Correspondence

Comments about the appraisal of systematic reviews in restorative dentistry [version 1; peer review: 1 approved with reservations]

Kelvin I. Afrashtehfar

1 Division of Restorative Dental Sciences, Clinical Sciences Department, Ajman University, Ajman, P.O. Box 346, United Arab Emirates
2 Department of Reconstructive Dentistry and Gerodontology, School of Dental Medicine, University of Bern, Berne, BE, 3010, Switzerland
3 Vicerrectorado de Investigación, Universidad Católica San Antonio de Murcia, Murcia, 30107, Spain
4 Centre of Medical and Bio-allied Health Sciences Research, Ajman University, Dubai, City of Gold, United Arab Emirates

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Abstract

Adequate adoption of evidence-based practice is deeply rooted in accessing methodological quality and completeness of systematic reviews and meta-analyses reporting. Nonetheless, this assumption might be flawed if the methodological quality assessment has not been properly conducted. Taking the former statement into consideration, this correspondence article encourages the improvement of future methodological quality assessment manuscripts, especially in the field of restorative dentistry. Thus, this article addresses a methodological quality assessment about systematic reviews in restorative dentistry by Sarkis-Onofre et al. in the May 2019 issue of the Journal of Esthetic and Restorative Dentistry as an example of evaluating appraisals of reviews for increasing the awareness of reviewers, authors, and readers.

Keywords

data management, dentistry, evidence-based medicine, evidence-based practice

This article is included in the Research on Research, Policy & Culture gateway.
Comments about the appraisal of systematic reviews in restorative dentistry

Dear respectable Advisory Editors and readers:

I read with great interest the publication by Sarkis-Onofre et al. 1 “Systematic reviews in restorative dentistry: discussing relevant aspects,” in the Journal of Esthetic and Restorative Dentistry in the May 2019 issue. This well-written methodological quality assessment of systematic reviews or systematic review of systematic reviews stated that “This study was not registered in PROSPERO” since PROSPERO indicates that “Reviews of methodological issues need to contain at least one outcome of direct patient or clinical relevance in order to be included in PROSPERO.” Interestingly, despite the fact that the above referenced review falls in the PROSPERO’s review of reviews category, it was neglected to being classified as such. Therefore, the authors’ arguments not to register their protocol in PROSPERO are not valid.

Moreover, the authors 1 mentioned that the previous version of their review 2 has a protocol available upon request. However, their first paper, 3 which is in a Brazilian University Magazine printed in Portuguese language, does not support the updated version of the review properly since their first version does not consider any protocol in the text.

Their critical appraisal using AMSTAR-2 appears in Table 2. Five out of the 16 included review studies in their review of reviews, had between one to four AMSTAR-2 items referred as “Authors reported different information by e-mail however, it was not found in the article.” This reporting method may not be the most scholarly, safe, and respectful to present their findings, especially when the authors of their included review studies kindly accepted to provide further clarification about their methodology.

Particularly, I am an author of Afrashtehfar et al. 3 “Failure rate of single-unit restorations on posterior vital teeth: a systematic review,” and I regretted the online communication with their corresponding author when I was requested to provide further information. Perhaps Sarkis-Onofre et al. should have dedicated more time to conduct an adequate assessment.  For example, their negative categorization of the AMSTAR-2 items 4, 7, and 16 for Afrashtehfar et al. 3 may be mistaken. A comprehensive literature search (item 4) can be considered in the former paper since it searched for published papers for over 20 years with no language restriction, using four databases and displaying each search strategy in the Appendix section. Additionally, the review screened eight journals and also searched manually in the reference list of all identified relevant studies. 4 Next, the list of excluded primary studies and justifications (item 7) were provided in Supplemental Table 6 (i.e., full-text excluded articles and reasons for exclusion). Regarding any potential sources of conflict (item 16), it is well-stated on the first page of the review that this study was “Supported in part by a Knowledge Transfer Grant from the Network for Oral and Bone Health Research.” Additionally, there is a section at the end of the paper for Acknowledgements where librarians and statisticians were thanked for their services.

Moreover, the search and eligibility criteria for Sarkis-Onofre et al. 1 were systematic reviews that met PRISMA-P, including adults over 18 years of age with direct composite resin restoration in posterior teeth compared with other materials or techniques used in posterior teeth regardless of the outcome up to October 15th, 2017. However, some articles that fully suited their inclusion criteria were not included. For example, Afrashtehfar et al. 5 “Failure of single-unit restorations on root filled posterior teeth: a systematic review” was not included despite being available from November 21st, 2016. Therefore, their search strategy and their search conduct (including the elimination of duplicates), 6 as well as screening, 7 raise some severe methodological concerns.

