

Peer Review Report

Review Report on Domains and methods of medical device technology evaluation: a systematic review

Systematic Review, Public Health Rev

Reviewer: Niklaus Meier

Submitted on: 18 Aug 2023

Article DOI: 10.3389/phrs.2024.1606343

EVALUATION

Q 1 Please summarize the main theme of the review.

This review seeks to address the research question: "What are the main methods and dimensions that integrate HTA studies of MD from the perspective of technological incorporation in healthcare systems?" In particular, it addresses this from a Brazilian perspective. The goal was therefore not to identify individual HTA studies of specific medical devices, but to look into perspectives and methodologies to perform HTA for medical devices. A systematic review was conducted on multiple databases as well as they grey literature, yielding 5,790 studies, of which 41 were ultimately included. These studies were categorized based on dimensions, attributes, and methods. The different dimensions, attributes, and methods, as well as their frequency, and which studies fall into which category, are all presented in the main text. The quality of studies was assessed using AMSTAR, SANRA, and JBI, and is included in the supplementary files. The Discussion primarily summarizes various aspects from the included studies, and the relevance to the Brazilian context is briefly touched upon.

Q 2 Please highlight the limitations and strengths.

I see two primary and more severe limitations. I address both of these limitations in the major comments, and make suggestions to the authors on how to address them.

- The scope of the review and the contents of the article are poorly aligned. This is primarily a systematic review on medical devices in HTA, which is a broad topic. But primarily in the title, abstract, and introduction, the Brazilian perspective is highlighted. This Brazilian perspective hardly plays a role in the Methods, Results, and Discussion, on the other hand, and is of limited interest to an international audience.
- The presentation of the results is, in my opinion, a bit muddled. The categorization into dimensions, attributes, and methods is too detailed, and insufficiently explained. Why something is a dimension or attribute is unclear. The definition of individual dimensions and attributes is also unclear, and they seem like they would overlap considerably. Categorizing and summarizing the 41 studies in this manner is sensible, but it should be simplified and the explanation needs to be improved.

The biggest strengths I see are the following:

- Medical devices are an important part of health care, but difficult to address in HTA. Summarizing the available evidence therefore has value to researchers and policymakers. A relatively recent previous review for medical devices in HTA does exist (<https://resource-allocation.biomedcentral.com/articles/10.1186/s12962-022-00389-6>) and the identified literature does partially overlap with this resource, but there are sufficient differences in the approach and results that an additional, published review still remains valid, in my opinion.
- The systematic review seems to have been conducted and documented in a serious manner, based on the protocol, the description of the method, and the supplementary files (though I am unable to assess the exact quality of the search syntax for every included database, as I am not familiar with all of them).
- The discussion is broad and touches on many different topics, but given the breadth of the research question, this is as expected. I still see value here, as it gives the readers some orientation on the individual aspects of medical devices, and where to go for further literature on the topic. Due to this, I think the article serves a purpose as an introduction and a jumping-off point for readers who begin their research here.

Q 3 Please provide your detailed review report to the authors, structured in major and minor comments.

Given the balance of limitations and strength, I suggest Major Revisions for this review. My major and minor comments are included in the file.

PLEASE COMMENT

Q 4 Is the title appropriate, concise, attractive?

Based on my other comments, I think it could be shortened to be more concise and attractive. For instance: "Dimensions and methods of medical device technology evaluation: a systematic review"

Q 5 Are the keywords appropriate?

The keywords are "Devices, Coverage, Equipment and Supplies, Technology Assessment, Biomedical, Medical Equipment Needs Assessment"

Some of these seem too general while other obvious candidates seem to be missing. For instance, why not "medical devices" instead of merely "devices"? Why not "Health technology assessment" instead of merely "Technology assessment"?

Q 6 Is the English language of sufficient quality?

The language is generally clear and legible, though there are some artifacts of translation from Portuguese into English. For instance, in Table 4, a Dimension is referred to as "Clínica".

I also think that in many instances, more precise language could be used, though is more an issue of style than grammar.

Q 7 Is the quality of the figures and tables satisfactory?

Yes.

Q 8 Does the reference list cover the relevant literature adequately and in an unbiased manner?

Yes

Q 9 Does this manuscript refer only to published data? (unpublished data is not allowed for Reviews)

Yes.

Q 10 Does the manuscript cover the issue in an objective and analytical manner

Yes.

Q 11 Was a review on the issue published in the past 12 months?

Yes.

Q 12 Does the review have international or global implications?

The topic of medical devices in HTA is of general interest for many health care systems across the world, so yes.

QUALITY ASSESSMENT

Q 13 Quality of generalization and summary

<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
-------------	-------------	-------------	-------------	-------------

Q 14 Significance to the field

<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
-------------	-------------	-------------	-------------	-------------

Q 15 Interest to a general audience

<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
-------------	-------------	-------------	-------------	-------------

Q 16 Quality of the writing

<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
-------------	-------------	-------------	-------------	-------------

REVISION LEVEL

Q 17 Please take a decision based on your comments:

Major revisions.