Introduction to Qualitative Data Collection Methods

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Disclosure(s)

None
Overview

Qualitative methods provide rich resources for practice and scholarship

• What do we mean by qualitative methods?
• What are the uses of qualitative methods?
• How can we collect (and analyze) qualitative data to use as a resource for practice and scholarship?
• What are the standards for rigor in using qualitative methods?
Objectives

Participants will be able to demonstrate applied knowledge of:

- Meaning of ‘qualitative methods’
- Uses of qualitative methods
- Selection, use and standards for rigor of common methods for data collection in relation to research questions and approaches
Exercise #1:

What do you think of when you hear the term ‘qualitative methods’?

What qualitative information do you currently collect in your program?
Example: Quantitative Data

Rate the educational value of this ambulatory medicine rotation.

<table>
<thead>
<tr>
<th>Category</th>
<th>% (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>85% (119)</td>
</tr>
<tr>
<td>Very Good</td>
<td>10% (14)</td>
</tr>
<tr>
<td>Good</td>
<td>5% (7)</td>
</tr>
<tr>
<td>Fair</td>
<td>---</td>
</tr>
<tr>
<td>Poor</td>
<td>---</td>
</tr>
</tbody>
</table>

Mean: 4.8, SD: 0.51
Example: Qualitative Data

One thing I really liked about this ambulatory medicine rotation was continuity of care. I liked knowing what was going on, just kind of connecting with people. It was for me one of the first times I really felt like I was making a difference. Part of that was because their expectations were pretty high for me. I’ve gone home a couple of times, I live in Wyoming, and people have asked me: “Do you feel like a doctor now?” Last year, I would think, no, I don’t feel much different than I did before. But, now I actually feel like, if I had to, I can problem-solve better on my own, and figure out what to do.
Common Characteristics of Qualitative Methods

**Authenticity:** In ‘natural’ environments, study of interactions, processes, talk, texts

**Complexity:** Identify patterns, variations, oddities

**Situatedness:** Characterize context, culture, organization, situations

Lingard and Kennedy, 2007
## What are “Qualitative Methods”?

<table>
<thead>
<tr>
<th>Purpose</th>
<th>To capture meaning, to describe, to understand experiences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach / Design</td>
<td>Plan that guides collection, analysis and interpretation of data</td>
</tr>
<tr>
<td>Data Collection Methods</td>
<td>Interviews, focus groups, observation, video, text, etc.</td>
</tr>
<tr>
<td>Data</td>
<td>Words/images vs. numbers</td>
</tr>
<tr>
<td>Data Analysis / Interpretation</td>
<td>Thematic analysis; Grounded theory; eclectic</td>
</tr>
<tr>
<td>Data Reporting</td>
<td>Primarily narrative</td>
</tr>
</tbody>
</table>
Purpose of Qualitative Methods

To explore complex phenomena through collection/analysis of qualitative data

To supplement qualitative data—to validate, explain, illuminate, interpret
Design

‘Quantitative’
Deductive: Begin with theory; collect data to test it
Design: e.g., experiment

‘Qualitative’
Inductive: Begin with data collection as resource to iteratively build theory
Design: e.g., case study, ethnography
Common Approaches

**Ethnography**: Study of culture through engagement

**Grounded theory**: Develop theory inductively, based on iterative data collection

**Case study**: In-depth study of a case or comparative cases

**Phenomenology**: Understand essence of phenomena, based on ‘lived experience’

**Hermeneutics**: Interpretation of text

**Narrative research**: Elicit stories

**Action research**: Collaboration between researchers and participants
Data Collection Methods

- Written surveys: Open-ended questions
- Individual interviews
- Focus group interviews
- Observations: Recorded in field notes
- Document textual analysis
Data Characteristics

Rich, vivid, concrete

Grounded in context, in naturally occurring events. Lived experience

Reveal complexity

Basis for discovery
Uses of Qualitative Methods/Data

Staple of some social sciences, e.g.,

- Anthropology
- History

Increasing use and acceptance in other social sciences

- Psychology
- Sociology
- Public health
- Policy analysis
- Health care evaluation
Uses in Medical Education

- Needs assessments
- Curriculum development
- Performance assessment
- Curriculum evaluation
- Various research applications
Examples: Medical Education Scholarship

