SESSION: HOW TO CONDUCT A SYSTEMATIC LITERATURE REVIEW

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Preface to Session

1. *Homepage of CCU Library*
   - *"Database Finder" & "Journals A-Z"*

2. *Formatting guidelines: American Psychological Association (APA) 6th Edition*
   - *APA Abbreviated Guides (Handouts on Moodle)*
   - *APA Sample Papers (on Moodle)*
   - *Purdue University Online Writing Lab*

Introduction

- Conducting a review of literature is research!
- A systematic review is a *type* of literature review—it is a rigorous, comprehensive summary of the published literature related to a specific topic.
- It involves selecting a specific topic / question, searching the literature, and selecting and synthesizing the best, current literature.
- The results = ***Current State of Knowledge!***

Introduction Continued

- Reviews of literature typically include scholarly sources of information which may include different types of data—qualitative or quantitative data, or both types of data, a.k.a., mixed methods.
- Reviews of literature compile scholarly sources (studies) about a particular topic and put them into one document to create a summary of the literature to answer a specific research question.
- Authors have complete control of their literature review to achieve their specific purpose.

4 Steps to Conduct a Systematic Literature Review

1. *Select a Topic*
2. *Search the Literature*
3. *Select the Best Literature*
4. *Synthesize the Best Literature*

Step 1: Select a Topic

The Process:

1. Define the purpose: Write it down.
2. Create a research question that is directly related to the purpose of the review.
3. Conduct a leisurely review of literature, often starting with Google Scholar or MedlinePlus.
4. Based on what you find in your leisurely review, refine the purpose / research question.
5. Repeat the process until you create the best purpose statement and research question(s).

Words From The Wise:

- Be specific and keep it simple!

Example Purpose Statement and Research Question #1

Purpose Statement:

The purpose of this systematic review of literature (is or was) to identify the major risk factors (determinants) of breast cancer for older women (65+ years of age).

Research Question:

What are the risk factors of breast cancer for older women (65+ years of age)?

Example Purpose Statement and Research Question #2

Purpose Statement:

The purpose of this systematic review of literature (is or was) to identify the best intervention/program to prevent Type 2 diabetes among people at increased risk.

Research Question:

What is the best intervention/program to prevent Type 2 diabetes among people at increased risk?

Example Purpose Statement and Research Question #3

Purpose Statement:

The purpose of this systematic review of literature (is or was) to examine the relationship between Vitamin C and upper respiratory infection.

Research Question:

What is the relationship between Vitamin C and upper respiratory infection?

Step 2: Search the Literature

Keywords and Combinations

- Create keywords, write them down, and record revisions
- Use Boolean operators (*NOT*, *AND*, *OR*)
- Some example search strategies:
  - "breast cancer" AND "risk factor*" (5th revision)
  - "breast cancer" AND risk factor AND "older women" (6th)

Limits / Boundaries

- Set limits/boundaries of the search, write them down
- Some examples of limits/boundaries include:
  - Dates of literature, e.g., published within 5 years
  - Species in literature, e.g., humans
  - Location of research, e.g., United States

Electronic Databases to Search the Literature

Must use:

- **PubMed (.gov)**

Consider using:

- Google Scholar
- Cochrane Library
- JSTOR
- ERIC
- PsycINFO

Step 2: Search the Literature Cont.

The Snowball Method

- Assist the keyword search in PubMed by using the "snowball" method to find additional studies that are cited in the studies you previously found.
- For example, read the background sections of the studies you identified in PubMed and look at the studies/sources those authors cited—all in-text citations should be clearly listed in the reference lists.

Step 3: Select the Best Literature

To select the best literature…

- Create eligibility criteria to help with deciding what studies to include or not in the literature review—eligibility criteria are similar to limits/boundaries used when searching the literature—write the eligibility criteria down and stick to them.
- Some example eligibility criteria include:
  1. *Studies that collected quantitative data.*
  2. *Studies published within 5 years.*
  3. *Studies conducted in the United States.*
  4. *Studies conducted with African American women.*

Step 4: Synthesize the Best Literature

Extract data/information from the selected research studies and put it in a summary matrix…

- The summary matrix is designed by the authors to display the major components of the studies selected.
- There are many different styles to choose from or the authors can create their own matrix, but most matrices include one row and multiple columns per study.

Citation / Location	Research Questions	Research Methods	Results	Conclusions
Smith et al. (2010); U.S.	Relationship between red meat and breast cancer?	10,000 women 65+ years of age in a cross-sectional study	Women who ate red meat more likely to have breast cancer.	Red meat may be a cause of breast cancer

Findings of the Literature Review

- **Must thoroughly answer the research question(s).**
- In addition, authors should answer the following:
  - Where are we and how did we get here? (*past to current*)
  - What does the best evidence say? (*current*)
  - What are the gaps/uncertainties in the literature? (current)
  - Where is the research trend, or what are the logical next steps for the research? (*future*)
  - How do the findings of the review help with making professional/personal choices?

Major Components of Research Articles

1. **Abstract** – is a brief description of the study that concisely communicates essential information; it is typically short (150-250 words) and includes the study purpose, questions, methods, and one or two major findings.
2. **Introduction** – includes background information, research questions/hypotheses, purpose statement, and rationale.
3. **Methods** – includes the research design, description of participants included in the study (if any), the instruments used to collect data (if any), and all procedures used to answer the research questions.
4. **Results** – includes the qualitative/quantitative findings generated from the author following the stated methods.
5. **Discussion/Conclusion** – includes an interpretation of the results and all related meanings; also comments on implications and provides a final conclusion.

How do I critically examine a published research article?

- Was the purpose of study clearly stated?
- Were the research questions clearly stated?
- Were the methods of the study clearly described?
- Were the instruments used to collect data clearly explained or described?
- Were the participants involved in the study clearly described and did the author state how the participants were recruited to participate in the study?

*Adapted from Riegelman (2005)

How do I critically examine a published research article?

- Did the results section directly address or answer the research questions?
- Were the final conclusions reasonable or similar to other published research studies?
- Did the study provide important information that can help the population of interest?
- Were the findings extrapolated or connected to a population that is similar to the population that was involved in the research study?

*Adapted from Riegelman (2005)