Systematic Grey Literature Searching

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Learning Objectives

By the end of today’s session, you should be able to:

1. Define what grey literature is and is not
2. Justify why it is important to search grey literature
3. Identify key grey literature sources
4. Select grey literature sources specific to a topic and begin creating a search plan
5. Articulate the process involved with producing a well-documented and transparent grey literature search
What is grey literature?
Why search grey literature?
Who should be searching for grey literature?
What is Grey Literature?

• “…information produced on all levels of government, academia, business and industry in electronic and print formats not controlled by commercial publishing” (Schöpfel,J., 2010.p.1)

• Information that has not been described and indexed

• Therefore, *usually* cannot be found in databases

• Essentially: Everything other than traditional academic publications
A government report on death rates from opioid overdose is...

Respond at PollEv.com/terukok228
A systematic review published in the New England Journal of Medicine

Respond at PollEv.com/terukok228

Grey Literature

NOT Grey Literature
A clinical trial in an online clinical trial repository

Respond at PollEv.com/terukok228

Grey Literature

NOT Grey Literature
"Research studies in which the reported outcomes are negative are less likely to be published" (Hopewell et al 2009)
“Systematic reviews aim to identify and analyze all the relevant trials to have the most complete picture of the available evidence”
(Peto 1987; Bonato 2018)

“The aim [of a systematic or scoping review] is to identify all relevant studies on a topic so that all of the relevant interventions can be identified and analyzed”
(Bonato 2018)
Why do you think it is important to search grey literature, especially when conducting clinical research or a systematic review?

Respond at PollEv.com/terukok228
Why search grey literature?

- Helps to ensure that your review is truly comprehensive
- Unpublished trial data could change statistical results
- Reduces publication bias
- In order to meet the standards:
  - Cochrane Handbook
  - Campbell Collaboration
  - Johanna Briggs Institute

“Failure to include grey literature sources compromises the validity and reliability [of a systematic review]”
(Bonato 2018)
What does it mean to be “systematic”?

- **Be reproducible:** Someone else can re-run your search strategies and get the same results.

- **Be comprehensive:** Searching in all of the relevant places for your research topic.

- **Be transparent:** Open about where you search and why.
Who should search for grey literature?

- Content Expert/Principal Investigator
- Screener/Reviewer 1
- Screener/Reviewer 2
- Statistician
- Librarian/Information Specialist
PRISMA flow diagram

Records identified through database searching:
- Medline: 2346
- EMBASE: 3322
- Cochrane: 127
- ERIC: 29
- Education Source: 9
  (n = 5833)

Additional records identified through other sources
  (n = )

Records after duplicates removed
  (n = )

Records screened
  (n = )

Records excluded
  (n = )

Full-text articles assessed for eligibility
  (n = )

Full-text articles excluded, with reasons
  (n = )

Studies included in qualitative synthesis
  (n = )

Studies included in quantitative synthesis (meta-analysis)
  (n = )

= Grey literature!
Where is grey literature found?

How do I effectively search grey literature?
Where is grey literature found?

There are four main places where you should search for grey literature:

1) Grey literature databases
2) Customized Google search engines
3) Targeted websites
4) Consultation with content experts
Common Grey Literature Sources 1

- **Databases of Grey Literature** ➔ Convenient, search to find missing studies
  - [OpenGrey](http://opengrey.eu/), [CIHI](http://cihi.ca/)

- **Research Registries** ➔ Search to find missing studies, ongoing research projects, systematic review protocols, unpublished reviews
  - [PROSPERO](https://www.crd.york.ac.uk/prospero/), [HSRProj](https://hsrproj.org/), [NIH RePorter](https://reporter.nih.gov/)

- **Clinical Trial Registers** ➔ Search to find missing studies, data from unpublished studies
  - [ClinicalTrials.gov](https://clinicaltrials.gov/), [WHO ICTRP](http://www.who.int/ictrp), [Canadian Cancer Trials](https://ccg-ccct.ca/), [ISRCTN Registry](https://www.isrctn.com/), [UKCRN](https://www.ukcrn.org/)

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**Health Sciences Library**

**St. Michael's**

**Inspired Care. Inspiring Science.**
Common Grey Literature Sources 2

• **Drug and Device Information** ➔ Search to find missing studies, unpublished information, missing data from published studies
  – Canada Health Drug Product Database, Drug Class Reviews, US Food and Drug Administration, European Medicines Agency

• **Government Documents** ➔ Search to find missing studies, unpublished studies
  – Canadian Docs Google, Government of Canada Publications

• **Practice Guidelines** ➔ Search to find missing studies, unpublished studies
  – Canadian Medical Association, Canadian Standards Association, NICE, etc.
Common Grey Literature Sources 3

• Conferences
  – Some traditional databases contain conference proceedings (CINAHL, PsycINFO for example)
  – But generally requires targeted web searching to find

• Institutional Repositories
  – Identify prominent researchers in the field and target those institutions

• Professional Associations

• Theses and Dissertations
Help.
Basic steps to systematic grey literature searching

1. Understand your question
2. Identify your concepts
3. Consider your scope
4. Consider who cares
5. Create a searching plan
6. Search according to your plan
7. Document as you go
8. Report in detail
1. Understand your research question

Do screens effect sleep?

