Understanding and evaluating qualitative research*

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Qualitative research aims to address questions concerned with developing an understanding of the meaning and experience dimensions of humans' lives and social worlds. Central to good qualitative research is whether the research participants' subjective meanings, actions and social contexts, as understood by them, are illuminated. This paper aims to provide beginning researchers, and those unfamiliar with qualitative research, with an orientation to the principles that inform the evaluation of the design, conduct, findings and interpretation of qualitative research. It orients the reader to two philosophical perspectives, the interpretive and critical research paradigms, which underpin both the qualitative research methodologies most often used in mental health research, and how qualitative research is evaluated. Criteria for evaluating quality are interconnected with standards for ethics in qualitative research. They include principles for good practice in the conduct of qualitative research, and for trustworthiness in the interpretation of qualitative data. The paper reviews these criteria, and discusses how they may be used to evaluate qualitative research presented in research reports. These principles also offer some guidance about the conduct of sound qualitative research for the beginner qualitative researcher.

Key words: qualitative evidence, qualitative method, research appraisal.

Australian and New Zealand Journal of Psychiatry 2002; 36:717–732

Psychiatrists, and other mental health practitioners, need to be knowledgeable across the multiple paradigms and perspectives that inform an understanding of the biological, psychological, social, cultural, ethical, and political dimensions of human lives [1]. In practice, they also recognize the interactive nature of practitioner/patient relationships, attend closely to patients' subjective experiences of illness, and draw upon their own personal understanding of human suffering, behaviour and interpersonal interactions. Effective clinical reasoning thus relies on employing several different kinds of knowledge [2]. Consequently, 'restricting oneself to any single paradigm or way of knowing can result in a limitation to the range of knowledge and the depth of understanding that can be applied to a given problem situation' [2, p.136]. This principle is as applicable in the generation of research knowledge as it is in clinical practice. Thus, research needs to draw on different perspectives, methodologies and techniques to generate breadth of knowledge and depth of understanding. Qualitative research is a broad umbrella term for research methodologies that describe and explain persons' experiences, behaviours, interactions and social contexts [3] without the use of statistical procedures or quantification [4]. This paper aims to orientate beginning researchers, and those relatively unfamiliar with qualitative research, to some of the perspectives and principles that guide evaluation of the quality of qualitative research.

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*The second article in an occasional series on 'Conducting Research in Psychiatry', coordinated by the Australasian Society for Psychiatric Research and the Research Board of the Royal Australian and New Zealand College of Psychiatrists

What constitutes good research is a question of great importance. We need to know that research is sound to know that its findings can be trusted, and that it provides evidence for understanding events that happen, taking actions, and designing future research [5,6]. This equally applies to qualitative and quantitative research, terms that are often used to contrast forms of research that produce descriptive, textual or narrative information with those that emphasize enumeration. The problem with such distinctions is that they focus attention solely on technical differences in methods and output, whereas there also are more fundamental differences in paradigms, or perspectives, that guide each approach [7]. In fact, the latter are more important for understanding the principles that underpin both the design and conduct of research, and for the evaluation of its quality. This paper introduces the reader to two philosophical perspectives, the interpretive and critical research paradigms, which inform the qualitative research methodologies most often used in mental health research, and which guide how qualitative research should be evaluated.

First, to illustrate the usefulness of qualitative research, we give a brief description of the kinds of health problems that might be investigated with qualitative approaches. These methodologies are especially appropriate for understanding individuals' and groups' subjective experiences of health and disease; social, cultural and political factors in health and disease; and interactions among participants and health care settings [4,8]. These problems may be difficult to access using quantitative approaches. Qualitative research also lends itself to developing knowledge in poorly understood, or complex, areas of health care. For example, as Buston and colleagues [9] suggested, exploring patients' perspectives on taking medications could help us to better understand why people fail to take prescribed treatments and, in turn, to develop and evaluate interventions for improving treatment adherence. Qualitative methods may also be useful for eliciting contextual data to improve the validity of survey instruments and questionnaires used in quantitative research [10], or to elaborate a more in-depth understanding of issues emerging from clinical/epidemiological studies [4]. Further examples of qualitative studies are given throughout this paper. In the following sections, the paradigms that inform both the practice and quality of research are discussed. Qualitative methods are then described chiefly for the purpose of highlighting how to use evaluation criteria in assessing the quality of research reports, rather than to provide a comprehensive guide to conducting qualitative research. For more information about how to conduct your own research, general texts [see 6,11–13] provide useful, practical guides to conducting qualitative research in health care settings. Texts on specific types of qualitative research are listed in Appendix I and II.

Paradigms and methodologies

In a research context, the term 'paradigm' describes a system of ideas, or world view, used by a community of researchers to generate knowledge. It is a set of assumptions, research strategies and criteria for rigour that are shared, even taken for granted, by that community [2,14]. Three principal research paradigms are the empirico-analytical, interpretive and critical research paradigms [2]. They represent different ways of looking at the world, which involve choosing different approaches to observe and measure the phenomena being studied [15]. Since some understanding of their main differences is helpful to appreciate the principles informing sound research, and how it should be conducted, these are summarized in Table 1.

The scientific method, with origins in the natural sciences, is based on an empirico-analytical paradigm rooted in a philosophical position referred to as positivism. The scientific method relies on deductive logic, combined with observation and experiment in the empirical world, to refute propositions and confirm probablistic causal laws, which are used to make generalizations about the nature of phenomena [15]. It depends on processes that are taken to be objective, neutral with respect to values, and reductionistic in that phenomena are studied as 'component parts to describe, explain, and predict how these parts work, when, and where' [2, p.132]. In addition, the scientific method permits the important step of quantification, allowing observations to be transformed into numerical data.

