Authorship on Systematic Reviews: Ask for It

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UCSF Library
Overview

• Systematic Reviews – background & history
• Library and Librarian Involvement in Systematic Reviews
• Systematic Review services at UCSF
• Systematic Review Research Project
• Authorship on Systematic Reviews
Background

**Systematic Review** (from the PubMed Health Glossary):

A systematic review is a research study that collects and looks at multiple studies. Researchers use methods that are determined before they begin to frame one or more questions, then find and analyze the studies that relate to that question.
History

• In the Medicare Improvement for Patients and Providers Act of 2008, Congress directed the Institute of Medicine (IOM) to develop standards for conducting systematic reviews
• What is the IOM?
• A nonprofit organization established in 1970 as a component of the US National Academy of Sciences that works outside the framework of government to provide evidence-based research and recommendations for public health and science policy
• SR articles in PubMed 1948-
Libraries & Systematic Reviews

- Library involvement in SRs, through the medical literature beginning in the mid-1990s
- Involvement around evidence-based practice and the Cochrane Collaboration
- PubMed articles from mid-1990s
- Library Literature & Information Science Full Text (H.W. Wilson) from 1998
UCSF Library Environment

- Main Library on Parnassus Campus – 4 Education Librarians
- Branch Library in the Community Center at UCSF Mission Bay Campus
- Student study/Consulting space in Mission Hall at UCSF Mission Bay Campus
- Hospital Library at ZSFG Hospital – Clinical Librarian
- Hospital Library at Mt Zion Campus – Clinical Research Librarian
- UCSF Fresno
- Other UCSF facilities in San Francisco
UCSF Library SR Services

• Classes on systematic reviews
• Personal consultations for systematic reviews
SR Classes

- Parnassus Library – Series of systematic review classes
- Curriculum-integrated SR classes for specific programs
- ZSFG Library – Systematic review process class
- Mt Zion Library – Joanna Briggs Institute (JBI) systematic review class
SR Class Series

• Systematic Review: Is it right for you?
• Provides an overview of the systematic review process
• Discusses the scoping review – enough information? Already done?
• Database searching and grey literature
• Role of the reference manager in the SR process
• Systematic review software beyond the reference manager
• How to decide where to submit a manuscript
Steps of a systematic review

- Formulate the research question
- Develop a protocol – check PROSPERO for examples
- Identify relevant work – three or more sources
- Apply inclusion and exclusion criteria
- Abstract/summarize the evidence
- Assess the quality of the studies
- Analysis of evidence
- Interpret the findings
What do you need to do one?

**Time**
- 6 months minimum, 12-18 months maximum
- Cochrane says 12 months and they are an SR “machine”

**Team – a minimum of 3**
- Investigator/Reviewer
- Co-investigator(s)/Reviewer
- Administrator
- Statistician
- Librarian

**Topic**
- Enough data?
- Significant question?
The question

• This may be the hardest step
• Questions should be significant, answerable
• Many ways to turn a vague idea into a SR topic
  - Usually an iterative process
  - Begin examining the literature to see what is known -> build on that
  - ”Scoping search” may show that there is no information or that your question is answered already
• If using a librarian, best to get them involved early in the process
• Look at PROSPERO early in the process to develop protocol
Protocol

- Begin to frame this early in the process
- PROSPERO is full of protocol examples
- Forces a critical examination of the question and the review planning process

- Templates
  - JBI – 19 pages
  - Cochrane Public Health – 51 pages
  - Arthritis Research UK – 31 pages
  - University of Warwick – 4 pages
  - Prisma-P – 2 pages
PROSPERO
International prospective register of systematic reviews

- Title and time frames
- Team details, conflicts of interest, funding
- Methods is a very distilled description of how the SR will proceed from conception to writing
- General includes plans for dissemination and other information
Search

- Use protocol details as you proceed with your search
- However… the confusing part…
- Your question and protocol will evolve as you begin to explore the information about the question
- Tidy diagrams that place Question, Protocol, and Search as discrete and orderly steps are misleading
Search Strategies

Two features of search strategies:

• Sensitivity (ability to identify all relevant studies) ~find the true positives
• Specificity (ability to exclude irrelevant studies) ~eliminate true negatives
• Sensitivity and specificity are inversely related
Why handsearch?

“A combination of handsearching and electronic searching is the most comprehensive approach in identifying reports and randomized trials.”

