Study Guide 9: An Introduction to Qualitative Research

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Contents

Disclaimer: This guide is not intended to be a definitive account of qualitative methodology but is a simple outline to introduce the reader to some of the common concepts. The reader is referred to the many excellent books on the subject for a fuller account. Some sources are cited in 'Further Reading'; the list is not exhaustive and there are many other good books worth consulting.

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(1) Overview and learning outcomes

This guide presents a simple introduction to qualitative research approaches for those thinking of undertaking qualitative or mixed method research within health care settings. No prior knowledge of qualitative research methods is assumed. The guide is directed at the novice researcher, particularly those undertaking a post-graduate degree that requires them to undertake a research project. It will introduce qualitative research, describe sources of qualitative data, consider the techniques qualitative researchers use and give an overview of the theoretical approaches underlying a variety of common qualitative research methods of analysis. After reading this guide you should be able to:

- Understand what qualitative research is and which type of research questions it is appropriate for
- State the skills needed to be a good qualitative researcher
- Be aware of the steps needed to get started
- Be familiar with some of the methodological approaches
- Be aware of sources of qualitative data and their strengths and weaknesses
- Be aware of the theoretical assumptions and processes involved when analysing qualitative data
- Have some insight into considerations when writing up qualitative research

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Associated NHS Fife study guides:
1   How to devise a research question and choose a study design
2   How to write a protocol
4   How to apply for a 'favourable' opinion from an ethics committee and for R&D management approval
7   How to plan your data collection and analysis
8   How to manage a research project
16   How to achieve success with your dissertation
18   How to write up and get your work published

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(2) Introduction

Qualitative research is concerned with developing explanations of social phenomena, including people's lived experiences, their views, attitudes and practices. The intention is to 'describe' and 'understand' rather than to predict something, as in quantitative research. The data are descriptive, non-numerical and typically relate to words and the meaning behind them. Qualitative research addresses issues that are socially constructed and subject to constant change and variation between settings and participants. The method is appropriate for studies investigating especially sensitive subjects such as attitudes to impending death (theirs or a loved one). Qualitative studies will typically involve a small number of participants but the amount of data collected may be considerable.

It is common practice for post-graduate students to undertake a research project as part of their degree course. For those students with a fear of statistics a qualitative research project may seem more attractive than a quantitative study. However, another consideration for the novice qualitative researcher concerns the terminology which can be hard to grasp. Terms such as ethnography, grounded-theory, ontology, epistemology, phenomenology, and many others, will be encountered. Hence,

selecting a qualitative project is not an 'easy option' and the choice of research question and project methodology should be made with great care. The reader is referred to Study Guide 1 ('How to devise a research question and choose a study design') for further advice and a comparison of features between qualitative and quantitative research approaches.

(3) The skills needed to be a good qualitative researcher

When interviewing people the researcher must appear approachable and have a warm and friendly personality to encourage participants to feel easy, relaxed and safe to 'open up' during their conversations. But, without doubt, a clear ability to listen carefully is an essential attribute.

> "When you talk, you are only repeating what you already know. But if you listen, you may learn something new." *Dalai Lama XIV*
>
> "You have two eyes, two ears, but only one mouth. This is so because you are supposed to look and listen more than you talk". *Lucca Kaldahl*

In addition, a qualitative researcher will need good skills in critical thinking, analysis and interpretation of the data collected (*see* Table 1).

Table 1 The skills needed to be a good qualitative researcher

1	A good listener
2	A warm, friendly manner and ability to establish trust with clients
3	A critical thinker
4	Adaptive to changes in the process
5	An ability to separate yourself from your cultural ties and own beliefs to enhance your interpretative skills as an 'independent commentator'
6	A basic understanding of the various approaches to collect qualitative data, with their advantages and limitations
7	A clear understanding of the strengths and limitations of approaches for analysing data
8	An ability to be reflexive and self-critical

(4) Getting started

The first step is to select an area for investigation and devise a research question. A review of the literature will help establish what is known on the subject and, more importantly, what is unknown and therefore a gap in knowledge. The choice of topic may be confirmed after discussions with colleagues, academic supervisors and service users. The latter, in particular, are likely to provide advice from a different perspective.

The study design (methodology) is determined by the research question (*see* Study Guide 1 'How to devise a research question and choose a study design'). For a qualitative design, some typical research questions might be:

(a) "Why do patients decline to take part in the national screening programme for bowel cancer?"

(b) "What are the fears of elderly people living on their own?"

(c) "How do the carers of patients with COPD cope with exacerbations?"

(d) "What factors are considered important by patients when consulting a GP?"

(e) "What are the concerns of parents of a child with a peanut allergy?"

A qualitative research approach is particularly relevant for studies investigating a topic about which little is known, where the disease / condition under investigation is rare (e.g. Huntington's Disease), or where an existing theory needs revising. Qualitative studies can be made before, during or after a quantitative study. For example, when a new intervention or service is introduced and being evaluated qualitative studies may be used (1) beforehand, to interview staff to identify their concerns or potential barriers about the new service, (2) once in operation to interview service users about their experiences of using the new service, and (3) once the service has been embedded for some time to interview staff on residual problems arising from any new working arrangements.

Having settled on a topic, devised the research question and research aims the researcher will need to do the following to complete the planning phase:

(a) Select a theoretical approach,

(b) Select a sample,

(c) Choose a method for data collection (e.g. document analysis, participant observation, interviews or focus groups),

(d) Decide on a method for data analysis and any data validation procedures (e.g. triangulation),

(e) Identify the software to be used for data management (if any),

(f) Write the detail in a protocol (*see* Study Guide 2 'How to Write a Protocol')

These details will be required to secure the necessary permissions to carry out the research (*see* Study Guide 4 'How to apply for a 'favourable' opinion from an ethics committee and for R&D management approval).

