Subject: [BDS] Editor Decision

suzan eda eyyupoğlu:

We have reached a decision regarding your submission to Brazilian Dental Science, "The effect of additive, subtractive, and conventional manufacturing methods on the flexural strength of occlusal splints: an in vitro study".

Our decision is: Resubmit

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Reviewer A:
Recommendation: Revisions Required

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**Questionnaire**

Does the manuscript contain new and significant information to justify publication?*

Yes

Brazilian Dental Science

Does the Abstract (Summary) clearly and accurately describe the content of the article?

Yes

Is the problem significant and concisely stated?

Yes

Are the methods or research design described comprehensively? Is the statistical analysis adequate?

Yes

Are the interpretations and conclusions justified by the results?

Yes

Is adequate reference made to other work in the field?

Yes

Is the language acceptable?

Brazilian Dental Science

No

**Manuscript Structure**

Length of article is:*

Adequate

Number of tables is:

Adequate

Number of figures is:

Adequate

**Please state any conflict(s) of interest that you have in relation to the review of this paper (state "none" if this is not applicable).**

None.

**Rating**

Brazilian Dental Science

Interest*

Good

Quality

Good

Originality

Average

Overall

Average

**Recommendation**

Minor Revision

**Would you be willing to review a revision of this manuscript?**

Yes

Brazilian Dental Science

**Comments**

*Comments to the Author*

This is a well-structured and methodologically robust in vitro study comparing the flexural strength of occlusal splints produced using conventional, subtractive, and additive manufacturing techniques. The topic is relevant given the increased clinical adoption of CAD/CAM and 3D-printing workflows in prosthodontics.
The manuscript is generally well written, the design follows ISO standards, and the statistical analysis is appropriate. Only minor revisions are recommended to improve readability and precision.
Major strengths
Comprehensive and standardized methodology (ISO 20795-1 and ISO 6872).
Clear statistical approach with ANOVA, Tukey, and Weibull analyses.
Well-organized results and relevant discussion supported by recent references.
Minor revisions suggested
Abstract: Simplify some sentences for smoother flow (e.g., “Although additive manufacturing methods do not have flexural strength values as high as others”. “Although additive methods show lower flexural strength...”).
Introduction: Rephrase the null hypotheses for grammatical clarity.
Methods: Include details on printing orientation (build angle or layer direction) in the additive group for reproducibility.
Results: Verify table numbering consistency (Table 1 and 2).
Discussion: Reduce redundancy in literature comparisons and expand on clinical implications (thresholds for acceptable flexural strength).
Language: A few grammatical corrections needed (e.g., “There were statistically significant differences between additive, conventional and subtractive groups”. “Statistically significant differences were found between the additive group and both the conventional and subtractive groups”).
Conclusion: Emphasize that additive manufacturing shows promise but still

requires optimization to match the reliability of traditional methods.

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Reviewer B:
Recommendation: Revisions Required

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**Questionnaire**

Does the manuscript contain new and significant information to justify publication?*

Yes

Does the Abstract (Summary) clearly and accurately describe the content of the article?

Yes

Is the problem significant and concisely stated?

Brazilian Dental Science

Yes

Are the methods or research design described comprehensively? Is the statistical analysis adequate?

Yes

Are the interpretations and conclusions justified by the results?

Yes

Is adequate reference made to other work in the field?

Yes

Is the language acceptable?

Yes

**Manuscript Structure**

Length of article is:*

Brazilian Dental Science

Adequate

Number of tables is:

Adequate

Number of figures is:

Too Short

**Please state any conflict(s) of interest that you have in relation to the review of this paper (state "none" if this is not applicable).**

none.

**Rating**

Interest*

Good

Quality

Good

Brazilian Dental Science

Originality

Good

Overall

Good

**Recommendation**

Major Revision

**Would you be willing to review a revision of this manuscript?**

Yes

**Comments**

*Comments to the Author*

– The manuscript addresses a relevant and current topic, considering the impact of digital technologies on the fabrication of occlusal splints. The text is coherent and well-structured; however, there are methodological weaknesses, a lack of

complementary analyses, and a need for greater technical depth in the discussion, which reduces the overall scientific strength of the study. The main points to be revised are as follows:

– The use of two specimen geometries (rectangular and disc-shaped) for flexural strength testing requires stronger justification, since uniaxial and biaxial loading modes generate different stress distributions and cannot be directly compared: What was the rationale for adopting two geometries in the same flexural strength study?

– The manuscript does not mention whether the rectangular bars had beveled edges (chamfers) at their ends, as recommended by ISO 20795-1, to minimize stress concentration at the contact points: Moreover, this type of test presents inherent limitations related to specimen fabrication and finishing, which may introduce variability in the results; this observation should be included in the Discussion or in the study's limitations section.

– Complementary analyses that could reinforce the interpretation of results are missing, such as scanning electron microscopy (SEM) of the fractured surfaces to identify failure patterns and surface roughness analysis: Therefore, these should be acknowledged as limitations, and future studies should be planned to include them; Why were such complementary analyses not proposed?

– The presentation of results is somewhat confusing: please insert error bars and significance letters directly in the figures and tables; include Weibull distribution curves (log–log plots) to visually illustrate the reliability of the materials.

– The Discussion is adequate but could be strengthened by relating the findings to structural differences between materials and to the conditions of polymerization and surface finishing: The discussion would be more meaningful if supported by additional data from complementary analyses to provide a more comprehensive understanding of the results.

– Although the text is understandable, it contains grammatical inconsistencies and long sentence constructions: A revision by a native English speaker or professional scientific English editing service is recommended to improve clarity and fluency.

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