Reviewer's report

Title: Evidence-based decision-making in infectious diseases epidemiology, prevention and control: matching research questions to study designs and quality appraisal tools

Version: 2
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Reviewer: Monika Kastner

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Review of Implementation Science paper by Krause et al:
Evidence-based decision-making in infectious diseases epidemiology, prevention and control: matching research questions to study designs and quality appraisal tools

Summary
The current study was aimed at reviewing existing quality appraisal tools (QATs) in terms of their usefulness across common questions in public health as a first step toward defining a methodology for evaluating and grading evidence and strength of recommendations in the area of infectious disease epidemiology, prevention and control (part of authors’ Project on a Framework for Rating Evidence in Public Health [PRECEPT]). Overall, this work is interesting, but the overall rationale; study design, methods and analysis, lack many important details to adequately interpret the results. The findings need to be further expanded to be useful and to provide more guidance to potential end-users of this data. I included comments and suggestions below that may be considered to strengthen the manuscript.

Background
# It would be good to expand a bit more on PRECEPT and how it differs or expands on GRADE; why is PRECEPT needed? – is it because it will address only public health literature and/or infections disease prevention and control? I this literature different enough to warrant another system for evaluating and grading the evidence in addition to GRADE? If yes, what are these differences?
# The rationale for why existing QATs were reviewed is unclear
# The list of 3 objectives in the methods don’t really match with the overall rationale described in the Background

Methods:
Identification of relevant questions and study designs
# Where did the questions come from that were used to develop a matrix?
# How were the domains grouped and by whom?
# Why was the “Standard Operating Procedure of the German Standing
Committee on Vaccinations” selected as the starting point for the list of questions and where did this come from? Also in terms of the resulting matrix from this, to whom was this circulated for feedback, and how did it lead to additional questions?

# It's not clear what study designs (and from where) were mapped onto identified questions and how this was done or by whom

Identification of QATs

# I see now that you used a systematic review on QATs [ref 18] as your literature source – is this what you used to identify relevant questions and study designs? If yes, it would be helpful to mention this upfront in the methods section

# Where did you locate this and 8 other systematic reviews as the basis of your data collection? How did you identify them? What were the search parameters or selection criteria?

# Are you essentially then performing a systematic review of reviews? – Your specific methodology (and rationale for this design) is not mentioned and/or confusing

Eligibility criteria for QATs

# It would be good to provide a precise definition for QATs in terms of your eligibility criteria; and an example would be helpful to support this

# It would be helpful to provide an example for the exceptions that reviewers had to make from eligibility criteria when there was a lack of QATs for a defined study design or when a QAT was very frequently used in public health

Data extraction for QATs:

# What does the statement: “answers to questions 1-11 were aggregated in text blocks…” mean?

Analysis:

# What was the analysis plan?

Results

# It would be helpful to explain the findings of Tables 1-3 rather than just to refer to them

# It would be good to know what were all the different QATs and indicate these in Table 1; also, what do domains A-F mean? – perhaps you could provide more info in a footnote on the table

# What is the purpose of Table 2? – that is, why is this important? What is the implication of this data?

# It would be informative to discuss/show what specific characteristics of QATs might make them more or less appropriate to answer different/similar questions? – ie, are there relationships between certain types of questions and certain types of QATs? – this may be more important and useful to end-users of this info

Discussion
# You indicate that the majority of the 20 questions can be addressed by experimental and observational study designs – How did you come to this conclusion? It would be helpful to provide an example – this would be good to include in the Results section

# It would be also good to explain in which circumstances were qualitative studies more appropriate to answer which question

# The explanation of the rationale for your approach should be in the Methods section (beginning of 3rd paragraph of Discussion)

# You indicate that “one has to keep in mind that the choice of QAT may exert a significant influence on the result of the respective systematic review” – how so?

# I would suggest adding a few more discussion points:
  • How do your findings add to what is already known?
  • How can findings be used by other researchers and decision makers?
  • What are next steps? You indicated that reviewing existing QATs was the first step – what’s next? How will you build on your findings?

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.