



REVIEWER'S REPORT

Manuscript No.: IJAR-54887

Title: Time-Dependent Fit Adaptation of Two Aligner Materials: A Scanning Electron Microscopy Study

Recommendation:

Accept as it is

Accept after minor revision...Yes.....

Accept after major revision

Do not accept (*Reasons below*)

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

Reviewer Name: Dr. Sireesha Kuruganti

Detailed Reviewer's Report

Overall Assessment

The manuscript addresses an important topic in orthodontics—timedependent fit adaptation of two aligner materials using SEM analysis. The study design is clear, and the methodology is welldetailed. However, there are several areas that need improvement for clarity, scientific rigor, and presentation.

1. Title & Abstract

Line 1–2: The title is descriptive but could be more concise. Consider removing “A Scanning Electron Microscopy Study” or placing it after a colon for better readability.

Line 3–23 (Abstract):

Strengths: Clear objective, methodology, and conclusion.

Issues:

Line 4–6: Typo in “differentiatethe” → should be “differentiate the”.

Line 16–19: Results section lacks actual numerical data or effect size. Include key values for better impact.

Line 21–23: Conclusion is strong but could mention clinical implications briefly.

2. Introduction

Line 28–59:

Strengths: Good background on CAT and material properties.

Issues:

Line 31: Typo in “polyethelene” → should be “polyethylene”.

Line 33–34: Sentence structure is awkward; revise for clarity.

Line 39–43: References are cited but not integrated well into the narrative. Consider explaining why material aging matters clinically.

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Line 51–55: Compliance discussion is relevant but slightly offtopic for this study. Condense or link better to aligner fit.

3. Aim

Line 66–69: Clear and concise. No major issues.

4. Materials & Methods

Line 70–107:

Strengths: Detailed description of materials and equipment.

Issues:

Line 76: “Freyty Technology” – verify spelling and manufacturer details.

Line 82–86: Null hypothesis is stated but could be more precise (mention statistical test).

Line 93: Sample size justification missing. Why N=20? Include power analysis or rationale.

Line 122–145 (Sample Preparation & SEM):

Good technical detail, but figures referenced (Fig. 1–7) are not included in the text provided. Ensure they are clear and labeled.

Line 128: Gold coating thickness (10 nm) is mentioned—good detail.

Line 148–152 (Statistics):

MannWhitney U test is appropriate for small sample size, but mention why parametric tests were not used.

5. Results

Line 156–190:

Strengths: Tables and graphs referenced; numerical data provided.

Issues:

Line 160: “fit fell from 261.98 to 10.60” – this seems like an extreme drop; verify accuracy.

Line 177: Confusing phrasing: “copolyester group demonstrated a significantly higher mean fit (223.14) compared to the Copolyester group (334.18)” – likely a typo.

Ensure all pvalues are consistently formatted (e.g., italicize p).

6. Discussion

Line 192–239:

Strengths: Good comparison with literature.

Issues:

Line 197–198: Contradiction with Fang et al. needs explanation.

Line 223–233: Excellent explanation of intraoral effects, but could include clinical relevance (e.g., impact on treatment predictability).

Avoid redundancy with introduction.

7. Limitations

Line 240–242:

Add more detail: e.g., lack of long term follow up, single patient STL source, absence of in vivo validation.

8. Conclusion

Line 245–259:

Well structured, but consider adding a sentence on clinical implications (e.g., material choice for better fit stability).

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9. References

Line 272–329:

Check for duplicate entries (e.g., Hennessy et al. appears twice).

Ensure consistent formatting (journal names italicized, proper DOI if available).

Recommendations

1. Language & Grammar: Correct typos and improve sentence flow.
2. Figures & Tables: Ensure all referenced figures are included and properly labeled.
3. Statistical Rigor: Justify sample size and clarify statistical choices.
4. Clinical Relevance: Strengthen discussion and conclusion with practical implications.