Steps to Improve Evidence Synthesis Reviews in Social Work

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Abstract: *Evidence synthesis reviews, including systematic reviews and scoping reviews, are increasingly conducted in social work. With the goal of informing practice and development of policies, these reviews seek to synthesize all available evidence. Yet the quality of published reviews often fails to meet methodological and reporting standards and may lead to incorrect conclusions. This article lays out practical steps review teams should take to assure their project is successful and avoid common errors. Recommended resources for further exploration are included, as well as suggestions for editors and researchers for improving the quality of reviews conducted in social work.*

Keywords: *Evidence synthesis, research methods, quality improvement, faculty librarian collaboration, systematic reviews*

Evidence synthesis reviews are becoming increasingly common in social work, informing evidence-based practice as well as policy development. However, many published evidence synthesis reviews fail to meet basic methodological and reporting standards (Littell & Gorman, 2022; Marsalis & Brown, 2020). This article suggests ways to avoid common errors, particularly relating to reporting the literature search, and seeks to increase the quality of such reviews in social work and related disciplines.

A range of methodologies is utilized in evidence synthesis reviews, most commonly systematic reviews, scoping reviews, meta-analyses, and evidence gap maps, but also less common methods such as qualitative interpretive meta-syntheses. These methods seek to synthesize, comprehensively and systematically, all previously conducted research on a topic and represent the highest level of evidence in research. A defining characteristic of these research methods is a reproducible and transparent methodology, which differentiates them from narrative reviews, which are neither comprehensive nor reproducible. They also differ from systemized reviews and critical reviews, which often are conducted by an individual as part of their graduate degree program. "A typology of reviews" by Grant and Booth (2009) is an excellent foundation for understanding the range of review types.

Assemble a Team

Most evidence synthesis reviews are conducted by a team, because each team member will bring different skills and levels of expertise, and because it helps reduce risk of bias. Members should be recruited for specific roles, including screening and data extraction, literature searching, project and data management, analysis, and writing. The level of involvement, time commitments, and level of acknowledgement of all the team members should be negotiated at the beginning of the project.

One of the goals of evidence synthesis methods is to reduce bias, which is aided by having a team of reviewers independently double-screen studies for inclusion at both the

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title/abstract and full-text stages. Since the literature search seeks to be comprehensive, the initial screening of titles and abstracts may look at thousands of records, and having a number of screeners can help lighten the load and expedite the review process. Data extraction and coding also are typically performed independently by two team members, and inter-rater agreement reported.

Because the quality of an evidence synthesis review is dependent on the comprehensiveness of the search for relevant studies, most guidelines suggest that a librarian or information specialist be part of the team (Gore & Jones, 2015, Table 1). An increasing number of social sciences librarians are being trained in supporting evidence synthesis and bring unique skills to the review team. When a librarian writes the search-related portions of the methods section and performs the searches, they should be offered co-authorship; if they perform the searches, but do not participate in the writing, acknowledgement is warranted (Ross-White, 2021). If a librarian new to supporting evidence synthesis is part of the team, they should consider applying to the mentorship program of the ACRL Evidence Synthesis Methods Interest Group (ACRL-ESMIG, 2024) which will pair them with a more experienced librarian.

Project Management

One of the team members should take responsibility for project management. Potentially key to successful project completion is the manager sending out weekly or bi-weekly emails reminding the team of where they are in the process (Townsend et al., 2019). If each team member needs to review 1000 articles in six weeks, being reminded weekly about how many they should have read at that point can keep the whole team on track. Data management duties also should be assigned, with a single person responsible for creating a file structure and regularly backing up files. Keeping a group document for tracking decisions and discussions of the team is helpful. Evidence synthesis projects usually take at least 12 months to complete, and having a record of previous conversation not only keeps the team from repetitive discussions, it also can be a touchpoint when writing the article.

