

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"**

Ebrahim Norouzi<sup>1</sup>

1. Farhangian University, Kurdistan, Iran

Dear authors,

This manuscript presents valuable insights into the application of an MBI within a Paralympic sports context. The findings suggest that such interventions can be acceptable, feasible, and potentially beneficial for improving the quality of life and performance of Boccia athletes and their staff. Addressing the critical comments below would further strengthen the rigor and impact of this research.

Introduction:

1. The introduction effectively establishes the context of Paralympic sports and the mental health challenges faced by high-performance athletes. However, the transition to mindfulness and its relevance to Boccia could be smoother. While the authors mention studies on other wheelchair sports, explicitly linking the demands of Boccia (strategy, precision, mental focus under pressure) to the potential benefits of mindfulness would be more compelling. The authors should also cite the following article in their discussion when they talk about the effects of mindfulness-based interventions on stress, anxiety, depression, and psychological well-being in athletes:

Norouzi, E., Gerber, M., Masrour, F. F., Vaezmosavi, M., Pühse, U., & Brand, S. (2020). Implementation of a mindfulness-based stress reduction (MBSR) program to reduce stress, anxiety, and depression and to improve psychological well-being among retired Iranian football players. *Psychology of Sport and Exercise*, 47, 101636.

This citation is relevant as it provides further evidence for the potential benefits of mindfulness-based interventions in an athletic population, although in retired football players rather than Paralympic Boccia athletes. It can help to contextualize the findings of the current study within the broader literature on mindfulness and sport psychology.

2. The rationale for including the NON-ATHLETE group is provided, which is good. However, the potential differences in how the MBI might affect this group compared to the athletes should be considered more explicitly throughout the manuscript, particularly in the analysis and discussion.

3. The hypotheses are clearly stated, which is appreciated. However, the phrasing "results mediated by changes in participants' levels of mindfulness, stress, anxiety, and depression" is somewhat broad. Specifying the expected direction of these mediations (e.g., increased mindfulness leading to improved quality of life and performance, decreased stress/anxiety/depression leading to improved outcomes) would enhance clarity.

#### Method:

1. The description of the participants and the sampling method is adequate, although the convenience sampling should be acknowledged as a limitation.

2. The description of the MBI protocol is generally good, highlighting the adaptation for the Paralympic team. However, more detail on the specific content of the eight one-hour sessions and the 10 maintenance sessions would be beneficial for replicability. While the availability of audio practices is mentioned, a brief overview of the types of practices included (e.g., body scan, sitting meditation, mindful movement) would be helpful.

3. The instruments used are well-established. However, for the performance assessment, the manuscript mentions "successfully acquired titles." This is a potentially subjective and distal measure of performance. It would be valuable to know if any objective measures of Boccia-specific performance (e.g., accuracy in drills, match statistics) were also considered or if the authors acknowledge the limitations of relying solely on titles.

4. The MBI Acceptability Assessment Questionnaire and POST Mindfulness Questionnaire are mentioned as peer-validated and based on qualitative research demands. Providing a brief description of the types of questions included in these questionnaires would give the reader a better understanding of how acceptability and the resulting content were assessed.

5. The data analysis section clearly outlines the statistical procedures used for the quantitative data. The approach to analyzing the qualitative data, including the use of thematic analysis and strategies

to ensure rigor, is also described.

#### Results:

1. The description of the participant demographics is clear. The information about COVID-19 affecting a significant portion of the sample during the final data collection point is important and should be considered in the discussion.
2. The quantitative results for quality of life, anxiety, stress, and depression are clearly presented in Table 2. The significant improvements in several domains are noteworthy.
3. The correlation between winning titles and the perception of the MT effect (Table 3) is interesting. However, the interpretation of correlation as causation should be avoided. The subjective nature of the "perception of the MT effect" should also be acknowledged. The small sample sizes for each title category also warrant cautious interpretation.
4. The descriptive analysis of MBI acceptability (Table 4) indicates high levels of enjoyment, satisfaction, recommendation, and perceived utility.
5. The qualitative results, organized into Outcome, Moderators, and Mediators dimensions, provide rich insights into the participants' experiences. The direct quotes effectively illustrate the themes identified. However, the sheer number of categories and thematic fields (Appendix B) might make it difficult for the reader to grasp the most salient findings. A more synthesized presentation of the key qualitative themes in the main body of the manuscript would be beneficial.
6. The connection between the quantitative findings (e.g., improved QoL, increased mindfulness) and the qualitative themes (e.g., positive impact on daily life, improved focus) is evident in the Results section, which strengthens the triangulation aspect of the study.

#### Discussion:

1. The discussion effectively summarizes the main findings and relates them to existing literature on mindfulness in sports. The novelty of the study in the context of Paralympic Boccia is highlighted appropriately.
2. The authors acknowledge the feasibility and acceptability of the MBI based on the participants' reports.
3. The discussion could be strengthened by explicitly addressing the limitations of the study, such as the case study design (limiting generalizability), the convenience sampling, the reliance on self-

report measures, and the potential influence of external factors (e.g., the COVID-19 pandemic) on the outcomes.

4. The differences (or lack thereof) in the effects of the MBI between the ATHLETE and NON-ATHLETE groups should be discussed more explicitly, considering the initial rationale for including both groups.

## **Declarations**

**Potential competing interests:** No potential competing interests to declare.