

Author Response: The Range of Nonpharmacological Measures to Prevent Delirium on Intensive Care Units is Broader than Assumed

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We sincerely appreciate the thoughtful comments by Finsterer and Marques about our article, "Prevention of Delirium in the intensive care unit (ICU) through Nonpharmacological Interventions: An Umbrella Review," published in the *Indian Journal of Critical Care Medicine*.^{1,2} We also extend our gratitude to the Editor-in-Chief, for providing us the opportunity to respond to the letter regarding our article.

First, the authors inquire whether prevention of hypoactive delirium can be achieved using the same nonpharmacological interventions as those applied to hyperactive delirium. We agree that the management of delirium subtypes requires tailored interventions after diagnosis. However, our umbrella review highlighted that simple, nonpharmacological interventions are effective in preventing delirium across subtypes in the ICU, including mechanically ventilated patients. Foundation strategies, such as promoting reorientation, and engaging family members in the care of these patients, were found to be feasible and significantly reduced delirium incidence. After diagnosing delirium, the approach to management varies. For hyperactive delirium, the focus is addressing underlying causes, pharmacological antipsychotic drugs, reducing overstimulation, ensuring safety, and calming agitation.² In contrast, managing hypoactive delirium emphasizes stimulating engagement, promoting mobility, and preventing withdrawal. We acknowledge that further research is needed to refine and optimize nonpharmacological interventions for these delirium subtypes in ICU settings.³

The authors also raised important questions regarding the creation of a familiar environment. We fully agree that environmental manipulation plays a critical role in reducing the incidence of delirium. Our review has highlighted that family interventions are among the most effective strategies for delirium prevention in the ICU. Creating a familiar environment by making use of family photos, personal belongings, familiar voices, scents/aromas, tastes, and comforting touch, along with frequent visits and meaningful family interactions significantly help to reduce the incidence of delirium. These interventions not only enhance comfort and reduce isolation but also support the patient's sense of normalcy, significantly lowering the risk of delirium. We agree that avoiding deliriogenic medications is a simple straightforward strategy to prevent ICU delirium. Medications commonly associated with delirium include opioids, benzodiazepines, dihydropyridines, antihistamines, H₂ antagonists, tricyclic antidepressants,

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anti-Parkinsonian medications, glucocorticoids, nonsteroidal anti-inflammatory drugs, and antimuscarinics. Additional contributors include certain anticonvulsants (e.g., carbamazepine, gabapentin, levetiracetam, valproic acid), hypnotics (e.g., eszopiclone, zaleplon, zolpidem), bladder medications (e.g., darifenacin, oxybutynin), and certain antibiotics/antivirals (e.g., acyclovir, levofloxacin, ciprofloxacin, vancomycin). These should be avoided when feasible, to minimize delirium risk.⁴

To reduce stress in the ICU through strategies such as minimizing noise, regulating light, maintaining a stable temperature, promoting sleep, and managing pain are the integral part of multicomponent interventions. Current reviews highlight these measures as the most effective nonpharmacological approaches to prevent ICU delirium. We emphasized the need for a multimodal strategy, noting that a lack of training and education among healthcare professionals can pose a significant barrier. Your observations regarding the importance of selecting empathetic, dedicated, and nonburnout staff highlight a crucial aspect of stress reduction. However, it is the collective responsibility of all ICU healthcare personnel to recognize and manage delirium effectively. While our review included relevant research, the limited number of studies remains a constraint, underscoring the need for future investigation in this area.^{5,6}

We thank the authors for their valuable feedback, which enriches the discussion on this important topic. We hope our clarifications provide additional insight into our study findings.

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REFERENCES

1. Finsterer J, Marques GJ. The range of non-pharmacological measures to prevent delirium on ICUs is broader than assumed. *Indian J Crit Care Med* 2025;29(3):278–279.
2. Sonia M, Kaur S, Kothari N. Prevention of delirium in the intensive care unit through nonpharmacological interventions: An umbrella review. *Indian J Crit Care Med* 2025;29(1):75–83. DOI: 10.5005/jp-journals-10071-24884.
3. Bannon L, Mc Gaughey J, Verghis R, Clarke M, McAuley DF, Blackwood B, et al. The effectiveness of non-pharmacological interventions in reducing the incidence and duration of delirium in critically ill patients: A systematic review and meta-analysis. *Intensive Care Med* 2019;14:1–12. DOI: 10.1007/s00134-018-5452-x.
4. Hipp D, Ely E. Pharmacological and nonpharmacological management of delirium in critically ill patients. *Neurotherapeutics* 2012;9(1):158–175. DOI: 10.1007/s13311-011-0102-9.
5. Reisinger M, Reininghaus E, Biasi J, Fellendorf F, Schobere D. Delirium-associated medication in people at risk: A systematic update review, meta-analyses, and GRADE-profiles. *Acta Psychiatr Scand* 2022;147(1):16–42. DOI: 10.1111/acps.13505.
6. Matsuura Y, Ohno Y, Toyoshima M. Effects of non-pharmacologic prevention on delirium in critically ill patients: A network meta-analysis. *Nurs Crit Care* 2023;28(5):727–737. DOI: 10.1111/nicc.12780.