(Hopewell 2007)
Key resources to locate SRs

- Cochrane database of systematic reviews
- DARE (not updated after March 2015)
- PubMed Clinical Queries
- JBI systematic reviews
- EMBASE
- Tripdatabase.com (can also be useful)
- PROSPERO (International prospective register of systematic reviews)
Also covered in the class series

- Connecting to UCSF resources
- Developing effective search strategies
- Basic search techniques
- PubMed search tips and tricks
- MESH: Medical subject headings
- Search exercises in different databases:
  - PubMed
  - EMBASE
  - Web of Science
  - Cochrane Library
  - Grey literature searching
- Citation management tools: EndNote, RefWorks, Zotero, Mendeley
- Writing and submitting for publication
Screening the results

• Usually a two step process
  - Title and abstract screening
  - Full text screening
• There are usually two reviewers for each article in both steps
• Helpful software
  - Excel
  - Microsoft Access or other database
  - Distiller
  - Eppi4
  - Covidence
Data abstraction

- Using the protocol
- Pull out the information designated from each study included in the final set of articles
- The software mentioned previously can help with this step as well
## Systematic review software

<table>
<thead>
<tr>
<th>Program</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covidence</td>
<td>3 reviews per year with unlimited team size = $445/yr. There is a limited free option to try it out 1 review per year, 2 reviewers</td>
<td>Nice interface, up and coming, just started charging for use</td>
</tr>
<tr>
<td>DistillerSR</td>
<td>Student $30/month; 5 users for 6 months = $4500</td>
<td>Best known, user friendly</td>
</tr>
<tr>
<td>Eppi-4</td>
<td>~$15/month for a single user; for 5 users on a shared review for 6 months = ~$765</td>
<td>Harder to use</td>
</tr>
<tr>
<td>RevMan5</td>
<td>Free</td>
<td>Works best in Cochrane “universe”</td>
</tr>
<tr>
<td>Sumari</td>
<td>Free</td>
<td>Works best in JBI “universe”; dated interface</td>
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</table>
Curriculum integrated SR classes

- TICR (Training in clinical research) – 1 hour class
- Global health program – 1 hour class
- School of Nursing PhD program – 3 hour class
Hospital-based SR classes

Systematic Reviews @ ZSFG
• Class focus is on the systematic review process
• Designed to walk users through the complexity of the process so they can decide if they want to conduct a systematic review
• Covers similar content to the UCSF SR series, but does not go into searching, reference managers, writing, etc.
• One hour class
Systematic reviews the JBI way

- Systematic review course at Mt Zion hospital
- Joanna Briggs Institute has its own database of systematic reviews
- JBI course is a very comprehensive training program
- International in scope
- Developed for nursing researchers
- Clinical librarian supports a group of nursing researchers at UCSF
- Course is 40 hours over 3-5 days
- Other librarians at Mt Zion hospital provide outreach services to other UCSF Medical Center personnel
Systematic review consultation services

- Individual appointments by request
- Faculty, students, or staff
- Involvement varies depending on researcher needs and desires
- Services offered:
  - help develop search strategies
  - mediated searching
  - downloading search results into a reference manager
  - eliminating duplicate articles
  - sharing final article set with database search numbers and date(s) searched
  - write search process for methods section of paper
  - create appendix with search strategies for paper
  - review paper and offer constructive criticism before article submission
Challenges with SR collaboration

• Communication is key, but problems can still arise
• Student may have an unhelpful faculty mentor
• Too few people on the team to screen articles and handle the review
• Faculty mentor may not actually understand the difference between a SR and a scoping review (or other review types)
• Lack of understanding of the SR methodology
• Unrealistic time expectations
Systematic review research project

Research Questions:

• Do UCSF researchers use Embase for systematic reviews?
• Are librarians involved in UCSF SRs?
• How is adherence to reporting standards/best practices?
• What’s the effect of IOM Guidelines?
• Can we use this data for targeted outreach?
Process

• Searched for systematic reviews written by UCSF authors in the last 10 years (2006-2016)
• Databases searched:
  - PubMed
  - EMBASE
  - Web of Science
Literature review findings

- Methodological quality of systematic reviews in several fields has room for improvement
- Librarian involvement in systematic reviews improves search reproducibility
- Librarian involvement also improves search standards, including the number of databases searched
Methods

2133 records identified through search

PM, EB, WoS

979 records excluded:
- Not systematic review

Covidence

1154 eligible for final screening

509 records excluded:
- Not extracted by staff

Airtable

645 records eligible for final screening

251 records excluded:
- No full text = 46
- Not systematic review = 82
- Not UCSF author = 109
- Duplicates = 14

