Author’s response to reviews

Title: Prevalence of attention-deficit/hyperactivity disorder symptoms and their associations with sleep schedules and sleep-related problems among preschoolers in Mainland China

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Author’s response to reviews:

Response to the comments

Dear Editor,

Re: “Prevalence of attention-deficit/hyperactivity disorder symptoms and their associations with sleep schedules and sleep-related problems among preschoolers in Mainland China” (BPED-D-16-00652 Version 1). Thank you very much for your letter of 9 June 2017, and your reminding. I'm very sorry I'm so late. When you reminded me, I just saw your information about the revised version of my manuscript BPED-D-16-00652. We have carefully considered the reviewers’ comments and revised the manuscript according to their comments.
Below are our point-to-point responses to Reviewers’ comments. We have highlighted the changes in our revised manuscript in red. In addition, some grammar and spelling errors have also been corrected.

Thank you very much for your attention. Looking forward to hearing from you.

With Best Regards,
Hui Cao, Shuangqin Yan, Fangbiao Tao
4 July, 2017

In response to reviewer 1:

Title: Prevalence of attention-deficit/hyperactivity disorder symptoms and their associations with sleep schedules and sleep-related problems among preschoolers in Mainland China

Reviewer: Pieter Hoekstra

Reviewer's report: This is an interesting and worthwhile article. I have a few suggestions mainly related to wording.

Major concerns:

1: 【Abstract】 Physiological mechanism is somewhat strangely worded. Can you rephrase? Conners' abstract symptom questionnaire should probably be "abbreviated" rather than "abstract" ; "Approximately 8.6% of the total preschoolers and higher in males (9.9%) than females (7.2%)". This is an incomplete sentence. "Preschoolers with ADHD symptoms were associated"; please rephrase to "presence of ADHD symptoms". This is a cross-sectional study, thus authors should be careful with wordings suggesting etiology such as risk and protective factors.
Response: I agree with your suggestions. Now we have rephrased it to the abstract section. As follows: identification of behavioral risk factors, including sleep quality has important public health implication to prioritize behavioral intervention strategy for ADHD.

Conners’ abstract symptom questionnaire had rephrased "abstract" to "abbreviated".

We’re sorry for this mistake. It should be “Approximately 8.6% of the total preschoolers had high ADHD symptoms, with boys higher than girls (9.9% vs. 7.2%). ”. In our revised manuscript it has been revised.

In the logistic regression analysis, after adjusting for TV viewing duration, outdoor activities, and socio-demographic characteristics, delayed bedtime was significantly associated with risk of high ADHD symptoms, with odds ratios (OR) of 2.50 [95% confidence interval (CI): 2.09～3.00] and 2.04 (95% CI: 1.72～2.42) for weekday and weekend, respectively. Longer fall-sleep time (≥31 minutes) (OR=1.76, 95% CI: 1.47～2.11), no naps (OR=1.57, 95% CI: 1.34～1.84) and often having sleep-related problems (OR=4.57, 95% CI: 3.86～5.41) were also significantly associated with increased risk of high ADHD symptoms, while longer sleep duration (>8.5 hours) was associated with decreased risk of high ADHD symptoms (OR=0.76, 95% CI: 0.67～0.87).

2: 【Background】 which is a common psychiatric disorder with a childhood onset: replace "which" by "and"; The ADHD symptoms are caused by a neurological dysfunction with the brain. There is no real evidence for this statement;

Effected should be affected.

Response: Thanks for the suggestion. “which” had be rephrased by "and".

We have deleted this sentence “The ADHD symptoms are caused by a neurological dysfunction with the brain”, and had be rephrased by “It is well known that ADHD is associated with psychiatric and developmental disorders” in the revised manuscript.
“Effected” had be rephrased by “affected”.

3: 【Results】 table 1. It is unclear what is being meant with "ADHD symptom". Is this presence of at least one ADHD symptom? Or presence of ADHD?

Response: The 10-item Chinese version of the Conners’ abbreviated symptom questionnaire (C-ASQ) is derived from the Revised Conners Parent Rating Scale. It assessed ADHD symptoms on a 4-point scale, ranging from 0 to 3. It discriminated very well between children with and without ADHD, therefore has been used as a valid screening instrument for identification and measurement behavioral problems of ADHD among children in China. The total score is coded into categorical variable, with the score ≥ 15 as having high ADHD symptoms.

