Overview: Research Process

1. **Problem formulation** (including research questions, lit review)
2. **Methodology**
   - Operationalization and measurement
   - Study population and sampling
   - Research design
   - Data collection
   - Data analysis plan
3. **Implementation** – Data collection
4. **Data analysis**
5. **Dissemination**
MEASUREMENT

1. Ways to measure
2. Evaluating measures
3. Errors in measures
4. Sensitivity to diversity
5. Avoid measurement errors
6. Using existing scale
1. Ways of measuring

1) **Operational definition**
   - From concepts to indicators
   - Conceptualization
     (Nominal definition)
     Operational definition
     Ways to measure
1. Ways of measuring

2) More than one indicator?
   - Item
   - Scale (Index): composite/cumulative measures
     - Likert scale
1. Ways of measuring

3) Techniques of measuring
   - Verbal report
   - Observation
   - Archival records

   - Triangulation
1. Ways of measuring

4) Influence of operational definition
   - Different operational definitions → different results
   - e.g., racism, spirituality
2. Evaluating measures

1) Validity
   - Accuracy

2) Reliability
   - Consistency or stability
2. Evaluating measures

3) Relationship between reliability and validity
3. Errors in measurement

1) Random errors
   - Errors by chance
   - Neither consistent nor patterned
   - Related to *reliability*
3. Errors in measurement

2) **Systematic errors**

- Consistent and patterned errors
- Related to *validity*
- Bias
  - Predisposing way of asking question
  - Social desirability
  - Cultural bias
4. Sensitivity to diversity in measurement

- Refine measurement, if necessary
- Use culturally sensitive measures
  - Use key informants
  - Translation-back translation
  - Pilot testing
5. Avoiding measurement errors

- Use unbiased wording
- Use understandable terms
- Obtain collegial feedback
- Pilot testing
- Triangulation
- Training interviewer/observer
6. Using existing scale

- Popular way to operationally define variables
- Save time and money
- Always consider the quality of existing scale
NEXT

week 7: Sampling

week 8: Exam 1 (wk 2-6)