable, the conclusion might sound better if to formulate it as follows: "The risk of prehypertension and hypertension was associated with short sleep duration among children and adolescents aged 12 to 15 years in Lithuania. 2. In Tables 3 and 4. Use aOR for adjusted OR as it was defined in the text and the list of abbreviations. 3. Use P<0.001 instead of P<0.0001. 4. The number of references seems much extented comparing with other articles on a such particular problem.

Answer: According to review’s comments, we revised the conclusion, and we made these corrections: used aOR for adjusted OR as it was defined in the text and the list of abbreviations (Tables 4, 5) used P<0.001 instead of P<0.0001, and corrected terms and spelling mistakes in the present manuscript.

Reviewer: Antonio Vela-Bueno

Reviewer’s report:
- Major Compulsory Revisions

The main problem with this paper is that the title describes it as a case-control study. However, as far as I could understand, the methodology the authors used is not the typical one of a case-control study. It lacks the definition of case and control and then the sampling is not adequate. As for the methodology, information is lacking about snoring and napping, as well as that on chronotypes. Some objective measure, such as actigraphy would have been adequate.

Answer: Thank You for your comments. We agree that it is a cross-sectional study, but not a case-control study. So we corrected the study design in the manuscript (page 1, page 4). Snoring, napping were not analysed in this study. Although we understand that these factors would be more appropriate for deeper analysis, but we emphasized associations between self-report sleep duration and high BP. We mentioned the lack of objective assessment of sleep in the limitation section (page 11). Analysis of objective (actigraphy) measure of sleep and high
BP is being planned for further longitudinal researches.

Quality of written English: Needs some language corrections before being published

Answer: According to reviewer's comment, the present manuscript was proof-read by a native English speaker.

Editor's Comments:
"As pointed out by reviewer 2, the study design is not suggestive of case-control study. It's suggestive of a cross-sectional study. This should be corrected. Being a cross-sectional study, authors should avoid using the term 'risk' as in 'short sleep duration is significantly associated with increased risk of prehypertension'.

In respect to Editors and reviewers remarks, we agree that it is a cross-sectional study. So, we corrected the study design (in abstract page 1, in methods section page 4), also we avoided the term 'risk' and corrected the title of the present manuscript „Associations of short sleep duration with prehypertension and hypertension among Lithuanian children and adolescents: a cross-sectional study” instead of „Short sleep duration and the risk of prehypertension and hypertension among Lithuanian children and adolescents: a case-control study“. We avoided using the term ‘risk’ in this manuscript. For this reasons, the aim of the study was revised and word ‘risk’ was deleted (page 1, page 2) „The aim of this study was to examine the associations between short sleep duration and prehypertension and hypertension in Lithuanian children and adolescents aged 12 to 15 years”. Also, there were revised the paragraphs in the results section (page 8, page 9), in which associations of sleep duration and high BP were described.

Lack of objective assessment of sleep need a mention.

Answer: We added this in the limitation section that sleep duration was self-report and was lack of objective assessment of sleep (page 11): „In this research, sleep duration was self-reported, and was not analysed separately by weekdays and weekends. Further studies are required to investigate the associations of the duration and quality of sleep using objective measurements of sleep (such as actigraphy) with an increased BP among children and adolescents. However, in larger epidemiological studies, information on sleep duration in children and adolescents is typically obtained by subjective measures (self-report and parent-report measures), which are simple and cost-effective methods”.

Is there any difference in characteristics between those included and excluded from the study (around 700 were excluded).

Answer: According to Editors comment, the sentence was added in the limitation section (page 11): „Not all study subjects answered questions about the analysed
risk factors in sufficient detail, and thus these subjects were excluded from the analysis; however, there were no significant differences in the characteristics including age, sex, BMI, weight, height, and BP levels between the subjects who were excluded from the analysis and the included subjects”.

Also providing public health recommendations based on cross-sectional data is going beyond data.

Answer: We added public health recommendations based on cross-sectional data in the discussion–conclusion section (page 12): „The data of our study may indicate possible interventions in families, including advice for parents to control children’s and adolescents’ sleep duration. The recommendation is to ensure that children and adolescents get a sufficient amount of sleep – i.e. not less than 8 h/day – for the reduction in odds of high BP. The findings of the present study would be useful for developing public health programs designed to reduce modifiable risk factors of cardiovascular diseases, and would also be essential for the prevention and management of elevated BP among children and adolescents.”