Register a Protocol

Creating a protocol is an essential step in the evidence synthesis process and ensures that the review project is well-planned and that the plan is documented before the review is conducted (Moher et al., 2015). The team should register the protocol, ideally before running the searches and definitely before commencing the screening stage, by placing it in a registry such as PROSPERO or OSF, or by publishing it in a journal. The team should reference the protocol in their article to allow readers to identify any deviations from the plan. Registering a protocol improves transparency and reproducibility, reduces bias, and helps ensure that other research teams do not duplicate efforts (Shamseer et al., 2015). The protocol states the rationale, hypothesis, and planned methodology for the review. The protocol will enumerate inclusion and exclusion criteria, and the team should refer back to the protocol as a guide as they conduct the review. When working with a librarian, the protocol provides background and documents the research questions as well as inclusion

and exclusion parameters, and will help them in developing the search. Finally, the work put into the protocol will help expedite the process when writing the final article or report.

Depending on the nature of the planned review, different options for registering are available. PROSPERO accepts registrations of systematic reviews, rapid reviews and umbrella reviews for health outcome subjects. It does not accept registration of scoping reviews. OSF Registries is an open access database for pre-registering research across a range of methods, including evidence synthesis. Other options are to register in a subject branded repository, or create an OSF Project for the review and include the registration there. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement includes the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocols (PRISMA-P) extension which provides guidance for writing and reporting the protocol (Moher et al., 2015). A template that works especially well for evidence synthesis outside the health sciences is available in the OSF (Ghezzi-Kopel & Porciello, 2021).

Peer-Review the Draft Protocol and Search Strategy

Conducting an evidence synthesis review is a significant investment of time and effort. Inviting informal peer-review of the protocol, including at least one search strategy, early in the process can help avert errors before data collection, screening and extraction occur, and help assure a successful publication.

The protocol should be peer reviewed before submitting to a repository. This is an ideal stage for someone outside the team to take a critical look at the inclusion and exclusion criteria, consider whether the review type is appropriate for the questions being asked, and make suggestions before the project advances. While PROSPERO includes peer review, protocols are automatically advanced when a backlog develops, and other registries do not include peer-review.

If a librarian is part of the team, ask if they will have their search for at least one database peer-reviewed before finalization. The Academic Social Work Librarians group (aswl@googlegroups.com) is a great resource for finding colleagues who have the necessary expertise and access to the same database on the same platform. If a librarian is not part of the team, ask a social work librarian if they will advise on and peer-review the search strategies before they are run. There are standards which can help with this review. The Peer-Review of Search Strategies (PRESS) instrument (McGowan et al., 2016) is designed for Medline, but is also useful in guiding peer review of searches in other databases. PRISMA-S (Rethlefsen et al., 2021) is a reporting guideline for the search strategy, and familiarity with it from the beginning will help assure that adequate records are kept to allow compliant reporting in the final article.

Be Familiar with the Relevant Methods and Standards

It is not unusual to see published articles of evidence synthesis which misidentify the methodology used, use a method inappropriate to the questions asked, misstate adherence to relevant standards, or confuse reporting and methodological standards (Marsalis &

