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REVIEWER'S REPORT

Manuscript No.: **IJAR-52561** Date: 02-07-2025

Title: COMPARATIVE EVALUATION OF THE EFFECT OF DIFFERENT DENTIN DISINFECTION PROTOCOLS ON THE SHEAR BOND STRENGTH OF TWO RESTORATIVE MATERIALS- AN IN VITRO STUDY.

Recommendation:
Accept as it is .....YES.....
Accept after minor revision.....
Accept after major revision .....
Do not accept (*Reasons below*) .....

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

Reviewer Name: Dr Aamina

Reviewer's Comment for Publication.

Overall Evaluation:
This manuscript presents a well-structured and clinically relevant in vitro study assessing how different dentin disinfection protocols affect the shear bond strength (SBS) of two restorative materials. The research is methodologically sound and contributes important insights to conservative dentistry and restorative practices, especially in optimizing pre-restorative disinfection protocols without compromising material adhesion.

Strengths:

1. **Clear Clinical Relevance**:
   The study addresses a pertinent clinical concern—residual bacteria after cavity preparation—and investigates the effect of disinfection on the integrity of restorative adhesion, which is critical to restoration longevity and patient outcomes.
2. **Defined Objectives and Scope**:
   The aim of comparing the effects of 2% chlorhexidine and GLUMA® desensitizer on the bond strength of two specific restorative materials is clearly outlined and directly aligned with the experimental design.
3. **Systematic Methodology**:
   The division of 72 samples into well-controlled groups with uniform sample preparation protocols and controlled experimental conditions ensures methodological consistency. The use of Universal Testing Machine (UTM) to quantify SBS lends reliability to the results.
4. **Use of Established Restorative Materials**:
   The study compares two widely used materials—Resin-Modified Glass Ionomer Cement

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(RMGIC) and Glass Hybrid (Equia Forte)—which enhances the practical applicability of the findings for clinicians.

5. **Comprehensive Results and Interpretation**:
   The SBS values are clearly reported, with Gluma + Equia Forte yielding the highest values. The comparative performance of disinfectants and materials is clearly discussed, showing differential effects depending on the combination of materials and disinfection protocols.
6. **Scientific Rigor in Statistical Evaluation**:
   The manuscript includes comparative statistical analysis that underlines significant findings (e.g., the enhanced SBS with Gluma and EF, and the limited benefit of CHX), strengthening the validity of the interpretations.
7. **Balanced Conclusion**:
   The conclusion is measured and evidence-based. It acknowledges that while Gluma enhances SBS, both disinfection methods do not significantly interfere with the adhesion of the materials tested, reinforcing clinical flexibility.
8. **Well-Structured Introduction**:
   The introduction contextualizes the study well within current dental literature, clearly defining the problem, the role of disinfection, and the characteristics of the restorative materials being tested.

Conclusion:
This in vitro investigation offers a meaningful contribution to restorative dentistry by exploring the interface between antimicrobial cavity disinfection and mechanical performance of restorative materials. The methodological clarity, clinically relevant results, and integration of material science with bio-preventive strategies make this study a valuable reference for dental practitioners and researchers alike.