Subject: [BDS] Editor Decision

Dear Michely Cristina Goebel, Aurélio de Oliveira Rocha, Isabela Ramos, Lucas Menezes dos Anjos, Julia Maldonado Garcia, Karina Cardoso, Beatriz Moraes Rosa, Filipe Colombo Vitali, Bruno Henriques, Mariane Cardoso:

Your submission Applications of Cryotherapy in Dentistry: Mapping 61 Years of Research Through a Bibliometric Review to Brazilian Dental Science Journal, 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 Journal for publishing your research.
We are looking forward the revised version of you manuscript.

Sincerely,

Reviewer A:
Recommendation: Resubmit for Review

Questionnaire

Does the manuscript contain new and significant information to justify publication?*

Yes

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Does the Abstract (Summary) clearly and accurately describe the content of the article?

Yes

Is the problem significant and concisely stated?

Yes

Are the methods or research design described comprehensively? Is the statistical analysis adequate?

Yes

Are the interpretations and conclusions justified by the results?

Yes

Is adequate reference made to other work in the field?

Yes

Is the language acceptable?

Yes

Manuscript Structure

Length of article is:*

Adequate

Number of tables is:

Adequate

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Number of figures is:

Adequate

Please state any conflict(s) of interest that you have in relation to the review of this paper (state "none" if this is not applicable).

none

Rating

Interest*

Good

Quality

Good

Originality

Excellent

Overall

Good

Recommendation

Major Revision

Would you be willing to review a revision of this manuscript?

Yes

Comments

Comments to the Author

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Dear Authors,

Thank you for the opportunity to review your manuscript on the bibliometric analysis of cryotherapy in dentistry. The topic is timely and relevant, particularly given the growing interest in non-pharmacological approaches to pain management across multiple dental specialties. The manuscript presents a substantial dataset and offers a broad overview of publication trends over several decades, which is commendable.

One of the strongest aspects of your manuscript is its originality. To my knowledge, this is the first bibliometric study specifically addressing cryotherapy within dentistry, which gives your work clear value and relevance for the field. The dataset is robust, and the descriptive findings are generally well presented.

However, there are several areas where the manuscript would benefit from revision in order to reach the standards expected for publication:

1. Methodological clarity and transparency
While the methods section is generally well structured, some aspects require further clarification to ensure reproducibility.
For example, you state: “The following search strategy was formulated... and applied to the Web of Science...”
However, the exact reproducible query is not fully presented. I recommend including the complete search string exactly as used in WoS, including field tags and filters. For instance:
Instead of:
“[TS= (Cryotherapy OR “cold therapy” OR cold*...)]”
Provide:
“TS=(Cryotherapy OR ‘cold therapy’ OR cold* OR cryotherapies OR ‘cold therapies’ OR ‘therapies, cold’ OR ‘therapy, cold’ OR ice*) AND WC=(‘Dentistry, Oral Surgery & Medicine’)”

Additionally, the study selection process lacks calibration details. You mention three reviewers and a fourth resolving disagreements, but do not report agreement metrics.
Suggested addition: “Inter-reviewer agreement was assessed using Cohen’s kappa (if available), or percentage agreement.”

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2. Use of a single database (important limitation)
The exclusive use of Web of Science is a critical methodological limitation that is currently underemphasized.
For example, in the Discussion you state: “The WOS-CC database was chosen... because it is a reliable and complete database...”
This statement is too strong and somewhat misleading, as no database is fully comprehensive.

Suggested revision:
“Although WoS-CC is a widely recognized and high-quality database for bibliometric analyses, the use of a single database may have resulted in the exclusion of relevant studies indexed in other sources such as Scopus or PubMed.”
This limitation should be more explicitly acknowledged as potentially affecting study coverage.

3. Overinterpretation of bibliometric findings
In several sections, the manuscript attributes clinical meaning to findings that are purely bibliometric.
For example: “Randomized clinical trials are the most suitable study design... and support clinical decision-making.”
While true in general, your study does not evaluate trial quality or outcomes, only frequency.

Suggested revision: “Randomized clinical trials were the most frequently identified study design, reflecting a growing interest in evaluating therapeutic applications of cryotherapy.”

Similarly: “These findings allow us to understand the scope of clinical applicability...”

