

The Effectiveness of Mindfulness-Based Stress Reduction (MBSR) on Psychological Resilience and Somatic Symptoms (Somatization) in Adolescents with Irritable Bowel Syndrome (IBS)

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E d i t o r	R e v i e w e r s
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1. Round 1

1.1. Reviewer 1

Reviewer:

In the Introduction, the paragraph defining psychological resilience states that “Resilience does not imply the absence of distress; rather, it reflects flexible adaptation...” This is a useful conceptual foundation, but the theoretical connection between resilience and IBS requires deeper development. The authors should explain why resilience is expected to change through an eight-week mindfulness intervention and describe the psychological mechanisms that may connect resilience to disease adjustment, such as emotion regulation, perceived control, cognitive flexibility, acceptance, self-efficacy, and recovery from stress-related symptom exacerbations.

The final portion of the Introduction appropriately identifies several research gaps, but the novelty claim should be articulated more sharply. The paragraph beginning “Despite promising findings, several important gaps remain in the literature” mentions that many previous IBS studies involved adults and that adolescent mindfulness studies often addressed general

psychological outcomes. The authors should specify whether prior studies have simultaneously examined resilience and somatization among adolescents with physician-confirmed IBS using MBSR and a follow-up design. A precise statement of the empirical gap would substantially strengthen the rationale and contribution of the study.

In the Methods section, the sentence “A total of 40 eligible adolescents were recruited through purposive sampling and, after completion of baseline assessments, were randomly allocated...” requires clarification regarding sample-size determination. No a priori power analysis, effect-size assumption, alpha level, statistical power, or allowance for attrition is reported. Because repeated-measures analyses were conducted with two groups and three time points, the authors should report a formal sample-size calculation and indicate whether 40 participants represented the required recruitment target or the final analyzable sample after attrition.

The Methods section states that participants “were randomly allocated in equal proportions to the MBSR intervention group (n = 20) and the control group (n = 20) using a computer-generated randomization sequence.” The randomization procedure requires considerably more methodological detail. The authors should report who generated the allocation sequence, whether block or simple randomization was used, whether allocation concealment was implemented, and who enrolled and assigned participants. Without this information, the risk of selection bias cannot be adequately evaluated.

The authors report that participants completed “approximately 20–30 minutes of home mindfulness practice on most days of the week,” but intervention adherence is not reported in the Findings. The manuscript should specify how homework completion and session attendance were quantified and present descriptive adherence data. Ideally, the authors should report mean number of sessions attended, proportion completing all eight sessions, mean frequency or duration of home practice, and whether adherence was associated with outcomes. Without such information, intervention exposure cannot be adequately assessed.

In the Findings section, the authors state that “A total of 40 adolescents with irritable bowel syndrome completed the study and were included in the final analyses.” This raises an important issue concerning participant flow. The manuscript should report how many adolescents were screened, excluded, randomized, lost to posttest, lost to follow-up, and included in the final analysis. A CONSORT-style participant flow description is strongly recommended even if a formal flow diagram is not included. It should also be clarified whether analyses followed an intention-to-treat or complete-case approach.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The participant eligibility criteria need greater clinical specificity. The Methods state that adolescents had “a confirmed diagnosis of IBS... according to the Rome IV diagnostic criteria,” but it is unclear how diagnosis was established, which professional performed the assessment, whether laboratory or clinical evaluations were used to exclude organic gastrointestinal disease, and whether IBS subtypes were formally classified according to Rome IV definitions. The authors should provide sufficient diagnostic detail to ensure that the sample can be reproduced in future studies.

The manuscript should report the ethical and trial-registration information more completely. The Methods currently state that procedures were performed according to ethical principles and that parental consent and adolescent assent were obtained, but no institutional ethics committee name, approval code, or clinical trial registration number is provided. For an intervention study involving minors and a medical condition, these details are essential. The authors should add the approving institution, ethics approval identifier, date of approval, trial-registration information if applicable, and procedures used to protect confidentiality and participants' right to withdraw.

The description of the Connor–Davidson Resilience Scale is generally adequate, but the sentence stating that “The Persian version of the CD-RISC has also demonstrated acceptable validity and reliability” should be supported with psychometric information directly relevant to adolescents. The authors should report the reliability coefficient obtained in the present sample, preferably Cronbach's alpha and/or McDonald's omega, and clarify whether the Persian instrument has been validated

specifically among adolescents or pediatric clinical populations. Reliance solely on psychometric evidence from adult Iranian samples would require justification.

The description of the Children's Somatization Inventory-24 requires similar psychometric strengthening. The paragraph states that the CSI-24 has demonstrated satisfactory reliability and validity, but the manuscript does not indicate whether an officially validated Persian version was used, whether translation or cultural adaptation was required, or whether the instrument has been psychometrically evaluated in Iranian adolescents. The authors should identify the exact Persian version, describe any translation procedure if applicable, and report internal consistency for the current sample.

The Intervention Protocol is detailed in content but insufficiently reproducible in delivery characteristics. The paragraph beginning "Participants assigned to the intervention group received an adapted Mindfulness-Based Stress Reduction program..." should identify the therapist's professional qualifications, training in MBSR, supervision arrangements, group size, intervention setting, and procedures for ensuring treatment fidelity. Because the protocol was "adapted" for adolescents and IBS, the manuscript should also distinguish which elements were retained from standard MBSR and which were modified.

Authors uploaded the revised manuscript.

2. Revised

Editor's decision after revisions: Accepted.

Editor in Chief's decision: Accepted.