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Systematic Reviews Workshop Series - Lesson plans

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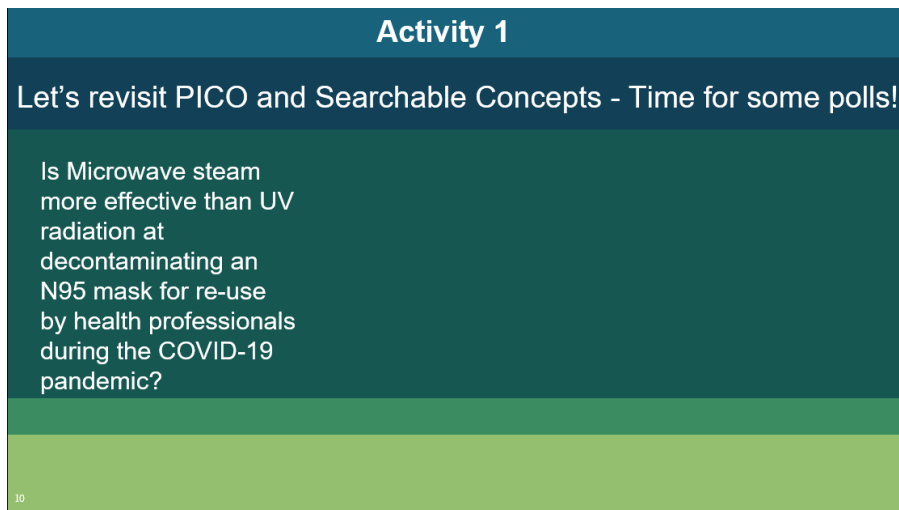
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Title of class: Systematic Review Workshop 2: Developing your data collection strategy	
Bridge: The data in a systematic review are the studies. You find these studies through comprehensive and exhaustive literature searching. Therefore, the search strategy is your data collection tool. A lousy search can result in lousy data, and a poor study.	
Learning Outcome(s): By the end of this session, students will be able to <ul style="list-style-type: none"> • Identify PICO elements and most/least searchable concepts • Identify the various components of a systematic search: subject headings, keywords, field codes and operators • Build a comprehensive search in EBSCO Academic Search Complete database using correct syntax and the concept block method • Test a comprehensive search against seed/known papers • Save and edit your search, while applying good data management practice • Identify errors in a search 	
Pre-assessment: Q&A: Does everyone remember what PICO stands for? Q&A: Why do you mine papers for terms? Q&A: Any questions from the previous session about the protocol?	
Teaching and Learning Activities: Combination of lecture, live demonstrations, Q&As and student activities	
Instructor Activities	Learner Activities
<ol style="list-style-type: none"> 1) PICO and searchable concepts 2) Sensitivity versus specificity 3) Finding textwords and subject headings in a record - revisited 4) Database thesaurus 5) Boolean operators, syntax/database operators, and search fields 6) Concept block method 7) Components of a comprehensive search strategy 8) Building a systematic search in Academic Search Complete. Includes live database demonstration on how to: find a subject heading (thesaurus; in an article record); explode; narrower terms; search fields; create a textword search line; combine lines in a concept using OR; combine concepts using AND 9) Saving and editing searches 10) Testing your search against seed papers 11) What's wrong with this search 	<ol style="list-style-type: none"> 1) PICO and searchable concepts (10 minutes). Students presented with 3 PICO questions and need to identify each PICO component. Then the students identified either the least important concept to search, or which combination of PICO elements to search. Zoom polls are used for each question. 8) Searching one concept in Academic Search Complete. Students start from a partially pre-populated concept table with a suggested list of keywords provided as a Google doc. Activity done in groups/breakout rooms with a librarian facilitator on-hand. (20 minutes) 11) What's wrong with this search (10 minutes) Students shown a search with some of the following errors: spelling, truncation, field searching and Boolean operators. Students are asked to identify the

	errors from the search and report in chat both the search line that the error is on and the error itself. Instructors read out the responses and facilitate a discussion.
Post-assessment: 1) Student understanding of PICO elements and how to identify the least/most important concepts to search based on poll results 8) Student understanding of searching in Academic Search Complete based on participation and discussion during the breakout room activity 11) Student understanding of potential errors in a search strategy based on the submissions in chat	
Summary: Understanding how to search appropriately is extremely important, as the search is your data collection instrument. Using textwords and subject headings, along with the appropriate database syntax, Boolean operators, and field searching helps to build a comprehensive search. Keeping your search in the concept block format helps with the ease of reading the search and identifying potential errors.	

