Reply to a letter to the Editor regarding the article “Sleep and Hypertension”

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Dear Editor,

We would like to thank Tomoyuki Kawada for the pertinent concern about sleep status and hypertension. First, in this study, we used cutoffs according to those listed in the included articles. Indeed, the categories were utilized with small differences in these studies, but most of them defined the short and long sleep duration according to the National Sleep Foundation’s recommendations [1]. We excluded some studies with different reference groups; for example, longer sleep time (8 h) was used as a reference to find the association between children’s sleep duration and hypertension [2].

Second, the results regarding long sleep hours are inconsistent, and study design may be one of the possible reasons. Wang’s study collected data from only cohort studies, and the result for the ≥ 8 h group is consistent with ours from the subgroup analysis of cohort studies. We also conducted a sequential study analysis to assess further the reliability of results from meta-analyses [3]. In terms of the association between long sleep duration and hypertension, more evidence is needed.

Third, we agree that the causal relationship between sleep status and hypertension could be biased by some important confounding factors, such as gender, age, obesity, smoking, and alcohol. Therefore, we gave priority to the data from models which adjusted for these covariates.

Finally, it is true that more studies are needed to confirm the causal association between sleep status and hypertension,

such as experimental epidemiologic studies and Mendelian randomization studies.

Compliance with ethical standards

Conflict of interest The author declares that he has no conflict of interest.

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