(5) Select a theoretical approach

Qualitative studies use a number of different analytical and theoretical approaches, each of which encompasses a different set of assumptions about the nature of the data needed. Some approaches are described by the type of analysis they entail. The approach chosen will be dictated by the research question, the topic (phenomena) under investigation, the setting and characteristics of the participants studied. A detailed discussion of the many varied different approaches is beyond the scope of this guide and the reader is referred to one of the many textbooks on the subject. However, some general advice can be offered on the most common approaches which include ethnography, phenomenology, grounded theory, biography and case study (after Creswell, 2007).

(5.1) Ethnography

This approach is commonly used by anthropologists to study groups of people in their natural settings to describe their social interactions and cultural practices. This may include residents of a village or care home, nursing staff working on a particular ward or patients attending a rehabilitation programme. Whatever the group they will share something in common. Data collection processes are likely to include observation, interviews and possibly focus groups. The analysis can assess how the group members interact with one another but also how they deal with contacts from outside the group.

Example of a study using an ethnographic approach.

See Nightingale et al. A qualitative analysis of staff-client interactions within a breast cancer assessment clinic. *Radiography* 2017; 23: 38-47

Research Question: What is the nature of staff-client interactions within a breast assessment clinic affiliated to the NHS Breast Screening Programme?

Aims: (1) To observe the type and frequency of staff-client communication episodes within the clinic. (2) To describe the client perceptions of the clinic. (3) To explore staff perceptions of the observation findings. (4) To develop a model to capture the culture of staff-client interactions in the clinic.

Sample: 23 clients attending the clinic and at least 12 staff members.

Data Collection: Participant observation captured via a data collection sheet and discretely recorded audio records. Semi-structured interview with clients at end of clinic visit. Observation and interview data transcribed. Emerging themes from the participant observation and interviews discussed in two focus groups of clinical staff, one of practitioners including radiographers, mammographers, assistant practitioners and reception staff, and a separate group of consultants. Each focus group facilitated by two radiographers with expertise in qualitative research methods.

Data Analysis: Observation and interview data analysed thematically to identify emergent themes. Transcripts from the focus groups analysed using an inductive approach to produce emergent themes. Initial analyses conducted by one researcher with findings checked by a second researcher. Analytical processes included triangulation, member checking and peer review.

(5.2) Phenomenology

This approach has its roots in philosophy and focuses on the lived experiences of individuals and the sense they make of those experiences in relation to one or more phenomena under investigation. An example is the study of a group of young people with cerebral palsy attending a sports camp. Here the phenomena under study might include their capacity to cope physically and independently in a new setting.

Example of a study using an interpretative hermeneutic phenomenological approach.

See Underhill et al. Living my family's story. Identifying the lived experience in healthy women at risk for hereditary breast cancer. *Cancer Nursing* 2012; 35: 493-504.

Research Question: How do women at high risk for hereditary breast cancer incorporate living with knowledge of this risk into their lives?

Aims: (1) To understand how living with knowledge of hereditary risk influences and is incorporated into self-identity. (2) To explore practical, self-care strategies women apply to managing this risk. (3) To describe the personal experiences and meaning of receiving care through a high-risk breast program.

Sample: A convenience sample of 20 women at high risk for hereditary breast cancer recruited from a breast cancer reduction and prevention program in the USA.

Data Collection: Interviews using a semi-structured interview guide, plus field notes. Interviews recorded and transcribed verbatim.

Data Analysis: Members of the research team reviewed transcripts to provide multiple interpretations based on a dynamic method of hermeneutic interpretation. Common themes identified and organised within a matrix to achieve data saturation, with interpretations and themes confirmed using respondent validation.

(5.3) Grounded Theory

This approach involves the researcher identifying issues as they relate to a phenomenon and as they emerge from the data to establish one or more theories that can be tested against further emerging evidence as the collection of data and analysis progresses. This inductive and intuitive approach is particularly useful when little is known about a given topic. The technique has been in use for about 50 years having been first described by Glauser and Straus in 1967 from their studies of terminally ill patients.

Example of a study using a Grounded Theory approach.

See Furlong EP. A grounded theory study of younger children's experiences of coping with maternal cancer. *Cancer Nursing* 2017; 40: 13-21.

Research Question: What are the main concerns of children whose mothers have recently been diagnosed with and are being treated for early-stage breast cancer and what processes do children adopt to resolve their concerns?

Aims: (1) To interview school-age children of mothers undergoing treatment for early-stage breast cancer to identify their concerns. (2) To develop a grounded theory of children's experiences as they cope with the stresses of having a mother diagnosed with early-stage breast cancer.

Sample: Convenience sample of 28 children (14 boys) aged 7 – 11 years.

Data Collection: Interviews undertaken in the child's home using a semi-structured interview guide that was amended as data collection progressed. Interviews audio-recorded and field notes taken. Interviews transcribed verbatim.

Data Analysis: Field notes and transcriptions reviewed and coded for themes and categories by a researcher using constant comparative analysis throughout the data collection period as interviews were completed. Findings later validated by two additional qualitative research nurses who reviewed the transcripts and field notes.

(5.4) Biography

A biographical approach considers the experiences of an individual (or individuals) set within the context of their life. An example may be studying survivors of childhood sexual exploitation to describe the consequences of their experiences on their subsequent life.

Example of a study using a Biographical approach.

See Trusson D, Pilnick A, Roy S. A new normal? Women's experiences of biographical disruption and liminality following treatment for early stage breast cancer. *Soc Sci Med* 2016; 151: 121-129.

Research Question: What are the long-term implications of surviving treatment for early-stage breast cancer and how do women adjust to living with reminders of treatments (lumpectomy and mastectomy) as they relate to concerns about recurrence and impact on perceptions of femininity and sexuality?

Sample: Twenty-four women aged 42-80 who had been treated for early stage breast cancer in the UK between 6 months and 29 years previously, recruited through local media.

