Template for a Systematic Literature Review Protocol

**INTRODUCTION**

The present document aims to facilitate the preparation and writing of a protocol for a Systematic Literature Review (SLR) study. The document is a *simplified* template, mostly based on the Generalized Systematic Review Registration Form (van den Akker et al., 2020). It also contains references or links to other key works or supportive information pages.

**RECOMMENDED USE**

The template has been developed explicitly for educational purposes. In that way, the template is expected to contribute to the learning goal of planning, conducting, and reporting a SLR study. The template is also intended to be of use for researchers who require a starting structure for their study protocol. Keep in mind that a SLR protocol always needs to be customized according to specific study goals. Likewise, a protocol might need to be tailored to the requirements of a [preregistration](https://www.utwente.nl/en/bms/research/support/#preregistration) platform. Therefore, in the present template it is expected that the guiding information is eventually removed as well as any irrelevant sections (including this one). When suitable, new or more specific sections should be added.

**ABOUT THIS TEMPLATE**

The current version of this template was developed by Roberto R. Cruz Martínez, information specialist at the faculty of BMS of the University of Twente (version 1.0., 30-10-2023). Please send any questions or feedback about this template to: [r.cruzmartinez@utwente.nl](mailto:r.cruzmartinez@utwente.nl). For matters related to UT educational courses in which this document is or could be applied, please use instead the following address: [infospecs-bms@utwente.nl](mailto:infospecs-bms@utwente.nl).

**KEY REFERENCES**

Booth, A., Noyes, J., Flemming, K., Moore, G., Tunçalp, Ö., & Shakibazadeh, E. (2019). Formulating questions to explore complex interventions within qualitative evidence synthesis. *BMJ Glob Health*, *4*(Suppl 1), e001107. <https://doi.org/10.1136/bmjgh-2018-001107>

Sutton, A., Clowes, M., Preston, L., & Booth, A. (2019). Meeting the review family: exploring review types and associated information retrieval requirements. *Health Information & Libraries Journal*, *36*(3), 202-222. <https://doi.org/https://doi.org/10.1111/hir.12276>

van den Akker, O., Peters, G.-J., Bakker, C., Carlsson, R., Coles, N. A., Corker, K. S., Feldman, G., Mellor, D. T., Moreau, D., Nordström, T., Pfeiffer, N., Pickering, J., Riegelman, A., Topor, M., van Veggel, N., & Yeung, S. K. (2020). *Generalized Systematic Review Registration Form* [Preprint]. <https://doi.org/10.31222/osf.io/3nbea>

**[Review (working) title]**

[Name]

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# Background

Introduce the topic of your review, its aims, and/or provide a short summary of known literature and what your review adds to this literature. You should describe why the review is needed (i.e., a justification), as well as which reviews already exist on this or related topics.

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# Research question(s)

## Primary research question(s)

List the specific questions this review is meant to answer (i.e., the questions that inform the decisions made when designing the search strategy, and screening, extraction, and synthesis plans). You may find it helpful to refer to frameworks such as PICO (Population, Intervention, Comparison, Outcome) or SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type), to pinpoint your research questions. Many frameworks exist, see for example [Table S1](https://gh.bmj.com/content/bmjgh/4/Suppl_1/e001107/DC1/embed/inline-supplementary-material-1.pdf?download=true) in this supplementary material by Booth et al. (2019). Note that all analyses pertaining to primary research questions should normally be reported in the final report.

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## Secondary research question(s)

List additional research questions that you will examine, but that took less central roles in informing the review’s design. Note that all analyses pertaining to secondary research questions should normally be reported in the final report.

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# Review team and other contributors

Identify each member of the review team. At the very least, by their name, affiliation, their (planned) role within the team. For an exemplary taxonomy of different roles in scientific works, check out the [CRediT author statement](https://www.elsevier.com/authors/policies-and-guidelines/credit-author-statement).

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# Type of review

This can be, for example, a meta-analysis, evidence map, or a qualitative review. Also indicate whether you used any guidelines, tools, or checklists to prepare your protocol and, if so, which ones. For an [overview of different types of reviews](https://doi.org/10.1111/hir.12276), take a look at the work of Sutton et al. (2019).

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# Search strategy

## Databases

List the databases you will search (e.g., Scopus, Web of Science, PsycINFO, PubMed,). For each database and where applicable, list the interface you used to search that database (e.g., Ovid or EBSCO). Some databases are provided by the same organisation, in which case the interface can have the same name (e.g., PubMed). Also for each database, include a justification for your decision to search in it (e.g., what type of content is indexed or retrievable in that database?)

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## Grey literature

If applicable, list your strategies for locating grey literature (i.e., sources not indexed in the databases you search) such as preprints (e.g., disciplinary repositories such as ArXiv or PsyArXiv or university repositories), dissertations and theses, conference proceedings and abstracts, government/industry reports, etc.

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## Other search strategies or resources

List any additional search strategies you aim to employ. For example, backward reference tracking (look through other sources cited in your included sources), or forward reference tracking (look through the sources that cite your included sources).

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## Inclusion and exclusion criteria

List the specific selection criteria (for inclusion and exclusion) that you will use to inform your search strategy and screening stages. Note that inclusion criteria are typically used to inform the search strategy (i.e., the ‘must-haves’ of literature you are interested in). In comparison, exclusion criteria are mostly used during your screening to eliminate sources from the full set identified in your search. During screening, typically as soon as an exclusion criterion is met, an entry is excluded. Avoid unnecessary repetition but, where applicable, inclusion criteria can be (explicitly) reformulated into exclusion criteria.

