Quadriceps and hamstrings muscle size and strength comparison between post-operative and healthy individuals

Title

It could be improved by adding the clarification "after knee surgery" to reduce ambiguity.

Note:

The title is publishable in this format, but it would be more powerful if it read: ***Comparison of Quadriceps and Hamstrings Muscle Size and Strength between Young Athletes Post-Knee Surgery and Healthy Controls***

Abstract:

- The sample size is missing in the abstract.
- It is preferable to clarify the type of surgery (ACL? meniscus?) as it may affect interpretation.

Recommendation:

I suggest rephrasing the conclusion in the abstract to be more specific:

These results suggest that the rehabilitation program was effective in restoring quadriceps function and enhancing hamstring strength in young athletes following knee surgery.

Introduction:

Points for improvement:

- Lacks a comprehensive list of the magnitude of the problem in numbers or global statistics (e.g., the percentage of athletes undergoing knee surgery).
- No specific reference to the types of injuries/surgeries included (ACL? Meniscal? Multiple?).
- It would have been better to include similar studies and their results briefly to clarify where this study differs or agrees.

Improvement recommendations:

- Add a short paragraph presenting the magnitude of the problem in numbers (e.g., An estimated X% of young athletes experience knee injuries requiring surgery annually).
- Include examples of previous study results, especially those that found weakness in the quadriceps muscle or improvement in the hamstring muscle.
- Clarify the type of surgery (if applicable) or state that it is multiple.

Method

Points for improvement:

- The number of participants is not clearly stated in the Participants section (it would be better to state the number of each group here).
- There is no mention of the body that granted ethical approval (IRB approval), which is very important.
- The post-surgery period (how many months after surgery) is not mentioned, a crucial piece of information that affects interpretation.
- There is no clear description of the sample selection method (was it random? Purposive sampling?)

Improvement recommendations:

- Add the number of participants for each group within the Participants section.
- Include text about the ethics committee approval and state the approval number.
- Specify the time period after surgery.
- Clarify the method of participant selection.

Result

Points for Improvement:

- There are no accompanying tables or graphs in this text. Their presence is very important to clarify the results.
- The effect size is not mentioned, although the p-value alone is not sufficient for scientific judgment.
- Some results (e.g., "no significant interaction") could be presented in summary tables instead of lengthy text.
- The total sample size is not stated in the results presentation (although the numbers are mentioned later in the results).

Improvement Recommendations:

- Add a table summarizing all ANOVA results with p-values and effect sizes.
- Provide a graph (bar graph or scatter plot) showing the difference in MVIC_ABS and MVIC_REL between the two groups.
- Clearly state the sample size (n) for each variable.
- State the effect size (Cohen's d or η^2), especially for significant results.

Discussion

Points for Improvement:

- The explanation for the superiority of hamstrings in the POST group was not sufficiently expanded.

- There are no clear suggestions for future studies.
- A more clear clinical implication of the outcome would have been preferable.
- Some non-significant variables were not commented on (why were there no differences in the quadriceps?)

Recommendations for Improvement:

- Broaden the discussion by providing deeper physiological explanations for the superior hamstrings strength.
- Recommend future studies with larger sample sizes and longer follow-up periods.
- Highlight the clinical implications of these results for designing athlete rehabilitation programs.

Conclusion

Recommendations for Improvement:

- Consider summarizing the study's limitations briefly in the conclusion for greater objectivity.
- Conclude with a direct call for future research involving different surgical types and larger sample sizes.

Best Regards