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REVIEWER'S REPORT

Manuscript No.: IJAR 53537 Date: 26/8/2025

Title: "Comparative Evaluation of Fracture Resistance of Endodontically Treated Mandibular Molars Restored with Direct Conventional Composite Versus Composite Restoration Reinforced with Horizontal Fiberglass Posts: An In Vitro 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. Vasudha Kommu **Date:** 26/8/2025

Reviewer's Comment for Publication.

(*To be published with the manuscript in the journal*)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.

This manuscript titled "**Comparative Evaluation of Fracture Resistance of Endodontically Treated Mandibular Molars Restored with Direct Conventional Composite Versus Composite Restoration Reinforced with Horizontal Fiberglass Posts: An In Vitro Study**" provides valuable evidence for a conservative and economical method to restore endodontically treated mandibular molars. The findings demonstrate that reinforcing composite restorations with horizontal fiberglass posts significantly enhances fracture resistance and promotes more favorable, restorable fracture patterns. This research is a promising step towards improving the longevity of root canal-treated teeth.

The study's primary limitations are inherent to its *in-vitro* design. The research was conducted outside of a living system, meaning it cannot fully replicate the complex oral environment. Specifically, the study did not simulate the periodontal ligament, which plays a crucial role in stress distribution and the response of teeth to occlusal forces. As a result, the findings may not perfectly translate to the clinical setting. The authors themselves acknowledge the need for clinical studies with long-term follow-up to confirm their findings.

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Recommendation: Accept with minor revisions

Detailed Reviewer's Report

Areas of Improvement

Methodology and Study Design

- **Clinical Relevance:** The study is **in-vitro**, meaning it was performed in a lab setting. A major limitation of this approach is that it cannot fully replicate the complex forces, humidity, and temperature variations present in the oral cavity. The absence of a periodontal ligament simulation is a notable omission, as this structure plays a crucial role in the biomechanical behavior and stress distribution of teeth under occlusal loads. Future research should aim to incorporate these elements for greater clinical relevance.
- **Load Application:** While a universal testing machine is a standard tool, the study applied a single compressive load until fracture. This doesn't simulate the repetitive, dynamic, and multidirectional forces of mastication that teeth experience in the mouth. Fatigue testing with cyclic loading would provide a more accurate representation of how these restorations would perform over time.

Clarity and Reporting

- **Materials and Equipment:** The manuscript should provide more specific details on the materials used. For example, the specific type and brand of the "universal testing machine" and the "flowable composite" used for cementation could be mentioned.
- **Referencing:** The referencing style and accuracy need minor revisions. One of the comments in the source document specifically notes a need to "follow the punctuation marks carefully" and to not include "unnecessary bibliographic elements". Ensuring all references conform to a consistent and correct format will improve the manuscript's professionalism and credibility.