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## Search strings or queries

Start by clearly identifying the key concepts of your search (i.e., the mutually exclusive topics of your research, which are also collectively exhaustive, meaning they effectively cover your information needs). For each key concept, also explicitly identify the relevant related terms that were taken into account when creating the search strings. Finally, for each database/interface combination, list the query you will input (note that the available fields and operators can differ by database and by interface). The query string should also reflect, when suitable, your inclusion criteria, the entities you want to extract (see “extraction”) and other key requirements (e.g., study designs of interest such as qualitative studies, RCTs, or prevalence studies).

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## Search strategy justification

Search strategies are often compromises, balancing pragmatic considerations with scientific rigour. Here, describe any justification for your key decisions. For example, on your choice of terms for the reported search strings or the search strategies for grey literature.

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# Screening

## Screening stages

Describe the stages you will use for screening. For example, if you expect many hits, you may want to first screen based on titles only, in a second round also include abstracts and keywords, and in a third round screen based on full texts. Start by describing the deduplication procedure. Next, report if (and how) a pilot screening stage will be conducted to make any refinements. For each stage, describe which bibliographic fields (e.g., title, abstract, authors) will be visible during the screening, and which fields will be blinded (could depend on the screening tool, see below).

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## Screening tool(s)

List any tools you will use for the review, for instance to store, screen search results, and keep track of decisions. When applicable, include version numbers and operating systems. For example, during screening you should indicate for each round whether the screening will be computer-assisted (e.g., [Covidence](https://www.covidence.org/) or Microsoft Excel) or supported by other tools (e.g., machine learning, as in [ASReview](https://asreview.nl/)).

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## Screener instructions

List any instructions provided to the screener(s). For example, how to best apply the exclusion criteria with the screening tool(s) or how flexible (i.e., inclusive) to be throughout screening stages.

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# Data extraction

## Data items

List the data that will be extracted from each included source. For example, 1) variables such as values of independent and dependent variables, and potential moderators (e.g., means, standard deviations); 2) estimations of associations between variables or effect sizes; 3) qualitative data fragments (e.g., interview material or synthesized themes); 4) descriptions of the used methods such as the included studies’ designs, sample sizes, sample characteristics, and key methodological procedures; 5) metadata such as authors, institutions, and year of publication; 6) and (other) risk of bias indicators.

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## Extraction stages

Describe the stages you will use for extraction. Examples of stages are: a training stage, a reliability verification stage, and a final extraction stage; or first extracting primary data and in a second stage risk of bias information; or two extractors working sequentially or in parallel. Also indicate for each stage whether the extraction is done by a computer (e.g., through natural language processing), a human, or a computer supervised by a human.

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## Extraction tool(s)

List any tools you will use for the data extraction. When applicable, include version numbers and operating systems. For example, if a customised data extraction form was designed in Microsoft Excel or Microsoft Word.

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## Extractor instructions

List the instructions provided to the extractors (i.e., those performing the data extraction). For example, how to deal with data that might be unclear or reported in unexpected ways.

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# Risk of bias (quality) assessment

If applicable, describe how you will perform the risk of bias or quality assessment. For example, the characteristics of the studies that will be assessed and what specific tools you will use for that purpose (e.g., [CASP checklists](https://casp-uk.net/casp-tools-checklists/)). Specify how the assessment will impact the following stages (e.g., if studies judged to be of low-quality will be excluded from the synthesis, or rather weighted differently for the analysis). Include also who will be involved in the assessment and who or how any final judgements will be made.

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# Synthesis

## Planned data transformations

Describe your plans for transforming the raw extracted data. In a quantitative review, this may include converting effect sizes to other metrics (e.g., convert all metrics to Pearson correlation coefficients). In a qualitative review, it could entail recoding or (re)categorizing extracted qualitative data fragments (e.g., coding extracted data according to the constructs of a theoretical frameworks). Generally for all reviews, this also includes aggregating extracted data prior to the main synthesis procedures (e.g., compute the mean of a variable over all samples in one source).

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## Missing or unclear data

Describe how you will deal with missing data (i.e., cases where it is not possible to extract one or more entities from the source material, and your efforts to obtain the missing or unclear information). For example, if data could not be obtained even after contacting the authors.

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## Synthesis method

Identify the formal method you will use to combine individual source data. In a quantitative review this could include information about statistical models that will be fitted (e.g., random effects meta-analysis). In a qualitative review, this could include methods of synthesising qualitative data (e.g., thematic analysis or framework synthesis). Include references to works that introduce, describe, or provide guidance to such methods (of course, only to those that actually informed your protocol).

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## Synthesis procedure

Describe the specific procedure you will apply to arrive at an answer to the research question(s). For example, in meta-analyses this is the full analysis plan, including any planned subgroup analyses and moderator analyses, the (multilevel) model specification, and preferably the analysis code. For qualitative reviews, it is the procedure you plan to use to collate your results into a coherent (overarching) picture. If you distinguish synthesis tiers (e.g., primary and secondary analysis, or confirmatory and exploratory analyses), list them and indicate which procedures you plan to use for each. Also specify what you will do if parts of the plan can’t be properly executed.

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# Additional information

Provide any other information that is relevant to describe in the review protocol.

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