

REVIEWER'S REPORT

Manuscript No.: IJAR-58458

Title: Impact of Dental Loupe Usage on Professional Quality of Life Among Dental Practitioners Performing Nonsurgical Root Canal Treatment: A Cross-Sectional Study

Recommendation:

Accept as it is

Accept after minor revision.....

Accept after major revision ...YES.....

Do not accept (*Reasons below*)

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

Reviewer's ID: JPR-094

Detailed Reviewer's Report

Reviewer's Report

Overall Assessment

The manuscript investigates an important and clinically relevant topic regarding the influence of dental loupe usage on the professional quality of life of dental practitioners performing nonsurgical root canal treatment. The study is well organized, addresses an emerging aspect of dental ergonomics, and provides useful data regarding practitioners' perceptions. However, several methodological and reporting issues should be addressed before publication.

Strengths

1. Clinically Relevant Topic

** Addresses an important occupational health issue in dentistry.*

** Ergonomics and magnification are increasingly recognized as essential components of modern endodontic practice.*

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2. Novel Perspective

*** Unlike many previous studies focusing only on ergonomics, this manuscript evaluates multiple dimensions including:**

- * Physical wellbeing**
- * Psychological wellbeing**
- * Procedural efficiency**
- * Financial perception**
- * Professional satisfaction**

3. Adequate Sample Size

*** Inclusion of 200 dental practitioners provides reasonable statistical power for a questionnaire-based cross-sectional study.**

4. Ethical Considerations

*** Ethical approval, informed consent, and confidentiality have been appropriately mentioned.**

5. Appropriate Statistical Analysis

- * Descriptive statistics**
- * Independent t-test**
- * One-way ANOVA**
- * Appropriate significance level ($p < 0.05$)**

6. Comprehensive Literature Review

- * Recent references (2023–2025) have been included.**
- * Discussion is supported with previous evidence.**

7. Practical Clinical Implications

The study provides useful recommendations regarding:

- * Ergonomic education**
- * Loupe adoption**
- * Occupational health awareness**
- * Undergraduate training**

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Weaknesses

1. Lack of Novel Methodology

The study mainly confirms already established benefits of dental loupes reported in previous literature.

2. Cross-sectional Design

- * Cannot establish causality.*
- * Only association can be concluded.*

3. Self-reported Data

Results depend entirely on participants' perceptions, introducing:

- * Recall bias*
- * Response bias*
- * Social desirability bias*

4. Questionnaire Validation

The manuscript states that WHOQOL-BREF was modified, but does not provide:

- * Reliability analysis*
- * Cronbach's alpha*
- * Content validity*
- * Pilot testing*

These should be reported.

5. Sampling Method

The sampling technique is not clearly described.

Need to mention:

- * Random sampling?*
- * Convenience sampling?*
- * Consecutive sampling?*

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6. Limited Generalizability

*Participants were only practitioners performing NSRCT.
Results cannot be generalized to:*

- * Oral surgeons*
- * Prosthodontists*
- * Orthodontists*
- * Pediatric dentists*

7. Confounding Variables

Important factors were not analyzed:

- * Type of loupe*
- * Magnification level*
- * Working distance*
- * LED illumination*
- * Daily duration of loupe use*
- * Clinical workload*

8. Statistical Reporting

Only p-values are reported.

The manuscript should additionally report:

- * Effect size*
- * 95% Confidence Interval*

These would improve scientific quality.

Key Points

- * Dental loupe users reported better procedural efficiency.*
- * Loupe users experienced less physical and postural discomfort.*
- * Professional satisfaction increased among loupe users.*
- * Cost remains a major barrier.*

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** Years of clinical experience significantly influenced perceptions regarding loupe usefulness.*

** Female practitioners reported significantly greater satisfaction.*

Scientific Significance

The study contributes to occupational dentistry by highlighting that magnification devices may improve not only treatment precision but also professional quality of life.

Its findings support:

** Ergonomic training*

** Loupe adoption in dental education*

** Prevention of work-related musculoskeletal disorders*

** Better clinician wellbeing*

Although the novelty is moderate, the study adds useful regional evidence to the existing literature.

Recommendations for Improvement

1. Clearly describe questionnaire validation.

2. Explain sampling technique.

3. Include reliability statistics (Cronbach's alpha).

4. Report effect sizes and confidence intervals.

5. Discuss potential confounding factors.

6. Improve English language and grammar in several sections.

7. Shorten repetitive discussion paragraphs.

8. Expand limitations regarding selection bias.

9. Mention whether sample size calculation (power analysis) was performed.

10. Add a Strengths section before Limitations.

Minor Comments

** Correct minor grammatical errors throughout the manuscript.*

** Standardize terminology ("Dental loupe" vs "Dental loupes").*

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- * *Ensure uniform formatting of references.*
- * *Improve figure quality and resolution.*
- * *Number tables and figures consistently.*
- * *Verify all DOI formatting.*

Justification

The manuscript addresses an important and clinically relevant topic with an adequate sample size and appropriate statistical analysis. However, methodological details—particularly questionnaire validation, sampling strategy, reliability assessment, and more comprehensive statistical reporting—require substantial improvement before the work is suitable for publication. Addressing these issues would significantly strengthen the scientific rigor and overall quality of the manuscript.

A **Major Revision** recommendation is appropriate when the manuscript has **important methodological and reporting deficiencies that can be corrected**, but **the scientific idea remains valuable**. Your manuscript has a good research question and useful results, but several aspects require strengthening before publication.