In otherwise healthy children, does using electronic screens in the evening effect sleep?

P: Healthy children
I: Electronic screens
C: No screens
O: Effects on sleep
2. Identify your main concepts

- Sleep
- Screens
- Children
3. Determine Your Scope

Am I interested in *Canadian literature only*? North American? European? International?

Which population am I interested in? *Children, adults, seniors? Women, men? Urban populations or rural?*
4. Who cares enough to write about my topic?

Who would create this information?

Sleep specialists, neurologists, PhD students?

Dissertations, Clinical trials, Research registries

Who would disseminate this information?

Interest groups, institutions, government?

Associations, conference proceedings, gov’t. reports
5. Make a searching plan

<table>
<thead>
<tr>
<th>Website / Source</th>
<th>Type of Grey Literature</th>
</tr>
</thead>
<tbody>
<tr>
<td>National Sleep Foundation</td>
<td>Association</td>
</tr>
<tr>
<td>Canadian Sleep Society</td>
<td>Association</td>
</tr>
<tr>
<td>Sleep Health Conference (sleephealthcme.ca)</td>
<td>Conference Proceedings</td>
</tr>
<tr>
<td>Clinicaltrials.gov</td>
<td>Clinical Trials</td>
</tr>
<tr>
<td>Publications.gc.ca</td>
<td>Government Reports</td>
</tr>
</tbody>
</table>
Activity: Creating a search plan

Please complete parts one and two of Activity #1 on the handout. Be prepared to share your process.

7 minutes

- Once you have a plan, you are ready to start searching
- Remember to document your process AS YOU GO

<table>
<thead>
<tr>
<th>Name of Website</th>
<th>URL</th>
<th>Dates Searched</th>
<th>Search terms used (include if you searched in specific sections)</th>
<th>Results of your search</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Not searched: Not relevant</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Searched: results found</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(number): 5 total, 1 included</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Searched: results may be of peripheral interest</td>
</tr>
</tbody>
</table>
Activity: Document your search

Please complete part three of Activity #1 on the handout. Be prepared to share your process.

5 minutes
Additional Resources: Advanced Google DEMO
Additional Resources: Checklists

1) **Grey Matters**: A Practical Tool for Searching Health-Related Grey Literature:  
   [https://www.cadth.ca/resources/finding-evidence/grey-matters](https://www.cadth.ca/resources/finding-evidence/grey-matters)

2) **Physical Rehabilitation**: Grey Literature Search Checklist:  
   [http://library.nshealth.ca/GreyLit/Tips](http://library.nshealth.ca/GreyLit/Tips)

3) **Scientific Research Center Grey Literature**: Tips and Checklist:  
Critical Appraisal

The AACODS Checklist:

Accuracy  Authority  Coverage  Objectivity  Date  Significance
How do I know when to stop?

Remember the goals of the search:

1. To identify studies that you might have missed → did you search in the most likely places to have published relevant information?

2. To be comprehensive → did you search a variety of different sources?

3. To be transparent → did you keep track of where/how you searched?

4. To be exhaustive → have you achieved saturation? Are you no longer finding anything that is relevant?
8. Reporting

Include:

- Name of search engine or website
- URL, if applicable
- Dates searched
- Search terms used
- How results were selected
- How many results were selected
Searches were made by means of the Google search engine ([www.google.com](http://www.google.com)) using the search terms listed in Appendix 7. It is acknowledged that other Google search options, such as date, geographic location and file type, could have been used to narrow the results, but this was felt to be too exclusive, as it was important to capture as broad a range of results as possible.

The first 100 results returned by each search strategy were scanned for relevance and those judged to be potentially relevant were followed up. As only the first 100 results were to be examined, it was decided to break down the list of search terms into smaller search strings to avoid the danger that a long string would result in the first 100 results being relevant to only the first search term. These were then combined with search terms on study methods or general outcome. The number of results returned for each search string can be found in Appendix 8.
Activity: Review a search

Please evaluate the grey literature strategy reported on your handout in Activity #2. With your neighbour, please discuss:

1) Is this search effectively reported? Why or why not?
2) Is this an effective grey literature search?

Go to PollEv.com/terukok228 to respond
Is this search effectively reported? Is this search an effective grey literature search? Why or why not?

Respond at PollEv.com/terukok228
Summary:

- Grey literature is information not found in traditionally indexed databases.
- Grey literature is important to include in your research because it encompasses a significant proportion of information, and may contain information otherwise missed.
- Systematically searching grey literature involves understanding your question, searching comprehensively, documenting as you go, and effectively reporting.
FYI: Upcoming workshops

Tuesday, April 2nd, 12:00-1:00 p.m.
Advanced Searching Using Medline

Tuesday, April 16th, 12:00-1:00 p.m.
Mendeley: The Free Reference Manager

Friday, April 26th, 3:00-3:30 p.m.
Systematic Review, Scoping Review, Realist Review…What IS the difference?? (Drop-in)

Our workshops will return in the Spring! Stay tuned for our new workshop schedule (May – July), which will be released soon!
Thank you!

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References Used


Additional References

