Research Review Types

Narrative literature review

Research process

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How Are Reviews Related?

- Meta-Analysis
- Systematic Reviews (has specific criteria)
- All reviews (Literature)

Source: Hillary Fox, University of West Florida Lib Guides, https://tinyurl.com/yx4krvuf
What is a Literature Review?

• A literature review is a comprehensive summary of previous research on a topic.

• Surveys scholarly articles, books, and other sources relevant to a particular area of research.

• Enumerates, describes, summarizes, evaluates and clarifies previous research.

• Acknowledges the work of previous researchers

Source: Bloomsburg State University, https://tinyurl.com/5drbepvz
Literature Review Steps

1. Identify your question
2. Review discipline styles
3. Search the literature
4. Manage your references
5. Critically analyse and evaluate
6. Synthesise
7. Write the review

Seven steps to producing a literature review

Source: https://dkit.ie.libguides.com/literaturereview
What is a Systematic Review?

• A type of review that uses repeatable methods to find, select, and synthesize all available evidence
• It includes a clearly stated set of objectives with pre-defined eligibility criteria for studies
• A search that attempts to identify all studies that would meet the eligibility criteria
• An assessment of the validity of the findings of the included studies, such as an assessment of risk of bias
• A systematic presentation, and synthesis, of the characteristics and findings of the included studies.

Source: Temple University Lib Guides, https://tinyurl.com/2wrvu9ff
Systematic Review Characteristics

• Clearly-defined question with inclusion and exclusion criteria
• Rigorous search of research evidence from multiple studies
• Phases of screening - data extraction and management, analysis and interpretation of results, and risk of bias assessment
• Can involve narrative approaches to integrations, or quantitative approaches that integrate findings statistically by using individual studies

Source: Temple University Lib Guides, https://tinyurl.com/2wrvu9ff
Identify the issue and determine the question

Write a plan for the review (protocol)

Search for studies

Sift and select studies

Extract data from the studies

Assess the quality of the studies

Combine the data (synthesis or meta-analysis)

Discuss and conclude overall findings

Systematic Review

Dissemination

Source: Cochrane Infographics, https://cccrg.cochrane.org/infographics
## Systematic vs. Literature Review

<table>
<thead>
<tr>
<th></th>
<th>Systematic Review</th>
<th>Literature Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question</td>
<td>Focused on a single question</td>
<td>Not necessarily focused on a single question but may describe an overview</td>
</tr>
<tr>
<td>Protocol</td>
<td>A peer review protocol or plan is included</td>
<td>No protocol is included</td>
</tr>
<tr>
<td>Background</td>
<td>Both provide summaries of the available literature on a topic</td>
<td></td>
</tr>
<tr>
<td>Objectives</td>
<td>Clear objectives are identified</td>
<td>Objectives may or may not be identified</td>
</tr>
<tr>
<td>Inclusion &amp; exclusion criteria</td>
<td>Criteria stated before review is conducted</td>
<td>Criteria not specified</td>
</tr>
<tr>
<td>Search strategy</td>
<td>Comprehensive search conducted in a systematic way</td>
<td>Strategy not explicitly stated</td>
</tr>
<tr>
<td>Process of selecting articles</td>
<td>Usually clear and explicit</td>
<td>Not described in a literature review</td>
</tr>
<tr>
<td>Process of evaluating articles</td>
<td>Comprehensive evaluation of study quality</td>
<td>Evaluation of study quality may or may not be included</td>
</tr>
<tr>
<td>Results and data synthesis</td>
<td>Clear summaries based on high quality evidence</td>
<td>Summary based on studies where the quality of articles may not be specified. May also be influenced by the reviewer’s theories, needs and beliefs.</td>
</tr>
<tr>
<td>Discussion</td>
<td>Written by an expert or group of experts with a detailed and well-grounded knowledge of the issues.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Lynn Kysh, San Jose State University, https://tinyurl.com/ydyyu8v6
Meta Analysis Defined

• Meta-analysis is a systematic, objective way to combine data from studies, and arrive at an estimate of treatment effectiveness and statistical significance

• Combines data from case control and cohort studies

• Advantages - increases sample size and allows for analysis that is not possible otherwise

• Disadvantages - publication bias and quality of design may lead to misleading results

Source: British Medical Journals https://ebn.bmj.com/content/16/1/3
How is a **Meta-analysis** Performed?

**STEP 1**
A theory based question is formulated, and scholarly works are searched for the framed questions in databases such as PubMed, Medline, Google Scholar, or any other valid source of scientific research.

**STEP 2**
The abstract and title of the individual papers are read and relevant ones are chosen.

**STEP 3**
Information from the selected final set of articles is extracted.

**STEP 4**
Quality of the information in the articles is determined; preferably with software like GRADE or using a judgment of their internal validity.

**STEP 5**
The heterogeneity of the articles is determined.

**STEP 6**
The summary effect size is estimated in the form of Odds Ration, and both fixed and random effects models are used and a forest plot is constructed.

**STEP 7**
The extent of the publication bias in these articles is determined and a funnel plot is run.

**STEP 8**
Subgroup analysis and meta-regression test are conducted to check if there are subsets of research that capture summary effects.

Source: www.statswork.com
Steps in Meta-Analysis

- **Identification** - find all of the pertinent articles on topic
- **Selection** - include enough information for analysis (standard deviation or standard error) and study design (controlled trials only vs. randomized controlled trials)
- **Abstraction** – identify appropriate studies and abstract relevant data
- **Analysis** – identify degree of between-study variability

Source: Michigan State University Libraries, https://tinyurl.com/5n6d9b89
Meta-Syntheses Defined

• Consolidates qualitative data to form a new interpretation
• Builds upon new theories that compare meta-analysis to test a hypothesis using quantitative data
• Explains why the intervention works, or not, and provides hypothesis for future testing or comparison with trial outcomes
• Provides meaning across many qualitative studies

Source: Temple University Lib Guides, https://tinyurl.com/ynnzez75
Meta-Syntheses Steps

1. Setting the research question
2. Systematic literature review
3. Searching and selecting appropriate texts
4. Data extraction from the texts
5. Analysis & combining the qualitative findings
6. Quality control
7. Findings presentation