# Analysis of Qualitative Data

Global Health and Social Science Website

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# Learning Objectives

- Discuss basic principles of analysis in qualitative research

- Identify the main steps in analysis using the 'framework' approach

- Develop and apply a framework for analysing qualitative data

- Discuss the strengths and weaknesses of using computer programmes for qualitative analysis

# Analysis in qualitative research

'Qualitative analytical strategies during the conduct of research and at its conclusion transform the volumes of interview transcripts, audio and video tapes, and other observational information into meaningful categories, taxonomies or themes to explain the meaning and underlying patterns of the phenomena of interest' (De Poy &Gitlin, 1994)

# Aim of analysis

- To be able to make comparisons, explain differences, provide descriptions and explanations of the views or perceptions held by research participants

- Process involves sifting and interpreting

# Qualitative data analysis

Transcripts

Field notes

Observations

Documents
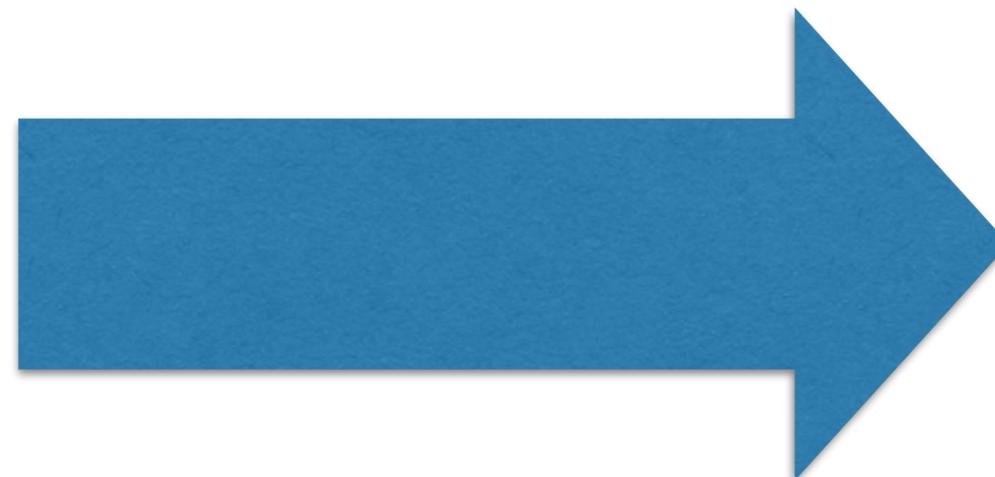


Descriptions

Explanation

Theory

# Qualitative analysis procedures

Qualitative researchers often move backwards and forwards through these steps returning to data collection if new avenues of enquires come up during the analysis process

Data collection

Preliminary analysis (emerging themes)

Further data collection

Analysis (coding and categorisation)