Data Collection: In-depth interviews using prompts to encourage each participant to 'tell their own story' of being diagnosed, treated and surviving breast cancer. The interviewer herself had personal experience of breast cancer and, after the interview was able to discuss her own experience in relation to the participant's expressed views. This was seen to increase the researcher's 'credentials' and often lead to participants making further disclosures on sensitive matters not previously addressed, hence adding to the narrative content.

Data Analysis: Transcripts examined using a descriptive and interpretive, narrative analysis. General findings and resulting themes discussed between the paper's co-authors to improve reliability.

(5.5) Case Study

This approach involves undertaking an in-depth examination of one or more individuals to describe, for example, some aspect of their interaction with the health service. Examples include the effect on a patient from taking part in a cardiac rehabilitation programme; a study of an elderly woman, living alone, at risk of falling to identify the health and social services required to support her independent living; or a study to chart the time course and struggles a patient experienced during their efforts at giving up cigarette smoking.

Example of a qualitative study using a case study approach.

See Cooper RS. Case study of a chaplain's spiritual care for a patient with advanced metastatic breast cancer. *Journal of Health Care Chaplaincy* 2011; 17: 19-37.

The study reported on the discussions between a hospital chaplain and a 64-year old woman with metastatic breast cancer. The data were derived from a retrospective assessment of approximately 16 pastoral encounters during the last year of the patient's life. The discussions covered issues concerning the patient's spiritual needs, particularly in regard to her fear of death, her loneliness, her faith and her grief that her life was "too short". The paper addressed the potential role of a chaplain as part of the health care team.

(6) Select a sample

Quantitative studies often rely on recruiting a random sample to estimate, for example, an average value representative of the group from which the sample was drawn. In comparison, a qualitative study requires purposive sampling whereby participants are recruited, as it were, 'to order' to fulfil some predetermined strategy. It is usual to make up a sampling frame that includes characteristics of the various members that need to be recruited. Participants are recruited sequentially to fill the frame using a variety of sampling strategies, some of which are given below. However, the number of participants required can only be a 'best guess' as, at the start of the study the researcher will not know how many participants are required to obtain a complete data set ensuring the fullest account (referred to as 'Data Saturation', *see later*). Accordingly, the time and resources needed for completing data collection can be difficult to predict when planning the fieldwork for a qualitative project.

Sampling strategies include the following:

(6.1) Convenience sampling

The researcher will recruit participants who are easily available, and willing to consent. This is the least rigorous method of the various sampling strategies. However, a convenience sample may not guarantee the researcher will capture the diversity of views needed to answer the research question.

(6.2) Quota sampling

Recruitment continues until it satisfies some predetermined quota, such as a set number of men from different age groups each with a certain condition. The number in the quota may be restricted by the resource available and hence considered 'convenient'. However, following data analysis it may become clear that one or more quotas need expanding with additional recruits to achieve data saturation.

(6.3) Snowball sampling

Participants are asked to identify additional members from their cohort as potential recruits that can be approached by the researcher. Alternatively, the participant may recruit them personally and introduce them to the researcher to deal with consent issues etc. This approach is especially useful for hard to engage groups such as the homeless, travellers, or users of illicit drugs.

(6.4) Sampling members of a defined group

On occasions the sample of interest comes from a defined group such as primary care practice managers, dental hygienists, traffic wardens etc. The researcher may be restricted to using one-to-one interviews if the recruits work in isolation, although a focus group may be arranged if the group members already meet routinely at a professional forum, or socially.

(7) Selecting a method for data collection

Qualitative studies use standard, observational methods to explore people's beliefs, experiences and knowledge. Techniques include document analysis (nursing notes, emails, tweets, minutes of meetings, diaries, annual reports, policy statements, clinical protocols, photographs etc), participant observation (of a parent's interaction with their child, for example), one-to-one interviews (semi-structured, unstructured) and focus groups where small groups of individuals are asked open questions by a facilitator who records and interprets the conversations. A qualitative study may involve more than one method of data collection. Each method has its own strengths and weaknesses (Tables 2 – 6 below).

(7.1) Document analysis

Table 2. Strengths and weaknesses of document analysis

Document analysis	
Strengths	• Low cost • Convenient (assuming documents are accessible) • Potential for unbiased data collection • Good for prospective studies (e.g. diaries of symptoms, medication adherence) • Potentially comprehensive records • May allow retrospective review of change over time in populations if source material has been collected rigorously and to high standards of completion (e.g. care home nursing notes) • Potential source of contemporary, independent evidence • May be the only source of evidence for long-term historical research
Weaknesses	• Missing documents or missing content • Possible restricted accessibility (confidentiality) • If multiple observers involved be aware that writing styles and content may vary • Potential ineligibility of written content • Accuracy and authenticity of content not guaranteed • Selective reporting (e.g. of unfavourable events) • Potential change in standards/practice over time (historical studies) • Context in which content is recorded may not be appropriate for the research • Information recorded may not be germane to research question • Volume of data may be excessive (hence, collection and analysis time consuming)

Qualitative studies may draw on a wide variety of source material, as outlined above. A convenient source for prospective studies is patient diaries. Here, patients are asked to record their symptoms, medications, activities and any test measures such as a peak flow rate, blood glucose level, on a regular basis. However, a principal assumption is that the entries are truthful.

> Elderly patients with asthma were issued with a new Peak Flow Meter and asked to record their Peak Flow morning and afternoon in a diary. The Meter gave a reading that the patient could note in their diary but also recorded the result within the device's software. Later analysis confirmed that many patients were recording the result truthfully. However, a significant proportion of patients were falsifying entries either deliberately mis-recording results in their diary or entering data without using the meter at all.

Gaining access to relevant documentation will involve seeking consent and may raise ethical considerations when requesting access to possibly sensitive material such as personal details of service users, members of staff, and financial details of individuals and organisations. Researchers need to be aware of any unintended, sensitive disclosures that may arise whilst collecting data from documents, especially if the information is not related to the research question and would best remain confidential.

