REVIEW

According to the authors, the present study aimed to assess the climbers´ capabilities to pull up on holds by conducting a series of three different exercises. The main findings of the authors were that body coordination and capacity to resist fatigue were related to climbing grade.

Language is clear, and the context is adequately clarified. However, I have a few comments.

1. Line 87. The purpose of the study needs a revision. It is established as part of the objective to determine elasticity storage capabilities of the climbers, however, they are not mentioned again in the rest of the study.
2. Participants section need to be completed *"Twenty-eight male climbers (age: 28.4±6.9 years; body weight: 66.2±6.8kg; height: 176.5±5.4cm) participated in the experiment. They practised climbing at least twice a week for at least the past two years and were from advanced to higher elite level of climbing (mean IRCRA red point level: 22.6±2.5 according to Draper et al., 2015)".* kind of climbing did the participants practise (outdoor/indoor)? How many participants practice boulder and lead? You provided details in the discussion as a limitation but not in the description of the sample. Did the sample's climbing ability correspond to their level in boulder / lead and indoor/outdoor climbing? Please provide participants´ climbing ability (grade level) in boulder and lead climbing, whether they practiced both disciplines and if they practiced one of them.
3. What are the implications for the results that all the participants have practiced both climbing disciplines (main and bouldering) with half the group favoring one or the other?
4. How did the selection of climbers for the study group proceed?
5. Please provide the inclusion and exclusion criteria in the research.
6. Please specify how the sample size was calculated for statistical analysis.
7. Why was the SmartBoard (Science For Climbing, Peypin díAigues, France) chosen to measure pull-ups on holds? Are there studies on the reliability of this device? please add references or explain your choice.
8. The force was measured with force sensors on the handboard, however, how was the velocity parameters measured? were accelerometers used?
9. Lines 342-344. "*Interestingly, the variables associated with the Normal jump are correlated with the climbing grade level while those of the Strict and Plyometric jumps are not (or are negatively).".* How do the authors explain these contrary results?

10. Were all tests performed on the same day? Considering that maximum number of pull-ups and incrementally weighted pull-ups as maximum force test does this not affect the results? Clarify the number of visits of participants for the completion of the study and the procedures in each visit.
11. Has it been taken into account how finger strength affects the results?
12. Lines 302-304- The sample size is too small and heterogeneous in relation to the type of climbing (bouldering / lead) to use the values of this study as reference values. In addition, the study did not take into account how the weight, body mass and age of the participants affect the results.
13. Lines 308- The authors should explain what mean climbers´ style or climbers´s type. Clarifying the concepts will give the readers a more comprehensive view of the explained.
14. Line 314. "*Especially, the velocity of the jump is higher in Normal ..*" should be rewritten as "*Especially, the velocity of the jump **was** higher in Normal"*
15. Lines 368-369. *Velocity parameters may thus be associated with a climbing style or a climbers´ type.* The conclusion of the study focusses on that velocity parameters may be associated with climbing style or type, but such conclusion cannot be withdrawn from the statistical results. The type of analyses and study design does not allow such statement.
16. Lines 376-377. *"In our study we chose to test climbers practising both disciplines (lead and bouldering) with half of the participants favouring one or the other. This was done in order to test climbers in the perspective of a combined climbing sport (bouldering and lead) as is the case for the Olympic Games in Paris in 2024. This could be seen as a limitation since Levernier et al. (2020) identified differences in Force-Velocity relationships between elite lead climbers and elite boulderers."*. Why weren't both groups of climbers compared? Please provide details on the level of the participants in each of the disciplines.
17. Lines 381-384- *Nevertheless, in our study, due to the combined practice of our participants, no such statistical differences were observed ($p>0.05$) indicating that for intermediate climbers, the grade level of practice and the individual characteristics are more important than the preferred form of practicing the sport.* In this paragraph you indicate that there are no differences because they are intermediate climbers, while in the methods section you detail that the average

level of the participants corresponds to an advanced to higher elite level of climbing. Please clarify this inconsistency.

18. Abstract: Review according to changes throughout the manuscript. Contribution to the field: Needs revision: "Our study provides the basis for some reference values for those parameters to help trainers in the diagnosis process and training follow-up for climbers".
19. Please provide implications for practice of the results obtained.