

# How to Classify Clinical Trials Using the PEDro Scale?



Areolino Pena Matos<sup>1\*</sup>, Maycon Sousa Pegorari<sup>1</sup>

<sup>1</sup>Department of Biological and Health Sciences, Federal University of Amapá, Macapá, Amapá, Brazil

\*Correspondence to: Areolino Pena Matos, Road Juscelino Kubitschek, Km – 02, Jardim Marco Zero, Macapá - AP, CEP 68903-419 - Tel. (+55 96) 4009-2944; Email: areolino.matos@gmail.com

Published online January 18, 2020

A recent systematic review<sup>1</sup> published in this journal included 10 clinical trials and discussed the effect of photobiomodulation therapy on postoperative pain of various surgical procedures and their possible side effects. Both are the outcomes of a recognized interest among clinicians and researchers working in the field.

The authors chose the Physiotherapy Evidence Database<sup>2</sup> (PEDro) scale to evaluate the methodological quality of the included studies. It is a sound option since this instrument is widely used worldwide with recognized reliability and validity.<sup>3-5</sup> The scale is available for free at [pedro.org.au](http://pedro.org.au) and gathers more than 43,000 clinical trials, systematic reviews, and clinical practice guidelines in the field of physiotherapy. The site is developed by the Institute for Musculoskeletal Health of the University of Sydney, Australia.<sup>2</sup>

The PEDro scale assists readers to quickly assess whether a clinical trial presents reliable and meaningful results for use in clinical practice.<sup>6</sup> The database classifies clinical trials only and scores them by adding the number of items on the scale (0-10) that have been met. Reviews and guidelines do not receive a score. This process involves a separate analysis by two trained evaluators. When there is no consensus, a third evaluator reviews the study until a classification is confirmed.<sup>2</sup>

Upon careful reading of the methods and results of the research conducted by the authors Ezzati, Fekrazad, and Raoufi<sup>1</sup>, we found that the qualitative evaluation of the clinical trials did not follow the guidelines of the PEDro scoring system, generating discrepancies in the final score. The scale does not assess the external validity of the studies nor the effect size of the treatment. Therefore, item 1 (eligibility criteria were specified), although analyzed, is not included in the calculation of the score. This explains why 11 items generate a maximum score of 10 points.<sup>2</sup> Therefore, the scores of the studies by Nesioonpour et al<sup>7</sup>, Fernandes et al,<sup>8</sup> and Santos et al,<sup>9</sup> show in this systematic review,<sup>1</sup> could not reach 11 points.

The same table shows the score for the study by Kozanoglu et al<sup>10</sup> as 8/10 points, whereas the PEDro website gives the same study a score of 5/10. For the study by Santos et al,<sup>9</sup> the score shown is 10/10, while in the PEDro website, it is 8/10. If we subtract the point from item 1, incorrectly attributed to all trials, we would have a change in the mean from 9 to 7.8 (SD 2.1) points on the scale, with a variation between low - 4/10 and high methodological quality - 10/10 points.

In addition to the PEDro scale, there are a number of other instruments that evaluate the methodological quality of randomized clinical trials (Cochrane Collaboration's Tool, the modified JADAD scale, the DELPHI List, CASP Checklist for RCT) and non-randomized trials (MINORS Tool, Reisch's Tool).<sup>11</sup> In general, instruments that evaluate methodological quality emphasize the identification of possible biases in clinical trials. Thus, choosing, applying, and interpreting them correctly are critical to a high-quality evidence-based health practice.

## Ethical Considerations

Not applicable.

## Conflict of Interests

The authors declare no conflict of interest.

## References

1. Ezzati K, Fekrazad R, Raoufi Z. The effects of photobiomodulation therapy on post-surgical pain. *J Lasers Med Sci*. 2019;10(2):79-85. doi: 10.15171/jlms.2019.13.
2. PEDro: Physiotherapy Evidence Database. Australia: School of Public Health, University of Sydney Institute for Musculoskeletal Health; 2019 [cited 25 March 2019]. Available from: <https://www.pedro.org.au>.
3. Maher CG, Sherrington C, Herbert RD, Moseley AM, Elkins M. Reliability of the PEDro scale for rating quality of randomized controlled trials. *Phys Ther*. 2003;83(8):713-721.
4. de Morton NA. The PEDro scale is a valid measure of the

- methodological quality of clinical trials: a demographic study. *Aust J Physiother.* 2009;55(2):129-33.
5. Elkins MR, Moseley AM, Sherrington C, Herbert RD, Maher CG. Growth in the Physiotherapy Evidence Database (PEDro) and use of the PEDro scale. *Br J Sports Med.* 2013;47(4):188-9. doi: 10.1136/bjsports-2012-091804.
  6. Kamper SJ, Moseley AM, Herbert RD, Maher CG, Elkins MR, Sherrington C. 15 years of tracking physiotherapy evidence on PEDro, where are we now? *Br J Sports Med.* 2015 Jul;49(14):907-9. doi: 10.1136/bjsports-2014-094468.
  7. Nesioonpour S, Mokmeli S, Vojdani S, Mohtadi A, Akhondzadeh R, Behaen K, et al. The effect of low-level laser on postoperative pain after tibial fracture surgery: a double-blind controlled randomized clinical trial. *Anesth Pain Med.* 2014;4(3):e17350. doi: 10.5812/aapm.17350
  8. Fernandes GA, Araújo Júnior RB, Lima AC, Gonzaga IC, de Oliveira RA, Nicolau RA. Low-intensity laser (660NM) has analgesic effects on sternotomy of patients who underwent coronary artery bypass grafts. *Ann Card Anaesth.* 2017;20(1):52-56. doi: 10.4103/0971-9784.197836
  9. Santos J de O, Oliveira SM, Nobre MR, Aranha AC, Alvarenga MB. A randomized clinical trial of the effect of low-level laser therapy for perineal pain and healing after episiotomy: A pilot study. *Midwifery.* 2012;28(5):e653-9. doi: 10.1016/j.midw.2011.07.009.
  10. Kozanoglu E, Basaran S, Paydas S, Sarpel T. Efficacy of pneumatic compression and low-level laser therapy in the treatment of postmastectomy lymphoedema: a randomized controlled trial. *Clin Rehabil.* 2009;23(2):117-124. doi: 10.1177/0269215508096173
  11. Zeng X, Zhang Y, Kwong JS, Zhang C, Li S, Sun F, et al. The methodological quality assessment tools for preclinical and clinical studies, systematic review and meta-analysis, and clinical practice guideline: a systematic review. *J Evid Based Med.* 2015;8(1):2-10. doi: 10.1111/jebm.12141.