Within the human sciences, including medicine, experimental research based on this paradigm has supported the development of knowledge, particularly that concerned with biological aspects of functioning. However, it is ill-equipped to develop an understanding of subjective experience, meaning and intersubjective interaction. A critique of the scientific method has been mounted within the human sciences, detailed review of which is beyond the scope of this paper [see 14,15 for fuller discussion]. One of the major criticisms is that within the positivist paradigm it is assumed that an objective reality, or truth, exists independent of those undertaking the inquiry and the inquiry context. Two research paradigms that inform qualitative research methodologies, namely the interpretive and critical research paradigms, place emphasis on seeking understanding of the meanings of human actions and experiences, and on generating accounts of their meaning from the viewpoints of those

Table 1. Comparison of three major paradigms that inform social research, adapted from Neuman (1994) and Guba & Lincoln (1994)

Characteristic	Paradigm		
	Empirico-analytical	**Interpretive**	**Critical**
1. Philosophical/ theoretical origins	Positivism, natural sciences	Hermeneutics, phenomenology, symbolic interactionism	Marxist, feminist, psychoanalytic
2. Why conduct research?	To discover natural laws that enable prediction or control of events	To understand social life and describe how people construct social meaning	To uncover myths/hidden truths that account for social relations, and empower people to change society radically
3. What is the nature of social reality?	Social reality contains stable pre-existing patterns or order that can be discovered	Fluid definitions of situations created by people through their social interactions with others	Social reality is multi-layered; events and relations based on hidden underlying social structures/forces that evolve in a historical context
4. What is the nature of human beings?	Self- interested and rational individuals shaped by external forces	Social beings who create meaning and constantly engage in making sense of their worlds	Creative, adaptive beings with unrealized potential, trapped by social forces that disempower/exploit
5. Role of common sense	Clearly distinct from and less valid than science	Powerful everyday theories that guide daily life; necessary to understand people; and no less valid than science	False beliefs that guide human actions, and contain myths that hide unequal control over power and objective conditions/ resources
6. What constitutes an explanation/theory of social reality?	A logical, deductive system of interconnected definitions, axioms and causal laws stated in probabilistic form	A description of how a group's meaning system is generated and sustained; contains detailed contextual information and limited abstraction	A critique that reveals the underlying social structure of conditions and helps people see the way to a better world
7. An explanation that is true	Is logically connected to causal laws and based on observed facts about social life	Resonates with or feels right to those who participated in the study	Is a resource that helps people understand their own experiences in historical context, and improve their own conditions/social world
8. Whose voices are privileged?	Researcher(s)	Participant(s)	Stakeholder(s)
9. What does good evidence look like?	Based on precise observations that others can repeat	Embedded in the context of fluid social interactions, in which meanings are assigned	Informed by a theory of what the social world is like that unveils myths/hidden truths
10. Where do social/ political values enter into science?	Science is value-free; values have no place, except when choosing a topic	Values are an integral part of social life; no group's values are presumed superior to others	All science must begin with a value position; some positions are better than others
11. What is the place of ethics in research?	Extrinsic; mechanisms guiding ethical conduct are *external* to the inquiry process itself	Intrinsic; participant values and personal nature of researcher–researched interactions are integral to the research process	Intrinsic; collaboration among participants and empowerment occur through the research process

involved. We review methodologies informed by each briefly below.

Interpretive research

Interpretive methodologies focus primarily on understanding and accounting for the meaning of human experiences and actions. Those enjoying the most prominence in psychiatric research are ethnography, phenomenology and narrative approaches, each of which addresses the issue of meaning from a differing standpoint. For example, in ethnography, description of the meaning of a phenomenon emphasizes its particular societal and cultural context, and explores the way in which the phenomenon has been constituted within a community, or collective of members, over time [6]. Phenomenological researchers, on the other hand, 'study the ordinary "life world": they are interested in the way people experience their world, what it is like for them' [16, p.68], and how best to understand their experiences. The differences here are, for the most part, a matter of emphasis, or degree. So, ethnography acknowledges that communities are comprised of persons, each of whom has his or her own subjective experiences, and phenomenology acknowledges that a person's 'life world' is a social, cultural and historical product, as well as a pole of individual subjectivity. Two studies of de-institutionalization provide a further illustration of this difference in emphasis. Newton and colleagues' [17] ethnographic study aimed to understand and describe the social world of a group of 47 hospital residents as they moved into supported community residences (see Table 2). This study focused on the shared social world of an informal community (e.g. how people were getting on with each other). By way of comparison, Davidson and colleagues' [18] phenomenological study described common themes identified across the experiences of individuals returning to the community over a one-year period following extended stays at a state hospital. Hence, the focus of this study was the common elements of subjective experience (e.g. the importance of freedom and privacy) described by separate individuals.

Critical research

A third paradigm, the critical paradigm, 'advocates becoming aware of how our thinking is socially and historically constructed and how this limits our actions, in order to challenge these learned restrictions' [2, p.134]. In other words, while interpretive approaches emphasize meanings inherent in human experience and action, regardless of their individual or collective origin, critical approaches emphasize the social and historical origins and contexts of meaning, regardless of the individual or collective forms of embodiment and expression they might take. Critical research derives from socio-political and emancipatory traditions, in which knowledge is not seen as discovered by objective inquiry but as acquired through critical discourse and debate. It focuses on the critique and transformation of current structures, relationships, and conditions that shape and constrain the development of social practices in organizations and communities, through examining them within their historical, social, cultural and political contexts [14]. Consequently, inquiry is directed not towards understanding for its own sake, but towards understanding as a tool to be used in the on-going process of practical transformation of society. The implication for methodologies informed by this perspective is that they aim to foster self-reflection, mutual learning, participation and empowerment [19], rather than the acceptance of discoveries [see 20,21].