- Teaching and learning in the:
  - Hospital
  - Ambulatory setting
  - Classroom

- Specialty choice and role modeling

- The ‘hidden curriculum’

- Professionalism

- Professional socialization

- Teamwork and Interprofessional Collaboration

- Other?
Common Approaches

**Ethnography**: Study of culture through engagement

**Grounded theory**: Develop theory inductively, based on iterative data collection

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**Action research**: Collaboration between researchers and participants
Approach: Ethnography

To understand meaning in everyday activities

Study of local subcultures

Methods:

• Long-term engagement
• Observation, recorded in field notes
• Conversational interviews – “conversations with a purpose” (Atkinson & Pugsley, 2005)

Approach: Grounded Theory

Develop theory inductively based on observations

‘Purposeful’ sampling: Selection of data sources to confirm, challenge, expand theory

Iterative study design

• Simultaneous data collection and analysis
• Results of data analysis inform subsequent data collection

Constant comparative analysis

Approach: Case Study

In-depth analysis of ‘bounded system’

Triangulation: Use multiple data collection tools/sources to gain insight from multiple perspectives

Approach: Phenomenology

Origins: Philosophical reflections on consciousness and perception

Goal: Understand essence of phenomena, based on lived experience of research participants

In-depth exploration of experiences of small number of individuals

**Phenomenenography**

Approach: Hermeneutics

Origins: Interpretation of biblical texts

“Hermeneutic cycle” – Move between analysis of individual parts of text and whole text

Approach: Narrative Research

Origins: Practice of storytelling to communicate experience

Collect and analyze personal accounts as stories

Use content, structure, and context of stories to understand experiences

Approach: Action Research

Origins: Social activism movements

Goal: Produce changes through research process

Collaboration of researchers with participants
Selection of Data Collection Methods

Used across approaches
Fit for researcher
Best fit for research question
Resources/time
Exercise #2
Formulate a research question amenable to use of qualitative methods

Questions about

• Individuals’ perspectives, experiences, values, beliefs
• Group interactions, social processes
• Human experiences
• ‘What’ questions?
• ‘How’ questions?
Examples:

How do physicians in practice learn from each other?

How do individuals (e.g., medical students, residents, attending physicians) respond to professionalism dilemmas? Act in response to professionalism dilemmas?

How do clinical teachers balance patient care and education responsibilities?

What do individuals (e.g., medical students, residents, physicians in community practice) think about an educational experience?
Common Data Collection Methods: Uses and Limitations

In-depth interviews

Focus group interviews

Observations: Recorded in field notes

Document textual analysis

Written surveys: open-ended questions
In-Depth Interviews

- Most frequently used method in medical education research – along with open-ended questions on written surveys
- Access to rich, detailed personal perspectives
- 45 mins – several hours
- Semi-structured
  - Pre-determined core open-ended questions, with probes
  - Pursue additional relevant topics
- Audiotaped and transcribed for later thematic analysis and interpretation
Focus Groups

Definition: “Any group discussion may be called a focus group as long as the researcher is actively encouraging of, and attentive to, the group interaction.” (Kitzinger and Barbour, 1999)

Frequently used in program evaluation

Origins: Marketing and social science research

When to use:

• Investigate complex, rich, detailed, diverse personal perspectives
• Benefit from group discussion
• Learn more about degree of consensus on topic, contrary opinions, group norms, common practices

Morgan & Krueger, 1993
Focus Group (continued)

- 30 min - several hours
- 4-12 participants
- Moderator/facilitator guides discussion
- Semi-structured
  - Pre-determined open-ended questions, with follow-up probes and pursuit of additional relevant topics
- Audiotaped and transcribed for later thematic analysis
- Limitations
  - Deeply personal topics
  - Power dynamics
Observations
Observation of study participants in regular activities
What participants do, not just what they say they do

Capture observations in ‘field-notes’
• Two columns
  ▪ Observation notes - details of observed events
  ▪ Reflective notes – researcher’s views about context/process of observation and analytic ideas

Audio-recording of conversations, transcribed for later thematic analysis

Issues
• Observer effect – impact of observer presence on participant behavior
  ▪ Spend time for participants to become accustomed to observer presence
  ▪ Conceal specific focus of observation
  ▪ Document evidence of impact and reflect on significance
• Likelihood of obtaining relevant data – inefficient when events are rare
• Degree of participation
  ▪ Non-participant
  ▪ Participant
Textual Analysis of Documents