(7.2) Direct Observation

Table 3. Strengths and weaknesses of direct observation

Direct observation	
Strengths	• Can provide objective evidence on behaviours and interactions, verbal and non-verbal, in a natural setting, particularly if participants are unaware they are being observed • Observations made within context and environment under study • Use of film and / or audio can provide remote and independent data unbiased by the presence of an observer • Researcher can be a participant (provides further in-depth analysis of context)
Weaknesses	• Hawthorne effect – participants may alter their behaviour, knowingly or unknowingly, if aware they are being observed. • Can be time consuming • May be subject to practical constraints • Rigorous training of multiple observers necessary • Potential conflict of interest if observer notes unethical or unprofessional behaviour • Can be problematic in intimate situations

Observational studies are useful in, for example, noting how children interact with others in a play situation or how a nurse may interact with a patient in a care setting. This method has clear advantages for finding out, for example, how people actually behave in certain situations in preference to asking them in an interview how they would behave.

Observations can be made through use of remote video cameras (either fixed position or monitored to allow free-movement), or use personal accounts recorded in writing by one or more researchers. The former approach has the advantage of providing a permanent record that can be assessed by multiple observers viewing and interpreting the footage afterwards. It may help the accuracy of the observation if participants are unaware that they are being filmed (Hawthorne Effect, Table 3), though this may raise ethical concerns. In comparison, the presence of a researcher recording events in writing has the advantage of witnessing events that happen out with the camera's field of view. However, one disadvantage is the possibility that the observer may miss something important whilst focussing on and writing down their account of another event.

(7.3) Interviews

Table 4. Strengths and weaknesses of a one-to-one interview

One-to-one interview	
Strengths	• Can be semi-structured or unstructured • Gives opportunity to probe in-depth using 'open questions' • Interviewer can clarify any uncertainty over question wording • Question sequence can be varied to suit interviewee • Questions can be left out if considered irrelevant • Can use less precise wording suited to the interviewee • Potential use of audio or video recording to collate data
Weaknesses	• Potentially expensive • Data collection can be lengthy and its analysis time consuming • Not anonymous, though interviewer can give reassurance that information gathered will be anonymised • Results subject to response bias but also to observer bias (training an important issue if using multiple interviewers) • Consent to record interview may be withheld and then the need to record field notes can be distractive • Does not provide evidence of interaction between participants

Perhaps the most common method of data collection in qualitative studies is the semi-structured interview. Wherever possible this should take place in a quiet, environmentally comfortable room free from outside disturbance. After gaining consent the interview should proceed with the conversation recorded usually with a digital voice recorder. An important first step is to ensure the batteries are fully charged and the available recording time on the device is sufficient! On occasion, a participant may withhold consent for the interview to be recorded in which case the researcher should explain that s/he will have to take field notes that may interfere with the flow of dialogue. It is imperative that, whether the interview is recorded or not the researcher should write notes on the conversation soon after completing the interview.

On occasion, interviews may be conducted over the telephone when, for example, the researcher and the participants are separated geographically, as in a national study. Alternatively, interviews may be conducted using teleconference or video facilities when these are available to both the interviewer and interviewee.

The interview requires use of a topic guide for the researcher to follow as a prompt and to make sure all aspects of enquiry have been covered during the interview. Conducting any qualitative study is not a 'linear' process and it may be that the topic guide, and questions from it will need to be expanded as the researcher interviews more participants and uncovers important aspects not originally envisaged. Researchers need to be aware that any major change to the study protocol is likely to require approval from both the research ethics committee and R&D management.

A study was undertaken in a deprived, inner city community seeking to identify the residents' reasons for not engaging in leisure time physical activity. A list of barriers was compiled from the literature and used in the topic guide in an interview of residents. During interviews it became clear that one additional barrier not initially identified by the research team was peoples' fear of leaving their home unattended at night; this was added to the topic guide in later interviews.

The interview process must rely on use of open-ended questions to elicit in-depth responses from the participants. The question, 'were you upset when the doctor told you that you had cancer?' is likely to elicit a 'yes' or 'no' reply. An open-ended question such as 'how did you feel when the doctor told you that you had cancer?' should provide the respondent with an opportunity to give a fuller, more detailed account of their first thoughts and feelings.

The order of questions and the degree to which a subject is probed is determined by the interviewer. Hence, each interview need not follow the same path and flexibility is ensured to allow the researcher the freedom to direct the interview as they see best.

It is good practice for the researcher to keep field notes as a reflexive diary soon after each interview to record, for example, what went well and what not so well.

(7.4) Focus Groups

Table 5. Strengths and weaknesses of a focus group

Focus group	
Strengths	- Can offer more efficient data collection than one-to-one interviews - Groups can be made up of participants who know one other (e.g. work colleagues) who share an experience or participants who are total strangers (to elicit 'social, group norms') - Provides evidence on the interaction between participants - Improved access to 'hard to engage' groups - Allows interaction between respondents to explore similarities and differences in views - Replicates the cultural context in which people discuss issues, particularly sensitive ones - Venues can be chosen to offer a 'safe' environment - Can study how opinions are formed from the flow of conversations within the group
Weaknesses	- All must consent to audio record interview as any dissenting participant may risk accuracy of data collection - Analysis time consuming - Possible lack of disclosure of sensitive issues or attitudes in a group setting - Not anonymous, maintaining confidentiality between participants can be uncertain - Potential discord between participants from disclosure of unsavoury, insensitive, controversial or inappropriate attitudes in a group setting - Potential suppression of views from 'power' relationships in groups where participants are known to one another - Risk of loss of control of the group and direction of conversations by the facilitator from (i) extraneous distractions at the venue, (ii) dominance of a single participant and (iii) group behaviour

Focus groups comprising 6 – 8 participants are a useful way of eliciting views and observing interactions between group members. However, they should not be seen as a quick way to obtain the equivalent of multiple one-to-one interviews! As with interviews, the event should take place at a suitable time of day in a quiet, environmentally comfortable room free from outside disturbance. The venue should be convenient for those attending with adequate car park facilities, access for the disabled, close-by toilets and arrangements in place to provide refreshments. Group members may be known to one another, or be complete strangers. The researcher must first establish 'ground rules'. These include how the conversations are to proceed with, if possible, an assurance that only one person will be speaking at a

time. The rules must also address the sensitive issue of confidentiality; it is important for all to agree that 'what is said in the room stays in the room'. This may be particularly difficult for groups where participants are colleagues, family members or otherwise known to one another.