Brown, 2020). Because many editors and peer reviewers lack relevant expertise, these errors too frequently are missed during the publication process. One common error is to call a study a systematic review when it is actually a scoping review or systemized review. Grant and Booth (2009) compiled a typology of reviews that remains the standard reference for matching research questions to the appropriate method and helping differentiate designs, although the conceptual framework developed by Julia Littell (2018) is an important update and explanation and should also be consulted. Another common error is for authors to inappropriately state that they conducted their review in accordance with PRISMA (Sarkis-Onofre et al., 2021). PRISMA and its extensions are reporting guidelines, rather than methodological standards. It is also common to see authors claim they followed PRISMA, yet only include a PRISMA flowchart while seemingly being unaware of the full standard. It is important to read and understand the relevant full reporting standard, including the statement, explanation and elaboration, and checklist. Before writing the report of an evidence synthesis study, consult prisma-statement.org for the relevant documents and updates. PRISMA is the guideline for reporting systematic reviews or meta-analyses, but there are extensions for other methods and specific aspects of the process, including PRISMA-ScR for scoping reviews, PRISMA-S for the search strategy report, PRISMA-P for protocols, and PRISMA for Abstracts. Equator-network.org is another resource for locating relevant reporting guidelines. Methodological standards are less well organized, however commonly relevant standards for social work-related reviews are the Methodological Expectations of Campbell Collaboration Intervention Reviews (Methods Group of the Campbell Collaboration, 2019) and the JBI Manual for Evidence Synthesis (Aromataris & Munn, 2020). For reviews of qualitative studies "Qualitative Interpretive Meta-Synthesis in Social Work Research" (Aguirre & Bolton, 2014) is frequently used, although teams should also familiarize themselves with the work of the Campbell Collaboration Qualitive Evidence Synthesis Working Group which is in the process of publishing guidelines. More resources relating to conducting and reporting social work evidence synthesis reviews are listed on the Social Work Liaison's Toolkit page regarding evidence synthesis and advanced reviews (American Library Association, 2020).

One of the differentiating characteristics of a systematic review is the inclusion of quality appraisal of the evidence, yet many researchers are unfamiliar with the relevant tools. The Quality Assessment and Risk of Bias Tool Repository in the OSF (Ledbetter & Hendren, 2021) and JBI Critical Appraisal Tools (n.d.) are good places to consult when seeking an appropriate assessment instrument.

Tips for Reporting the Search

Evidence synthesis relies on identifying all relevant studies; an incomplete literature search may result in missed studies and introduce bias or lead to inaccurate conclusions, with potentially dire consequences. Because of this, a complete and accurate reporting of the search strategy must be included. Littell and Gorman's (2022) commentary on a recently published Campbell Review elucidates critical errors, and is an excellent example of the type of scrutiny that reviews should be subjected to.

Include the full search strategy for all databases. PRISMA-S (Rethlefsen et al., 2021), the reporting standard for literature searches, requires reporting the strategy for all databases, whereas earlier standards may have required only one. Yet word count limitations in most journals preclude including even one complex strategy. One way to accomplish this is to clearly describe the strategy components in the article text, then link to a supplemental file with the full strategies. The author has seen multiple instances where the supplemental file has disappeared from a journal's website, however, or been omitted from the manuscript when sent for peer review. For these reasons it is recommended that the supplemental file be shared via a project in OSF (osf.io.) or other repository instead. OSF allows the creation of an anonymized URL which should be included in the submitted manuscript, then updated to the non-anonymized URL after peer review.

When summarizing the search strategy in the text of the article a common approach is to list categories of terms that form the strategy, often relating to the question framework such as PICO (Population, Intervention, Comparison, Outcome) or PCC (Population, Concept, Context). It is important to be clear in the use of the term "keyword" - does this refer to only terms in the title, abstract, and author-supplied keywords, but not official thesaurus terms, or refer to all searchable terms? Do not use the term "included," (e.g., "search terms included…"), as this implies a non-exhaustive list. Instead use a clear statement such as, "search terms were…" or "categories of search terms were…." Make sure Boolean logic is clear, even in summary. Do not use commas or semicolons to imply Boolean operators as these do not adequately report the logic.

It is important to accurately list all databases and other resources searched, including those where no relevant studies were identified. When reporting databases, include the vendor name when it is available on more than one platform (e.g., "APA PsycInfo (Ovid)."). Also include the dates the searches were conducted, and the dates covered by the database. Do not confuse vendor names or platforms with a database. "Proquest" or "Web of Science" do not accurately report specific databases. For Web of Science it is necessary to specify the component databases searched, and the years included for each. Do not search aggregated databases or publisher platforms as the included searchable literature may vary from institution to institution, and therefore is irreproducible. For example, most research libraries have a "Library Search" box on their homepage, however the resources it searches, and the parameters of the search, are unique to each institution. Likewise, a publisher's site may search all their content, or only that content subscribed to by the institution, so if this is part of the search strategy it must clearly report what was included. If Google Scholar is searched, great care must be taken in reporting as the search will most likely be irreproducible; it should only be considered for supplemental searching and not as a core resource (Gusenbauer & Haddaway, 2020; Haddaway et al., 2015). When searching an individual journal ("hand searching") or seeking grey literature, report the search strings and sites used in the supplementary file.