Screenshots of Activities

1) PICO and Searchable Concepts



Activity 1

Let's revisit PICO and Searchable Concepts - Time for some polls!

Is Microwave steam more effective than UV radiation at decontaminating an N95 mask for re-use by health professionals during the COVID-19 pandemic?

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Screenshot of poll questions for one of the scenarios

1. Consider the following research question: Is Microwave steam more effective than UV radiation at decontaminating an N95 mask for re-use by health professionals during the COVID-19 pandemic. What is the population? (Single Choice)

Answer 1: Microwave steam

Answer 2: UV radiation

Answer 3: Decontaminating an N95 mask

Answer 4: Health professionals

2. What is the intervention? (Single Choice)

Answer 1: Microwave steam

Answer 2: UV radiation

Answer 3: Decontaminating an N95 mask

Answer 4: Health professionals

3. What is the comparison? (Single Choice)

Answer 1: Microwave steam

Answer 2: UV radiation

Answer 3: Decontaminating an N95 mask

Answer 4: Health professionals

4. What is the outcome? (Single Choice)

Answer 1: Microwave steam

Answer 2: UV radiation

Answer 3: Decontaminating an N95 mask

Answer 4: Health professionals

^ Poll 4:Scenario 2 searchable concepts 1 question No

1. For the research question in Scenario #2, " Is Microwave steam more effective than UV radiation at decontaminating an N95 mask for re-use by health professionals during the COVID-19 pandemic", what is the least important concept to search? (Single Choice)

Answer 1: Health professionals

Answer 2: Microwave steam

Answer 3: UV radiation

Answer 4: Mask decontamination

8) Building a search in Academic Search Complete for Population (post-secondary students)

Activity 2

Now it is your turn to replicate the process that you just saw and attempt to complete the search by building:

Concept P (population): Post-secondary students

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KS Workshop 2 - Activity 2: Creating a search in Academic search complete
Step 1: Complete the concept table
Step 2: Find all subject headings in Academic Search Complete
Step 3: Build the complete search for the Post-secondary students concept
Concept table

	Textwords (mined from seed/known articles)	Textwords (modified using operators such as truncation, proximity, etc.)	Subject Headings (Academic Search Complete)
Concept 1 (Intervention) - Pet therapy	Pet therapy Therapy dogs Dog-assisted therapy animal-assisted therapy Animal assisted intervention	((animal* or pet or pets) N3 (therap* or intervention*)) ((dog or dogs or cat or cats or rabbit* or equine or horse* or canine*) N3 (therap* or intervention*))	PET therapy THERAPY dogs ANIMAL-assisted therapy EQUINE-assisted therapy DOG-assisted therapy
Concept 2 (Population) - Post-secondary students	Students Student University students undergraduates Graduate student College students Higher education Graduate education	student* N3 (university or college or graduate or postsecondary or "post secondary") Education N2 (higher or tertiary or "post secondary" or postsecondary)	STUDENTS COLLEGE freshmen

11) What's wrong with this search?

Error-filled search is shown below. Responses were submitted in chat.

Activity 3: Identifying errors in searches

What is wrong with this search?

Textword spelling

Truncation

Search fields

Boolean operators

Database: Academic Search Complete (EBSCO)	
#	Query
S1	DE "DIETARY management"
S2	DE "DIET therapy"
S3	TI (diet OR eating* OR food*) OR AB (deit* OR eating* OR food*) OR KW (diet* OR eating* OR food*)
S4	DE "DIET in disease"
S5	DE "DIET"
S6	DE "FOOD habits"
S7	S1 AND S2 AND S3 AND S4 AND S5 AND S6
S8	DE "ATTENTION-deficit hyperactivity disorder"
S9	TI (ADHD or ADD) OR AB (ADHD or ADD) OR KW (ADHD or ADD)
S10	attention deficit
S11	S8 OR S9 OR S10
S12	S7 AND S11