The participants should all agree for their conversations to be audio recorded. Preferably, consent should be sought beforehand though participants should be able to withdraw consent on the day. If any member dissents then the options include proceeding with the researcher taking notes of the discussions (which is onerous) or asking the dissenting member to leave the group (which can be embarrassing for the researcher as well as the remaining participants). Wherever possible, it is advisable to have an additional observer present to take field notes as the discussion progresses. This allows the researcher to concentrate on the flow of discussion following the topic guide.

Participants often vary in their ability to express themselves comfortably. The researcher must ensure that all members of the group have time to express their views and that the discussions are not dominated by any particular members.

A qualitative study can include both one-to-one interviews and focus groups. A study relying on focus groups alone is likely to require more than one group to satisfy the sampling strategy. The choice of method adopted must be made with care as both interviews and focus groups require a different approach.

(7.5) Use of narrative accounts

Table 6. Strengths and weaknesses of a narrative account

Narrative account	
Strengths	• In-depth account given of a personal event • Potential diversity of accounts • May only require a few participants
Weaknesses	• Focusses on the individual rather than the social context • Likely to be time consuming, laborious • The account may suffer from selective recall • May present a challenge in reporting (summarising) the findings • Possible difficulty in extracting common aspects between individual participant stories

This involves the collection of stories where a research participant is invited to give an account of some life event such as living through an illness or coping with the sudden death of a child. Having sought consent, the researcher audio-records the account and listens, preferably without interrupting. Afterwards, the researcher may ask questions to clarify any particular detail. Personal stories of a given event can be very revealing in determining how different individuals cope with the same challenges.

(8) Decide a Method for Data Analysis

The choice of analysis is partly determined by the theoretical approach taken and the information needed to answer the research question. In general, the analysis will attempt to explore the use and meaning of language, describe and interpret a person's views / beliefs / attitudes / practices, or develop theory.

(8.1) Discourse Analysis

This involves the analysis of speech and text to gain an understanding behind the words people use and their intent in *how* they express themselves to others. Data sources may include interviews, focus groups but also written text (personal letters, emails) and published articles as they appear in newspapers, for example.

(8.2) Content Analysis

This approach involves counting the number of times a particular word or phrase occurs and is useful when analysing an interview transcript, a speech or written report. For example, the analysis of a speech from a certain politician in the time leading up to the referendum on Britain's continued membership of the EU revealed they had used the phrase 'take back control' no less than 11 times.

(8.3) Interpretative Phenomenological Analysis (IPA)

IPA, as the name suggests, uses a phenomenological approach to data analysis with an interpretative component. It seeks to describe how participants make sense of their lived experiences by considering the person to be a self-reflecting individual who seeks to interpret their experiences within the context of the world they inhabit. In turn, the researcher also interprets their statements to make sense of the participant's own efforts to make sense of their world. The analysis involves creating themes (patterns) and searching for connections between them. IPA uses a constant comparison method and, sometimes, content analysis. IPA can be applied to transcripts from interviews and focus groups but also to other data sources such as diaries.

(8.4) Narrative analysis

Most people like to tell stories, particularly about themselves. Narrative analysis is concerned with the content and sequence of events within the story, concentrating on describing both *what* is said and *how* it is said. The analysis does not seek to identify themes. The approach can be time consuming and the meanings behind the story difficult to summarise.

(8.5) Using Grounded Theory

This method of analysis involves the researcher identifying themes and sub-themes from *what* is said to establish one or more theories that can be tested against further emerging evidence as the analysis progresses. A grounded theory approach to analysis requires that the data from an interview should be analysed shortly after its completion and before the next interview. In this way the topic guide may be altered and any theory developed can be adjusted in light of new findings from subsequent interviews.

(9) Further comments on data analysis

Audio records will first need to be transcribed verbatim. It is common practice to use digital recordings and a computer package such as 'Express Scribe'. However, transcribing can be a lengthy process requiring anything from 4 to 6 hours for a one-

hour interview or focus group. Rules must be created to deal with aspects such as pauses, hesitations in responses ('ums', 'ers, 'ahs'), identity of the respondent etc. Errors can easily be made due to, for example, mishearing, mumbling, confusion over use of slang phrases, difficulty understanding an accent, and interference from outside noise (e.g. vehicle sirens, telephones). Such errors can alter meanings radically. In general, it is advisable to use little or no punctuation when transcribing. However, limited punctuation may be necessary to avoid any ambiguity in the account. When used, this should be done with great care as incorrectly placed punctuation can alter the meaning. For example, consider the transcript:

> *"The nurse told me I could go home in the car I had another attack so ended up back in A&E"*
>
> Where should the punctuation be placed? Should there be a full stop after 'home' or 'car'? Which is correct?
>
> *"The nurse told me I could go home in the car. I had another attack so ended up back in A&E"*
>
> *"The nurse told me I could go home. In the car I had another attack so ended up back in A&E"*
>
> The emphasis differs if the important point is that the nurse had said the patient could go home in the car in preference to, say, an ambulance where, if the patient had experienced a problem the ambulance crew could deal with it.

