Brazilian Dental Science

Dear Thays Oliveira Marques, Marina Bacelar Silva, Layra Catarina Rocha Muramatsu, Leonardo Alvares Sobral Silva, João Maurício Ferraz da Silva, Eduardo Shigueyuki Uemura:

Your submission Analysis of Innovative Techniques for Finishing Dental Preparations Using Piezoelectric Ultrasonic Instruments to Brazilian Dental Science, has been revised and according to reviewers' comments, there are questions to be addressed and/or points to be clarified/corrected.
Please answer the reviewers considerations point-by-point in a separate document and also please make all the corrections in the text highlighted in yellow.

Deadline: 30 days

Thank you for considering Brazilian Dental Science for publishing your research.
We are looking forward the revised version of you manuscript.

Sincerely,

Reviewer A

Comments to the Author

Several revisions are required in the manuscript, particularly regarding the writing. The terminology should be standardized throughout the text to avoid reader confusion, and multiple abbreviations appear without being spelled out at first

mention. In addition, the hypotheses at the end of the Introduction should be revised, and the entire Discussion section should be rewritten to ensure it is concise, direct, and logical. Finally, some methodological limitations inherent to the study design are missing and should be addressed.

Reviewer B:
Comments to the Author

Abstract
• The term “prosthetic preparation wear” is incorrect in English terminology. Wear usually refers to tooth loss caused by mastication or chemical/acidic challenges. When referring to prosthetic preparation, the word wear is unnecessary and should be removed.
• The description of the experimental groups is unclear: “Control (DT), DT+CVD, DT+CVDU, and DT+FF+RT (n=10)”. Please clarify and provide a precise explanation of each group.
• The results section could include numerical values (Ra means and p-values) for clarity.
Introduction
• The hypothesis regarding surface topography is not well formulated: “(2) there is no difference among the various finishing methods of dental preparations with respect to surface topography.” Since surface topography was only qualitatively assessed by SEM, it cannot be used to directly test a hypothesis. It could be better tested with Atomic Force Microscopy, addressing the surface complexity and quantitative measurements of feature sizes, such as step heights and other dimensions. It should instead be framed as a complementary descriptive analysis to support quantitative findings.
• Furthermore, the null hypothesis is incorrectly phrased: it states “the use of CVD tips... does not significantly affect surface characteristics,” but later two “alternative hypotheses” are written in a negative form (“there is no difference...”). This is not correct, if there is no differences then it’s a null hypothesis.

Materials and Methods

• Surface roughness and SEM alone are insufficient to predict clinical behavior of prosthetic preparations. These methods usually serve as complementary analyses to mechanical or adhesion tests. Including micro-shear bond strength or contact angle measurements would provide more clinically relevant evidence.

• The terminology “white from Spain” is incorrect and should be revised, it is a Brazilian/Portuguese term.

• Figure 1 and its description add little to the study. A more informative image would be a photograph of the burs under evaluation, rather than the measurement of samples fixed in a plate.

• Roughness analysis should not be based solely on Ra, as it does not fully represent the surface profile. Additional parameters such as Rz (peak-to-valley height) and RSm (mean spacing of defects) would provide a more reliable assessment.

• The use of both ANOVA and Kruskal-Wallis is confusing. Statistical tests should be selected based on the outcome of normality and homoscedasticity tests, not applied simultaneously.

Results

• The statement “The different superscript letters indicate that there are differences between the groups ($p<.001$)” should appear as a table footnote and explicitly state that differences were identified using Tukey’s post hoc test.

• The caption “Authors, 2025” in Figure 2 is inappropriate and should be removed. Also, correct the typographical error “diferente”.

Discussion

• The discussion lacks depth and consistency in scientific writing. The hypotheses introduced were not explicitly addressed (accepted or rejected).

• Informal expressions such as “we believe” or “it is believed” are not aligned with scientific writing and should be avoided.

• The isolated sentence in a paragraph “The dental literature shows that this can improve long-term prognosis, resulting in well-adapted restorations on the teeth [3,27].” is vague. Specify what “this” refers to and connect it to the study’s findings.

• The sentence “The smoothness characteristics of the dental preparation can influence the retention of the prosthetic restoration; however, it also depends on the type of cement used” needs rephrasing for clarity.

• The statement “Future studies are needed to evaluate these methods in adhesion, and the research group is working to gather this data.” suggests fragmented publication of results. It would strengthen the manuscript to present

all relevant data together instead of dividing outcomes into separate papers.

Conclusion

• The conclusion is adequately written, but formatting issues remain (font size and style differ from the rest of the text). Please standardize.