Participatory action research is one approach based on the critical perspective. Its aim is to engage key stakeholders as participants in the design and conduct of the research [6], diminishing the distinction between the 'researcher' and the 'researched'. Participatory approaches have direct relevance to psychiatry, increasingly being advocated to amplify the voices of consumers and carers in mental health research and to strengthen their participation in mental health service evaluation and development [22–25]. A project of this type in an Australian public psychiatric hospital is that described by Wadsworth and Epstein [21,26]. This study aimed first to establish an exchange of experiences and ideas between consumers and staff in an acute mental health service about coming to, being in, and leaving the ward. Second, it aimed to build consumer-staff dialogue into the organizational culture so that consumers' feedback could be routinely sought and heard within the service, and consumers and staff could effectively collaborate to make changes as a result of this feedback. This study exemplifies the use of participatory processes to involve people of traditionally unequal power and status in research, and demonstrates an orientation towards bringing about change in a practice setting. These are both more explicit features of participatory research methodologies than other qualitative methodologies.

The quality of qualitative research

Sound research requires a systematic and rigorous approach to the design and implementation of the study, the collection and analysis of data, and the interpretation and reporting of findings. Particular methods or procedures in and of themselves, however, are insufficient

Table 2. Exemplars of qualitative research using different methodologies

Study	Paradigm	Methodology	Research aim(s) / question(s)	Sampling	Data collection method(s)	Analytic strategies	Type(s) of findings	Research report
Newton *et al.* [17]	Interpretive	Ethnography Part of a multifaceted study of deinstitution-alization, incl. quantitative clinical and economic components.	To describe the social world of a group of long-stay hospital residents as they moved and settled into a community residence.	Setting: Sydney, NSW Participants: 47 long-stay hospital residents; an unspecified number of community peers (i.e. other patients), staff; and members of the local community.	Participant - observation, open-ended and semi-structured interviews; life history taking; case record review. Data collected over 2.5 years.	Iterative analysis process described; emerging ideas and themes checked with participants. Qualitative data collected and analysed separately from quantitative data.	Findings outline progressive changes in attitudes and behaviour of long-stay hospital residents, their peers, staff and community members, as they made respective transitions to community life, work in a community residence, and new residents in their midst.	Published account gives an overview of the qualitative findings, and their convergence with the study's quantitative findings, rather than a detailed description of the qualitative findings.
Davidson *et al.* [42]	Interpretive	Phenomen-ology Part of a randomized controlled trial of supported socialization, involving volunteers, in which 260 people with psychiatric disability participated.	To describe first-hand experiences of the processes of meeting a partner, developing a friendship, and exploring community activities among participants in a supported socialization programme.	Setting: New Haven, Connecticut, USA. Participants: 21 people with psychiatric disability, 7 from each of the following conditions: i) community volunteer partner, ii) consumer-volunteer partner, iii) stipend only.	Semi-structured interviews developed with a sub-sample of study participants.	Team approach: a) 4 researchers independently analysed each transcript for prominent themes, then confirmed these through discussion b) themes analysed and confirmed across participants in same manner c) themes then reviewed with a sub-sample of participants for authenticity.	Findings describe lonely and demoralizing lives of participants prior to the programme. These contrast with descriptive accounts of growing mutual friendship, having someone to share activities with, and expanding networks experienced by those with volunteer partners. For those receiving a stipend only, not having a volunteer partner was disappointing, but somewhat ameliorated by being financially able to 'pull their weight' in activities with pre-existing friends.	Published account focuses on the qualitative study only. Quotes from interviews with participants are interspersed throughout the textual description to clearly illustrate the themes described.

Table 2. Continued

Study	Paradigm	Methodology	Research aim(s) / question(s)	Sampling	Data collection method(s)	Analytic strategies	Type(s) of findings	Research report
Wadsworth; Wadsworth & Epstein [21,26]	Critical	Participatory action research	To establish staff-consumer exchange about experiences of acute mental health care; and to build consumer-staff dialogue into the organizational culture of the mental health system.	Setting: Melbourne, Vic. Participants: collaborative committee (staff and consumers); people receiving acute inpatient care; ward staff; consumers and staff from the wider mental health system, incl. consumer advocates and policy-makers.	Storytelling participant-observations, interviews, dialogue, group discussion, suggestion boxes, surveys, documentation of procedures (e.g. complaints advocacy and quality assurance). Data collected over 4 years.	Dialogue and action-oriented analysis, i.e. ongoing collection and then exchange of views of staff and consumers generated: i) new ways of seeing and understanding problems and barriers to change; ii) identified better ways of acting; and iii) led to changed practices. These in turn became part of the research process and were further evaluated.	Findings elaborate many aspects of the culture of the mental health system from consumer perspective, incl. reflections on experiences of acute care, discourse used and why it can be difficult for consumers to share and staff to hear feedback. Findings identified mechanisms that enable consumer-staff dialogue, which have led to changed policies and practices in the mental health system at local, state and national levels.	Consumers/ service users were engaged as paid researchers & consultants in many differing roles (e.g. interviewers, committee members, speakers, writers) and contributed to all aspects of the research process.
Fossey *et al.* [43]	Critical to some degree; also interpretive	Participatory component of a study of community functioning; also included quantitative clinical, neuro-psychological and social components.	To evaluate how participants (both persons diagnosed with schizophrenia and staff) viewed receiving individualized feedback following their participation in a community research project.	Setting: Melbourne, Vic. Participants: 18 persons diagnosed with schizophrenia; 11 staff (residential support/case managers)	Semi-structured interviews designed by critical reference group; conducted by consumer-researchers. Written records of interviews checked with participants for authenticity.	Initial coding conducted by each consumer-researcher, then checked with each other; themes then developed by one consumer-researcher and reviewed by the other for credibility.	Thematic account of processes and content of feedback valued by participants. It draws attention to feedback in reciprocating participation; ethical dilemmas associated with sharing feedback; and the potential to reinforce participants' negative self-evaluations, if feedback is neglected when performance-based tests are used.	Journal article focuses on consumer-participant views only. Quotes from interviews with participants are interspread through the textual description to illustrate the themes described.

to ensure the quality of research [5,27]. Evaluation criteria need to be consistent with the philosophical position (paradigm) and aims informing the research method.