If the transcribing is done by anyone other than the interviewer it is important that the interviewer checks the transcript against the recording to check any punctuation and ensure it represents a faithful record. The use of coloured text can help separate comments made by the interviewer from those made by the interviewee. This approach may be particularly useful when transcribing the separate comments from members of a focus group.

The use of a transcriber out with the research team can raise ethical issues of confidentiality and, in general, it is best that the interviewer transcribes the data as this has the added advantage of ensuring they are fully familiar with the content of the transcript prior to its analysis. The identity of a respondent should be anonymised to conform to data protection regulations, and all transcribed records stored on a computer should be backed up and, preferably, encrypted using a password.

Wherever possible, the transcribing should be done soon after the interview (or focus group), preferably the next day, so the researcher can review the topic guide should this be necessary before the next scheduled interview or focus group. Qualitative research is not a 'linear' process as it involves stepping backwards or sideways to adopt a new perspective as data are collected and analysed. On occasions the research question itself may need to be amended during the course of a study in light of emerging findings.

Software packages such as NVivo are widely used for data management. They are not designed as an analysis package. If using such a package it is important to ensure that the transcripts are prepared in a suitable format to allow them to be entered into the software.

There are many different approaches to the analysis of qualitative data which can be onerous, time consuming (due to the amount of data collected) and potentially subject to bias from the person undertaking the analysis. In general, the analysis is best undertaken by the person collecting the data as review of any transcripts of audio recordings can be misunderstood by those not privy to the way a participant's views may have been expressed. As an example, the simple statement in a transcript "she was alright" may be interpreted differently according to any emphasis made on individual words, or pauses made during its expression. Hence, "<u>she</u> was alright" is different from "she <u>was</u> alright" which, in turn is different from "she was [pause] alright [with the latter word expressed as a question]".

The commonest framework for analysing qualitative data is to recognise patterns within the accounts recorded. Other approaches include finding interactions and looking for personal stories. A 'thematic' analysis involves identifying themes from the account and summarising these in codes that can be compared within the same account and between different accounts (referred to as 'Constant Comparison'). Coding can take place at different levels. A higher level may capture general themes with a lower level targeted at describing sub-themes. An important aspect that determines the point at which data collection may be considered complete occurs when 'data saturation' is reached. Here, it becomes apparent that no new themes or sub-themes are emerging from consecutive interviews. This is a reason why it is important to try to analyse interview data as they are collected. The generation of themes and sub-themes allows the interviewer to amend their questioning of additional respondents and to determine the point at which the findings are truly 'saturated'. However, it may be necessary to undertake one or two additional interviews just to satisfy the decision that 'enough is enough'.

A detailed description of codes and approaches to analysis is beyond this simple guide and the reader is referred to a specialist text.

An important aspect of the analysis is 'respondent validation'. This is not always required but may be considered essential in a particular study to ensure the findings are robust. When undertaken it involves allowing the respondent to see their transcript to allow them to make additional comments to add to, or challenge something they have said.

The original interviewer should undertake the initial analysis of the transcripts but it can help for multiple commentators from the research team to review transcripts independently to ensure the generation of themes and sub-themes are complete. Later, the various team members can discuss their findings together to reach a consensus.

(10) Qualitative Longitudinal (QL) research

A special approach to qualitative enquiry is the use of serial interviews (Qualitative Longitudinal, or QL Methodology). The great majority of qualitative research is cross-sectional dealing with only one point in time. QL research offers the opportunity to find out how a participant's experiences change with time by using serial interviews. The approach has been used successfully in palliative care research where patients with progressive disease and life-limiting conditions have been followed-up during the course of their illness. Researchers were able to describe how a patient's

physical and spiritual needs changed as they approached death. For a further account *see* Murray and Sheikh (2006) and other papers in 'Further Reading'.

(11) Writing up Qualitative Research

The account should be transparent with a clear description of the methods adopted, including the processes for analysing the data. It should address the research question and, where appropriate, use a variety of direct quotes from different participants to illustrate the diversity of views and support the study findings. The inter-relationships between themes can often be best summarised in a visual map (a 'mind map'). The results section should include an interpretation of the separate findings to extract their meanings, and to arrive at an overall conclusion that may include generation of a theory about the topic under investigation.

A useful 32-item check list for reporting qualitative research is given by Tong, Sainsbury and Craig, published in the International Journal for Quality in Health Care (Table 7). This list may be used as a reporting guideline when writing up qualitative research. But, perhaps the best advice on writing up is to read some peer-reviewed papers using qualitative methodologies, especially those being considered for your own study and to use the criteria in Table 7 to critically appraise the text.

Table 7. COREQ (COnsolidated criteria for REporting Qualitative research) Checklist (After Tong et al, 2007)

Notes: This checklist of items should be included in reports of qualitative research. Report the page number in the manuscript where each item is addressed. Use N/A where relevant.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the interviewer/ facilitator? e.g. bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where were the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	

Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the interview or focus group?	
Duration	21	What was the duration of the interviews or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or correction?	
Domain 3: analysis and findings			
Data Analysis			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

(12) Summary

Qualitative research is a valuable, if complex method of investigation for certain research questions that cannot be answered by other approaches. But, like quantitative research it is not necessarily easy to undertake. However, competency will accrue with practice. If relying on using interviews or focus groups the researcher requires specialist inter-personal skills. In any event, the researcher must have a good grasp of the underlying theory behind the approach adopted and of the planned analysis which should be thought out at the planning stage. The process can be lengthy and the time required to complete a qualitative study should not be underestimated. This introductory guide is necessarily limited in scope and the reader is referred to the many helpful texts written on the subject.

Further Reading (Papers)

Carduff E, Murray SA, Kendall M. Methodological developments in qualitative longitudinal research: the advantages and challenges of regular telephone contact with participants in a qualitative longitudinal interview study. *BMC Research Notes* 2015; 8: 142*.*

Greenhalgh T, Russell J, Swinglehurst D. Narrative methods in quality improvement research. *Qual Saf Health Care* 2005;14: 443-449.

