decrease the potential arrhythmogenic effects. Hypercapnia may occur in patients who are breathing spontaneously during anaesthesia and predispose them to arrhythmias. The patient in case 3, however, had been given premedication and had undergone controlled ventilation avoiding volatile agents. This shows that cardiovascular disturbances can occur even when anaesthetic conditions are optimal.

These cases show the difficulties of applying small quantities of a highly concentrated paste without exceeding the recommended doses of cocaine. The risks are further compounded by the addition of adrenaline, which itself may be given in a high dose into a vascular area.

The value of adding adrenaline to cocaine is questionable; the clinical efficacy of the combination is dubious and we query the medicolegal aspects of this practice. Nasal surgery is rarely life saving and patients are commonly young and fit. Thus the benefits of using a particular technique must be substantial to justify any risk.

1 Reynolds JEF, ed. *Martindale. The extra pharmacopoeia.* 30th ed. London: Pharmaceutical Press, 1993.
2 Feehan HF, Mancusi-Ungaro A. The use of cocaine as a topical anaesthetic in nasal surgery: a survey report. *Plast Reconstr Surg* 1976;57:62-5.
3 Johns ME, Henderson RL. Cocaine use by the otolaryngologist: a survey. *Transactions of the American Academy of Ophthalmology and Otolaryngology* 1977;84:969-73.
4 British Medical Association-Royal Pharmaceutical Society of Great Britain. *British National Formulary.* No 27. London: BMA-RPS, 1994:485.
5 Adriani J, Zepernick R. Clinical effectiveness of drugs used for topical anesthesia. *JAMA* 1964;188:711-8.
6 Lips FJ, O'Reilly J, Close D, Beaumont GD, Clapham M. The effects of formulation and addition of adrenaline to cocaine for haemostasis in intranasal surgery. *Anaesth Intensive Care* 1987;15:141-6.
7 Pfleiderer AJ, Brockbank M. Cocaine and adrenaline: a safe or necessary combination in the nose? *Clin Otolaryngol* 1988;13:421-6.
8 Bromley L, Hayward A. Cocaine absorption from the nasal mucosa. *Anaesthesia* 1988;43:356-8.
9 Fleming JA, Byck R, Barash PG. Pharmacology and therapeutic applications of cocaine. *Anesthesiology* 1990;73:518-31.

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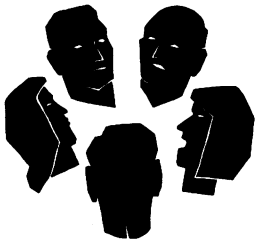
Qualitative Research

Qualitative interviews in medical research

Nicky Britten



This is the fourth of seven articles describing non-quantitative techniques and showing their value in health research

Much qualitative research is interview based, and this paper provides an outline of qualitative interview techniques and their application in medical settings. It explains the rationale for these techniques and shows how they can be used to research kinds of questions that are different from those dealt with by quantitative methods. Different types of qualitative interviews are described, and the way in which they differ from clinical consultations is emphasised. Practical guidance for conducting such interviews is given.

Types of qualitative interview

Practising clinicians routinely interview patients during their clinical work, and they may wonder whether simply talking to people constitutes a legitimate form of research. In sociology and related disciplines, however, interviewing is a well established research technique. There are three main types: structured, semistructured, and in depth interviews (box 1).

Structured interviews consist of administering structured questionnaires, and interviewers are trained to ask questions (mostly fixed choice) in a standardised manner. For example, interviewees might be asked: "Is your health: excellent, good, fair, or poor?" Though qualitative interviews are often described as being unstructured in order to contrast them with this type of formalised quantitative interview, the term "unstructured" is misleading as no interview is completely devoid of structure: if it were, there would be no guarantee that the data gathered would be appropriate to the research question.

Semistructured interviews are conducted on the basis of a loose structure consisting of open ended questions that define the area to be explored, at least initially, and from which the interviewer or interviewee may diverge in order to pursue an idea in more detail. Continuing with the same example, interviewees might initially be asked a series of questions such as: "What do you think good health is?", "How do you consider your own health?", and so on.

