Objectives

Participants will identify two personal biases that can impact the way they read research.

Participants will be able to explain three strategies to refine search results in academic search engines.

Participants will be able to describe three simple study designs.

Participants will be able to define at least three statistical terms.

Participants will apply their knowledge to studies.

Schedule

8:30-9 Sign ins, breakfast

9-9:45 Intros and ice breaker, reader bias

9:45-10:50 Finding studies

10:50-11:05 Break

11:05-11:30 Vocabulary

11:30-12:15 The When and Why of Qualitative Study Design

12:15 - 12:45 Lunch

12:45-2:00 Levels of evidence and experimental study design

2:00 – 2:30 Statistics

2:30 – 2:45 Break

2:45 – 3:15 Researcher and Publisher Bias

3:15 – 3:45 Becoming a Critical Reader

3:45-4:45 Application Exercise

4:45- 5 Closing and Evals

Materials Needed

Blinder Glasses

Printed Participant Manuals

Studies (attached ones or studies of your choice)

Vocabulary cards (attached, print and laminate)

Extra large post it notes 25X30 inches

Markers

Koosh balls or beach balls, 2 for every 5 participants

Deck of cards

Plickers cards

Dice (enough for 1 per participant)

Audio Visual

Projector/screen

Computer w/ Powerpoint

WiFi

Ask students to bring laptop or tablet – ideally enough devices for participants to work in pairs to practice searching.

Appendices

Appendix A – cards for the vocabulary matching exercise. Color print on cardstock and separate before the training.

Appendix B – List of data points for the Qualitative/Quantitative sorting exercise.

Appendix C – Coding framework for the qualitative coding exercise. Print one copy for each participant.

Appendix D – Citations for studies suitable for the application exercise. Fee free to substitute more current/applicable studies as desired.

Introductions & Icebreaker

15 minutes

Name, role(s) in birth work, one thing you would conduct research about if you had unlimited funding
Class objectives

Reader Bias

30 minutes

Student self evaluation exercise 10 minutes
PowerPoint slides 5-14 and students mark their answers in the participant manual

Presentation 20 minutes
Use PowerPoint slides 15-19 to discuss the different kinds of reader bias

Finding Studies

65 minutes

Presentation 15 minutes
Introduce the three steps, PowerPoint slides 20-31:

- Formulate your question
- Choose your database
- Choose your strategy

Demonstration 20 minutes
Ask student to suggest a research topic and demonstrate how to use the three steps.

Student practice 30 minutes
Have students choose a topic, either something they are interested in, or one from the list in the participant manual. Have them work in pairs to work through the three steps and find the research.

Break

15 Minutes

Vocabulary

Matching Exercise 25 minutes
Each table gets a set of the matching cards and pairs the definitions/terms/charts in Appendix A. Use of online searching is encouraged. Float around and assist as needed.

Some matching sets will be 2 cards, some will be 3. Use PowerPoint slides 33-38 to explain answers, if desired.

Qualitative Research

45 minutes

Presentation 5 min
Define qual research and why it matters

Sorting Exercise 15 min
Have students explore the difference between qualitative data and quantitative data by giving them examples of data and asking them to determine if they are qualitative or quantitative data. (See Appendix B)

Presentation – 10 minutes
Use slides 39-41 to discuss common qualitative methods

Coding Exercise – 15 minutes
Have the students turn to the data tracking worksheet in their participant manual, and as a group talk about how the data from the Facebook post on slide 42 might be coded.

Lunch

30 Minutes

Catered, on site

Levels of Evidence & Experimental Study Design

75 minutes

Presentation 15 minutes
PowerPoint slides 45-51 to discuss levels of evidence, focusing on the idea that all have value and ethics mean not all levels are possible – best *possible* evidence.