Quantitative research, informed by the empirico-analytical paradigm, is best evaluated against its own aims: accurate and objective measurement, and the generalizability of the findings to a population beyond the study context [9]. Hence, the reliability and validity of instruments used is central to evaluating the accuracy and objectivity of the measurements, while the generalizability of findings depends on the representativeness of the sample and the replicability of the data collection procedures. Lincoln and Guba [28] outlined criteria for assessing the trustworthiness of qualitative research (credibility, transferability, dependability and confirmability) that parallel internal and external validity, reliability and objectivity, respectively. While these criteria are still referred to in qualitative research reports, it has been argued more recently that qualitative research should be evaluated against criteria more consistent with its particular philosophical stance and aims [29,30].

Qualitative research aims to give privilege to the perspectives of research participants and to 'illuminate the subjective meaning, actions and context of those being researched' [5, p.345]. Thus, central to the quality of qualitative research is: whether participants' perspectives have been authentically represented in the research process and the interpretations made from information gathered (authenticity); and whether the findings are coherent in the sense that they 'fit' the data and social context from which they were derived. The importance of the power relations between the researcher and researched, and the need for transparency (openness and honesty) of data collection, analysis, and presentation implied here highlight the extent to which criteria for quality profoundly interact with standards for ethics in qualitative research [31].

Ethical considerations are paramount in all research from its design to conclusion. The differences between paradigms, described above, also suggest different ethical issues may become relevant depending on the researcher's position. While the ethical principles of informed consent and minimizing harm apply to all research, how they are interpreted and infiltrate the research process may differ. Readers are directed to the National Health and Medical Research Council's [4] information paper for fuller discussion of ethical issues in qualitative research. As one example, in research within the critical paradigm, stakeholders (parties with an interest in the research issue), who are likely to include participants, hold greater control over the development of research questions and methods used. As this also may serve to enhance authenticity in the way that participants' views are represented, this example illustrates the interconnectedness of ethics and rigour in qualitative research [31].

Criteria for evaluating the quality of qualitative research include criteria concerned with good practice in the conduct of the research (methodological rigour) as well as criteria related to the trustworthiness of interpretations made (interpretive rigour) [32]. Table 3 summarizes these criteria. It should be borne in mind that not all are equally important, or applicable, in every qualitative research project, given the differing philosophical and social science traditions that inform qualitative inquiry. Consistent with paradigms concerned with socially constructed and contested meanings, what makes for 'good' qualitative research also is contested, although this debate cannot be covered here [see 5,29,31,32]. In critiquing qualitative research then, the criteria outlined in Table 3 should be used heuristically to guide the review and evaluation of the elements of a particular study, given its context and purpose, rather than taken as prescriptive [32]. Applications of these criteria are explored in the following sections.

Review of basic techniques

Research design and questions

Qualitative research methods have origins within diverse disciplines, including anthropology, sociology and psychology. Whatever the focus, qualitative research should be concerned with interpretation of subjective meaning, description of social context and the privileging of lay knowledge [5, p.345]. Qualitative research questions focus chiefly on three areas: language as a means to explore processes of communication and patterns of interaction within particular social groups; description and interpretation of subjective meanings attributed to situations and actions; and theory-building through discovering patterns and connections in qualitative data [16]. Relatively broad questions, rather than specific hypotheses to be tested, identify the initial focus of inquiry [4]. These questions reflect the aim, which is to achieve depth of understanding. To achieve this, as information (data) is gathered and informs the broad questions with which the researcher began, these questions may be refined. The refined, or more specific questions thus generated then lead to more focused sampling and information-gathering as the study progresses. In this sense, qualitative research is designed to be flexible and responsive to context, characteristically being described as emergent. This means the research questions asked in a particular study evolve in response to the setting, data and its analysis. So, sampling, data collection, analysis and interpretation are related to each other

Table 3. A summary of key issues to consider when evaluating the quality of qualitative research

Criteria	Considerations
A. Methodological rigour	
Congruence	Research design – Does the chosen methodology (i.e. philosophical/theoretical approach) 'fit' the research issue? – Do the methods used 'fit' with the chosen methodology? – Is the study conducted in a way that is congruent with the stated methodology (i.e. philosophical/theoretical approach)?
Responsiveness to social context	Emergent research design – Was the research design developed and adapted to respond to real-life situations within the social settings in which it was conducted? Sampling, data gathering and analysis – Did the researcher's engage with participants, and become familiar with the study context?
Appropriateness	Sampling – Were the sampling strategies suitable to identify participants and sources to inform the research question being addressed? Data collection – Were suitable data gathering methods used to inform the research question being addressed?
Adequacy	Sampling – Have sufficient sources of information been sampled to develop a full description of the issue being studied? – Is a detailed description of the people who participated, how they were sampled, their levels and types of participation provided? Data gathering and analysis – Is there a detailed description of the data gathering and analytical processes followed? – To what extent did analysis inform subsequent data gathering in a cyclical (iterative) manner during the research process? – Were multiple methods and/or sources of information weighed in the analysis? – Were methods of gathering and recording/documenting data sensitive to participants' language and views? – Were corroborating, illuminating, and rival accounts gathered and analysed to explore multiple aspects of the research issue? Written report – Is the description of the methods detailed enough to enable the reader to understand the context of what is being studied?
Transparency	Data collection and analysis – To what extent have the processes of data gathering and analysis been rendered transparent? – How were rival/competing accounts dealt with in the analysis? – To what extent do the processes of data gathering and analysis give privilege to participants' knowledge?