Box 1—Types of interviews

- Structured
  Usually with a structured questionnaire
- Semistructured
  Open ended questions
- Depth
  One or two issues covered in great detail
  Questions are based on what the interviewee says

In depth interviews are less structured than this, and may cover only one or two issues, but in much greater detail. Such an interview might begin with the interviewer saying, "This research study is about how people think about their own health. Can you tell me about your own health experiences and what you think of your health?" Further questions from the interviewer would be based on what the interviewee said and would consist mostly of clarification and probing for details.

Clinical and qualitative research interviews have very different purposes. Although the doctor may be willing to see the problem from the patient's perspective, the clinical task is to fit that problem into an appropriate medical category in order to choose an appropriate form of management. The constraints of most consultations are such that any open ended questioning needs to be brought to a conclusion by the doctor within a fairly short time. In a qualitative research interview the aim is to discover the interviewee's own framework of meanings and the research task is to avoid imposing the researcher's structures and assumptions as far as possible. The researcher needs to remain open to the possibility that the concepts and variables that emerge may be very different from those that might have been predicted at the outset.

Qualitative interview studies address different questions from those addressed by quantitative research. For example, a quantitative epidemiological approach to the sudden infant death syndrome might measure statistical correlates of national and regional

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variations in incidence. In a qualitative study Gantley *et al* interviewed mothers of young babies in different ethnic groups to understand their child rearing practices and hence discover possible factors contributing to the low incidence of sudden infant death in Asian populations.[1] A quantitative study of singlehanded general practitioners might compare their prescribing and referral rates, out of hours payments, list sizes, and immunisation and cervical cytology rates with those of general practitioners in partnerships. A recent qualitative study examined the concerns of singlehanded general practitioners during semi-structured interviews and identified the problems perceived by this group of doctors.[2] Qualitative research can also open up different areas of research such as hospital consultants' views of their patients[3] or general practitioners' accounts of uncomfortable prescribing decisions.[4]

Conducting interviews

Qualitative interviewers try to be interactive and sensitive to the language and concepts used by the interviewee, and they try to keep the agenda flexible. They aim to go below the surface of the topic being discussed, explore what people say in as much detail as possible, and uncover new areas or ideas that were not anticipated at the outset of the research. It is vital that interviewers check that they have understood respondents' meanings instead of relying on their own assumptions. This is particularly important if there is obvious potential for misunderstanding—for example, when a clinician interviews someone unfamiliar with medical terminology. Clinicians should not assume that interviewees use medical terminology in the same way that they do.

Patton said that good questions in qualitative interviews should be open ended, neutral, sensitive, and clear to the interviewee.[5] He listed six types of questions that can be asked: those based on behaviour or experience, on opinion or value, on feeling, on knowledge, and on sensory experience and those asking about demographic or background details (box 2). It is usually best to start with questions that the interviewee can answer easily and then proceed to more difficult or sensitive topics. Most interviewees are willing to provide the kind of information the researcher wants, but they need to be given clear guidance about the amount of detail required. It is possible to collect data even in stressful circumstances.[6]

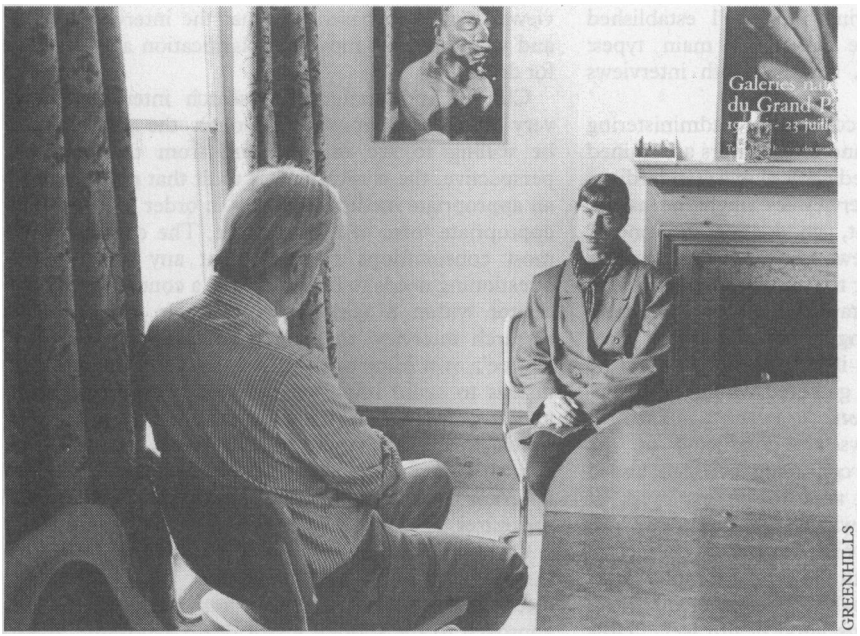
Box 2—Types of questions for qualitative interview[5]