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Pope C, Ziebland S, Mays N. Qualitative research in health care. Analysing qualitative data. *BMJ* 2000; 320: 114-116.

Sbaraini A, Carter SM, Wendell Evans R, Blinkhorn A. How to do a grounded theory study: a worked example of a study of dental practices. *BMC Medical Research Methodology* 2011; 11: 128-138.

Sikasote J, Grant L, Chinn DJ, Macwang'i M, Murray SA. Voluntary counselling and testing for HIV in a Zambian mining community: serial interviews with people testing negative. *Sexually Transmitted Infections* 2011; 87: 433-8.

Smith J, Firth J. Qualitative data analysis: the framework approach. *Nurse Researcher* 2011; 18: 52-62.

Tong, A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care* 2007; 19: 349 – 357.

Vivar CG, McQueen A, Whyte DA, Armayor NC. Getting started with qualitative research: developing a research proposal. *Nurse Researcher* 2007; 14: 60-73.

Further Reading (Books)

An Introduction to Qualitative Research (6th ed). Flick U. Sage Publications, London, 2019.

Case Study Research: Design and Methods (4th ed.). Yin, RK. Sage Publications, London, 2009.

Discourse Theory and Practice: A Reader. Wetherell, M, Taylor, S, Yates, SJ. London: Sage in association with the Open University, London, 2001.

Interpretative Phenomenological Analysis: Theory, Method and Research. Smith JA, Flowers, P, Larkin, M. Sage Publications, London, 2009.

Introducing Qualitative Research (2nd ed). Barbour R, Sage Publications, London, 2013.

Mays N and Pope C (1996). Rigour and qualitative research. In Mays N and Pope C (eds) Qualitative Research in Health Care. BMJ Publishing Group, London 1996.

Narrative Based Medicine. Dialogue and Discourse in Clinical Practice. Greenhalgh T, Hurwitz B (ed). BMJ Publishing Group, London, 1998.

Qualitative Inquiry and Research Design: Choosing Among Five Approaches. 2nd ed. Creswell JW, Sage Publications, London, 2007.

Qualitative Research for Nurses. Holloway I and Wheeler S, Blackwell Science Ltd, 1996.

Researching Health, Qualitative, Quantitative & Mixed Methods. Saks M and Allsop J, Sage Publications, London, 2007.

Successful Qualitative Research: A Practical Guide for Beginners. Braun V, Clarke V. Sage Publications, London, 2013.

The Discovery of Grounded Theory: Strategies for Qualitative Research. Glaser BG, Strauss AL. Chicago, Aldine, 1967.

Glossary (from various sources)

Tip: search Google for an on-line glossary of research terms not included here

Analytic Induction	Use of the constant comparative method to develop hypotheses which are then tested in further data collection and analysis
Case study	A single unit in a study (e.g. a person, a ward or other setting) which uses a method to focus on the circumstances and dynamics of a single case.
Central organising concept	The essence of a theme in Thematic analysis; an idea or concept that captures a coherent and meaningful pattern in the data, and provides a succinct answer to the research question.
Constant comparison method	An iterative method of content analysis where each category is searched for in the entire data set and all instances are compared until no new categories emerge.
Content analysis	The systematic examination of text or conversational transcripts to identify and group common themes, and to develop categories for analysis.
Convenience sampling	A common way of sampling where participants are selected on the basis of accessibility rather than some other criterion.
Conversation analysis	A form of analysis that attempts to describe the orderliness, structure and sequential patterns of interaction in everyday conversation.
Data saturation	*See* Saturation
Discourse analysis	The analysis of speech and text to gain an understanding behind the words people use.
Document analysis	Systematic analysis of document contents to answer a research question in a qualitative study.
Empiricism	A theoretical position that sees truth as revealed through observation and experimentation or empirical research.
Epistemology	A theory of knowledge, that determines what counts as valid or accepted knowledge, and also therefore how do we go about obtaining or producing that knowledge.
Ethnography	A qualitative research methodology studying people in their natural settings to describe their social interactions and culture. The method is commonly used by anthropologists.
Feminism	A broad range of theoretical and political approaches which at their core assume the rights of women.
Field notes	Notes written very soon after or during data collection which record commentary about, and reflection on, the data collection session as well as ideas for analysis.
Focus group	A method of collecting data in which a small group of participants discuss a topic of interest, guided by a moderator, allowing interaction between members of the group to elicit views.
Framework analysis	A form of analysis based on thematic analysis using a priori concepts as well as emerging concepts.
Generalisability	The ability to apply the results of a study to the wider population; most strongly

associated with quantitative research.

Grounded theory	A method of analysis of qualitative data in which the researcher identifies issues that emerge from the data to establish theories that can be tested against further emerging evidence as the analysis progresses.
Hawthorne effect	An effect when participants change their behaviour, consciously or unconsciously, as a result of knowing they are being observed.
Hermeneutics	The theory and practice of interpretation.
Induction	The process of inference from the particular to the general. Inductive reasoning begins with empirical observations which form the basis of theory building.
Insider researcher	A researcher who belongs to the group or community they are researching.
Interpretation	A process of making sense of, and theorising the meanings in data; goes beyond summarising the obvious semantic content of data and puts an interpretative framework around it.
Interpretative phenomenological analysis (IPA)	An approach to qualitative research concerned with understanding experiences of the 'person in context'; prioritises participants' experiences and their interpretations of them. Theoretically developed from Phenomenology and Hermeneutics.
Interview	A one-to-one method of collecting qualitative data where a participant responds to a researcher's questions, usually in a face to face encounter.
Member checking	*See* Respondent validation
Method	A technique or tool for data collection or analysis; often confused with methodology.
Methodology	Theory of how research proceeds, including consideration of such things as methods, participants and the role of the researcher, ethics etc.
Mixed method research	The combination of different methods of data collection and/or data analysis within a single study, frequently combining qualitative and quantitative approaches.
Narrative	An account of one or more events, characterised by having some sort of structure, often temporal in Western cultures, and other story elements.
Narrative analysis	A method that uses the person as the unit of analysis, and looks within the person's account to find meanings. The analysis may draw together elements from multiple stories to construct an overarching narrative.
Naturalistic data	Data that exist in the world, such as newspaper articles or doctor-patient interactions rather than being collected specifically for the purposes of research.
Observation	The systematic watching of behaviour and talk in a naturally occurring setting.
Ontology	Refers to the study of being and the nature of reality; concerned with the state or nature of the world; with questions of what exists, and what relationship exists between the world and our human understanding and interpretation of the world.
Open-ended question	One which allows the respondent the freedom to give their own answer to a question rather than force them to select one from a limited choice of