Table 3. Continued

Criteria	Considerations
B. Interpetive rigour	
Authenticity	Presentation of findings and interpretations – Are participants' views presented in their own voices, that is, are verbatim quotes presented? – Are a range of voices and views (including dissenting views) represented? – Would the descriptions and interpretations of data be recognizable to those having the experiences/in the situations described? – To what extent were power relations in data collection and analysis taken into account, for example, were participants involved in documenting, checking or analysing data, or reviewing the analysis?
Coherence	Presentation of findings and interpretations – Do the findings 'fit' the data from which they are derived, that is, are the linkages between data and findings plausible? – What proportion of the data is taken into account? – Have the perspectives of multiple researchers (e.g. research team) been taken into account, e.g. are corroborating and competing elements considered?
Reciprocity	Data analysis, findings and interpretations – To what extent were processes of conducting/reviewing the analysis/negotiating the interpretations shared with participants? Written report – Were participants involved in presenting the study?
Typicality	Written report – What claims are made for generalizability of the findings to other bodies of knowledge, populations, or contexts/settings?
Permeability of the researcher's intentions, engagement, interpretations	Findings and interpretations – Is the researcher's role transparent in the interpretive process? – Did the study develop/change the researcher's initial understanding of the social worlds/phenomena studied? Written report – Are the researcher's intentions, preconceptions, values, or preferred theories revealed in the report? – Is the researcher's personal experience during the research process made explicit?

in a cyclical (iterative) manner, rather than following one after another in a stepwise sequence [16].

In the reporting of qualitative research, the initial domain of inquiry and aims of the study, or research questions, should be clearly and explicitly articulated [32]. This relates to two essential criteria for good practice in qualitative research. First, it enables the reader to understand the intentions of the study and evaluate the congruence (fit) between these intentions and subsequent choices related to sampling, information-gathering, and analysis [5]. Second, a clear sense of the researcher's starting point helps the reader to assess the researcher's permeability (i.e. how well the researcher's own assumptions, understanding, and interpretations have been influenced by the observations made or information gathered) [32]. In other words, evidence in the research report indicating that the researcher has learned from the research encounter lends some authenticity to claims that the views of participants are being represented.

Sampling and recruitment

Qualitative sampling is concerned with information-richness [33], for which two key considerations should guide the sampling methods: appropriateness and adequacy [34]. In other words, qualitative sampling requires identification of appropriate participants, being those who can best inform the study. It also requires adequate sampling of information sources (i.e. people, places, events, types of data) so as to address the research question and to develop a full description of the phenomenon being studied [5,34]. Qualitative sampling is described as purposive (or purposeful) when it aims to select appropriate information sources to explore meanings, and theoretical when its aim is the selection of people, situations or processes on theoretical grounds to explore emerging ideas and build theory as data analysis progresses [6]. In either case, sampling is ongoing through the course of a study and intimately linked with the emergent nature of the research process, previously noted.

Qualitative sampling may involve small numbers of participants, while the amount of data gathered can be large, with many hours of participant interviews, or multiple data sources related to one setting including interviews, observation-based field notes and written documents. No fixed minimum number of participants is necessary to conduct sound qualitative research, however, sufficient depth of information needs to be gathered to fully describe the phenomena being studied. For example, detailed information-gathering with one person may be both appropriate and adequate to describe that person's life history, whereas one team member's account would be insufficient if a study's aim were to understand and describe the practices of a clinical team. Hence, sampling in qualitative research continues until themes emerging from the research are fully developed, in the sense that diverse instances have been explored, and further sampling is redundant. In other words, patterns are recurring or no new information emerges [4,33,35]; a situation sometimes referred to as 'saturation'.

To enhance the appropriateness of sampling and adequacy of information gathered, different sampling strategies may be used [for detailed descriptions, see 33, 36]. For example, a purposive sampling strategy designed to maximize representation of a range of perspectives on an issue will help to challenge (permeate) the researcher's own views. Thus, as shown in Table 2, studies by Newton *et al.* [17] and Wadsworth and Epstein [21,26] involved sampling participants over time, and in differing positions (e.g. hospital inpatients, staff, advocates, community members), to inform their research questions. This strategy (maximum variation sampling) helped to ensure that the views of those who may otherwise be disenfranchised, or disempowered, are represented [33]. Another strategy is snowball sampling, in which participants identify others with direct knowledge relevant to the investigation being conducted. This strategy may be used when the people being studied are difficult to access or approach. However, it relies on the quality of participants' social networks and tends to result in a homogenous sample [6]. Other sampling strategies include extreme case sampling, in which participants are chosen because their knowledge, or experience, is atypical or unusual in some way of relevance to the study being conducted, and sampling for disconfirming evidence (negative case sampling). These sampling strategies are used to enhance the completeness of information gathered and the credibility of interpretations generated, respectively [28,33]. No one strategy is superior to the others, but the trustworthiness of qualitative research findings is affected by the soundness of choices among them [37]. In qualitative research reports, readers should look for clearly articulated sampling strategies so as to evaluate their appropriateness and adequacy in the light of the study's focus and aims.

Data collection

Interviewing, focus groups, and participant observation are common modes of qualitative data gathering. Each is briefly described, then key principles of adequacy, transparency and responsiveness related to data collection are discussed. Interviews are used in most types of qualitative research. They are typically the technique of choice in phenomenological research, depending

as it does on first-person descriptions of experience, although phenomenological studies have used written autobiographical accounts and creative techniques for eliciting subjective descriptions [e.g. 38–40].