Below is a **line-by-line reviewer justification**.

Section / Line No.	Issue Identified	Why It Is a Problem	Revision Required
Title (Lines 1–2)	Title is appropriate	No issue	No revision
Abstract (Lines 13–18)	Sample size mentioned but sampling method not reported	Readers cannot judge representativeness of the sample	Mention sampling technique (convenience/random/purposive)
Abstract (Lines 16–18)	Statistical analysis incomplete	Only tests are mentioned; no reliability statistics	Mention questionnaire validation if performed
Introduction (Lines 71–80)	Research gap is weakly justified	Previous studies already demonstrate ergonomic benefits; novelty is not clearly	Clearly explain how this study differs from previous studies

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Section / Line No.	Issue Identified	Why It Is a Problem	Revision Required
		established	
Materials & Methods (Lines 83–88)	Sample size justification absent	Scientific journals expect sample size calculation or rationale	Include power analysis or sample size calculation
Materials & Methods (Lines 89–93)	Ethical approval number missing	Ethical approval should be traceable	Provide Institutional Ethics Committee approval number and date
Materials & Methods (Lines 94–99)	Sampling strategy not described	Selection bias cannot be assessed	State whether convenience, random or consecutive sampling was used
Materials & Methods (Lines 100–103)	WHOQOL-BREF was modified but modification process not described	Modified questionnaires require validation	Explain modifications with supporting references
Materials & Methods (Lines 100–110)	Reliability testing absent	Reliability of modified questionnaire is unknown	Report Cronbach's alpha, pilot testing and content validity
Materials & Methods (Lines 107–110)	Three-point Likert scale not justified	Most validated QoL studies use five-point scales	Explain why a 3-point scale was chosen
Materials & Methods (Lines 111–116)	Statistical analysis incomplete	Assumptions for t-test and ANOVA not reported	Mention normality testing and homogeneity of variance
Results (Lines 118–123)	Demographic data adequate	No issue	No revision
Results (Lines 125–155)	Mostly descriptive percentages	Limited inferential interpretation	Include confidence intervals or effect sizes where appropriate
Table 2 (Lines 158–159)	Expense variables only descriptive	Statistical comparison missing	Compare expense perception between loupe users and non-users

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Section / Line No.	Issue Identified	Why It Is a Problem	Revision Required
Table 3 (Lines 160–175)	Only p-values reported	Statistical significance alone does not indicate practical significance	Report effect size (Cohen's d, η^2) and 95% confidence intervals
Discussion (Lines 177–211)	Discussion repeats results	Discussion should interpret findings rather than restate them	Reduce repetition and provide deeper interpretation
Discussion (Lines 182–211)	Limited comparison with recent international studies	Discussion lacks broader context	Include additional recent studies (2024–2025)
Discussion (Lines 199–204)	Cost discussion is superficial	Cost-effectiveness is an important barrier but insufficiently explored	Expand discussion on financial barriers and affordability
Limitations (Lines 212–221)	Important limitations acknowledged but selection bias omitted	Sampling bias may influence conclusions	Add discussion of selection bias and non-response bias
Clinical Relevance (Lines 223–232)	Appropriate	No major issue	Minor language editing
Conclusion (Lines 233–247)	Some statements imply causation	Cross-sectional studies cannot establish causality	Replace "positively affected" with "was associated with"
Entire Manuscript	Language requires editing	Several grammatical errors and awkward sentences reduce readability	Professional English language editing recommended
Entire Manuscript	Figures are low quality	Publication-quality figures are required	Improve figure resolution and formatting
References	Minor formatting inconsistencies	Journal formatting requirements	Uniform reference style

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Major Scientific Issues

1. Questionnaire Validation (Major)

The authors modified the WHOQOL-BREF questionnaire but did not report:

Pilot study

Content validity

Face validity

Cronbach's alpha

Reliability statistics

Reason: Without validation, the accuracy of the measurements is uncertain.

2. Sample Size Calculation (Major)

The manuscript states that **200 practitioners** were included but does not explain why this number was selected.

Reason: Journals require statistical justification for sample size to ensure adequate study power.

3. Sampling Method (Major)

The recruitment process is unclear.

Questions remain unanswered:

Were participants randomly selected?

Were they recruited consecutively?

Was convenience sampling used?

Reason: This affects the generalizability of the findings.

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4. Statistical Reporting (Major)

The manuscript reports only **p-values**.

Missing:

Effect size

Confidence intervals

Assumption testing

Reason: Statistical significance alone does not indicate the magnitude or precision of observed effects.

5. Causal Language (Major)

The title and conclusion imply that loupe use **improves** quality of life.

However, the study design is **cross-sectional**.

Correct wording should be:

"Loupe use was associated with improved professional quality of life."

instead of

"Loupe use improved professional quality of life."

Minor Issues

Grammar and sentence construction need improvement.

Figure captions should be more descriptive.

Some discussion paragraphs repeat results.

Formatting of references should be standardized.

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Use consistent terminology (e.g., "dental loupe" vs. "dental loupes").

Why Major Revision and Not Minor Revision?

A manuscript typically receives **Major Revision** when one or more of the following are present:

Important methodological details are missing.

Questionnaire validation is inadequate.

Statistical analysis requires strengthening.

Conclusions are stronger than the evidence supports.

Reporting does not meet journal standards.

Your manuscript has a solid research question and meaningful findings, but the methodological reporting and statistical presentation need substantial improvement. These issues are **correctable** and do not require new data collection, which is why **Major Revision**—rather than rejection—is an appropriate recommendation.