Knowledge Syntheses Services: From Dreams to Reality

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UHN Library & Information Services
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University Health Network
UHN Libraries & Information Services

- Toronto General Hospital
- Toronto Western Hospital
- Princess Margaret Cancer Centre
- Toronto Rehabilitation Institute – University, Rumsey Cardiac, Bickle
Information Specialist Services

- Literature searches
- Knowledge synthesis searches
  - Systematic reviews
  - Scoping reviews
  - Rapid Reviews
  - Guidelines
- Consultation
- Workshops/Training
  - Database searching
  - Citation management
  - Knowledge synthesis (systematic review overview, different review types)
Knowledge Synthesis

Reviews with *systematic methodologies and processes* can fall under the *Knowledge Syntheses* umbrella but each may have a different name.

- Systematic Review
- Rapid Review
- Critical Review
- Meta-Analysis
- Scoping Review
- Mapping Review
- Mixed Methods Review
- Etc.
<table>
<thead>
<tr>
<th>Feature</th>
<th>Traditional (Narrative) Review</th>
<th>Systematic Review</th>
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<tbody>
<tr>
<td>Question</td>
<td>Often broad in scope</td>
<td>Focused research question</td>
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<tr>
<td>Protocol</td>
<td>None</td>
<td>A priori research protocol or plan needed</td>
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<tr>
<td>Authors</td>
<td>Can be one person</td>
<td>Requires a team of experts, often including librarians and statisticians</td>
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<tr>
<td>Sources and search</td>
<td>Not usually specified (therefore not reproducible and transparent), potentially biased</td>
<td>Comprehensive and explicit search strategy with a list of all databases used. Intent to find all primary studies on question.</td>
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<tr>
<td>Selection</td>
<td>Not usually specified (therefore not reproducible and transparent), potentially biased</td>
<td>Inclusion/exclusion criteria defined at outset, with at least two independent reviewers</td>
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<tr>
<td>Appraisal</td>
<td>Variable</td>
<td>Rigorous critical appraisal</td>
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<tr>
<td>Synthesis</td>
<td>Often a qualitative summary</td>
<td>Qualitative summary + Quantitative synthesis when data allows</td>
</tr>
<tr>
<td>Inferences</td>
<td>Sometimes evidence-based</td>
<td>Usually evidence-based</td>
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</table>
Basic Searching

1 exp Epilepsy/
2 epilep*.mp.
3 seizur*.mp.
4 seizing.mp.
5 OR/1-4
Exhaustive Searching

1 exp Epilepsy/
2 epilep*.mp.
3 seizur*.mp.
4 seizing.mp.
5 aura?.mp.
6 myoclonus/ [1966-1976]
7 (dravet adj4 syndrom*).mp.
8 myocl*.*.mp.
9 (atroph* adj4 dentatorubral-pallidoluysian).mp.
10 atypical inclusion body disease*.mp.
11 (biotin adj4 encephalopath*).mp.
12 naito-oyanagi.mp.
13 (haw river adj4 syndrome*).mp.
14 (may white adj4 syndrome*).mp.
15 lafora.mp.
16 merrf.mp.
17 fukuhara.mp.
18 unverricht.mp.
19 lundborg.mp.
20 petit mal.mp.
21 grand mal.mp.
22 jme.mp.
23 jmes.mp.
24 janz.mp.
26 bcects.mp.
27 bects.mp.
28 convuls*.mp.
29 pyknolep*.mp.
30 tonic-clonic.mp.
31 (nodding adj4 syndrome*).mp.
32 (lightning adj4 attack*).mp.
33 (salaam adj4 attack*).mp.
34 (cryptogenic adj4 spasm*).mp.
35 hypsarrhythm*.mp.
36 (nodding adj4 spasm*).mp.
37 (spasm* adj4 nutan*).mp.
38 (symptom* adj4 west).mp.
39 (west adj4 syndrom*).mp.
40 landau-kleffner.mp.
41 lennox gastaut.mp.
42 absence status.mp.
43 kozhevniko???.mp.
44 kojewniko???.mp.
45 kojevniko???.mp.
46 kozhevniko???.mp.
47 OR/1-46
History of Knowledge Synthesis Services

- Originally requesting a search for a systematic review was the same as requesting a literature search
- 2015-2019 a systematic review work plan introduced
  - This was adapted with permission from McGill’s workplan
  - Protocol not required
  - Co-authorship not guaranteed; up to client to decide
Authorship
Increasing Workload

\[ y = 315.18x + 91.626 \]

<table>
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<tr>
<th>Year</th>
<th>Total Time (Hours) Spent on SRs per Year before Service Model Change</th>
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<tbody>
<tr>
<td>2012</td>
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Lack of Preparation from Clients
Students’ Coursework
Environmental Scan

- Nielson et al presented an environmental scan at CHLA/ABSC in St. John’s, 2018
- Many service models
- Services broken into tiers with different expectations

Neilson C, Askin N, Demczuk L, Gottschalk T, Szwajcer A. An environmental scan of systematic review service models. Canadian Health Libraries Association/Association des bibliothèques de la santé du Canada conference; 2018 Jun 15-18; St. John’s, NL.