Insights into content and processes

Examples in education

• Course curricula
• Student assignments and exams
• Student and faculty evaluations
• Policy documents

Thematic analysis
Exercise #3: For your research question (s), select a qualitative method

Select a qualitative method, provide:

• Rationale for your choice
• Subjects
• Strategies for recruitment
• Limitations of this method for your study
Question - Data Collection Method

How do medical students characterize professional behavior in themselves and other members of interdisciplinary healthcare team?

- In-depth interviews
- Rich understanding of students’ conceptualizations
- Multiple contexts
- Detailed descriptions of relevant personal experience

Adapted from Lingard and Kennedy, 2007, p. 9
Question - Data Collection Method

What are medical students’ impressions of the professional behavior of their clinical supervisors?

- Focus Groups
- Affirming environment
- Accounts of students’ similar experiences may promote disclosure of relevant anecdotes
- Discussion could make evident the range of relevant experience

Adapted from Lingard and Kennedy, 2007, p. 9
Do patient care discussions on medical teaching teams promote professionalism in novice physicians?

- Observation of case presentations or teaching rounds
- Provide ‘real-life’ data
- Analyze language used by students and supervisors

Adapted from Lingard and Kennedy, 2007, p. 9
What messages about professionalism are conveyed through clinical evaluations of medical students?

- Textual analysis of narrative comments on clinical evaluation forms
- Provide insight into types of behavior being promoted through evaluation process

Adapted from Lingard and Kennedy, 2007, p. 9
Data Collection: Ethical Issues

Procedural: Conduct of research to protect participants
  • Evoke strong emotions
    – Appropriate support
    – Balance benefit and harm
  • Minimal disclosure

Situational: Conduct of researcher
  • Reflexivity: Sensitivity of researcher to ethics issues
  • Deal with power dynamics
Standards for Rigor: Sample

Who?
- Purposeful sample
- Right people/activities/context

How many? How much?
- Sufficient number
- Saturation – No new themes/issues
Standards for Rigor: Researcher

Role and relationships with participants

Hierarchical relationships – potential distorting effect

Hawthorne effect – observer effect, when participants may act differently

- Prolonged engagement
- Establish rapport, trust
- Comportment, e.g., dressing like insider
- Reflection process
Standards for Rigor: Quality of Data

Script
- Questions appropriate to capture perspectives
- Non-leading
- Piloted

Triangulation
- Data from multiple positions/perspectives
  - Methods
  - Groups
Standards for Rigor: Data Analysis and Interpretation Phase

Peer Review (Audit Trail)
- Review of themes by peer(s) not involved in research

Member Checking
- Sharing interpretations with individuals who were data sources

Triangulation
- Comparing with data from other sources, e.g., comparing focus group analysis with results from quantitative surveys

Researcher Bias
- Explicitly identify values, possible biases
Example Interview Script

Research Question:
*How do medical students characterize professional behavior in themselves and other members of interdisciplinary healthcare teams?*

Interview Questions:
Question: *Please give an example of a time when you acted professionally.*
  • Probe for rich contextual details: *What was it about that behavior that was professional?*

Question: *Please give an example of a time when you acted unprofessionally.*
  • Probe for rich contextual details: *What was it about that behavior that was unprofessional?*

Question: *Please give examples of times when your medical student colleagues acted professionally/unprofessionally? A nurse working with your team? Other members of team?*

Question: *What are the important elements of professional behavior for a medical student?*

Adapted from Lingard and Kennedy, 2007, p. 9
Exercise #4: Draft an interview script

For a research question, using an individual interview or focus group to collect qualitative data, work in a small group to draft an interview script.

List 2-3 questions

List 1-2 probes for each question
Summary

What are qualitative methods?

How are qualitative methods used?