Qualitative research interviews aim to elicit participants' views of their lives, as portrayed in their stories [6], and so to gain access to their experiences, feelings and social worlds. They may be unstructured or semistructured. Unstructured interviews are usually conducted in an everyday conversational style, in which participants take the lead, to a greater extent, in telling their stories, rather than the researcher directing the interview. Semistructured interviews are used to facilitate more focused exploration of a specific topic, using an interview guide. Interview guides usually contain a list of questions and prompts designed to guide the interview in a focused, yet flexible and conversational, manner [41]. For example, in studies by Davidson *et al*. [42] and Fossey *et al*. [43] described in Table 2, interview guides developed with participants, or reference group members, were used in semistructured interviews to explore specific experiences: developing a friendship with a volunteer and receiving feedback in research. This approach to data collection is advantageous in ensuring sensitivity to participants' language and privileging their knowledge. Semistructured interviews have a further use to follow up on specific ideas or issues, which emerged from initial unstructured interviews, during subsequent data collection.

Focus groups are facilitated group discussions that make use of the group interaction as the means to explore the research issue being studied, so the use of group processes distinguishes them from individual interviews [6]. Thus, participants are usually selected because of shared social or cultural experiences (e.g. gender, ethnicity), or shared concern related to the study focus (e.g. caring for persons with mental illness). Focus groups are increasingly used in health research [35] and programme evaluation [6], being particularly useful in exploring sensitive issues, or with marginalized populations, where people are more likely to feel comfortable talking with others who share similar experiences. Hence, Rice and Ezzy [6] argue focus groups are frequently used in participatory action research, which concerns itself particularly with marginalized groups. For example, in the Understanding and Involvement project [26 see Table 2], separate focus group discussions for mental health consumers and ward staff created greater safety for each group to share their experiences of acute psychiatric units. As a result of the group context, data collected in this fashion reflect the collective views of group members rather than an aggregation of individual interviews [35]; data may be enhanced by group dynamics that aid recall and elaboration; and may overlook or minimize views that are sensitive or held by a minority within a particular group [9]. Thus, focus groups are most informative when group interaction is effectively facilitated [9,35].

Participant observation is a method particularly employed by ethnographers in the anthropological tradition [44]. It is used to learn about the naturally occurring routines, interactions and practices of a particular group of people in their social environments, and so to understand their culture. It is so-called since the researcher's participation with the research participants in their social world is crucial to developing an understanding of what is being observed [6]. For example, Barrett's [45] ethnography of multidisciplinary team practice in a modern psychiatric hospital involved engagement with the team over two years. His 'insider' position as a psychiatrist in the hospital setting facilitated his understanding of the team's discourse, and learning from them about their practice. This was juxtaposed by his position as an anthropologist, which enabled him to take a somewhat more 'outsider' view in observing and describing the hospital culture. Both positions were critical to developing a contextual understanding of how the team interacted in the construction of patients as 'cases'. Thus, while the extent of the researcher's participation in the setting being observed may vary between studies [46], some degree of participation and persistent engagement are essential if the complexities of meanings and situations are to be adequately explored and uncovered [5]. This necessarily means that participant observation is one of the more time-intensive data gathering strategies.

Multiple data gathering techniques are frequently used in qualitative studies, such as the ethnographic studies previously discussed [17,45]. Similarly, participatory forms of research use multiple methods, but often go beyond them to emphasize participation, dialogue and action [19], as illustrated by Wadsworth and Epstein's study [26, see, Table 2]. This strategy is chosen deliberately so as to develop a more complex understanding of phenomena being studied [6], and has been referred to as triangulation. Its importance for enhancing the quality of data lies in the idea that gathering information from multiple sources (e.g. people, events) in multiple ways (e.g. interviews, observations) will illuminate different facets of situations and experiences and help to portray them in their complexity [5]. For example, McDermott and Pyett [47] used traditional data gathering methods in their study of people with serious psychiatric disorder and problematic drug and alcohol use. They then moved to the recruitment of public housing tenants as co-researchers, recording their action strategies in dealing with these problems in the housing estate to deepen their

understanding of the impact of these problems within this local context. Triangulation of data sources and methods thus permits comparison and convergence of perspectives to identify corroborating and dissenting accounts, and so to examine as many aspects of the research issue as possible. Therefore, to evaluate the adequacy of data collection, readers should consider whether the chosen data collection methods have enabled the researcher to adequately explore the subjective meaning, actions and social context relevant to the research question.

Information gathered during data collection needs to be recorded in a manner that enables the researcher to analyse the data, but also allows him or her to describe subjective meaning and social context from the data. For example, if the aim of the analysis is to understand the meanings given to a situation as expressed by interview participants, then verbatim transcription of the participants' own words in the interviews would be important to privilege their voices in the analysis and interpretation. However, transcription of entire tape-recorded interviews may not be feasible, and may produce amounts of data that tend to overwhelm the researcher. Note-taking and tape recording is a useful combination that enables analysis of the material as a whole, while more specific components of interviews can be transcribed in full for detailed analysis. In some situations, tape-recording may be inappropriate, or overly intrusive, and so field notes may be used. Field notes describe not only the researcher's experiences and observations, such as those made while engaged in participant observation, but also his or her reflections and interpretations [6,48]. In research reports, an important principle related to data collection is transparency, that is, whether the researcher's use of interviews, participant observation, field notes, and so on are explained such that the gathering and documenting of data is rendered transparent [5]. Reporting of methodological decisions made during a study, referred to as an audit trail [28], helps to make these processes explicit.