In table 1, “ADHD symptom” had be rephrased by "high ADHD symptoms".

In response to reviewer 2:

Title: Prevalence of attention-deficit/hyperactivity disorder symptoms and their associations with sleep schedules and sleep-related problems among preschoolers in Mainland China

Reviewer: Per A Gustafsson

Reviewer's report: The authors present a large epidemiological study of the relation between ADHD symptoms and sleep-related problems in preschool children. The large number of participants is clearly a strength, as well as the low percentage of missing cases.

Minor concerns

1: 【Abstract】 Something is missing in the first sentence in the section "Results" "Approximately 8.6% of the total pre-schoolers and higher in males (9.9%) than females (7.2%)" ; Further down in the same section sleep related problems are referred to as "risk factors for ADHD symptoms" (and in the last line "protective factor"). These are conclusions that are not possible to draw from a cross-sectional survey, what has been shown are associations, not causal relationships.
Response: We’re sorry for this mistake. It should be “Approximately 8.6% of the total preschoolers had high ADHD symptoms, with boys higher than girls (9.9% vs. 7.2%)”. In our revised manuscript it has been revised.

We agree with your suggestions and have modified this sentence. As follows: in the logistic regression analysis, after adjusting for TV viewing duration, outdoor activities, and socio-demographic characteristics, delayed bedtime was significantly associated with risk of high ADHD symptoms, with odds ratios (OR) of 2.50 [95% confidence interval (CI): 2.09~3.00] and 2.04 (95% CI: 1.72~2.42) for weekday and weekend, respectively. Longer fall-sleep time (≥31 minutes) (OR=1.76, 95%CI: 1.47~2.11), no naps (OR=1.57, 95% CI: 1.34~1.84) and often having sleep-related problems (OR=4.57, 95% CI: 3.86~5.41) were also significantly associated with increased risk of high ADHD symptoms, while longer sleep duration (＞8.5 hours) was associated with decreased risk of high ADHD symptoms (OR=0.76, 95%CI: 0.67~0.87).

2: 【Background】 Overall, the presentation of the literature is satisfactory.

page 4, line 12 "…ADHD symptoms are caused by a neurological dysfunction with the brain." I think that such a bold statement of causation is inappropriate, "related to" would be better. page 4, line 42 - check the reference system, use numbers not names..

Response: We have deleted this sentence “The ADHD symptoms are caused by a neurological dysfunction with the brain”, and replace it by “It is well known that ADHD is associated with psychiatric and developmental disorders” in the revised manuscript.

We sorry that we have made the error. We have deleted the name.

3: 【Methods】 I am not sure which of the many Conners questionnaires that was used. A reference to the original publication would be helpful (not just the Chinese translation). Was it Conners' abbreviated symptom questionnaire (CASQ) that was used? (Goyette CH, Conners CK. Ulrich RF (1978). Normative data on revised Conners parent and teacher rating scales.]AbnormChildPsychol6:221-236 )
On page 9 line 48 "...clinically significant cutoff score of 15". Is that based on the Chinese study (ref 15). And is 15 one standard deviation above mean? I suppose that a cutoff score of 15 is used to categorise the children into having or not having ADHD symptoms, that has to be stated clearly. It would be helpful for the readers if the children above the cutoff score of 15 were labelled, i.e. "high ADHD symptoms". When the findings of the logistic regression are discussed on page 12 line 20 and following the wording "ADHD symptoms" could give the impression of a continuous correlation with the number of ADHD symptoms, not a dichotomised variable.

Response: There are many Conners questionnaires that was used. Conners' Rating Scales-Revised : Developed by C. Keith Conners, Ph.D., the Conners' Rating Scales-Revised (CRS-R) are paper and pencil screening questionnaires designed to be completed by parents and teachers to assist in evaluating children for attention-deficit/hyperactivity disorder (ADHD). The CSR-R is used as part of a comprehensive examination and are designed to be easily administered and scored. Both the long and short versions are tools to assist in determining whether children between the ages of three and 17 years might suffer from ADHD. (Pendergast LL, Vandiver BJ, Schaefer BA, Cole PM, Murray-Kolb LM, Christian P. Factor structure of scores from the Conners’ Rating Scale-Revised among Nepali Children. Int J Sch Educ Psychol. 2014; 24: 261-270. Goyette CH, Conners CK, Ulrich RF. Normative data on revised Conners parent and teacher rating scale. J Abnorm Child Psychol. 1978; 6(2): 221-236.)