This review of reviews has a collaboration with well-known evidence-based medicine experts from Canada, Tricco and Moher, 9 which usually rely on the talent from their research team for screening and assessing the literature.

After a brief analysis, this letter encourages the improvement of future methodological quality assessment manuscripts to:

- Address clarification with authors of potentially included studies safely and respectfully to avoid accusation, especially if there is no consensus on the matter from different experts (i.e., two experts as a minimum).
- Take the time and effort necessary to assess the review paper of interventions according to AMSTAR-2. 4 At least two experts in the field should also determine this instead of two research students.
- Spend sufficient time with expert librarians to develop an adequate search strategy in multiple databases.
- Use a reference manager and do not rely on removing the duplicates by selecting only one category (i.e., authors’ names). Thus, the available categories should be combined to avoid removing records that may share the same publication journal, year, or authors.
A PRISMA checklist\textsuperscript{10,11} should be submitted, reporting compliance with each item by indicating the paragraph and page where they can be identified in the review/appraisal. All the required reporting should be included in the quality assessment to ensure transparency and validity.

**Data availability**

**Underlying data**

No data are associated with this article.

**Authorship contribution based on the ICMJE criteria**

Kelvin Ian Afrashtehfar: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Resources, Software, Supervision, Validation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing.

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Marta Roqué-Figuls
Iberoamerican Cochrane Centre, Biomedical Research Institute Sant Pau (IIB Sant Pau), Barcelona, Spain

This comment from Afrashtehfar refers to an overview by Sarkis-Onofre et al., 2019, published in Esthet Restor Dent, which discusses key aspects of systematic reviews in restorative dentistry, focusing on the improvement of the conduct and reporting of these reviews. The author of the comment identifies specific shortcomings of the Sarkis-Onofre et al. overview and formulates some suggestions to improve future methodological quality assessment manuscripts.

As a general thought, this comment would surely be better suited to be published in the original journal, in order to reach the same audience that read the original paper.

The author of this comment is also an author of a review included in Sarkis-Onofre et al. and illustrates his criticisms of their paper with the assessments made to his review. Given this clear conflict of interest, he should be careful in formulating subjective assessments such as “Perhaps Sarkis-Onofre et al. should have dedicated more time to conduct an adequate assessment”, or using the terms ‘safe’ or ‘respectful’.

The author criticises the methods applied by Sarkis-Onofre et al., particularly that a single researcher conducted the study selection and AMSTAR-2 assessment. These criticisms are based on perceived errors in the AMSTAR-2 assessments made to his own review included in Sarkis-Onofre et al., and on the failure to identify and include in the overview another work he authored (Afrashtehfar et al., 20162). While these are undeniable facts and the methods applied in the overview were subpar, it’s not clear whether the errors identified are the exception or the norm, nor their impact on the overview conclusions.

He also points out the need for more transparency in the reporting of AMSTAR-2 assessments whenever these challenge personal communications with the original study authors. I fully support the idea to present in an appendix the clarifications about methodology provided in personal communications and the reasons for Sarkis-Onofre et al. to accept or disregard them in
each case.

However, there are two instances of unjustified statements made in the comment. First, the author challenges the justification of Sarkis-Onofre et al. for not registering their methodological overview in PROSPERO, arguing that as an overview it could have been registered. However, this fails to acknowledge that methodological overviews that provide no data on patient-relevant outcomes don't verify PROSPERO registration criteria for methodological reviews.

Second, the author assumes that the overview, which updates a previously published overview from different authors, should follow the original overview protocol. But, while any review must have a pre-specified protocol, it's not necessary for an update to follow the protocol of the original review, as that protocol may be inexistent or outdated. What is important is that Sarkis-Onofre et al. do have a protocol available at request.

The author finishes his comment by proposing a list of suggestions for improving future methodological quality assessment manuscripts, mostly already known and common sense. However, the recommendation that AMSTAR-2 be applied by experts in the field rather than research students lacks evidence and is quite debatable.

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Is the rationale for commenting on the previous publication clearly described?
Yes

Are any opinions stated well-argued, clear and cogent?
Partly

Are arguments sufficiently supported by evidence from the published literature or by new data and results?
Partly

Is the conclusion balanced and justified on the basis of the presented arguments?
Partly

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** I am a statistician, author of several systematic reviews, and an editor in two Cochrane Review Groups, conducting peer reviews frequently.

**I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have**
significant reservations, as outlined above.

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