

REVIEWER'S REPORT

Manuscript No.: IJAR- 58668

Title: INTERGENERATIONAL BIOMECHANICAL ANALYSIS OF JOINT ADAPTATIONS INDUCED BY REGULAR PLAYING BEACH FOOTBALL IN COASTAL COMMUNITIES OF BENIN

Recommendation:

Accept after minor revision

Rating	Excel.	Good	Fair	Poor
Originality		✓		
Techn. Quality			✓	
Clarity			✓	
Significance	✓			

Reviewer's ID: Abdul Haseeb Mir

Detailed Reviewer's Report

The manuscript titled "INTERGENERATIONAL BIOMECHANICAL ANALYSIS OF JOINT ADAPTATIONS INDUCED BY REGULAR PLAYING BEACH FOOTBALL IN COASTAL COMMUNITIES OF BENIN" presents a comparative cross-sectional study examining the kinematic lower-limb adaptations resulting from long-term barefoot beach soccer practice across different age groups in Benin. The study evaluates 74 male beach soccer players partitioned into three generational cohorts (Youth: 15–25 years; Adults: 26–40 years; Veterans: 41–60 years) alongside 24 sedentary control participants. Utilizing 2D Kinovea video analysis during standardized motor tasks, the authors assess range of motion (ROM) across the ankle, knee, and hip joints, as well as support asymmetry indices.

The findings demonstrate that regular beach soccer players exhibit significantly greater joint ranges of motion—particularly ankle dorsiflexion, knee flexion, and hip abduction—compared to sedentary controls. A positive correlation is identified between the duration of practice (years) and joint ROM (specifically at the hip and ankle), alongside a negative correlation with support asymmetry. While an age-related decline in joint flexibility is observed across generations, veteran players maintain superior biomechanical profiles relative to age-matched sedentary controls, underscoring the protective and functional benefits of regular athletic activity on unstable substrates.

Detailed Suggestions for Improvement

REVIEWER'S REPORT**1. Methodological and Analytical Refinements**

- **Discrepancy in Statistical Values:** In the Abstract, the mean ankle dorsiflexion range of motion for young players is stated as $52.4 \pm 4.1^\circ$ versus $40.3 \pm 4.6^\circ$ for controls. However, according to Table 2 and Figure 1, 40.3° represents the overall Control group mean or Adult Control mean, whereas Youth Controls measured 44.1° . Ensure statistical comparisons in the text explicitly state which specific control subgroup is being compared to avoid ambiguity.
- **Control Subgroup Clarification:** Table 1 lists a single unified "Control" group ($n = 24$, age 34.2 ± 9.1), whereas Figure 1 and Figure 3 partition controls into three age-matched subgroups (Youth Control, Adult Control, Veteran Control). The manuscript should explicitly detail the sample size and demographic breakdown of these control sub-groups in Table 1 and Section 2 of the Methodology.
- **Redundant Citation Entries:** Citation [15] in the Reference list (*Chou et al., 2025*, regarding shoulder adaptation in volleyball players) is a duplicate of Citation [9]. Furthermore, this reference is cited in the main text in relation to general joint adaptation but shares identical authors and text with reference 9. Remove the duplicate entry and renumber the bibliographical sequence accordingly.
- **Statistical Threshold Consistency:** In the Methodology, the significance level is defined as $\alpha = 0.05$, whereas the caption for Table 2 states " $p < 0.005$ ". Align the significance criteria throughout the text, tables, and figure captions for consistency.

2. Structural, Formatting, and Language Polish

- **Elimination of Text Watermarks and Layout Artifacts:** The manuscript contains several stray layout overlays and editorial text fragments that disrupt readability. Specifically, remove text artifacts such as "PEER UNDER" (line 25), "NEW IND" (line 83), "REVIEW IN JAR" (lines 114–116), "MAR" (line 169), and "ER PEER RE" (lines 337–338).
- **Figure Captioning and Formatting:** Figure 2 lacks a complete descriptive axis legend, and the sub-heading on line 185 is incomplete ("Figure 2: Knee angles according to the locomotor phase and group."). Ensure all figure titles and axis labels are fully articulated. Additionally, fix the broken line formatting in the body text (e.g., lines 145–146: "three three times per task").
- **Ethics Statement Alignment:** Section 6 ("Compliance with ethical standards") mentions research conducted on "*initiation rites in Benin*" (lines 332–333). This appears to be a template error from an unrelated manuscript and must be corrected to reflect the ethical approval and protocol for lower-limb biomechanics in beach soccer players.

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3. Bibliographic Standardization

- **Citation Formatting:** Ensure all citations in the reference list follow a uniform journal style (e.g., APA 7th edition or Vancouver). Standardize volume, issue, and page numbers across all entries (e.g., fix incomplete page references in Reference 9: "(1-11)doi...").

Recommendation for the Editor

- **Decision:** Minor Revisions
- **Justification:** The manuscript addresses an innovative and under-researched topic regarding intergenerational joint kinematics on soft, unstable surfaces in sub-Saharan African populations. The application of low-cost 2D motion analysis (Kinovea) provides valuable context for low-resource athletic research. However, substantial revisions are required to resolve statistical reporting inconsistencies between the text, tables, and figures, correct duplicate references, rewrite erroneous ethics statements, and thoroughly clean up layout artifacts. Addressing these issues will significantly elevate the scholarly quality and rigor of the paper.