Extensive engagement with participants, data, and setting is an essential feature of all qualitative research, whatever modes of data gathering are used. Its importance rests with the idea that subjective meanings are situated in context and cannot be understood separate from this context. Hence, engagement with participants in their social worlds is essential to the understanding of subjective meanings [5]. Extensive engagement means researchers are also better placed to conduct research in a manner that is responsive to the participants and settings. This, in turn, enhances the permeability of the researcher's understanding by the information gathered [32], so that the study findings are informed by the data rather than the researcher's own preconceptions. This requires reflexivity, meaning it requires researchers to develop awareness of these preconceptions, to reflect on actions taken, their roles and emerging understandings, while engaged in the research process [6]. Reflexive reporting, that is, informing readers about these interests, experiences, and actions in research reports, allows the reader to weigh the researcher's role in the conduct of the study, and the understandings gained from engaging with the study participants, data and setting.

Data analysis

Qualitative analysis is a process of reviewing, synthesizing and interpreting data to describe and explain the phenomena or social worlds being studied. As Tesch [16] states, the differing analytical procedures can be grouped into content, discovery and meaning-focused approaches. No matter which approach is used, just as with data collection methods, the rigour of the analytical procedures depends on their adequacy and transparency. Prior to comment on these, we briefly introduce meaning-focused and discovery-focused analytical approaches, being those more usually found in psychiatric research. Meaning-focused approaches emphasize meaning comprehension; that is, understanding the subjective meaning of experiences and situations for the participants themselves, as opposed to how these meanings might fit with researchers' conceptions [22]. Phenomenological analytic techniques exemplify this approach. Typically, this approach to data analysis attends to unique themes of meaning within the data, as well as common themes of meaning across data [16]. The analytical procedure typically involves two levels of analysis: first, to review, identify and code recurrent themes within data for each participant; and second, using similar steps, to identify common themes and areas of divergence across participants. Finally, it usually entails bringing identified themes back together into meaningful relation with each other; developing, as it were, a narrative or structural synthesis of the core elements of the experiences described [22].

Discovery-focused techniques aim to establish patterns and connections among elements of data. The unit of analysis is usually segments of texts that contain some particular meaning, rather than individual words or phrases [16]. These are then coded, sorted and organized to look for patterns, or connections, between them. This process may be viewed as one of theory building, either thematically or by using the procedures of grounded theory. Thematic analysis typically involves a constant comparative method [28], meaning a progressive process of classifying, comparing, grouping and refining

groupings of text segments to create and then clarify the definition of categories, or themes, within the data. In this sense, thematic analytic procedures focus on developing categories, derived inductively from the data itself, rather than from a priori theory, to enable systematic description [16]. Grounded theory techniques for analysing data [3,49] combine theoretical sampling, previously described, with procedures for coding data, the main aim of which is to explicitly build up or explicate theory inductively from the data [16]. This process may also involve using theory developed from the data to test, reformulate or refine pre-existing theory [6]. Readers are referred to Rice and Ezzy's [6] illustrated introduction, and Strauss and Corbin [3], for further descriptions of grounded theory procedures.

Whichever analytical approach is used, an effective system for readily retrieving data is essential since qualitative data analysis involves progressively exploring the data, and comparing and contrasting different parts of the data, to evolve a more sophisticated understanding as more data is gathered and reviewed iteratively. Coding, that is, labelling segments of data to identify themes, or processes, is central to effective data retrieval in two ways [6]. It enables the researcher to locate and bring together similarly labelled data for examination and to retrieve data related to more than one label when wanting to consider patterns, connections, or distinctions between them. Coding and retrieval may either be conducted manually, or with the aid of a computer, the latter being briefly discussed below. However, qualitative analysis involves more than simply coding data: developing an understanding of qualitative data requires conceptual level processes of exploring the meanings, patterns or connections among data that involve the researcher's own thought, reflection and intuition.

An adequate description of data analysis includes evidence of how these conceptual level processes were used and the manner in which data were explored to weigh the information gathered from differing sources. For example, Davidson *et al.* [42, in Table 2], described the process by which their analysis of interview data was undertaken by a team of four researchers. A transparent description is one from which the reader can discern whether and how competing accounts within the data were explored and interpreted, and how the researcher's thinking contributed to the analysis, which, as aforementioned, also contributes to evidence of the researcher's permeability. In Davidson *et al.*∏s study, participants were also involved in reviewing the analysis, a process sometimes referred to as member checking. Given that a stated principle aim of qualitative research is to privilege participants' perspectives, evidence of the involvement of participants, not only in sharing their views with researchers but in the analysis and interpretation of their responses, is important. Evidence in research reports of participants' involvement in these aspects of the research process adds to the transparency of the research. It simultaneously permits the reader to evaluate the authenticity of researchers' representations of participants' perspectives and worlds, and to consider the extent of reciprocity between the researcher and those researched.

Using computers in qualitative data analysis

The capacity of computers to effectively sort, store and retrieve information makes their use in qualitative data analysis appealing, but computer software cannot replace the conceptual processes required of the researcher. Computer software does not, and cannot, analyse qualitative data for the researcher. In choosing computer methods of qualitative data analysis then, their impact on the research process and outcome needs to be weighed carefully [6,50]. Computers can expand the possibilities for exploring data and enhancing depth of understanding, but may also unacceptably constrain or distort the analysis [50]. As a result, the researcher and analytical process may become distanced from the data, or participants, whose views are being explored. The adequacy of the analytical procedure can thus be undermined, as can the authenticity of the interpretive process. Rice and Ezzy [6] and Weitzman and Miles [51] provide further discussion of these issues.

