

Comment on “Prevalence and Correlates of Sleep Problems in Children and Adolescents with Type 1 Diabetes: A Cross-Sectional Study” [Letter]

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Dear editor

We read with interest the article by Alqahtani et al¹ reporting a 37.5% prevalence of sleep problems among children and adolescents with Type 1 diabetes (T1DM) in Abha, Saudi Arabia. While this study explores an important clinical issue, we have identified several concerns that may affect the validity, interpretability, and generalizability of the findings.

First, the most striking feature of this study is the profoundly skewed gender distribution: 86.29% male versus 13.71% female (214 vs 34). This deviates markedly from the near-equal sex ratio observed globally in T1DM pediatric populations^{2,3} and cannot be plausibly explained by consecutive sampling alone. This discrepancy from any global benchmark cannot be simply attributed to biological variation and strongly suggests systematic selection bias, clinic attendance patterns favoring male patients, or potential data quality issues in gender coding. The authors offer no explanation for this anomaly, nor do they present gender-stratified analyses or sensitivity analyses to assess whether findings differ between gender. We recommend that the authors should clarify this imbalance.

Second, the sample size calculation contains a critical error. The margin of error calculated by the author, which is “6.12%”, contradicts the precision parameter C (5%) in the formula. In fact, the achieved sample size of 248 was calculated based on C = 0.0612. The authors should elucidate how they carried out the calculations by which C value.

Third, the Pittsburgh Sleep Quality Index (PSQI) questionnaire was developed and validated for adults over the age of 18.⁴ Its application to children under the age of 18 raises certain validity concerns. Children aged 6 to 9 years usually do not possess the cognitive ability to accurately self-assess sleep quality, sleep latency, and daytime dysfunction. Consequently, the PSQI relies on precise estimations of bedtime and wake time for its sleep efficiency calculation, which these children are unable to reliably provide without the assistance of a caregiver. Therefore, we strongly recommend validation of the PSQI against objective measures such as actigraphy or polysomnography in a Saudi pediatric subsample, or alternatively, appropriate adoption of validated pediatric sleep instruments such as the Children's Sleep Habits Questionnaire (CSHQ) or the Pediatric Sleep Questionnaire (PSQ).

Finally, the classification of HbA1c < 6% as “optimal glycemic control” is contrary to international guidelines for pediatric T1DM and may encourage dangerous overtreatment. The International Society for Pediatric and Adolescent Diabetes (ISPAD) and American Diabetes Association (ADA) recommend individualized targets, with < 7.0% for adolescents, explicitly warning that HbA1c < 6.5% may indicate excessive hypoglycemia risk.^{5,6} The categorization used by the authors conflates optimal control with dangerous overtreatment indeed. Moreover, categorizing HbA1c instead of utilizing it as a continuous variable diminishes statistical power and conceals clinically relevant dose-response relationships. We recommend a re-analysis that employs HbA1c as a continuous predictor, incorporating clinically validated thresholds, and explicitly models the bidirectional relationship between glycemic control and sleep quality.

Conclusion

In conclusion, the issues outlined above suggest that the reported prevalence estimate and associated factors require cautious interpretation. We encourage the authors to consider these to strengthen the evidence base and improve the translational value of their existing findings.

Data Sharing Statement

No new data were generated or analyzed.

Author Contributions

All authors participated in the writing of the article and approved the submitted version. The specific contributions of each author are as follows:

Yuting Wu: Conceptualization, Formal Analysis, Writing-Original Draft.

Zhiheng Yu: Conceptualization, Formal Analysis, Methodology, Writing-Review & Editing.

Guanghai Liu: Supervision, Writing-Review & Editing, Project Administration.

All authors gave 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.

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Disclosure

The authors declare no conflicts of interest in this communication.

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