How do you select the appropriate method and employ standards of rigor?
Resources: Qualitative Methods

- Sage’s Qualitative Research Methods series
- AMEE Guides
The Next Step: How to Analyze Qualitative Data

By what method do we get from -

• 25 pages of a focus group transcript to a useful and trustworthy summary of results?
• 150 surveys, with responses to open-ended questions to a useful and trustworthy summary of results?
Issues in Analysis of Qualitative Data

Identifying themes by methods that yield trustworthy results

One set of objectively identifiable themes versus multiple reasonable interpretations
Stages in Analyzing Qualitative Data: Iterative Process, Analytic Choices

Analytic Choices

Tested for trustworthiness plausibility

Data reduction: Coding

Data Display: table, figure, narrative

Drawing conclusions
Features of Analytic Methods

Identify Themes: Label with codes

Identify Patterns: Sort themes to identify patterns

Represent: Display in tables, figures, narrative
Coding: Inductive From Data Set

Question: Compare this ambulatory care rotation to other clinical rotations you have taken. What SPECIAL CONTRIBUTIONS, if any, did it make in preparing you to become a physician, e.g., knowledge, clinical competence, career development?

Comment 1: “The independence allowed me to gain more confidence in my clinical skills. The pace helped me to become more efficient.”

Comment 2: “Outpatient management of disease is not really addressed in any other rotation. Also, the sheer number of patients seen really allows you to hone your H and P skills and gain confidence in patient interaction. This is also the only rotation where you see the administrative side of medicine.”

Comment 3: “Caused me to like Family Medicine even better. Dramatically increased my confidence. Dispelled fears that ambulatory medicine might be boring. Gave me a good start at learning to prioritize in a clinic visit of a finite time period.”
Example of Coding - I

CURRICULUM THEMES
COM  Outpatient management of disease not addressed in any other rotation

EDUCATION EXPERIENCE
EI:  Independence helps increase confidence in clinical skills
EP:  Quick pace helps to increase efficiency
EV:  High volume of patients contributes to learning
EA:  Saw administrative side of medicine

OUTCOMES
OCC:  Gained confidence in clinical skills
OCI:  Gained confidence in patient interaction
OLA:  Learned about administrative side of medicine
OSE:  Learned to become more efficient
OSPr: Learned to prioritize in a clinic visit
OSPx: Improved physical examination skills
OSHx: Improved history taking skills
OIAM: Found ambulatory medicine to be interesting
OIF:  Increased interest in family medicine
Example of Display: Coding

CURRICULUM THEMES
Outpatient management of disease not addressed in any other rotation (1)

EDUCATION EXPERIENCE
Independence helps increase confidence in clinical skills (1)
Quick pace helps to increase efficiency (1)
High volume of patients contributes to learning (1) “Sheer number of patients seen really allows you to hone your H and P skills and gain confidence in patient interaction.”
Saw administrative side of medicine (1): “This is also the only rotation where you see the administrative side of medicine.”

OUTCOMES
Gained confidence in clinical skills (1)
Gained confidence in patient interaction (1)
Learned about administrative side of medicine (1)
Learned to become more efficient (1)
Learned to prioritize in a clinic visit (1) “Gave a start at learning to prioritize in a clinic visit.”
Improved physical examination skills (1)
Improved history taking skills (1)
Found ambulatory medicine to be interesting (1) “Dispelled fears that ambulatory medicine might be boring.”
Increased interest in family medicine (1) “Cause me to like Family Practice even better.”
Example of Display- Figure

Students’ Views: Contributions of Ambulatory Care Rotation

Curriculum
Outpatient
Management of Theme: Disease

Experience:
Independence
Quick Pace
Patient
Volume

Outcomes:
Confidence and Skill in Patient Interaction and Focused Examinations
Example of Display: Narrative

A major purpose of this evaluation is to identify the special role of an ambulatory medicine rotation in students’ medical education. In response to the question: Compare this ambulatory care rotation to other clinical rotations you have taken. What SPECIAL CONTRIBUTIONS, if any, did it make in preparing you to become a physician, e.g., knowledge, clinical competence, career development?, students identified aspects of their educational experience in the rotation as well as outcomes.

Overall, the rotation made a special contribution to their medical education by focusing on outpatient management of disease, which is not addressed in any other clerkship. The relative independence they experienced, along with the quick pace and the high volume of patients, and opportunities to see the administrative side of medicine, all contributed significantly to their learning.

Students described important learning outcomes. They gained confidence and skill in patient interaction, and focused history taking and physical examinations. . . .