

REVIEW COMMENTS

A systematic review and meta-analysis of the effectiveness of mind-body exercise as an intervention for negative emotions in depressed and anxious people

The following are the specific review comments on this paper from five aspects:

1. Basic Reporting

1) Language Expression

The overall language expression is relatively clear, but some sentences have grammatical problems or are not expressed accurately enough. For example:

a) In the "Background" section, "This systematic review seeks to comprehensively evaluate the efficacy of mind-body exercises in alleviating depression and anxiety, investigate the differential impacts of distinct types of mind-body exercises, and elucidate whether variables such as cycle, duration, and frequency exhibit a dose-response relationship in enhancing mental health outcomes."

The word "cycle" is not accurate enough. It is recommended to change it to an "intervention cycle" or "exercise cycle" to clarify whether it refers to the intervention cycle or the exercise cycle.

b) In the "Results" section, "The meta-analysis demonstrated that mind-body exercise significantly alleviates symptoms of depression (Hedges' $g = -0.86$, 95% CI [-1.24, -0.48], $P < 0.001$) and anxiety (Hedges' $g = -0.38$, 95% CI [-0.53, -0.23], $P < 0.001$)." The tense of the word "alleviates" is not accurate enough. It is recommended to change it to "alleviated" to be consistent with the tense of the research results.

2) Introduction and Background

The introduction section provides relatively sufficient background information, expounding on the prevalence of depression and anxiety disorders and their harm to health. It also mentions the effectiveness of exercise interventions, providing reasonable background support for the development of research. However, some of the cited literature is relatively old. It is recommended to add some relevant recent studies to enhance the timeliness of the background information.

3) Structure and Format

The structure of the paper basically conforms to the standard format of systematic reviews and meta-analyses, including introduction, methods, results, and discussion, etc., with clear levels and coherent logic. However, in the setting of some section titles and subheadings, it can be further optimized to improve readability. For example, "Subgroup analysis for depression" and "Subgroup analysis for anxiety" can be changed to more descriptive titles, such as "Subgroup Analysis of Mind-Body Exercise Interventions for Depression" and "Subgroup Analysis of Mind-Body Exercise Interventions for Anxiety", so that readers can more intuitively understand the content of each part.

4) Charts and Data

The overall quality of the charts is high, and they can clearly display the research results. However, the annotations of some charts are not detailed enough. For example, in "Figure 2 Forest plot of mind-body exercise interventions for depression" and "Figure 3 Forest plot of mind-body exercise interventions for anxiety", the specific meanings and interpretations of the forest plots are not described in detail. It is recommended to supplement detailed explanations of the forest plots, including the calculation method of the effect size, the meaning of the confidence interval, and how to interpret the data points in the graph, etc., so that readers can better understand the research results.

2. Experimental Design

1) Research Methods

The sample selection is relatively reasonable. 15 studies are included, with a total of 1,351 participants. The sample size is relatively large, which can provide certain statistical support for the research results. However, there may be certain limitations in the representativeness of the sample. For example, the research includes studies published from 2010 to 2024. Although it covers recent studies, some early studies may have certain limitations in research design and methodology. In addition, the research did not conduct a detailed stratified analysis of samples from different regions, cultures, and ethnic backgrounds, which may affect the general applicability of the research results. It is recommended to further expand the sample range in subsequent studies and increase the representativeness of samples from different backgrounds to improve the external validity of the research results.

2) Data Analysis Methods

The data analysis methods are relatively comprehensive, using a variety of statistical methods such as meta-analysis, subgroup analysis, sensitivity analysis, and publication bias assessment, which can conduct in-depth analysis and verification of the research results from multiple angles. It is recommended to supplement detailed descriptions of the statistical analysis methods in the methods section, including the selection basis of the random effects model and the fixed effects model, etc., so that readers can better understand the analysis process and result interpretation of the research.

3. Validity of the Findings

1) Reliability of the Results

The research results show that mind-body exercises have a significant alleviating effect on the symptoms of patients with depression and anxiety disorders, and this conclusion is statistically significant ($P < 0.001$), indicating that the research results have a high degree of reliability. However, there is a certain degree of heterogeneity in the research. For example, in the analysis of the intervention effect on depressive symptoms. Although some explanations for the heterogeneity have been provided through subgroup analysis and sensitivity analysis, some sources of heterogeneity have not been clearly identified. It is recommended to further explore the possible sources of heterogeneity, such as differences in the characteristics of the research objects and the specific implementation details of the intervention measures, etc., to improve accuracy.

4. General Comments

1) Innovation and Contribution of Research

This research systematically evaluates the intervention effect of mind-body exercises on the negative emotions of patients with depression and anxiety disorders and explores the impacts of different factors on the intervention effect, providing relatively comprehensive evidence support for the application of mind-body exercises in the field of mental health interventions. The research results not only provide specific guiding suggestions for clinical practice but also provide an important reference for the development of future related research and have high innovation and academic contribution.

2) Limitations and Improvement Suggestions for the Research

Although the research is relatively rigorous in design and implementation, there are still some limitations. For example, there are certain differences in the standardization of intervention measures and the selection of evaluation tools in the studies included in the research, which may affect the comparability and accuracy of the results; in addition, the research did not conduct a follow-up assessment of the long-term effect of the intervention, making it difficult to determine the long-term impact of mind-body exercises on mental health.

5. Confidential Notes to the Editor

1) Overall Evaluation

This paper shows a high degree of scientific and rigor in research design, data analysis, and result presentation, and the research results have certain innovative and practical value. It is recommended to consider accepting it for publication. However, there are still some deficiencies in the standardization of intervention measures, the selection of evaluation tools, and the evidence quality, etc., which need to be further improved.

2) Revision Suggestions

It is recommended that the author revise the paper according to the review comments as follows:

a) Language and Expression: Further polish the language, correct grammatical errors and inaccurate expressions to improve the overall readability of the paper.

b) Standardization of Intervention Measures: Describe in detail the specific implementation methods of mind-body exercises in different studies, including exercise intensity, guidance methods, etc., to enhance the comparability of the research results.

c) Long-Term Effect Evaluation: Mention the importance of the long-term effect evaluation of the intervention in the discussion section and suggest that future research conduct long-term follow-up studies.

6. Final Suggestion

In view of the scientific value and practical significance of this paper, it is recommended to consider accepting the paper for publication after the author completes the above revisions. These revisions

will help improve the quality and credibility of the paper, making it more in line with the publication standards of academic journals.