Findings, their interpretation and presentation

Our earlier discussion of research design, sampling, data collection and analysis held several implications for the reporting of qualitative research, and the extent to which the subsequently presented findings and interpretations may be viewed as trustworthy. To summarize, a qualitative research report needs to include a detailed description of the methods, explaining both the manner in which the study was conducted and the researcher's reasoning, to address issues of congruence, appropriateness and adequacy. Reports also should include evidence of the evolving design of the study, making transparent the ways in which the data gathering and analysis processes informed each other and the study design [5] to address the issues of responsiveness and transparency.

In this section of the paper, we move to discussion of a second type of criteria for considering the quality of qualitative research: those that address the trustworthiness of interpretations, or interpretive rigour (Table 3). The interpretive process, in fact, occurs at many points in the research process: beginning with making sense of what is heard and observed during data gathering, and

then building understanding of the meaning of the data through data analysis. This is followed by development of a description of the findings that makes sense of the data as a whole, in which the writer's interpretation of the findings is embedded [52]. It is the latter stage of transforming qualitative data into a written account on which we focus at this point to consider how qualitative research findings should be presented in research reports, and the kinds of interpretations that may be made from them.

Qualitative research findings are presented as textual descriptions that should illuminate the subjective meanings of the phenomena, or social world, being studied, but which should also place the findings in context [5], so as to represent the real world of those studied and in which their lived experiences are embedded. However, the extent to which anyone is able to represent the experiences and intentional meanings of others depends on interpretations that are necessarily personal, experiential, and political [52], making qualitative findings at once both descriptive and interpretive. Principle issues related to their trustworthiness are related to the representation of views (authenticity); how the findings are presented (coherence); claims about their typicality; and the contribution of the researcher's perspective to the interpretation (permeability).

In the presentation of findings, participants' accounts should still be visible in the synthesized description and interpretations that the researcher presents. The aim is to bring the reader as close as possible to the experiences being described, so the use of language and constructs from the researcher's professional discourse to describe participants' meanings and actions should thus be avoided [5,52]. The report thus moves from description of the settings and interactions that occurred, through quotations or examples, to discussion of their meaning and importance, so as to provide a coherent account [5,32]. This means the linkages between the findings and the data, from which they are derived, are visible and comprehensible to the reader. Hence, the description should be sufficiently detailed to understand people's actions and experiences in the context of the intentions and meanings that inform them [5,52], sometimes referred to as a thick description, particularly in ethnography from which this term originates [6].

Since qualitative research claims to represent participants' own perspectives, or subjective experiences of their worlds, it is important to consider the extent to which the qualitative research report reflects the perspectives of those it claims to represent. The use of quotations (i.e. participants' own words) juxtaposed with the writer's description and interpretation helps the reader to evaluate the authenticity of the researcher's claims about the data. Authenticity in representation is further enhanced by evidence that participants were engaged in the interpretive process, or gave feedback on the researcher's interpretation. Evidence that different, or competing, views were listened to, as well as evidence of dialogue among those views in the report, also suggests an openness on the researcher's part to the possibility of different views and an effort to explore and represent them. Reflexive reporting, as an aid to authentic representation, helps distinguish participants' voices from that of the researcher in the report, as well as enhancing the permeability of the researcher's role, as previously discussed.

The final issue concerned with interpretation that we will discuss concerns the claims made about the findings in relation to other bodies of knowledge, populations or groups [5], that is, their typicality. Qualitative research stresses the importance of understanding findings in the particular contexts and settings of the research [4]. 'The aim is not to generalize about the distribution of experiences, or processes' [6, p.42]. Therefore qualitative research makes no claim of the generalizability of findings to a specified larger population in a probabilistic sense. Rather, qualitative researchers are interested in the applicability of their findings, based on how the nature and processes involved in experiences generalize [6]. Put another way, 'the aim is to make logical generalizations to a theoretical understanding of a similar class of phenomena' [5, p.348], for which atypical settings, or cases, may be as relevant as typical ones. The applicability of findings from one setting to another depends on the likeness between the bodies of knowledge, or contexts, as judged by those wishing to apply the findings. Hence, the presented description of the research setting, findings and interpretations needs to provide sufficient detail for others to determine the applicability of the research findings to their own settings. The onus is on qualitative researchers to provide an adequate detailed description, while the onus is on the reader to evaluate its applicability in another setting [29].

Conclusion

Qualitative research methodologies are oriented towards developing understanding of the meaning and experience dimensions of human lives and their social worlds. In psychiatry, they are useful in developing knowledge in poorly understood and complex areas, such as to understand people's subjective experiences of mental illness, the meanings ascribed to these experiences, and interactions of participants with the mental health system. The ways in which qualitative research questions are posed, methods are chosen to address these

questions, and qualitative research is conducted are each visibly informed by their underlying research paradigm. Good qualitative research is characterized by congruence between the perspective (or paradigm) that informs the research questions and the research methods used. The quality of qualitative research and standards for ethics in qualitative research are also interconnected, so that central to both issues is whether the subjective meaning, actions and social context of those being researched is illuminated and represented faithfully. The principles of good practice in the conduct of qualitative research and the trustworthiness of the interpretation of information gathered are both essential to judgements about its quality.

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Appendix 1: Further reading

Paradigms and methodologies

Benner P, ed. *Interpretive phenomenology: embodiment, caring and ethics in health and illness*. California: Sage, 1994.

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Trustworthiness/rigour of qualitative research

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Appendix II: On-line qualitative research resources

Some on-line qualitative research resources, discussion forums, and useful information about computer assisted qualitative data analysis may be found through the following websites.

QualPage: resources for qualitative research http://www.ualberta.ca/~jrnorris/qual.html

AQR Association of Qualitative Research and Qualitative Research Journal http://www.latrobe.edu.au/aqr/

Computer Assisted Qualitative Data Analysis Software Networking Project http://www.soc.surrey.ac.uk/caqdas/