Report

Spencer et al (2003) see qualitative research analysis begins at the beginning of the research process
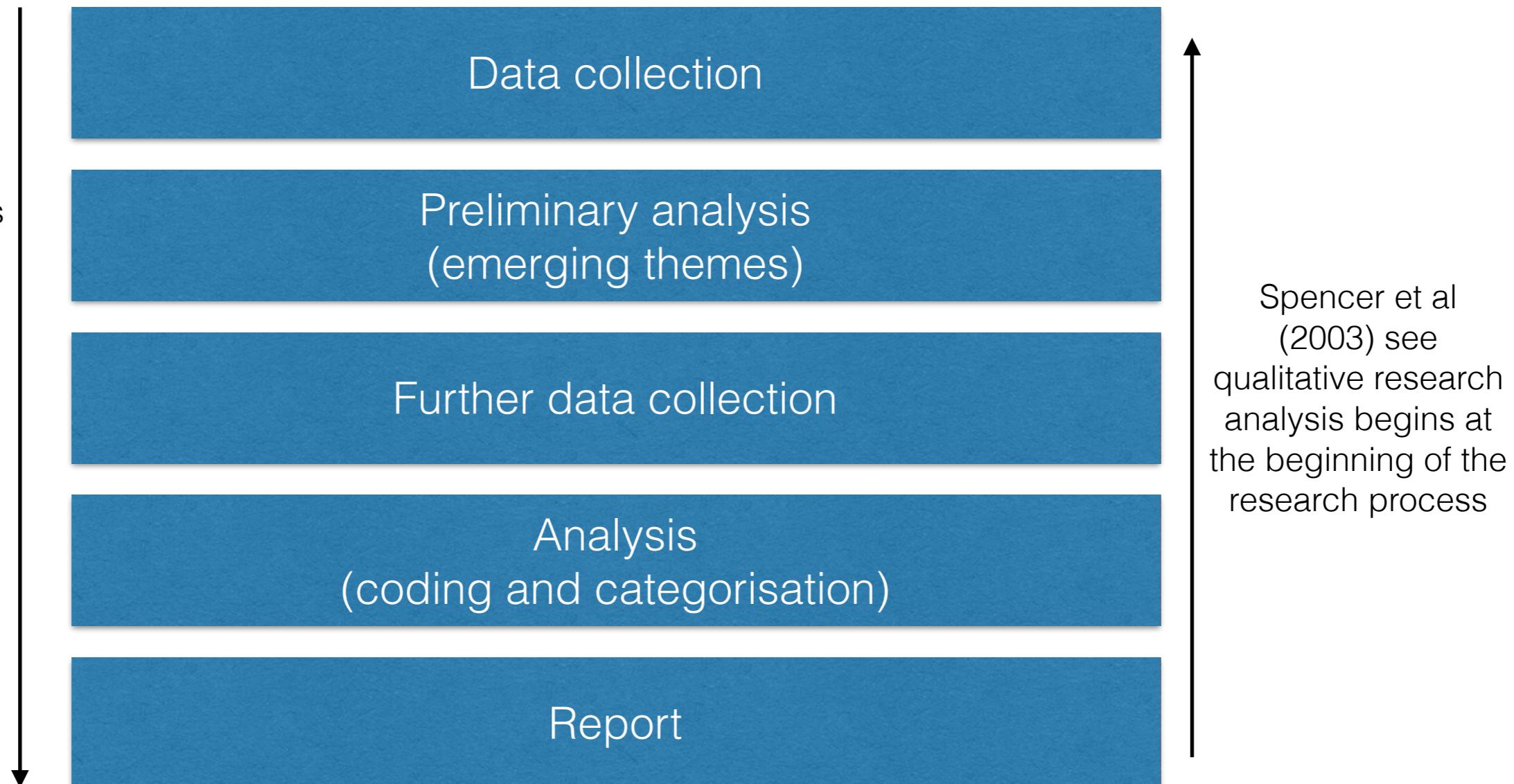
# Demand

- "As researchers from other traditions begin to understand the methods, they are demanding a means by which they can evaluate the claims researchers make about the design, conduct and outcomes of qualitative research"

(Mays and Pope, 2000)

# Rigour in analysis

- How did the researcher manage, organise and reduce the data?

- How were themes and concepts identified?

- What process was used to generate findings from data collected?

"poor qualitative analysis is anecdotal, unreflective, descriptive without being focused on a coherent line of enquiry" Fielding, 1993

# Trustworthiness

- "In my view, validity (trustworthiness) of interpretation in any form of qualitative research is contingent upon the 'end product' including a demonstration of how that interpretation was reached…...the validity (trustworthiness) of your interpretation will be strengthened both if you give some sense of how your standpoint or analytical lens feeds into your interpretation, and also if you can show why the other interpretative perspectives which you have considered are less compelling than your own" (Mason 1996:150)

# Common analysis approaches

- **Content analysis:** themes identified, frequency of occurrence

- **Conversation analysis:** focuses on the structure of the conversation and interaction between people

- **Grounded theory:** generation of categories, identify relationships between them. Data collection and categorisation continues until saturation –new data don't add to the developing theory

- **Policy or evaluation analysis** (**Framework**, matrix analysis): analysis targeted at providing answers about the effectiveness of policy delivery and impact