This study used 10-item Chinese version of the Conners’ abbreviated symptom questionnaire(C-ASQ) to assessed ADHD symptoms. C-ASQ is derived from the Revised Conners Parent Rating Scale (Goyette CH, Conners CK, Ulrich RF. Normative data on revised Conners parent and teacher rating scale. J Abnorm Child Psychol. 1978; 6(2): 221-236.) and consists of 10 statements for which a parent or a teacher rates a child’s behavior on a 4-point scale, ranging from 0 to 3. It discriminated very well between children with and without ADHD, therefore has been used as a valid screening instrument for identification and measurement behavioral problems of ADHD among children in China (Huang Y, Zheng S, Xu C, Lin K, Wu K, Zheng M, et al. Attention-deficit hyperactivity disorder in elementary school students in Shantou, China: prevalence, subtypes, and influencing factors. Neuropsychiatr Dis Treat. 2017; 13:785-792.). The total score is coded into categorical variable, with the score ≥ 15 as having high ADHD symptoms. Its sensitivity, specificity and accuracy are 76.0%, 92.9% and 82.1%, respectively. (1. O P, Chen X, Qian QF. The value of Conners’ abbreviated symptom questionnaire in the diagnosis of attention deficit/hyperactivity disorder. Chinese Journal of Child Health Care. 2001; 9(3): 201. ).
The score of 15 as the cut-off points were determined in combination of high sensitivity and specificity among Chinese children.

4: 【Results】 As in the abstract the wording "risk factors for ADHD symptoms" are conclusions that are not possible to draw from a cross-sectional survey, such formulations should be changed. I.e. page 12 line 23 (also later in the discussion section).

Response: We agree with your suggestions and have modified this sentence. As follows: in the logistic regression analysis, after adjusting for TV viewing duration, outdoor activities, and socio-demographic characteristics, delayed bedtime was significantly associated with risk of high ADHD symptoms, with odds ratios (OR) of 2.50 [95% confidence interval (CI): 2.09～3.00] and 2.04 (95% CI: 1.72～2.42) for weekday and weekend, respectively. Longer fall-sleep time (≥31 minutes) (OR=1.76, 95%CI: 1.47～2.11), no naps (OR=1.57, 95% CI: 1.34～1.84) and often having sleep-related problems (OR=4.57, 95% CI: 3.86～5.41) were also significantly associated with increased risk of high ADHD symptoms, while longer sleep duration (>8.5 hours) was associated with decreased risk of high ADHD symptoms (OR=0.76, 95%CI: 0.67～0.87).

5: 【Discussion】 On page 12 line 57 the wording "… had ADHD symptoms..." makes it unclear if the reference is to a continuous rating of ADHD symptoms, or to the group above cut-off. The manuscript is in need of language editing, it is sometimes hard to follow and understand.

Response: We have revised the sentence. As follows: this study showed that 8.6% of the total preschoolers had high ADHD symptoms, including 10.1% for 3 year-old, 9.6% for 4 year-old, 7.5% for 5 year-old and 7.0% for 6 year-old, and higher rate in boys (9.9%) than girls (7.2%).

In addition, some grammar and spelling errors have also been corrected.
Declarations

Ethics approval and consent to participate

The project was approved by Biomedicine Ethical Committee in Anhui Medical University. Informed consent was obtained from all participants.

Consent for publication

Not applicable

Availability of data and materials

Data can’t be made available for public use due to property right.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

HC, SQY and FBT conceived of the idea for the manuscript and designed the study. HC and SQY performed the statistical analysis, interpreted the data. HC, SQY and FBT drafted the manuscript. HC, SQY, CLG, SMW, LLN, HHT, TS, YQX and FBT conducted the data collection. All authors critically revised the manuscript, and read and approved the submitted manuscript.
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Thanks again!

Sincerely yours  Hui Cao, Shuangqin Yan, Fangbiao Tao

4 July, 2017