Moving Beyond the Abstract: Critically Appraising the Literature

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5 Steps to EBP
- Identify the problem
- Access the evidence
- Critically appraise the evidence
- Use the evidence
- Evaluate the practice change

Hierarchy of Evidence

Common Quantitative Research Study Designs
- Systematic Reviews
  - Narrative report and/or meta-analysis
- Randomized Controlled Trials (RCTs)
- Cohort Studies
  - Prospective
  - Retrospective
- Case Control Studies
- Case Series/Case Reports

Systematic Reviews (SRs)
- SRs are a form of secondary research
- Usually focus on a clinical topic and answer a specific question
- An extensive literature search is conducted to identify all relevant evidence pertaining to the topic
- The studies are reviewed, appraised, and the results are summarized according to the predetermined criteria related to the systematic review protocol
  - Narrative summary
  - Meta-analysis

Narrative Summary vs Meta-Analysis
- Depends on the outcomes measured in the individual studies reviewed
- Can only perform a meta-analysis on similar outcomes
- If the outcomes from individual studies are too varied, must provide a narrative summary
Meta-Analysis

- Used to analyze the major trends and variations across all studies included in the analysis
- The results of similar, but individual, studies are combined to determine the overall effect of the intervention (or treatment) when compared to standard of care (or control/placebo)
- The effect size and weight of each study are calculated so that results from different studies can be pooled

Example


Qualitative Systematic Review

- Create a meta-synthesis, which is the aggregation of similar findings from individual qualitative research studies
- The individual findings drive categories, which lead to recommendations for practice

RCTs

- Considered the gold standard for testing the effectiveness of treatments and/or interventions
- Control is the underlying principle, thereby limiting systematic bias
  - Randomization
  - Blinding
  - ITT
- Can provide sound evidence of cause and effect

Randomised Controlled Trials (RCTs)

Cohort Studies

- Divided into 2 kinds:
  - Prospective (longitudinal): Take a large population who are already taking a particular treatment or have an exposure, follow them forward in time, and compare outcomes with a similar group that has not been affected by the treatment or exposure
  - Retrospective (historical cohort): Similar to prospective, but use information collected in the past and follow it forward until an effect or outcome of interest is observed
- These kinds of studies are observational and not as reliable as RCTs, since the 2 groups may differ in ways other than the variable under study
Cohort Studies

- Prospective
- Retrospective

Case Control Studies

- Are studies in which patients who already have a specific condition are compared with people who do not have the condition.
- These are always retrospective, as the researcher looks back to identify factors or exposures that might be associated with the condition.
- Less reliable because showing a statistical relationship does not mean that one factor necessarily caused the other.

Case-Control Studies

Case Series/Case Reports

- Consist of collections of reports on the treatment of individual patients or a report on a single patient.
- Because they are reports of cases and use no control groups with which to compare outcomes, they have no statistical validity.

Case Series/Case Reports

Different Paradigms—Different Goals

<table>
<thead>
<tr>
<th>Quantitative</th>
<th>Qualitative</th>
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<tbody>
<tr>
<td>- Emphasize the measurement and analysis of causal relationships between variables, not processes.</td>
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<td>- The goal is to predict</td>
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<tr>
<td>- Such inquiry is purported to be within a value-free framework</td>
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<tr>
<td>- Emphasize the practices, meanings, concerns, and practical knowledge of the world it interprets</td>
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<tr>
<td>- The goal is increased understanding</td>
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<td>- Such research emphasizes the value-laden nature of inquiry</td>
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Different Goals

<table>
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<th>Quantitative</th>
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<tr>
<td>Each research study is like a brick after research study adds to the wall of science</td>
<td>Each research study is like a wall after research study adds new walls of science</td>
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Why Qualitative Research?

- To answer research questions that would be inadequately answered using a quantitative approach, such as:
  - Thick, naturalistic description
  - Meanings, understandings, and beliefs
  - Behaviors, rituals, and practices
  - Patterns of interactions
  - Interacting processes
- Ask yourself, “Can it be counted?”

What Counts as Data?

Text, text, and more text!

Study Design Considerations

- Data Collection
  - The researcher is the data-collecting instrument!
- Data Collection Methods
  - Interviews &/or Observations
  - Audio &/or Videotapes
- Sample
  - Typically referred to as “participants”
- Projected Sample Size
  - Informational redundancy
  - Theoretical saturation

Reflexive Thought

- Qualitative researchers need to critically think through the dynamic interaction between self and the data
- Referred to as reflexive thinking or reflexivity
- During this process, the researcher explores personal feelings and experiences that may influence the study and integrates this understanding into the study
- This process requires a conscious awareness of self
- Typically accomplished through the disciplined use of memos

RESEARCH FLOW

Qualitative data analysis occurs concurrently with data collection
Evaluation

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<tr>
<td>Reliability</td>
<td>Dependability</td>
</tr>
<tr>
<td></td>
<td>Appropriateness of methodology, methods, &amp; implementation of methods</td>
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<tr>
<td>Internal Validity</td>
<td>Credibility</td>
</tr>
<tr>
<td></td>
<td>Does the account ring true?</td>
</tr>
<tr>
<td>External Validity (Generalizability)</td>
<td>Transferability</td>
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<tr>
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<td>The account’s practical applications</td>
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Common Qualitative Research Methods

- Phenomenology (Interpretive)
  - Transcendental (or Husserlian)
  - Existential (or Sartrian)
  - Hermeneutic (or Heideggerian)
- Grounded Theory
- Ethnography

Methodology: Phenomenology

- Focuses on individual and group meaning
- Emphasizes participants’ experiences and interpretations of the world
- Seeks to understand

Methodology: Grounded Theory

- Focuses on individual meaning
- Generates theory grounded in real world—observations from participants
- Goal is to generate a theory to better understand the phenomenon

Methodology: Ethnography

- Focuses on group and social meaning
- Researcher immerses self in cultural group
  - Field Work - primarily participant observation and interview data
- Seeks to explore the context and meanings held by communities

ASPAN Critical Appraisal Tool: Systematic Review
Levels of Evidence: JBI FAME Scale

| Qualitative | Quantitative |

JBI Levels of Evidence: FAME Scale

References

Questions?

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