Nature and Science of Sleep

Elevate Series

Open Access Full Text Article

RESPONSE TO LETTER

Letter to the Editor Regarding "Effect of Propofol on Postoperative Sleep Quality in Patients Undergoing Elective Cesarean Section with Spinal Anesthesia: A Retrospective Cohort Study Using Propensity Score Matching at a Single Center" [Response to Letter]

Jie Zhou, Bingwei Hu, Yu Zhang, Qing Wang, Yong Wu, Hongwei Wang

Department of Anesthesiology, Tongde Hospital of Zhejiang Province, Hangzhou, Zhejiang, People's Republic of China

Correspondence: Hongwei Wang, Department of Anesthesiology, Tongde Hospital of Zhejiang Province, Hangzhou, Zhejiang, People's Republic of China, Email wanghw1022@163.com

Dear editor

We sincerely thank Gou et al for their thoughtful comments on our recently published article, "Effect of Propofol on Postoperative Sleep Quality in Patients Undergoing Elective Cesarean Section with Spinal Anesthesia: A Retrospective Cohort Study Using Propensity Score Matching at a Single Center".[1,2] We greatly appreciate the opportunity to clarify and further discuss several important issues.

We agree that the criteria—"maternal demands, severe anxiety, or fatigue"—are subjective. However, conducting a randomized controlled study on the use of propofol during cesarean section (CS) for pregnant women poses a challenge to medical ethics. Our observational design reflects real-world decision-making, where anesthesiologists respond to a patient's expressed needs or observed anxiety. Therefore, while subjective, these indications represent a clinically relevant and legitimate exposure variable in this context. This explains why the propofol group in our original cohort predominantly comprised patients with more severe baseline sleep disturbances and mood disorders. As we stated in the Limitations section of our manuscript, propensity score matching (PSM) cannot account for unmeasured confounders. We maintain that our study provides valuable hypothesis generating evidence on the potential benefits of propofol in postoperative sleep disorders in patients undergoing CS. We are currently planning a prospective study specifically designed to confirm the causal effect of propofol on improving postpartum sleep quality after CS.

Regarding the concern about potential recall bias in the assessment of PSQI and EPDS via telephone interview, we wish to note that this specific limitation was explicitly acknowledged and discussed in the Limitations in the Discussion section of our manuscript.

Regarding the blinding of assessors, we acknowledge this methodological point. As described in the Methods section, all outcome assessments were based on patient-reported responses and the assessors solely recorded the answers without any subjective interpretation or measurement. Therefore, we consider that the lack of blinding of the assessors would have minimal impact on the results.

In this exploratory study, the global PSQI score was pre-specified as the primary endpoint. The analyses of seven PSQI dimensions and EPDS were exploratory, aiming to provide a detailed description of which specific sleep dimensions might be influenced by the intervention, thereby generating hypotheses for future research. Implementing multiple testing correction in this context would increase the risk of Type II error. Such overcorrection could mask potentially meaningful signals, especially when sample sizes are limited. Accordingly, consistent with previous similar studies, we did not apply multiplicity adjustments. We appreciate the reader's attention to this methodological aspect. We

Received: 1 December 2025
Accepted: 10 December 2025
Published: 18 December 2025

recognize that the effect sizes observed may be overestimated, potentially due to the small sample size. To confirm the true magnitude of this effect, a randomized controlled trial is currently being planned.

We sincerely thank the reader for highlighting the mechanistic limitations of our study. We wish to clarify that this is an inherent and acknowledged limitation of our retrospective observational design. Our study utilized existing clinical data and was not designed to prospectively collect objective mechanistic measures such as polysomnography (PSG), electroencephalography (EEG), or cortisol assays. Thus, our mechanistic discussion remains speculative and hypothesis-generating, grounded in known propofol pharmacology and related literature. We are particularly grateful for the reader's constructive suggestion of the mechanism: that propofol may provide restorative intraoperative sleep, mitigating preoperative sleep deprivation. We regret not including this excellent perspective in our original discussion. These variables will be given full consideration in our future randomized controlled trial.

We extend our thanks once again to Gou et al for their valuable feedback, which has enhanced the clarity of our work and illuminated important avenues for future research.

Data Sharing Statement

No data were generated for this communication; therefore, data availability is not applicable.

Author Contributions

All authors have given final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Jie Zhou: Conceptualization, Writing – original draft. Bingwei Hu: Methodology, Writing – review and editing. Yu Zhang: Conceptualization, Writing – original draft. Qing Wang: Writing – review and editing, Investigation. Yong Wu: Formal Analysis, Writing – review and editing. Hongwei Wang: Writing – review and editing, Project administration.

Funding

No funding was received.

Disclosure

All the authors declare that they have no conflicts of interest.

References

1. Zhou J, Hu B, Zhang Y, Wang Q, Wu Y, Wang H. Effect of propofol on postoperative sleep quality in patients undergoing elective cesarean section with spinal anesthesia: A retrospective cohort study using propensity score matching at a single center. *Nat Sci Sleep*. 2025;17:2853–2862. doi:10.2147/NSS.S559802
2. Gou K, Zhou J, Zhang Z. Letter to the editor regarding "Effect of propofol on postoperative sleep quality in patients undergoing elective cesarean section with spinal anesthesia: a retrospective cohort study using propensity score matching at a single center" [Letter]. *Nat Sci Sleep*. 2025;17:3083–3084. doi:10.2147/NSS.S583304

https://doi.org/10.2147/NSS.S585673