

Peer Review

Review of: "Acceptability, Feasibility, and Effects of a Mindfulness-Based Intervention on the Quality of Life and Performance of the Brazilian Paralympic Boccia Team: Mixed Methods Case Study"

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I applaud the originality of this work and its contribution to the field, particularly in examining the acceptability and perceived effectiveness of a mindfulness-based intervention (MBI) among Paralympian athletes. Although the study population is quite small (n=12 Boccia athletes), the authors do acknowledge that this was a population of convenience and appropriately cite the unique characteristics of Paralympic Boccia athletes as justification for the small sample size.

A strength of the article is in the reporting of the acceptability and feasibility of MBI among a group of Paralympian athletes. In addition, addressing the mental health of high-performance athletes in relation to anxiety, stress, and depression ratings both before and after MBI is an important contribution of this study.

One limitation of this study is that there was no direct metric of athletic performance that could be contrasted before and after the intervention. The study did investigate the *perceived* effectiveness of the MBI among the participants in relation to the team's performance at major Paralympic events that occurred during or after the mindfulness training period, but there was no direct metric of sport-related performance, such as the accuracy or consistency of throws. This point should be acknowledged and perhaps even mentioned as a topic for further investigation. Caution should also be taken not to overstate findings related to the impact or effectiveness of MBI on athletic performance. Greater inclusion of the word "perceived [effectiveness]" or "subjective rating of [effectiveness]" is thus warranted. For example, the caption of Figure 3 should begin with "Perceived effect...."

Another important limitation of the study that is also worth acknowledging is that the mindfulness intervention used here was not compared to any other type of educational or control intervention. This may not have been practical due to logistical constraints and sample size, but it should still be acknowledged as a limitation of the study.

Of interest, based on the results shown in Table 2, it appears that the physical and psychological improvements, as well as reported reductions in anxiety, stress, and depression, were stronger at the 6- and 12-month follow-ups compared to the follow-up that was conducted immediately after the mindfulness training. This suggests the importance of the maintenance sessions and/or continued practice of mindfulness among the participants in order to achieve full benefits. The difference in responses to early (T2) versus later (T3 and T4) follow-ups was not directly addressed by the authors but could be potentially informative for future applications of MBI in high-performance athletes.

Suggestions: Greater clarification of the differences and similarities between mindfulness-based stress reduction (MBSR, Kabat-Zinn) and the MBI procedure used in this study is also of significant interest but is only described briefly in the discussion. The authors could consider moving this description into the methods or introduction. In the discussion, the authors also describe their protocol as including eight 1-hr sessions, but this was actually implemented in two 4-hr sessions according to what is described in the methods (Given other standard forms of MBSR, 8 1-hr sessions implies 8 sessions on separate days). Table 1 shows the assessment instruments, but it is unclear what the numbers under headers t0-t4 reflect. Are those mean scores for each assessment, the number of total respondents, or the number of total questions included in that assessment? A more detailed caption for Table 1 would be helpful.

In summary, the topic of mental health among athletes and persons with disabilities is very much in need of study, especially with regard to interventions that may result in physical, psychological, and performance benefits. It is difficult to carry out well-designed studies in highly specialized populations, such as elite athletes, so this study is making a notable contribution, particularly with regard to the feasibility and acceptability of conducting mindfulness training in Paralympian Boccia athletes.

The contents of this review do not represent the views of the U.S. Department of Veterans Affairs or the United States Government.

Declarations

Potential competing interests: No potential competing interests to declare.