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Peer Review

Review of: "Swiss Ball Exercises for Constipation: Mechanistic Hypothesis, Evidence Quality Assessment, and Clinical Translation Framework"

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Reviewer Report

General Comments

This manuscript presents a novel and clinically relevant hypothesis-generating narrative review on the potential role of Swiss ball exercises in constipation management. The manuscript is generally well organized and provides a plaus

A major strength is the author's acknowledgment that no direct randomized controlled trials currently exist in adults with constipation and the clear positioning of the review as hypothesis-generating rather than confirmatory. However, several methodological and interpretative concerns should be addressed. In particular, the manuscript occasionally overextends indirect mechanistic evidence into clinical implications, and the methodological structure resembles a systemati

Overall, the manuscript has potential, but some revisions are needed to improve methodological clarity, reduce overinterpretation, and better align the conclusions with the current level of evidence.

Comments

1. Although the use of structured search strategies and quality assessment tools can strengthen narrative reviews, the current manuscript incorporates several methodological features commonly associated with systematic reviews, including predefined eligibility criteria and formal quality appraisal. Clarifying the methodological positioning of the review would improve transparency and help readers distinguish this narrative synthesis from a formal systematic review or meta-analysis.

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The authors may consider explicitly describing the review as a “structured narrative review” and clarifying that the literature search and quality assessment were conducted to support a mechanistic narrative synthesis rather than a comprehensive systematic evidence synthesis.

2. A central limitation of the current literature is the absence of direct randomized controlled trials investigating Swiss ball interventions in adult constipation populations. Consequently, the authors appropriately rely on indirect mechanistic evidence derived from related clinical contexts, including labor pain management, low back pain rehabilitation, unstable-surface training, and pediatric dysfunctional voiding. Within a hypothesis-generating framework, this approach is reasonable and scientifically valuable.

However, several sections occasionally extend these indirect findings into broader clinical implications. To maintain consistency with the current level of evidence, the manuscript would benefit from more cautious phrasing when discussing concepts such as anorectal pressure distribution, venous stasis reduction, defecation biomechanics, and whole-systems constipation management. Emphasizing that these proposed mechanisms remain theoretical and require validation in adult constipation-specific trials would strengthen the scientific balance and interpretative rigor of the review.

In particular, the authors may consider revising portions of the “Posture, Sitting Patterns, and Anorectal Pressure,” “Clinical Translation Framework,” and Conclusions sections to more clearly distinguish mechanistic hypotheses from evidence-based clinical applicability. Using terms such as “may,” “potentially,” or “hypothesized” more consistently throughout these sections may further improve interpretative balance.

3. A simplified study selection flowchart may further improve transparency regarding literature identification and screening.

4. The manuscript would benefit from a dedicated limitations subsection summarizing:

-the absence of direct adult randomized controlled trials,

-reliance on indirect mechanistic evidence,

-heterogeneity of the included clinical contexts,

-uncertainty regarding optimal dosing and patient selection,

and the absence of direct physiological measurements related to anorectal pressure dynamics and defecation biomechanics.

5. Figure 1 is visually clear and helpful in summarizing the proposed mechanistic framework linking Swiss ball exercises and constipation management. However, several pathways presented in the figure are derived primarily from indirect evidence and theoretical extrapolation rather than direct constipation-specific trials.

To improve interpretative balance and avoid overstating causal certainty, the authors may consider revising the figure language to more explicitly emphasize the hypothetical nature of the proposed mechanisms. For example, terms such as “may enhance,” “potentially reduces,” or “hypothesized pathways” could be used instead of more definitive wording. In addition, the figure title and legend could more clearly indicate that the illustrated mechanisms represent a conceptual framework synthesized from related clinical contexts and remain to be validated in adult constipation populations.

Possible alternative figure titles may include:

“Hypothesized Mechanisms Through Which Swiss Ball Exercises May Influence Constipation-Related Pathophysiology”

“Conceptual Framework Linking Swiss Ball Exercises and Constipation Management”

“Theoretical Mechanisms Supporting Swiss Ball Exercises as an Adjunctive Approach in Constipation”

6. The randomized pediatric study by Ladi Seyedian et al. provides valuable preliminary evidence supporting the potential role of Swiss ball–assisted pelvic floor interventions within a broader urotherapy program. In particular, the study reports improvements in constipation-related findings alongside voiding and pelvic floor outcomes.

However, because the intervention was conducted in a pediatric dysfunctional voiding population and combined multiple therapeutic components (e.g., urotherapy, dietary management, pelvic floor exercises, and Swiss ball exercises), the findings may have limited generalizability to adult patients with primary chronic constipation. The manuscript would therefore benefit from more explicitly contextualizing this study as supportive but indirect evidence, rather than as direct evidence for the efficacy of Swiss ball interventions in adult constipation management.

7. Certain statements in the **Conclusions section**—particularly those related to pressure distribution, venous stasis reduction, and “whole-systems” therapeutic effects—may benefit from slightly more cautious wording to better reflect the exploratory and hypothesis-generating nature of the current evidence base. For example, in the Conclusions section, statements such as “Swiss ball sitting may reduce excessive anorectal pressure concentration and venous stasis” may benefit from slightly more cautious

phrasing. Expressions such as “may theoretically contribute to reducing” or “could potentially influence” may better reflect the current indirect and hypothesis-generating nature of the evidence base.

Declarations

Potential competing interests: No potential competing interests to declare.