# Common analysis tasks

- Content analysis to identify key issues

- Indexing of textual data

- Constant comparison of coded data

- Analytical categories to describe & explain patterns

- Communicating what the data reveal using diagrams, illustrative quotes

# Manual
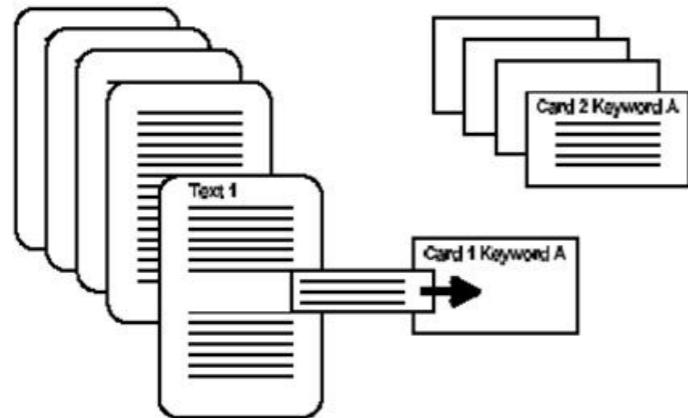
# Computer-aid



Figure 2: Cut and paste



Retrievals of Code A
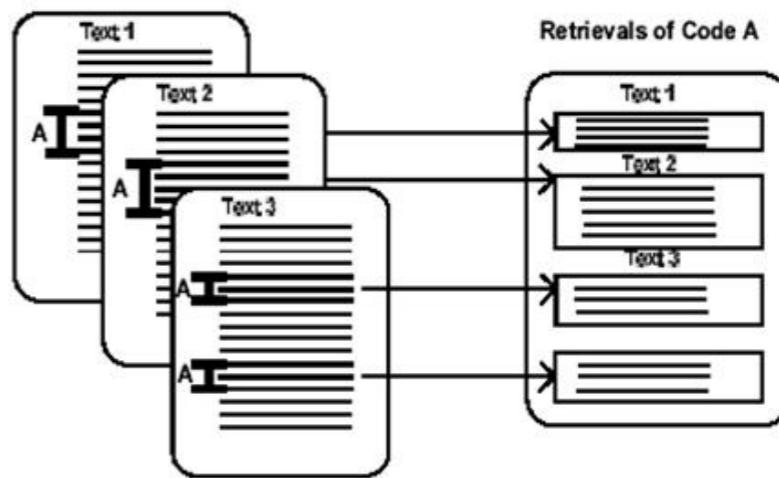
Figure 4: Coding and retrieval

Source: Kelle (1996) Computer-aided qualitative data analysis: an overview

# Manual analysis

- Code by highlighting sections of text

- Cut and paste into similar subject areas

- Index cards summarise cases by theme

- Interpret & explain patterns

# Problems with manual analysis

- Audit trail, transparency?

- Removes data from context

- Difficult to manage various data sources

# Computer software can help with

- Sorting & coding

- Retrieval

- Systematic searching

- Data storage

- Not reliant on handwritten material

# Caution

- Computer software cannot <u>analyse</u> qualitative data for you!

- Taking the data beyond description requires analytical skills

- Aim is to move towards explanation

# Stages & processes

Data
management

Descriptive
analysis

Explanatory
account

Generating themes     Assigning meaning     Assigning data to themes     Refining more abstract     Generating themes
                                                                          concepts

# Framework analysis

- Developed in 1980's by NCSR

- 'Thematic framework'

- Manual or computer assisted

- Rigorous, transparent data management

(Ritchie and Lewis, 2004)

# Stages in framework analysis

| | |
|---|---|
| 1. Familiarisation | Phase 1 summarising |
| 2. Identifying a thematic framework | |
| 3. Coding or indexing | |
| 4. Charting | Phase 2 interpreting |
| 5. Mapping & interpretation | |

# DOT implementation in Chongqing

- Patient survey to assess DOT implementation and adherence

- Qualitative research to identify factors affecting implementation of DOT and adherence

  - Interviews with TB patients, village doctors, senior officials in 4 counties

# Data preparation

- Mark your tapes

- Allow double the time to transcribe!

- Add reference info to transcripts: respondents, place/date, interview # (F1-23 = female, interview No.1, age 23yrs)

- Leave large margin for notes and coding

- Extra copies of transcripts for analysis & for participants if requested

# 1. Familiarisation

- Immerse yourself in your data!

