EXAMINER REPORT · BEFORE THE DEFENSE

Shear bond strength of a bulk-fill resin composite to dentin using four adhesive protocols: an in-vitro study

MSc thesis · Dentistry · fictional sample · Standard: CRIS

C

59%

VERDICT

Major revision.

Not ready to defend as written.

WHY THIS GRADE · THE THREE REASONS

1 The main conclusion is not supported: the "best adhesive" is not better than the control (A vs C, p = 0.925).

2 A key mean in Table 4.2 cannot be computed from your raw data (12.58 reported, 15.28 recalculated).

3 Methods say 10 specimens per group; your sheets hold 9.

REFERENCES · FACT-CHECKED
Scored 7 / 10

RAW DATA · RECOMPUTED
2 numbers don't match

FIX LIST
3 must-fix, in order

AI and software

REVIEW

reviewed ✓

FINAL REVIEW · A DENTIST

SECTION 2

Major comments in order of impact

M1 CRITICAL — Evidence T04

"C gave the highest bond strength, significantly above A" is not supported. A is highest (18.97 vs 18.33 MPa); Tukey A vs C, p = 0.925.

→ **Do this:** rewrite the conclusion. C is comparable to the control, not superior.

M2 CRITICAL — Evidence D02 · H1

Group B mean 12.58 MPa cannot be computed from the raw sheets. Recalculated: 15.28 (likely swapped digits).

→ **Do this:** correct the mean to 15.28 in Table 4.2, the text and the abstract.

M3 MAJOR — Evidence INV-1

Methods state n = 10 per group; the sheets hold 9 per group (36 specimens). Exclusions are not reported, as CRIS requires.

→ **Do this:** state n = 9 per group and report each excluded specimen with its reason.

SECTION 3

Minor comments

MINOR	Group D reports the standard error (0.82) as the SD (2.46). Label the column correctly and give the SD.	D03
MINOR	Normality and equal-variance checks are not reported. Both pass (Shapiro p ≥ 0.395, Levene p = 0.647), so the ANOVA stands. Add one sentence to the methods and the values to the results.	A01
MINOR	Reference [14]: Cited for '10,000 thermocycles equal one year in the mouth'; the source reports a range and does not state this equivalence.	T11
MINOR	Reference [22]: Year and volume do not match the DOI record.	T12

SECTION 4

Statistics: what changes and why

ITEM	AS WRITTEN		CHANGE TO	WHY
Conclusion, C vs A	~~C significantly above A~~	→	**C comparable to A**	Tukey A vs C: difference 0.64 MPa, p = 0.925. A has the higher mean.
Group B mean	~~12.58 MPa~~	→	**15.28 MPa**	Mean of the 9 raw values. The typed value has the same digits in a different order.
Specimens per group	~~n = 10~~	→	**n = 9**	The sheets hold 9 per group. F(3, 32) also only fits 36 specimens.
Group D spread	~~SD 0.82~~	→	**SD 2.46 (SE 0.82)**	0.82 equals the SD divided by √9: that is the standard error.
Assumption checks	~~Not reported~~	→	**Report them**	Shapiro–Wilk lowest p = 0.395; Levene p = 0.647. Both pass.
One-way ANOVA	F(3, 32) = 24.21	=	**Keep**	Recomputed from the raw data: F = 24.21, p < 0.001.

Recomputed means from the raw sheets (MPa, n = 9 per group, line = ± 1 SD)



A vs C The two dark bars are statistically the same (p = 0.925). The thesis says C is higher; the data say it is not.

Recomputed Tukey comparisons

A vs B DIFFERENT Δ 3.69 MPa · p = 0.006	**A vs C** SAME Δ 0.64 MPa · p = 0.925	**A vs D** DIFFERENT Δ 7.88 MPa · p < 0.001
B vs C DIFFERENT Δ −3.05 MPa · p = 0.029	**B vs D** DIFFERENT Δ 4.19 MPa · p = 0.002	**C vs D** DIFFERENT Δ 7.24 MPa · p < 0.001

Significant at 0.05 = DIFFERENT

SECTION 5

Originality: copied text and AI-sounding writing

COPIED TEXT · T15

2 sentences without quotation marks

Compared with every source the thesis cites

AI-SOUNDING WRITING · T16

2 passages flagged

Each with the reason, read by a person

COPIED TEXT **Discussion, paragraph 2** T15

Two sentences follow the abstract of **[7]** almost word for word. They are cited, but not in quotation marks.

Do this: put them in quotation marks, or rewrite them in your own words and keep the citation.

AI-SOUNDING **Introduction, paragraph 1** T16

"In the ever-evolving landscape of adhesive dentistry, it is crucial to delve into..."

Why: a stock opener with no fact in it.

Do this: open with the gap: few studies test universal-adhesive modes under a bulk-fill composite.

AI-SOUNDING **Discussion, paragraph 5** T16

Furthermore, Moreover, Additionally,

Why: three sentences in a row open this way and repeat the paragraph above.