Photo by Annie Spratt on Unsplash
Process

1. Looked at services we or other libraries provided
2. Brainstorm potential other aspects of KS projects we could help with
3. Organize them into categories
4. Think about requirements

Cycle between smaller KSS team and full IS team until agreement
Consultation

1 hour consultation(s) for advice / instruction on areas like:

- Choosing an appropriate KS method
- Resources to help develop a protocol
- Search skills for the type of KS
- Documenting and reporting a search process
- Etc.

Requirements

- Scheduling an appointment

For full details: UHNLibraries.ca/KSS
Coursework

Assistance performing a KS on your own, including with:

- Choosing an appropriate KS method
- Developing a research question and/or search question(s)
- Improving your search strategies
- How to document your search process
- Etc.

Requirements

- Scheduling appointments
- UHN affiliation

For full details: UHNLibraries.ca/KSS
Full Service

Consultations on any topic related to your KS and a librarian joins your KS team to:

- Choose appropriate databases
- Develop and run search strategies
- Document search process
- Citation searching
- Write search methods for the manuscript
- Etc.

Requirements

- Proposal form and protocol
- Appropriate team assembled
- Authorship for librarian
- Librarian reviews manuscript prior to submission
- UHN Affiliation

For full details: UHNLibraries.ca/KSS
What is a Literature Review?

A literature review provides an overview of what's been written about a specific topic. It is a generic term. There are many different types of literature reviews which can cover a wide range of subjects at various levels of completeness and comprehensiveness. Choosing the type of review you wish to conduct will depend on the purpose of your review, and the time and resources you have available.

This page will provide definitions of some of the most common review types in the health sciences and links to relevant reporting guidelines or methodological papers.


Traditional (Narrative) Review

Traditional (narrative) literature reviews provide a broad overview of a research topic with no clear methodological approach. Information is collected and interpreted unsystematically with subjective summaries of findings. Authors aim to describe and discuss the literature from a contextual or theoretical point of view. Although the reviews may be conducted by topic experts, due to preconceived ideas or conclusions, they could be subject to bias. This sort of literature review can be appropriate if you have a broad topic area, are working on your own, or do not have a specific question to address.
# Common Types of Knowledge Syntheses

<table>
<thead>
<tr>
<th>Systematic Reviews</th>
<th>Meta-Analysis</th>
<th>Scoping Reviews</th>
<th>Rapid or Restricted Reviews</th>
<th>Clinical Practice Guidelines</th>
<th>Realist Reviews</th>
<th>Mixed Methods Reviews</th>
<th>Qualitative Synthesis</th>
<th>Narrative Synthesis</th>
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A systematic review attempts to identify, appraise and synthesize all the empirical evidence that meets pre-specified eligibility criteria to answer a given research question. Researchers conducting systematic reviews use explicit methods aimed at minimizing bias, in order to produce more reliable findings that can be used to inform decision making. (See Section 1.2 in the Cochrane Handbook for Systematic Reviews of Interventions.)

A systematic review is not the same as a traditional (narrative) review or a literature review. Unlike other kinds of reviews, systematic reviews must be as thorough and unbiased as possible, and must also make explicit how the search was conducted. Systematic reviews may or may not include a meta-analysis.

On average, a systematic review project takes a year. If your timelines are shorter, you may wish to consider other types of synthesis projects or a traditional (narrative) review. See suggested timelines for a Cochrane Review for reference.

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**Systematic Review Overview** (UHN)

**Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA)**


What is Knowledge Synthesis?

Knowledge Syntheses are research methods which gather, appraise, synthesize and analyze existing research on a topic. Systematic reviews and scoping reviews are two types of knowledge syntheses, but there are many other types of literature reviews as well. The type of knowledge synthesis method that is appropriate for your question depends on what you are aiming to find out as well as practical concerns around time and other resources you have available to you.

Is this the right review for you?

Depending upon the purpose of your review, and the time and resources you have available, a systematic review or scoping review may not be the best option. Consider the types of literature reviews available to determine the most appropriate one for your project.