- Review a selection of your data

- Become familiar with your data set

- Note recurring issues, concepts, patterns

# Tips

- Write summaries

- Look for common points

- Read aloud

- Look for surprises

- Annotate the transcript

- Enthusiastic enjoyment

- Lost in the quantity of data

- Overwhelmed by ideas

- Regrets over data's imperfection

Riley, 1990

# Recurring issues

*DOT implementation*

*Opinions on DOT*

*Type of DOT supervision*

*Adherence*

*Reasons for non-adherence*

*Side effects, financial*

# 2. Identify a thematic framework

- Using recurrent views, phrases, patterns from the data (inductive), your topic guide & research questions (deductive)

- List important phrases, concepts, patterns

- End product is an index to label data into manageable chunks

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# A section from a thematic framework

**1. Adherence**
- 1.1 Reasons for non-adherence
- 1.2 Adherers

**2. DOT characteristics**
- 2.1 Home visit details
    - 2.1.1 Duration
    - 2.1.2 Frequency
    - 2.1.3 Content
- 2.2 Type of supervision
    - 2.2.1 Patient own
    - 2.2.2 Friends or family member
    - 2.2.3 Doctor

**3. DOT implementation**
- 3.1 Stigma
- 3.2 Time constraints
- 3.3 Financial incentives
- 3.4 Opinion on DOT
    - 3.4.1 Family DOT

**4. Patient management**
- 4.1 Drug purchase
- 4.2 Referral process
- 4.3 Migrant population
- 4.4 Side effects of medication
- 4.5 Treatment follow-up
- 4.6 Human resources

- "Devising and refining a thematic framework is not an automatic or mechanical process, but involves both logical and intuitive thinking. It involves making judgements about meaning, about the relevance and importance of issues, and about implicit connection between ideas"
 (Ritchie and Spencer, 1994:180)

# Identify a thematic framework

- Simple content analysis may be useful

- Search for recurring words, views or phrases

-  "data reduction and sense-making…that takes a volume of qualitative data and attempts to identify core consistencies & meanings" Patton, 2002

# A note about terms

- ...the content analysis revealed a pattern of participants reporting being treated differently by their neighbours; many also experienced exclusion from community activities. Many village doctors also reported community residents did not like to get close to TB patients.  These patterns make "stigma exists in communities" a major theme of the research

# 3. Coding / indexing the data

- Process of applying the thematic framework or index systematically to all data

- Read through transcripts and assign codes to relevant words, sentences or paragraphs of text

# 3. Coding / indexing the data

- Identify sentences, quotations in the transcript, which illustrate the concepts or issues in the thematic framework

- Use a highlighter pen where the quote is situated in the transcript

- It is important not to lose the context from which the quotes are taken

"By adopting a system of annotating the textual data, the process is made visible and accessible to others, they can see for themselves how the data is being sifted and organised…. Once labelled, the analyst is able to access each reference, and more crucially, to see patterns and the context in which they arise…these juxtapositions are often one of the early clues to associations for subsequent stages of analysis."  (Ritchie and Spencer, 1994:182)

# 3. Coding / indexing the data

- Manually

  - Code in transcript margin, colour code sections of text

- Computer assisted

  - Import transcripts into Nvivo, set up coding system, apply codes to each transcript

# An example of coding

**Doctor supervision**

"Yes. I supervise the patient. I often visit her. I asked her 'did you take drugs regularly', 'how did you take drugs', or 'did you take drug according to the instruction?' etc."

**Time constraints**

"It takes me about 20 min to patient's house by walk."

**Doctor supervision**

"I seldom call the patients. For the patients in my village, I often visit them and chat with them. …… every 4 or 5 days I visit them."

"I witness him to take drug." "You witness him ……" "Yes."

"I often visit him. Sometimes I am not available and I called the patient to remind him."

"(what do you do when you witness the patient?) I check the rest drugs, and take record."

**Friends/ family involvement**

"Sometimes the neighbors also remind the patient. Because they live in the same yard, if somebody spit everywhere, he will be blamed. In each yard there are 3-4 households, the neighbors usually remind the patient that do not spit everywhere because it's air-borne infectious disease. It's easy to spread. ……"

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# Stages in framework analysis

| | |
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# Phase 1: Trustworthiness check!

