Highly Esteemed Authors,

First of all, my suggestions are ONLY ADVISORY FOR FUTURE WORKS—the comments have been addressed in a prior round of revisions, and this reviewer is CONTENT.

Basic reporting

While the paper maintains a professional standard of English, there are areas where a more concise and transparent language could enhance the readability. For instance:

On page 2, line 58, the phrase "muscle weakness... also known as ICU-induced weakness" could be rephrased to better fit. You can also switch it to "Muscle weakness, ICU-acquired weakness (ICU-AW), happens..."
That sentence could have been cut shorter in lines 192-193 on page 8. You can reformat it to "quantitative data was represented as categorical and continuous variables and qualitative data represented in in-text quotes.
Better-Try: Check these and other examples for legibility and concision. I suggest that a professional language editor or another peer specializing in academic English read the final draft of the paper.

Literature references and adequate field background/context: The manuscript refers to a wide range of studies in the field and sets the stage for this study. However, the introduction might also focus on which gaps in knowledge this research fills.

For example, on page 2, line 54, the Post-Intensive Care Syndrome

(PICS) topic could include more insight into how mobilization practices today fail to adequately manage both the physical and psychological components, specifically how VR can help fill the gap.
Suggestion for improvement: Strengthen the literature review by explaining why VR is better than traditional methods and discussing more of the gaps in the literature.

Professional article format, tables. Embedded data sharing: The code follows the PeerJ model. The tables and graphs are explicit, and the raw numbers are available. However, figures, especially Figure 1, aren't necessarily contextualized.

Figure 1 (page 12) could have told us a bit more about the importance of the in-game movements and how they align with the study's rehabilitation objectives.
Improvement suggestions: Include a short caption or description about the meaning of the visual features in Figure 1.

Contained with concomitant findings to hypotheses: The manuscript contains and is consistent with the theory to examine the possibility of VR therapy for ICU patients. However, the findings could be trimmed, given the research's small sample size and feasibility.

Improve upon: On page 10, line 267, soften the talk of session efficiency to take account of the broad range of patient outcomes. On page 11, the same thing points out how larger studies are required to confirm these results.

Experimental design

Experimental Design

First-person research within Journal Aim and Scope: The study is first-person research within Journal Aim and Scope and investigates a novel use of VR in a clinical context. The research covers a pertinent issue in ICU patient rehabilitation and addresses a new technology in clinical practice. There is nothing to worry about here.

Research question well spelled out, timely, and meaningful: The research question is clear (page 1, lines 22-28) and investigates whether VR therapy could be helpful in the mobilization of upper extremities in the ICU. However, while the question is interesting, the authors might be able to describe exactly how their research fills in the gap in the existing literature rather than articulating the possibilities of VR.

Recommended update: Lines 69-83 on page 2 make the shortcomings of old-school mobilization more explicit and describe how VR overcomes them to help build the rationale behind the study.

High-quality research with high technical and ethical standards: The moral norms of the study are evidently met, proper informed consent was obtained, and ethical clearances were obtained (page 4, lines 93-98). According to the authors, the paper's local ethics committee designated the study non-incriminating. The technical minutiae are fine for a feasibility project, but nothing on how safety during VR immersion was evaluated above the Borg-RPE level is explained.

Improvement request: On page 7, lines 153-164, flesh out safety requirements for VR therapy visits. More specific information about how

adverse effects like dizziness, pain, or technical glitches were handled during sessions.

I appreciate the thoroughness of your methods section, particularly in detailing the patient recruitment process and session structure. While the protocol is detailed very well, there are opportunities to further enhance the reproducibility of your research.

Proposed enhancements:

On page 6, line 112, discuss the details about how the individualized training protocol was devised and modified depending on the patient's state.
p 6 l147 whether/how the VR treatment was modified using feedback from the patient and how it may allow future research to adjust VR therapy protocol.

Validity of the findings

Applicability of Findings.

Impact and novelty are ignored. Pluribuspid replication is welcome: The paper contributes significantly to the literature by examining the applicability of VR therapy in a new environment—ICU rehab. However, though replicators are welcome, the paper should provide a more open-ended discussion on how further studies could take these conclusions and confirm feasibility in more extensive, controlled trials.

Improve: On pages 10 and 10, lines 311-320, add more detailed suggestions for future studies. Identify potential areas of replication and what the studies might bring to the domain. For example, propose large randomised controlled trials of VR vs. traditional rehab to see if it works

and if it is feasible.

All raw data have been given; they are sound, statistical, and verified. The study plainly provides its information, and the authors furnish raw data (tables, figures, and additional data). Although statistical approaches are hampered by the small sample size, they are suitable for this kind of feasibility. A non-parametric test (Wilcoxon signed-rank test) is acceptable given the number of samples and the pattern of the data. However, more reasons exist for the sampling size employed.

Comment: Page 8, line 197, a few sentences on why the sample size was chosen, i.e., whether the choice was made on feasibility or on power calculations, if any.

Conclusions clearly defined, relevant to the question asked & restricted to positive outcomes: The conclusions are primarily pertinent to the results, indicating that VR therapy could be useful for ICU patients (page 10, lines 246-250). However, the authors sometimes go over the edge and describe their results, especially with the small sample size and sessional efficiency variance.

Improve suggestions: On page 10, p267, reduce the reference to session efficiency and satisfaction (the patient-to-patient variation and the small sample size). This will make the interpretations more consistent with the study’s limitations.

Additional comments

Other Comments

Confirmation of Co-design Process: One of the study's most vital aspects is the VR therapy co-design process with patients, caregivers, and

medical staff. This way, the treatment is not only patient-centered but practical. The paper acknowledges this but also highlights how this co-creation led to the success seen in patient satisfaction and adherence (page 11, lines 318-320).

Improvement suggestions: Focus more deeply on the impact of co-creation. Highlight how the direct feedback received from the patient and caregiver directly guided the VR game and enhanced its relevance and usability.

Discussion of Fatigue as a Challenge: The manuscript mentions fatigue as a determinant of session engagement (page 9, lines 213-217). Although the research suggests interventions such as fewer and more frequent sessions, we can fill in the gaps in fatigue literature with references to literature on ICU patient rehab and fatigue management.

Proposal: On page 9, line 217, provide links to other research on fatigue in ICU rehabilitation and recommend fatigue management interventions that could be used in later VR treatment versions.

Generalizability: This is a feasibility study, and therefore, they recognize the issue of the small sample size (page 10, line 311). However, given the relatively similar sample (largely male, with chronic illnesses), the paper would be enhanced by more discussion of how the results translate to other ICU patients.

Needs improvement: On page 10, line 313, consider whether there would be any problem when the same results are applied to broader ICU populations, including younger patients, those without a chronic

condition, or those with other healthcare settings.

Ethics and Consent: The ethical guidelines are well defined, but we would add a paragraph about when the patients are being excluded from the study and if any patients decide to withdraw from the study due to illness or otherwise.

Modification suggestion: On page 5, line 110, briefly mention whether patients withdrew from the study and, if so, how their data were processed.