Stata

394 records used in analysis
Systematic reviews published by UCSF authors

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of published SRs</th>
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<tbody>
<tr>
<td>2006</td>
<td>20</td>
</tr>
<tr>
<td>2007</td>
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<td>2014</td>
<td>35</td>
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<tr>
<td>2015</td>
<td>50</td>
</tr>
<tr>
<td>2016</td>
<td>35</td>
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Systematic reviews by subject area

- Medicine, 185
- Surgery, 94
- Public Health, 65
- Behavioral Sciences, 29
- Maternal/Child Health, 26
- Allied Health, 25
- Diagnostics, 17
- Other, 19
- Not Reported, 34
Databases searched

- PubMed – 99%
- EMBASE – 47%
- Web of Science – 21%
- PsycINFO – 17%
- Other databases – 21%

There was no significant differences in databases searched before and after IOM guidelines
EMBASE use by subject area

- Surgery
- Medicine
- Allied Health
- Maternal/Child Health
- Behavioral Sciences
- Public Health
- Diagnostics
- Other

Percent of subject area’s SRs that used Embase
Librarian involvement

n= 61

- Coauthor: 6%
- Acknowledgement: 51%
- Methods: 43%
Does librarian involvement affect best practices?

- Search strategy: \( p > .01 \)
- Controlled vocab: \( p > .01 \)
- Search date: \( p > .01 \)
- Incl/excl: \( p > .01 \)
- PRISMA chart: \( p > .01 \)

Librarian vs. No librarian.
Limitations & lessons learned

• Search? Meta-analysis vs systematic review
• Data collection: think about which and how
  - consider about using familiar tools
• Potential lack of inter-rater reliability
  - consider quality check for all reviewers
• Potential selection bias
  - consider individual’s level of commitment to the project
Conclusions

• Do UCSF researchers use EMBASE for systematic reviews?
  - About half
• Are librarians involved in UCSF systematic reviews?
  - No
• How is adherence to reporting standards/best practices?
  - Better with librarian involvement
• What is the effect of IOM guidelines?
  - Nothing of significance
• Can we use this data for targeted outreach? ....
Next steps

- Continue data collection
- Look at EMASE and librarian trends 2016-
- Targeted outreach
- Compare data with other institutions
What about authorship?

- Just ask for it!
- Librarian expertise helps the SR process with taxonomy, search strategies, database knowledge and navigation, knowledge of other useful software, and of the SR process itself
- Formal or informal?
The librarian as co-author is committed to collaborating and supporting the following Systematic Review tasks:

• Determine if a systematic review has already been done on your topic
• Translate the research question into an appropriate search strategy
• Translate the search concepts into controlled vocabulary and keywords so that retrieval is maximized at the same time as being precise
• Recommend specific databases and other information sources to be searched
• Conduct the literature searches
• Provide training to your administrative staff or designated team member in how to access full text articles or request them via MSK Document Delivery. Help obtain or verify any references found from hand searching or other venues
• Provide guidance and support regarding bibliographic management tools
• Write the literature search methodology section for the submitted manuscript
• Maintain records of search results and follow up with alerts and updates as needed
Informal – what I do

- I explain the ways I can help them
- I discuss potential authorship if I go beyond just helping them set up a search strategy or tell them about databases
- Usually for students I do not offer more than search strategy assistance
- I won’t conduct mediated search or downloading or writing without authorship
- It’s been surprisingly easy – people have been welcoming of additional help
Co-authorship 2016-2017

Three papers:
• Palliative Oncologic Care Curricula for Providers in Resource-Limited and Underserved Communities: a Systematic Review
• Survival outcomes in pediatric recurrent high-grade glioma: results of a 20-year systematic review and meta-analysis
• Remote Physical Activity Monitoring in Neurological Disease: A Systematic Review

One poster and one E-poster:
• What We Know About Peri-implantitis: Review of All Systematic Reviews.
• Survival outcomes in pediatric recurrent high-grade glioma: results of a 20-year systematic review and meta-analysis
Final thoughts

- More people continue to work on systematic reviews
- More librarians are involved
- Our expertise is valued by SR teams
- Our skills allow us to intervene if we see a “pain point”
- We should advocate for ourselves and Ask for authorship, depending on our level of participation in the SR
Helvetica Neue Bold – 36pt font

Garamond – 25pt font or
Arial – 21pt font
“Use your passion and expertise to provide long term value and innovative solutions for your clients”

Benjamin Kofi Quansah
Acknowledgements

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