- **Data quality** – eyeball the balance of qu's & responses in transcripts. Did you use open questions and probes?

- Have you started to develop ideas or theories about what the respondents are telling you?

- Is there a consistency of views or opinions in the transcripts?

- **Reflexivity** - How much does the **content** of the interview support your ideas? Are you listening 'selectively'? Have you ignored important issues?

- Have you over-emphasised points because **you** think they're important?

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# Analysis tips

- Worried about finding interpretations?

- Joy in your creative ability?

- Excitement at making an original contribution to knowledge?

- Visualise your audience

- Outline your report

- Brainstorm, play with the data

- Draw pictures

- Have conversations!

# Constant comparison

- Long list of codes

- Which are the most important?

- Compare coded sections with each other

- Can any be collapsed?

- Are there any 'themes' emerging?

# 4. Charting

- Helps reduce and summarise data

- One chart for each main emerging theme

- Retain original terms, phrases, expressions

- Don't interpret

- Don't dismiss material at this stage

# 4. Charting

- Charts are created in Word/Excel

- Cut & paste coded segments or enter summaries of views

- Remember to note where in the original transcripts the extracts are from

## BOX 9.6 EXAMPLE OF A THEMATIC CHART

| HOUSING CRISIS | 3.1 | 3.2 | Factors causing housing crisis | | 3.6 | 3.7 | 3.8 |
|---|---|---|---|---|---|---|---|
| Serial No., Gender, Age, Ethnicity etc. | Chronology of mobility and housing disruption | The nature of housing crisis | 3.4 Unconnected to sexuality | 3.5 Connected to sexuality | Nature of connection with family/ home during HC and once overcome | Feelings about and impact of housing crisis | Notes/ comments |
| NO. 34, Male, 17, Gay, White UK | ran away at 14 for 2 weeks (1st HC) but found & went into to care – when left there after 2 yrs went to mums, left there cos of bro's abuse, then to hostel for 3 months (2nd HC), then left there cos of harassment, then moved back to mums, left again cos of bro's abuse (3rd HC-early 2000); then | 1 – was here, there & everywhere, on streets, doing best to get money, stealing (4) 2 – not seen as housing crisis tho was resident in a hostel (called it 'own place' cos had his own room) big building with loads of separate flats (20) 3 – went and stayed in hostel 4 – stopping here there and e'where – | 1. physical abuse from brother (THO POSS CONNECTED TO S COS BRO WLD CALL HIM POOF ETC. BUT ABUSE ALSO APPEARS UNRELATED TO S) 2. Again physical abuse from bro (20) 3. Physical abuse from bro – this time beating with metal bar but this time also beat sister 4. ran away from hospital cos were treating him like | went to [city] in 3rd period of HC because gay and liked the village – THO REASON FOR RUNNING AWAY UNCON-NECTED TO S, MORE CON-NECTED WITH ESCAPING FROM HOSPITAL (22–23) | Loves mum to bits, treats him really bad, but every time he was away and she said come back he would cos loved her – always had a close rel, went e'where together (13) | didn't like sleeping on streets, v afraid (26) hasn't got a place to call home, that's been awful, cos thinking where am I going to put my head down tonite – awful being on the street (26–27) made him change from being a little tearaway to keep-ing out of trouble with the police (29) | MULTIPLE PERIODS OF HOUSING CRISIS – STILL ONGOING – LIKELY TO HAPPEN AGAIN ALTHO VIO-LENCE FROM BROTHER NOT EXPLICITLY TO DO WITH S, IT DOES APPEAR TO FEATURE AS PART OF THE REASON FOR ONGOING ABUSE SEE 3.4 (Continued) |

# Charting

- Helps to compare data across themes

- Include as much data as needed so you don't need to return to transcript

- Summarise without losing context of content

# 5. Mapping & interpretation

- Using your charts, map the range and nature of viewpoints, refine categories, create typologies and find associations between themes

- Interpretation is influenced by your original research objectives as well as themes emerging from your data

- Describe your data

- Lead into explaining your data (higher level analysis)

# Descriptive account

- Identify range of views in each theme

- Assign labels to the data (categories)