Do this: cut them to one sentence that states how your result compares with earlier studies.

How to read this page. The copied-text check compares the thesis with the sources it cites; it does not replace your university's similarity report. AI-sounding flags are a reader's judgement on style, each with its reason. They are not a detector score and not an accusation.

SECTION 6

Section-by-section critique

SECTION	WHAT WORKS	WHAT TO CHANGE
Title and abstract	The title names the material, the test and the comparison.	CRITICAL The abstract repeats the unsupported conclusion (M1) and the wrong group B mean (M2).
Introduction	The gap is clear: few studies pair universal adhesive modes with a bulk-fill composite.	State the null hypothesis for each comparison, not one general aim.
Methods	Adhesive protocols and ageing (5,000 thermocycles) are described step by step.	Correct n to 9, add an exclusion log, a sample-size justification and the assumption checks.
Results	The ANOVA is reported in full: F(3, 32) = 24.21.	CRITICAL Correct Table 4.2 and remove the claim that C is above A.
Discussion	Compares the findings with earlier bond strength studies.	Rebuild the argument on "comparable to the control"; drop the equivalence cited to [14]. Rewrite paragraphs 2 and 5 (section 5).
Conclusion	Short and direct.	Rewrite it to match the data: A and C are statistically the same; D is lowest.

SECTION 7

Ethics and compliance

OK	Source of the extracted teeth and the ethics approval are stated in the methods.
ADD	Donor consent wording for the use of extracted teeth is not given. Add one sentence naming how consent was obtained.
ADD	Conflict-of-interest and funding statements: the adhesives are named by type only; add a statement that no manufacturer funded the study, if true.

SECTION 8

Tables and figures

FIX	Table 4.2: correct the group B mean and the group D SD; put n = 9 in the caption.
ADD	Add the Tukey letters (shared letter = not significantly different) to Table 4.2 so the reader sees that A and C share a letter.
FIX	The bar chart of means should show SD error bars, labelled as SD.

SECTION 9

References

WRONG CLAIM	**[14]** Cited for '10,000 thermocycles equal one year in the mouth'; the source reports a range and does not state this equivalence.
FIX DETAILS	**[22]** Year and volume do not match the DOI record.
COPIED TEXT	**[7]** Supports its sentences, but two of them copy its abstract without quotation marks (section 5).
KEEP	All other references support the sentence they are cited for. Full list in the journal-submission audit.

SECTION 10

Plain explanation for the student

Your experiment is good and your main test is right. But your conclusion picks the wrong winner: the control bonded best, and the universal adhesive in etch-and-rinse mode was statistically the same. "Comparable to the gold standard" is a strong, defensible finding. Claiming it is better is what an examiner will stop you on.

The other two problems are typing problems, not science problems: one mean has its digits in the wrong order, and the methods count one more specimen per group than your sheets hold. Both are quick to fix, but an examiner who finds them will check every other number.

SECTION 11

Must-fix before the defense, in order

1. Rewrite the conclusion: C is comparable to A, not superior.
2. Correct the group B mean to 15.28 in Table 4.2 and the abstract.
3. State n = 9 per group and report the excluded specimens.
4. Report the group D SD as 2.46.
5. Add the normality and equal-variance results.
6. Replace or reword the sentence cited to [14]; correct the details of [22].
7. Quote or rewrite the two Discussion sentences that follow [7], and rewrite the passages that read as machine-written.

SECTION 12

Evidence index nothing here is opinion without a check behind it

ID	WHAT WAS CHECKED	USED IN
INV-1	Specimen inventory: 9 per group on the raw sheets, 36 in total, no exclusion log.	M3
D02	Group B mean recomputed from the 9 raw values: 15.28.	M2
H1	Origin of 12.58: the same digits as 15.28, two swapped.	M2
D03	Group D spread recomputed: SD 2.46, SE 0.82.	Minor
A01	Normality and equal-variance checks on the raw data: lowest Shapiro–Wilk p = 0.395, Levene p = 0.647.	Minor
T04	Tukey A vs C recomputed: difference 0.64 MPa, p = 0.925.	M1
T11	Reference [14] read against its sentence.	Minor
T12	Reference [22] checked against its DOI record.	Minor
T15	Thesis text compared with the cited sources: two sentences follow [7] without quotation marks.	Originality
T16	Writing read for passages that sound machine-written: two flagged, with reasons.	Originality

Recomputed descriptives (MPa, from the raw sheets)

GROUP	N	MEAN	SD	SE	MIN	MAX
A · Two-step etch-and-rinse adhesive (control)	9	18.97	1.45	0.48	16.60	20.80
B · Universal adhesive, self-etch mode	9	15.28	2.43	0.81	10.32	18.75
C · Universal adhesive, etch-and-rinse mode	9	18.33	2.28	0.76	14.29	20.97
D · One-step self-etch adhesive	9	11.08	2.46	0.82	7.65	15.08