PASS: A Checklist for Assessing the Quality of Systematic Reviews of Prevalence Studies

The huge number of journal articles published each year has made clinicians and clinical decision-makers increasingly reliant on literature reviews for up-to-date evidence relevant to their areas of practice. Systematic literature reviews are especially useful for this purpose as they aim to summarize all the relevant evidence in an objective, unbiased manner by using transparent and standardized procedures [1, 2]. An increasing number of systematic reviews are of studies of the prevalence of medical conditions.

Systematic reviews of the prevalence of medical conditions are especially important in informing service planning. However, despite often being regarded as definitive summaries of evidence, they may be subject to bias and consequently report potentially misleading conclusions [3]. Common shortcomings in the methodological quality of such systematic reviews are: a lack of clarity about how the authors have searched for and selected the primary studies included in the review, a failure to consider the quality and limitations of these primary studies, and poor justification of the methods used to combine data from primary studies [3-5].

It is therefore essential that, when using systematic reviews of prevalence, clinicians and clinical decision-makers are able to judge their quality and consequently decide how much credence to give to their findings. Although a number of tools and questionnaires exist for assessing the quality of systematic reviews, including AMSTAR (A MeaSurement Tool to Assess systematic Reviews), OQAQ (Overview Quality Assessment Questionnaire) and ROBIS (Risk of Bias in Systematic Reviews), none of these are ideal for rapidly assessing the quality of systematic reviews of prevalence studies [6-8]. This is because: (a) they were designed primarily to assess the quality of systematic reviews of studies of the effectiveness of interventions and (b) they are time-consuming to apply, reducing their usability by busy clinicians and clinical decision-makers [9].

We have therefore designed a new, simple checklist specifically designed to help clinicians and clinical decision-makers rapidly judge the quality of systematic reviews of the prevalence of medical conditions. The design of the checklist was informed by the tools described above and by our own experience conducting systematic reviews and umbrella reviews (systematic reviews of systematic reviews). In the interests of maximising its usability, our checklist focuses on what we believe to be the basic quality criteria for a systematic review of prevalence, organized in four domains. These four domains are denoted by the acronym PASS to remind readers that to pass the test of quality a review should: be **Planned** with a clearly stated aim; consider **All** the relevant literature; use methods for **Selection** of included studies that are unbiased and transparent; and conduct **Synthesis** of data from included studies in a way that is unbiased and informative. We have listed a small number of specific questions for the reader to ask within each of these domains. The answer to these questions can be scored as either 'yes' or 'no/unclear'.

In order to pass a basic quality assessment, a review should score 'yes' on all the checklist items. The highest quality reviews are likely to also have additional quality markers, such as a published or registered protocol and searches that were recent and conducted without language restrictions. The findings of reviews that score 'no/unclear' on any of the questions should be regarded with caution. The full PASS quality assessment checklist is shown in the Table, together with notes about where the relevant information can usually be found in a review article.

We used PASS when conducting a recent umbrella review that aims to summarize the published systematic reviews of the prevalence of psychiatric disorders in general hospital inpatients. We found that it allowed us to rapidly assess a systematic review's quality and that it was easy for multiple raters to achieve agreement for each of the questions. We hope that readers of the journal will also find the PASS checklist useful.

REFERENCES

[1] Egger M, Davey Smith G and Altman DG. Systematic Reviews in Health Care: Meta-Analysis in Context. London: British Medical Journal Publishing Group, 2001.

[2] Grant MJ and Booth A. A typology of reviews: An analysis of 14 review types and associated methodologies. Health Information and Libraries Journal 2009;26:91-108.

[3] Page MJ, Shamseer L, Altman DG, Tetzlaff J, Sampson M, Tricco AC, et al. Epidemiology and Reporting Characteristics of Systematic Reviews of Biomedical Research: A Cross-Sectional Study. PLoS Med 2016;13:e1002028.

[4] Hoffmann F, Eggers D, Pieper D, Zeeb H and Allers K. An observational study found large methodological heterogeneity in systematic reviews addressing prevalence and cumulative incidence. J Clin Epidemiol 2020;119:92-99.

[5] Borges Migliavaca C, Stein C, Colpani V, Barker TH, Munn Z, Falavigna M, et al. How are systematic reviews of prevalence conducted? A methodological study. BMC Med Res Methodol 2020;20:96.

[6] Shea BJ, Reeves BC, Wells G, Thuku M, Hamel C, Moran J, et al. AMSTAR 2: a critical appraisal tool for systematic reviews that include randomised or non-randomised studies of healthcare interventions, or both. BMJ 2017;358:j4008.

[7] Oxman AD and Guyatt GH. Validation of an index of the quality of review articles. J Clin Epidemiol 1991;44:1271-8.

[8] Whiting P, Savovic J, Higgins JP, Caldwell DM, Reeves BC, Shea B, et al. ROBIS: A new tool to assess risk of bias in systematic reviews was developed. J Clin Epidemiol 2016;69:225-34.

[9] Perry R, Whitmarsh A, Leach V and Davies P. A comparison of two assessment tools used in overviews of systematic reviews: ROBIS versus AMSTAR-2. Syst Rev 2021;10:273.