	responses.
Outsider researcher	A researcher who is not a member of the group or community they are researching.
Paradigm	A conceptual framework within which scientific (and other) theories are constructed, and within which scientific practices take place.
Paradigm shift	A major change in thought and practices (*see Paradigm).*
Participant	A person who takes part in research (or some other activity).
Phenomenology	A research methodology which has its roots in philosophy and which focuses on the lived experiences of individuals.
Positivism	A theoretical framework for making sense of the world which assumes a world exists independent of our ways of getting to know it, and that if we observe it properly, we can discover the reality of the world.
Postmodernism	A worldview that challenges the linear and progressive model of the world promoted by modernism. Instead, it offers an approach to society and/or knowledge that stresses the uncertainty of knowledge and the existence of multiple truths. It theorises individual experiences as fragmented and multiple rather than coherent and linear. It is often seen as ironic and self-aware.
Postpositivism	Beyond positivism, a theoretical position that acknowledges that researchers are influenced by their contexts, but still seeks (uncontaminated) knowledge about the true nature of the world.
Purposive sampling	The deliberate choice of respondents, subjects or settings, on the basis that they will have certain characteristics or experiences.
Qualitative Longitudinal (QL) research	The use of serial interviews to understand a subject's evolving experience and needs. This can offer a better approach than a single interview when exploring a patient's experiences during the course of an illness or a period spent in, for example, a rehabilitation programme.
Qualitative research	A method of studying the meanings people give to their lived experiences, attitudes, expectations and how they make sense of their world. Data may be collected by interview (personal or in a focus group), by participant observation or by reading what they have written. The analysis is non-statistical.
Quantitative research	A method to measure and investigate the relationship between one thing (independent variable) and another (dependent variable). It seeks to quantify relationships between variables. Results can be expressed in simple descriptive terms or as tests of statistical significance between groups.
Raw data	Data in their original form.
Realism	An ontological and epistemological position which assumes that the world has a true nature which is knowable and real, discovered through experience and research; that we 'know' an object because there are inherent facts about it that we can perceive and understand.

Reflexivity	A critical reflection on the research, both as process and as practice, on one's own role as researcher, and on one's relation to knowledge. Reflexive research is that which acknowledges the role of the researcher in the production of knowledge, and in which the researcher reflects on their various positionings and the ways these might have shaped the collection and analysis of their data.
Relativism	A theoretical position that holds that there are multiple, constructed realities, rather than a single, knowable reality. All we have is an account of what we think reality is, but there is no foundation on which to claim our version of reality is more true, and right than another version.
Reliability	The extent to which the results generated could be generated again, e.g. by another researcher using the same data, or in another study, at another time or in a different context.
Respondent validation	The process by which a researcher will double check the respondent's view or understanding after an interview. The respondent is offered the opportunity to make changes. This is also known as 'member checking'.
Rich data	Data that provide detailed, complex and contradictory accounts about the research object.
Saturation	The point at which new data stop generating any substantially new ideas; developed out of, and associated with Grounded Theory.
Secondary sources of data	Information that has been generated for purposes other than research, but that can be used as data in empirical research, such as parliamentary debates or blogs.
Semi-structured interview	An interview where the researcher has a set of questions to ask but which can be varied in the order given and where the interviewer can depart from the question set to explore emerging themes.
Snowball sampling	A non-probability method of sampling whereby a recruited subject nominates other potential subjects for inclusion in the qualitative study.
Structured interview	An interview where the researcher has a set of questions to ask each participant but in which the order and wording is fixed.
Sub-theme	In Thematic analysis, a sub-theme captures and develops one notable specific aspect of one theme, but shares the central organising concept of that theme.
Thematic analysis	A process of coding data into themes and sub-themes.
Theme	A patterned meaning across a dataset that captures something important about the data in relation to the research question, organised around a central organising concept.
Theoretical sampling	A sampling method, most associated with Grounded Theory, whereby the sample is selected on the basis of the theory and the needs of the emerging theory. It does not seek to be representative.
Topic guide	A list of topics to act as an aide-memoire for the researcher when conducting an in-depth interview or focus group.
Transcript	A textual version of audio or audio-visual data, produced through the process of transcription.

Transcription	The process of turning audio or audio-visual data into written text by writing down, verbatim, what was said (and if audio-visual material, what was done), and in some instance how it was said, so that the data can be systematically coded and analysed.
Transferability	The extent to which qualitative research results can be 'transferred' to other groups of people or contexts.
Triangulation	Using two or more data sources, methods, or researchers to try to gain a fuller or multi-faceted understanding of a topic to affirm the study results.
Unstructured interview	An interview where the researcher asks participants very general questions without any predetermined plan to allow the participant to shape the interview in whichever way they prefer.
Validity	The extent to which research actually shows what it claims to show. The most common form of validity in qualitative research is 'Ecological Validity' which describes whether or not research captures meaning in a way closely related to real life situations.
Vignette	A short hypothetical scenario. As a method for qualitative data collection, a vignette is presented to participants after which they answer a series of open-ended questions about it.