Should be softened to: “These findings suggest areas where cryotherapy has been investigated, although they do not directly reflect clinical effectiveness.”

4. Classification issues (important internal validity concern)
A relatively high number of studies were categorized as “not identified”:
- Objectives not identified (n=28)

- Area not identified (n=18)
This raises concerns about classification consistency.

Example from Results: “In twenty-eight documents, the objectives could not be identified.”
This requires clarification.

Suggested improvement:
- Define clear classification criteria
- Explain why classification failed
For example: “Studies were classified based on explicit statements in titles/abstracts; when insufficient information was available, classification was not possible.”
Without this clarification, the reliability of thematic analysis is weakened.

5. Statistical analysis (limited contribution)
You report: “Spearman’s correlation revealed a weak negative correlation...”
While statistically correct, this result is not deeply explored and adds limited value.

Suggestion:
Either: Expand interpretation: “This may reflect that more recent studies have not yet accumulated citations...” or reduce emphasis, as it does not significantly contribute to the main narrative.

6. Discussion (need for deeper critical analysis)
Parts of the discussion are descriptive and somewhat repetitive, particularly when addressing:
- Journals
- Geographic distribution
- Citation patterns

For example: “The most prominent journals... comprise 22.08% of the included studies...”
This is more results repetition than discussion.

Suggested improvement:
- Compare with other bibliometric studies (e.g., AI in dentistry, fluorosis,

bleaching)
- Add structured insights: (What gaps exist? Why is pediatric dentistry underrepresented? Why Asia is leading?)

Example addition: “The predominance of adult populations suggests a gap in pediatric-focused research, which should be addressed in future clinical trials.”

7. Language and writing style
The manuscript is understandable but would benefit from linguistic refinement.

8. Terminology consistency
There are inconsistencies such as: “Stomatology/oral pathology”, “Oral medicine”, “General dentistry” vs “general practice”

Recommendation:
Standardize terminology according to international classifications (e.g., ADA or MeSH).

9. Tables and formatting issues
Table 1: “Non identify” should be replaced with: “Not identified”

Suggest: Standardize column labels, Clarify categories, etc

Final remarks
In summary, this is a well-conceived and original study with clear relevance to the field of dentistry. The manuscript would benefit primarily from:
- Improved methodological transparency
- More cautious interpretation of findings
- Greater depth in discussion
- Refinement of language and structure

Addressing these points will substantially enhance the scientific rigor and clarity of your work. I encourage you to revise accordingly, as the manuscript has strong potential for publication after these improvements.

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Reviewer B:
Recommendation: Revisions Required

Questionnaire

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Brazilian Dental Science

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Please state any conflict(s) of interest that you have in relation to the review of this paper (state "none" if this is not applicable).

None

Rating

Interest*

Good

Quality

Good

Originality

Good

Overall

Brazilian Dental Science

Good

Recommendation

Minor Revision

Would you be willing to review a revision of this manuscript?

Yes

Comments

Comments to the Author

This manuscript presents a well-conducted bibliometric analysis on the applications of cryotherapy in dentistry over a 61-year period. The topic is relevant, particularly due to the growing interest in non-pharmacological approaches for pain and inflammation control. The study provides valuable insights into publication trends, leading contributors, and thematic focuses.

However, some points should be addressed to further strengthen the manuscript:

Major Suggestions
Database limitation:
The exclusive use of Web of Science should be better justified. Including or at least discussing other databases (e.g., Scopus, PubMed) would strengthen the comprehensiveness of the analysis.
Classification criteria:
The process for categorizing “primary objective” and “dental field” should be described more clearly to improve reproducibility.
Handling of “non-identified” categories:
A significant proportion of studies had undefined objectives or specialties. The authors should clarify how these cases were handled and discuss the potential impact on results.
Interpretation depth:
The discussion could be expanded to provide more critical insights, especially:
Why Asia leads recent publications

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Clinical implications of analgesia predominance
Gaps in high-level evidence (e.g., systematic reviews vs. clinical trials)

Minor Suggestions
Revise grammar and syntax (e.g., punctuation errors, repetition of phrases).
Standardize decimal notation (e.g., “p<0,05” → “p<0.05”).
Improve clarity in some sentences (e.g., Results and Discussion sections).
Minor formatting inconsistencies in tables and text should be corrected.

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