Introduce the PIO acronym and the concepts of sample size, inclusion/exclusion criteria and power

Sampling activity 20 minutes
If desired, use slides 52-55 as you do this activity

Get everyone standing up. Demonstrate the sampling methods as follows:

- Convenience sampling – grab the 5 closest people
- Snowball sampling – name two people in the room and ask them to grab two more people each and come to the front. Have those people each grab one more person on the way up.
- Cohort sampling – tell the whole group they're all in the study, like it or not
- Quota Sampling – Have three people who fit each of these (or other) criteria come to the front: People who have an iPhone, people who have an Android, people who have other phones or no phones
- Random sampling – Shuffle the deck of cards well. Have everyone draw a card. All the people who drew face cards are your sample.

Basic experimental designs
Presentation/Role Play 40 minutes

Using the laminated signs from the appendix and volunteers from the students, introduce the cast of characters:

Start with VARIABLE – talk about what can be a variable: intervention (drug, surgery, education program, doula presence, etc.)

Add STUDY POPULATION – briefly review sampling methods and power analysis

Add DATA COLLECTION – Kinds of data – have 2 people with signs that say DATA COLLECTION.

Add OUTCOME – how do researchers determine outcome? Give silly example "Measuring the effectiveness of a medication for labor induction by how many babies are born from the pregnancy" – ask the group to brainstorm what outcomes could measure the **effectiveness** of a new drug for labor induction. And what other data researchers should collect to look at the **safety** - if you have a whiteboard, write those down.

Line up volunteers in the basic pre- and post-test design: data -> intervention -> data

Have the STUDY POPULATION walk through the experiment.

While holding the sign that says CONFOUNDING VARIABLE, pull the STUDY POPULATION off track as they pass by the INTERVENTION volunteer.

Introduce a new character: CONTROL GROUP and discuss what can constitute a control (no treatment, standard treatment) and how that can avoid issues with confounding variables. Have STUDY POPULATION flip their sign over to reveal TREATMENT GROUP.

Have CONTROL GROUP and TREATMENT GROUP walk through the process together.

(If time, talk about prospective and retrospective while wearing a tag that says RESEARCHER and standing at either end, discussing what can and cannot be done in each way of doing research)

Show slide 57 and the flow from a real study

Statistics

30 minutes

Data Gathering 5 minutes
Give each class participant a dice. Ask them to roll it 10 times and record the results. Ask the tables or rows to report their results. Add them up and write them on a whiteboard or oversize post it.

Discussion 10 min
What would you expect if we did this over?
Did any tables/groups have a different distribution?
Would left or right handed throwing make a difference?
If the dice rolling had a different distribution than expected, what would you think?

Presentation 15 min
Using PowerPoint slides 59-65, discuss different terms and what they mean in the context of reading results

- Significance
- Correlation
- Causation

Break

15 Minutes

Return from break activity

You have 60 seconds to write 10 facts you've learned. Stand up when you have 10 facts written down. Have volunteers read one of their facts, applaud

Researcher and Publisher Bias

30 minutes

Brainstorming session
Use PowerPoint Slides 68-72 to show, in turn, the roles Researcher and Publisher. For each role, first ask the class to brainstorm 3-5 motivations for bias. Include both internal and external biases. Then ask the class to brainstorm 3-5 ways the person in this role might steer the research in a biased way. Discuss the checks and balances that exist to try and minimize the effects of bias in research. (Peer review, disclosure, etc.)

Becoming a Critical Reader

30 minutes

Presentation: 20 minutes
PowerPoint slides 74-78 and review the 5 Key Questions and show students how you find the information in the sample studies on the PowerPoint.

1. What did the authors set out to do?
2. Did the study do what it set out to do?
3. Did the study use the appropriate methodology?
4. Did the author show undue bias or influence?
5. Do the conclusions match the data?

Discussions/Questions 10 minutes

Application Exercise

60 minutes

Student practice 30 Minutes
Divide into groups of 2-3. Each group has a giant post it note with the pages of a study taped vertically in a column down the middle. As the students to write the 5 key questions on the post it, with arrows to the highlighted places where they found information to help them answer the questions.

Student teach back 30 minutes
Have each group present their study and their evaluation to the group.

Closing and Evaluations

15 minutes