- Behaviour or experience
- Opinion or belief
- Feelings
- Knowledge
- Sensory
- Background or demographic

The less structured the interview, the less the questions are determined and standardised before the interview occurs. Most qualitative interviewers will have a list of core questions that define the areas to be covered. Unlike quantitative interviews based on highly structured questionnaires, the order in which questions are asked will vary, as will the questions designed to probe the interviewee's meanings. Wordings cannot be standardised because the interviewer will try to use the person's own vocabulary when framing supplementary questions. Also, during the course of a qualitative study, the interviewer may introduce further questions as he or she becomes more familiar with the topic being discussed.

All qualitative researchers need to consider how they are perceived by interviewees and the effects of characteristics such as class, race, sex, and social distance on the interview. This question becomes more acute if the interviewee knows that the interviewer is also a doctor. An interviewee who is already a patient or likely to become one may wish to please the doctor by giving the responses he or she thinks the doctor wants. It is best not to interview one's own patients for research purposes, but if this cannot be avoided, patients should be given permission to say what they really think, and they should not be corrected if they say things that doctors think are wrong (for example, that antibiotics are a suitable treatment for viral infections).

Interviewers are also likely to be asked questions by interviewees during the course of an interview. The problem with this is that in answering questions, clinical researchers may undo earlier efforts not to impose their own concepts on the interview. If questions are not answered, this may reduce the interviewee's willingness to answer the interviewer's subsequent questions. One solution is to say that such questions can be answered at the end of the interview, although this is not always a satisfactory response.[7]



A qualitative research interviewer aims to discover the interviewee's own framework of meanings; the research task is to avoid imposing the researcher's structures and assumptions as far as possible

Researcher as research instrument

Qualitative interviews require considerable skill on the part of the interviewer. Experienced doctors may feel that they already possess the necessary skills, and indeed many are transferable. To achieve the transition from consultation to research interview, clinical researchers need to monitor their own interviewing technique, critically appraising tape recordings of their interviews and asking others for their comments. The novice research interviewer needs to notice how directive he or she is being, whether leading questions are being asked, whether cues are picked up or ignored, and whether interviewees are given enough time to explain what they mean. Whyte devised a six point directiveness scale to help novice researchers analyse their own interviewing technique (box 3).[8] The point is not that non-directiveness is always best, but that the amount of directiveness should be appropriate. Some informants are more verbose than others, and it is vital that interviewers maintain control of the

Box 3—Whyte's directiveness scale for analysing interviewing technique [8]

1 Making encouraging noises
2 Reflecting on remarks made by the informant
3 Probing on the last remark by the informant
4 Probing an idea preceding the last remark by the informant
5 Probing an idea expressed earlier in the interview
6 Introducing a new topic
(1=least directive, 6=most directive)

interview. Patton provided three strategies for maintaining control: knowing the purpose of the interview, asking the right questions to get the information needed, and giving appropriate verbal and non-verbal feedback (box 4).[5]

Box 4—Maintaining control of the interview[5]

- Knowing what it is you want to find out
- Asking the right questions to get the information you need
- Giving appropriate verbal and non-verbal feedback

Some common pitfalls for interviewers that have been identified by Field and Morse include outside interruptions, competing distractions, stage fright, awkward questions, jumping from one subject to another, and the temptation to counsel interviewees (box 5).[9] Awareness of these pitfalls can help the interviewer to develop ways of overcoming them.

