NORTHERN NEW ENGLAND
CLINICAL & TRANSLATIONAL
RESEARCH NETWORK

Qualitative Research and Design

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Project ECHO®

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Overview

1. Define what qualitative research is and contrast it to quantitative research

2. Introduce common methods of qualitative data collection

3. Compare/contrast two qualitative analytical approaches

4. Introduce sampling considerations

* NOT AN OBJECTIVE: Competency in actually conducting qualitative research!

About Me

- ## Anthropologist
  - Empiricism
  - Holism
  - Methodological Relativism
- ## Research
  - Antibiotic prescribing
  - Treatment decisions for infections in people who inject drugs
  - Cancer genomics

- ## Methods
  - Ethnography
  - Interviews
  - Experimental tasks
  - Surveys
- ## Topics of Interest
  - Meaning and sense-making
  - Decision-making
  - Cognitive and cultural change

Rhea County Courthouse lawn Dayton, Tennessee, ca 2012

Human thought and behavior is qualitative by default

- Quantitative vs Qualitative Research
  - Quanta= countable units (how much?)
  - Qualia= category or kind of experience (What? Why? How?)

- For all research translate "messy" reality into object of study
  - Language/behavior have unclear meaning
  - Quantification doesn't eliminate subjectivity

- For qualitative inquiry, humans are the subjects and the instruments of research
  - Skilled interviewers
  - Thoughtful, knowledgeable, sensitive analysts
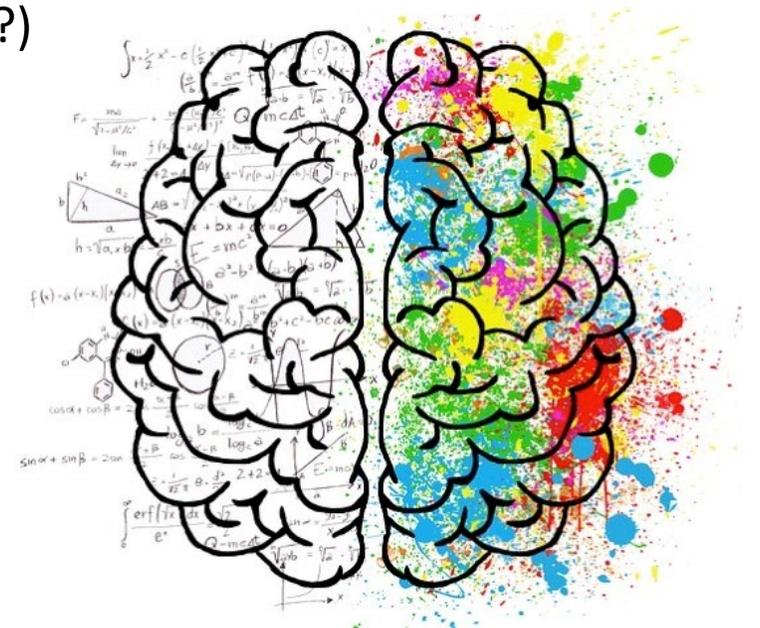
Qualitative Research Questions

- Answer questions related to:
  - Decision-making
  - How people communicate
  - What people do (and/or why they do it)
  - What people perceive and how they experience it
  - How groups of humans carry out tasks
  - How systems work and fail

Social Behavior: Laboratory vs Wild

Data Collection Methods

More Naturalistic ↑

More Structured ↓

"Found" content

Ethnography/observation

Shadowing

Reflective writing/journaling

Interviewing (individual or group)
- Ethnographic interview (conversation)
- Unstructured interview/ Narrative interview
- Semi-structured interview / Focus group
- Structured interview/ Question frames

Open-ended survey questions

Close-ended survey questions

Qualitative Data Analysis

- Qualitative analysis involves imposing structure after data collection rather than before

- Complex process, not easily summarized:
  - Immersive
  - Reiterative
  - Collaborative

- Two examples of qualitative analysis
  - Content analysis
  - Thematic analysis

Coding

- Practice of fragmenting, chunking, indexing text for analysis
  - Inductive coding
  - Deductive coding
  - Coding structure
  - Constant comparative method
  - Qualitative Data Analysis Software (QDAS)

The Process of Content Analysis

Coding transforms text into categorical and even ranked data, which can be analyzed through statistical models.

1. Develop a "codebook"

Name of Code	Description	Included	Excluded	Example
Politics	Participant mentions politics or topics closely associated with politics	Any reference to political leaders, political identity, polarization, or governance	Economy Laws/regulations Personal job in government Political science	"Stop the political infighting and pay attention to the doctors and scientists."

2. Assess and refine codebook
   - Test ability to code consistently, revise as needed
   - Finalize codebook before applying to all text

The Process of Content Analysis

3. Apply codes to all interviews
   - Independent coders
   - Intercoder reliability check to demonstrate reliability of code application (e.g. Cohen's Kappa)

Thematic Analysis (TA)

- Good for exploratory or explanatory research (generating hypotheses)
- A method for identifying, analyzing and reporting *themes* in a data set
  - Theme: "represents some level of *patterned* response or meaning within the data set." (Braun & Clarke 2006)
- Codes ≠ Themes

Table 1 Phases of thematic analysis

Phase	Description of the process
1. Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2. Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3. Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4. Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5. Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6. Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

From Braun & Clarke (2006) Using thematic analysis in psychology, *Qualitative Research in Psychology*, **3**: 77-101

Sampling

- Representation and generality
- Purposive sampling
  - Theoretical sampling
- Thematic saturation: sample until doing so yields no new insights
  - Homogeneous populations are saturated most easily
  - Complex systems require more perspectives

- As for any original research, access to population of interest is essential!

Research Design

1. Operationalize research question
   - Identify concepts of interest
2. Determine data needed to answer
   - Consider whether qualitative data is necessary
3. Consider whether any existing theories, models or frameworks would be useful to answer question
4. Collect needed data in ways that can be analyzed
5. Careful, thoughtful analysis appropriate for data and answering question

Selected Bibliography

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- Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing*, *62*(1), 107–115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

- Gale, N. K., Heath, G., Cameron, E., Rashid, S., & Redwood, S. (2013). Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Medical Research Methodology*, *13*, 117. Link

Questions?

The Qualitative Research Interest Group (QRIG) meets virtually each month. All are welcome. Contact Mike Kohut to be added to the group.

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How do we Assess Qualitative Research?

- Content Validity:
  - Do participants have the information?
  - Are participants being honest?
  - Do confounding circumstances (including the interview) encourage particular responses?
- Interpretive Validity:
  - Are claims consistent with what participants actually said?
  - Were alternative understandings adequately considered?
  - Do they "ring true" for people involved?

Mixed Methods – 3 Models

- Exploratory Sequential:
  - Qualitative (identify important things) → Quantitative (hypothesis testing, prevalance)

- Explanatory Sequential:
  - Quantitative (get basic information) → Qualitative (explore more depth)

- Concurrent Triangulation:
  - Quantitative + Qualitative → Compare results