- This is the start of 'interpretation'

| Respondent | Stigma - Range of views | Categories |
|---|---|---|
| 31M-XS-M-R | No any influence to the relationship with my neighbors. I can get on well with them. | No stigma felt/ experienced |
| 29M-WZ-Y-I | No any influence. I always behave myself; I know I can't keep too close with others, I have protective consciousness. | |
| 25M-RC-Y-I | To me, there is no any difference before and after I got TB. My friends and neighbors still treat me same as before. | |
| 26M-RC-O-I | Now when I meet neighbors, we just say hello to each other, then they go away. Before I got TB, we always sit down and chat for a while. | Stigma within the community |
| 14F-XS-O-I | My neighbors knew that I got disease, but they didn't know that it's TB. After knowing my disease and that I can't do any agriculture work any more, who want to visit me? | |
| 2F-JLP-Y-I | After they (friends and relatives) knew my disease, they always keep a certain distance while talking with me. | |

# Descriptive account

- Interrogate all cases (respondents)

- Categories begins to recur

- Sometimes you can collapse categories together

- Work towards a meaningful classification of your data

- Refine main themes

# Descriptive analysis

- Greater understanding and meaning of each theme

- Note range of views, experiences across all cases

- Describe common features of themes

- Identify illustrative quotes

- Develop typologies?

# Typology

- "Classification made up of categories that divide some aspect of the world into parts along a continuum" (Patton 2002)

- Evaluation of natural history museum exhibition visitors:

1. The commuter (walks through)

2. The nomad (wanders without purpose)

3. The cafeteria type (wants to get interested in something)

4. The VIP (has a prior interest in the content)

# Explanatory accounts

- Higher stage of analysis

- Find patterns in the data

# Explanatory accounts

- Are respondent characteristics associated with particular views? (sub-groups)

- What views go together? (linkages)

# Linkages

- Co-existence of views, attitudes, circumstances

  - Village doctors' opinion on DOT and frequency of home visits?

  - Negative opinion on DOT accompanied by strong view about financial incentive for DOT?

# Sub-groups

- Detect differences between population groups – use sampling criteria

  - Do village and county doctors have different opinions on DOT?

  - Different views on adherence among old and young patients?

  - Different views among patients from different counties?

# Interpretation

- Organising and describing themes, patterns, categories and content does not constitute *interpretation*

- Much qualitative research stops at presenting descriptive accounts

# Interpretation

- Go beyond descriptive data

- Within themes:

  - Describe which viewpoints go together

  - Explain if respondent characteristics associated with certain views

- Illuminate important things we didn't know

- What are the **most important** themes emerging from your whole dataset?

- Are these **really** key themes?

- Do they exist across **all** transcripts?

- **Interrogate your data** – constant comparison

- Look for deviant cases/ outliers

- Be informed by the conceptual and theoretical literature

# Tips for interpreting your data

- You may feel confident or dreadful depending on your findings!

- Bored by the chore!

- Relate your findings to other studies

- Use quotes

- Borrow theories

- Check with informants

(Riley, 1990)

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# Phase 2: Trustworthiness check!

- **Respondent validation** - where possible get their views on your interpretations

- Have I upheld confidentiality and privacy? Have I acted in the spirit of the informed consent I received?

- **Fair dealing/negative cases** - Have you have captured the range of participant perspectives, meanings, understandings?

# Phase 2: Trustworthiness check!

- **Triangulation** – have you compared and contrasted data reported through different methods & different participants?

- **Reflexivity** –how might you have shaped the data / analysis process?

- **Audit trail** – can you describe the analysis process; how coding evolved into themes and interpretations?

- Have I provided sufficient data to allow a reader to judge whether interpretation is supported by the data?

# Summary - Framework analysis

- Data management and reduction through specific stages

- Transparent, reliable

- Can provide descriptive & explanatory analysis

# Further reading

- Anfara et al. Qualitative analysis on stage. Educational Researcher 2002; Oct

- Hussey S, Hoddinott P, Wilson P et al. Sickness certification system in the United Kingdom. BMJ 2004; 328: 88

- Attride-Stirling J. Thematic networks. Qualitative Research 2001; 1(3): 385-405.