Box 5—Common pitfalls in interviewing [9]

- Interruptions from outside (telephone, etc)
- Competing distractions (children, etc)
- Stage fright for interviewer or interviewee
- Asking interviewee embarrassing or awkward questions
- Jumping from one subject to another
- Teaching (for example, giving interviewee medical advice)
- Counselling (for example, summarising responses too early)
- Presenting one's own perspective, thus potentially biasing the interview
- Superficial interviews
- Receiving secret information (for example, suicide threats)
- Translators (for example, inaccuracy)

Recording interviews

There are various ways of recording qualitative interviews: notes written at the time, notes written afterwards, and audiotaping. Writing notes at the time can interfere with the process of interviewing, and notes written afterwards are likely to miss out some details. In certain situations, written notes are preferable to audiotaping, but most people will agree to having an interview tape recorded, although it may take them a little while to speak freely in front of a machine. It is vitally important to use good quality equipment which has been tested beforehand and with which the interviewer is familiar. Transcription is an immensely time consuming process, as each hour's worth of interview can take six or seven hours to transcribe, depending on the quality of the tape. The costing of any interview based study should include adequate transcription time.

Identifying interviewees

Sampling strategies are determined by the purpose of the research project.[9] Statistical representativeness is not normally sought in qualitative research (see the paper by Mays and Pope earlier in this series[10]). Similarly, sample sizes are not determined by hard and fast rules, but by other factors such as the depth and duration of the interview and what is feasible for a single interviewer. Large qualitative studies do not often interview more than 50 or 60 people, although there are exceptions.[11] Sociologists conducting research in medical settings often have to negotiate access with great care, although this is unlikely to be a problem for clinicians conducting research in their own place of work. Nevertheless, the researcher still needs to approach the potential interviewee and explain the purpose of the research, emphasising that a refusal will not affect future treatment. An introductory letter should also explain what is involved and the likely duration of the interview and should give assurances about confidentiality. Interviews should always be conducted at interviewees' convenience, which for people who work during the day will often be in the evening. The setting of an interview affects the content, and it is usually preferable to interview people at home.

Conclusion

Qualitative interviewing is a flexible and powerful tool which can open up many new areas for research. It can enable practising clinicians to investigate research questions of immediate relevance to their everyday work, which would otherwise be difficult to investigate. Few researchers would consider embarking on a new research technique without some form of training, and training in research interviewing skills is available from universities and specialist research organisations.

Further reading

Fontana A, Frey JH. Interviewing: the art of science. In: Denzin NK, Lincoln YS, eds. *Handbook of qualitative research.* London: Sage, 1994:361-76.
Mishler EG. *Research interviewing: context and narrative.* Cambridge, MA: Harvard University Press, 1986.

1 Gantley M, Davies DP, Murcott A. Sudden infant death syndrome: links with infant care practices. *BMJ* 1993;306:16-20.
2 Green JM. The views of singlehanded general practitioners: a qualitative study. *BMJ* 1993;307:607-10.
3 Britten N. Hospital consultants' views of their patients. *Sociology of Health and Illness* 1991;13:83-97.
4 Bradley CP. Uncomfortable prescribing decisions: a critical incident study. *BMJ* 1992;304:294-6.
5 Patton MQ. *How to use qualitative methods in evaluation.* London: Sage, 1987:108-43.
6 Cannon S. Social research in stressful settings: difficulties for the sociologist studying the treatment of breast cancer. *Sociology of Health and Illness* 1989;11:62-77.
7 Oakley A. Interviewing women: a contradiction in terms. In: Roberts H, ed. *Doing feminist research.* London: Routledge and Kegan Paul, 1981:30-61.
8 Whyte WF. Interviewing in field research. In: Burgess RG, ed. *Field research: a sourcebook and field manual.* London: George Allen and Unwin, 1982: 111-22.
9 Field PA, Morse JM. *Nursing research: the application of qualitative approaches.* London: Chapman and Hall, 1989.
10 Mays N, Pope C. Rigour and qualitative research. *BMJ*;1995;311:109-12.
11 Holland J, Ramazanoglu C, Scott S, Sharpe S, Thomson R. Sex, gender and power: young women's sexuality in the shadow of AIDS. *Sociology of Health and Illness* 1990;12:336-50.