For very complex searches, or simply to assure comprehension or reproducibility, consider including an annotated strategy or a search narrative in the search supplementary file. Cooper et al. (2018) provide guidance and examples of what these might look like. An example of a narrative explaining a complex search approach for a scoping review is included in the appendix of Obschonka et al. (2021).

Table 1. *Resources and Summary of Process*

Step	Resource	Description
General	Social Work Liaison's Toolkit (American Library Association, 2020)	General guide to evidence synthesis with social work (SW) focus.
Training	Introduction to Systematic Review & Meta-Analysis (Li & Dickerson, n.d.)	Massive Open Online Course (MOOC) offered through Coursera. Covers information necessary to complete all stages of systematic reviews & meta-analyses.
	Systematic Reviews & Meta-Analysis: A Campbell Collaboration Online Course (Valentine et al., 2022)	MOOC offered through the Campbell Collaboration focused on synthesizing quantitative studies.
Search	ACRL Evidence Synthesis Methods Interest Group (ACRL Evidence Synthesis Methods Interest Group, 2024)	Networking & professional knowledge exchange resource for librarians supporting evidence synthesis. Resource for mentoring & search peer review between librarians.
	Academic Social Work Librarians group (Academic Social Work Librarians Group, 2021) aswl@googlegroups.com	Professional network for SW librarians. Resource for search peer review between librarians.
	PRISMA-S (Rethlefsen et al., 2021)	Standard for reporting searches. For all resources relating to PRISMA-S.
	Peer Review of Electronic Search Strategies (PRESS) (McGowan et al., 2016)	Instrument for peer reviewing database search strategies.
Protocol Registration	PROSPERO (National Institute for Health & Care Research, n.d.)	Site for registering & searching for protocols for health-related systematic reviews & meta-analyses.
	OSF Registries (Center for Open Science [COS], 2024)	Open repository for registering & searching for protocols.
	Evidence Synthesis Protocol Template (Ghezzi-Kopel & Porciello, 2021)	A template for creating protocols in OSF Registries.
	PRISMA for systematic protocols (PRISMA-P) (Moher et al., 2015)	Standard for the reporting of systematic review protocols. For all resources related to PRISMA-P.
Quality Assessment	Quality Assessment & Risk of Bias Tool Repository (Ledbetter & Hendren, 2021)	Resource for finding & selecting tools for assessing quality or risk of bias. Created & maintained by Duke University's Medical Center Library & Archives.
	JBI Critical Appraisal Tools (JBI, n.d.)	Critical appraisal tools developed by JBI for a range of study designs.
Reporting	Welcome to the NEW Preferred Reporting Items for Systematic Reviews & Meta-Analyses (PRISMA) website (PRISMA Executive, 2024)	Website for PRSIMA & related extensions. Consult the statement paper, explanation & elaboration paper, as well as the checklist.
	Equator Network (UK EQUATOR Centre, n.d.)	Repository of reporting guidelines for main study types, with focus on health research.

Conclusion

With the proliferation of evidence synthesis reviews in social work it is important that authors, editors, and peer reviewers become familiar with the relevant standards and best practices, and editors should consider including a librarian experienced in conducting evidence synthesis reviews as a peer reviewer. Researchers should assemble a review team with the necessary expertise and clearly discuss roles and responsibilities. Good project and data management practices will help ensure completion of the review in a reasonable time frame. Evidence synthesis reviews can be critical in informing policy and practice that impact and improve lives and should be conducted with careful adherence to guidelines and best practices, including sharing a protocol, a comprehensive, exhaustive literature search, and reporting to aid reproducibility. It is hoped that this article will serve as an aid to this pursuit.

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