Librarian’s Role in Knowledge Synthesis Projects

A librarian or Information Specialist can be a valuable part of your Systematic Review or Knowledge Synthesis Team. Information Specialists at UHN have expertise in searching for evidence and in developing search strategies for systematic reviews, scoping reviews, and other knowledge synthesis projects. We can help with numerous steps throughout the planning, conducting, and reporting phases of your review, including:

- actively helping to develop and refine your topic,
- helping to determine feasibility of your review question and review type,
- developing and executing systematic literature searches in all relevant databases,
- documenting search strategies,
- drafting the search methods section and corresponding appendix for your manuscript,
- providing information for your PRISMA flow diagram.
Your UHN Information Specialist will provide a 1-hour consult meeting during which you and/or your team can choose to receive advice, instruction or assistance on one or more of the following topics (depending upon time):

- Choosing the appropriate type of knowledge synthesis for your project
- Developing your research/search question and using PICO
- Finding resources to guide the development of your review protocol
- Choosing an appropriate journal to submit your manuscript to
- Choosing the right databases to search
- Navigating open access considerations
- Choosing and using a citation manager such as Endnote
- How to conduct searches for knowledge syntheses
- How to develop, test and translate search strategies for different databases
- How to document and report your search process
- How to update or adapt another person's search strategy
- Tips for grey literature searching or hand searching
- Answering basic questions about the screening process and directing you to more in depth information about screening
- Finding and using Risk of Bias tools
- Available options for dissemination of your published article

We also have group workshops available for some of these topics.
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- ISs use proposal form at their own discretion
- Final discussion with ISs about Coursework option
- Blog post & website carousel image
- Last review of KSS page - goes live, tweeted

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- Item in UHN-wide newsletter
- New service models in place
- Item in KITE Newsletter
- March 15, item in Research News
Time (hours) on KS Projects per Month

- January
- February
- March
- April
- May
- June
- July
- August
- September
- October
- November
- December

2018
2019

New Model Launched
Interviews with Information Specialists

- 7 interviews conducted by an iSchool Student
- Thematic analysis applied to interview transcripts using an inductive method (allowing the data to determine your themes)
- 3 independent coders

Steps
1. Familiarization
2. Coding
3. Generating themes
4. Reviewing themes
5. Defining and naming themes
6. Writing up
Eight Themes Emerged

1. Workload
2. Control/Agency
3. Communication
4. Professional Recognition
5. Client Knowledge
6. Client Attitudes/Expectations
7. Quality
8. Concern Over Buy-In
Workload

Before
“I would say the amount of requests that we were getting was a lot… it was a lot and it could be stressful… and you’re just trying to juggle different pieces…”

After
“It’s nice to be working on two reviews instead of nine.”
Control/Agency

Before
“And also we wanted more control over the paper. Being able to say this isn't a good job, then we have the ability to pull back.”

After
“This gives me more control over which projects I invest time in because I can say if you want me to do these for you, you need to provide me with these things.”
Communication

“I really like having exactly what we’re going to offer and what we need from the people in order to help them as well, too. I think it’s very valuable to have everything laid out there like that.”

“I do like having the knowledge synthesis project proposal; it gives me something to anchor everything to, and I can always go back and say this is what we talked about…It’s nice to have recourse to go to…”
“The amount of work we’d done didn’t get appreciated and...the research team said we’ll put you as co-author, but they didn’t, even though the person wrote their methods section...that’s our biggest issue, for our work to be known, acknowledged properly. And some people were taking advantage of our services.”
Client Knowledge

“We need to make sure that they understand what a systematic review is. There’s often among clients a lot of terminology incorrectness. So a lot of times, they’re thinking just a simple literature search, but they’ll come and say they want to do a systematic review.”
Client Attitudes/Expectations

Before
“People would come, and they weren’t prepared, they didn’t have their protocol, they wanted me to do a search for them very quickly, they didn’t necessarily know what was involved, and they would just disappear after I did a lot of preparatory work... they realized that maybe they didn’t have enough people on their team in order to do a project of this size, or maybe they weren’t as serious as they thought they were.”

After
“I find that people are more serious about the project when they realized that they had to write their protocol in advance, as they’re supposed to.”
Quality

Before
“You’re doing work for these projects where people are trying to take shortcuts right away and you try to talk them out of it but you’re still working on this project that you know isn’t going to end up as something good."

After
“…the ones that are making their way through all of the hurdles are the ones that are actually of quality, and the people are demonstrating that they’re going to be able to put the work in. And so because of that too, I’m seeing more projects that are actually moving…”
Concern Over Buy-In

“I guess there is the worry and you keep an eye on the future that you don’t want to discourage people or turn them away…”

“…there is worry about saying that we have to be co-authors, that clients aren't going to want to give us co-authorship or aren’t going to want to work with us…you don’t want to alienate people…”
Next Steps…

- Gather client feedback
- Further analysis of usage statistics
- Determine if clients have been following through on their agreement to grant librarian co-authorship
Thank you!

Questions?

For more information contact us:uhnlibraries@uhn.ca