

Peer Review

Review of: "Efficacy of Aromatherapy on Children: A Systematic Review with Meta-Analysis"

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This systematic review and meta-analysis addresses an important clinical question and demonstrates methodological strengths such as PRISMA adherence, PROSPERO registration, use of RoB 2/ROBINS-I tools, and GRADE evaluation; however, several weaknesses limit its scientific robustness and clinical applicability. The major limitation is the extremely high heterogeneity across studies (I^2 often $>90\%$), which undermines the reliability of pooled estimates and suggests that combining heterogeneous populations, procedures, delivery methods, and essential oils may not be statistically or clinically appropriate; performing meta-regression or stricter subgroup stratification could improve interpretability. Additionally, the inclusion of many quasi-randomized and small-sample studies with a high risk of bias reduces evidence certainty, so restricting analysis to high-quality RCTs or conducting weighted sensitivity analyses would strengthen validity. The search strategy appears restrictive because it relied mainly on title-based keywords and excluded non-English/Italian literature, increasing the risk of selection and language bias; expanding to MeSH/Emtree terms and multilingual searches would improve completeness. Another weakness is poor standardization of intervention characteristics (dosage, oil composition, administration duration), which limits reproducibility and clinical translation; establishing standardized aromatherapy protocols is recommended. Furthermore, the study emphasizes statistical significance without sufficiently discussing clinical relevance and safety outcomes, and adverse event reporting is minimal; incorporating safety meta-analysis and clinical threshold interpretation would enhance impact. Finally, the discussion could better address mechanistic plausibility and placebo effects, particularly given the difficulty in blinding aromatherapy interventions; integrating mechanistic evidence and bias-adjusted models would improve scientific rigor and increase suitability for higher-impact journals.

Declarations

Potential competing interests: No potential competing interests to declare.