

## Bias in qualitative research designs

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Quantitative researchers speak of 'bias' and 'generalisability'. Qualitative researchers address the same issues, but seldom use these terms. Like any other researchers, they are concerned with the extent to which their research is valid and representative of the area being investigated, but the way in which these issues are addressed is substantially different from the way in which quantitative researchers go about the task. Here we offer our views on the process of doing good qualitative research. These views underpin our decision-making when papers using qualitative methods are submitted to this Journal.

Qualitative research, like any research, starts with a systematic review of the literature to show that the topic being studied is significant and unresolved. Some forms of qualitative research focus on existing data, for example from archives or media reports. Our focus here is on interview studies. Both formats face the same problem, that of selecting and justifying a sample, and then defining the extent to which the results apply to other groups or settings.

Sampling in an interview study is a bit like collecting a slice of life and taking it into a laboratory for dissection and analysis. It makes sense to select a slice in which the topic under investigation is present in high concentration. To take a current example, let us say that we are interested in women's use of hormone replacement therapy. We might start by enrolling five women attending a menopause clinic and conducting open-ended interviews about their experience. Analysis starts immediately, sorting the women's accounts into categories that can come from social theory, the literature review or from analysis of the data itself. If necessary, we return to the field to enlarge the sample until we are sure that we understand the experience of these women. When we reach this point of saturation, we cease to enrol further research participants of this kind.

There are situations where this first slice of life is all that is needed. A small sample of people can all have very similar responses despite being from very different backgrounds. Sometimes this happens because the experience that they have in common is of overwhelming significance in their lives, such as being caught up in a bushfire or a plane hijacking. More commonly, we find differences of opinion in the sample. In such cases, we need to return to the field to sample for these different experiences. In addition, if either the literature or social theory suggests other possibilities, then we have to diversify our sample, re-enter the field, and select another slice of life where this different experience is present in high concentration.

Let us return to our example. On the basis of early analysis of the views of women at a menopause clinic, we may be surprised to find that better access to information actually deters women from using hormone replacement therapy. This could then be checked by diversifying the sample to include groups of midlife women with different degrees of access to information, perhaps enrolling a group of health professionals as a group with access to the scientific debate on hormone replacement therapy. On the basis of social theory, we might want to ensure that we have diversity in terms of class, assessing whether this makes a difference. On the basis of the literature, we might want to ensure that we explore the experience of women from Asian backgrounds who are said to experience less distress during menopause. Sampling and analysis proceeds until saturation for each new slice of life. Only when we have reason to think that we have a comprehensive coverage of important issues contributing to the experience, and when each sub-sample is saturated, do we have the ideal sample on which to base our conclusions.

In practice, the ideal, well-diversified sample is hard to achieve. Sometimes the topic we are studying involves hard-to-reach populations where we have to involve the groups we want to study in the research itself (see Priscilla Pyett's article in this issue). There is a tradition that argues that the mutual trust established between researcher and participant contributes to the validity of the data. This takes time and may place practical constraints on sample size. Even if we fail to enrol more than a handful of participants, especially if the experience we are investigating is rare, this does not make the sample worthless. What we need to do is to present an explicit argument that the study is worthwhile and that the data are trustworthy. Whether the sample is extensive and well-developed, or attenuated by circumstance, we need to persuade the reader that the experience is well understood. The way in which this is done varies study by study.

The next stage is to argue for the extent to which the conclusions can be generalised, but this is done more in terms of the variety of experience to be expected rather than in terms of an average value. A well-selected and diversified sample is important, as is the extent to which our conclusions correspond with both the literature and social theory. If our findings are based on the expected range of social settings that are likely to contribute to a particular experience, this strengthens the generalisability of the conclusions. If we can argue that our conclusions are consistent with the literature, while still adding something new, this strengthens our conclusions, demonstrating that we have not generated an idiosyncratic interpretation. Social theory, in

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particular, is useful in providing an explanatory framework for a study and underpins the argument that our conclusions should apply to a range of other social groups. If our conclusions contradict either social theory or the literature, then these differences have to be explained. The explanation may point to deficiencies in either with the study results pointing to new possibilities. These various assessments need to be presented in a clear and convincing narrative.

Let us end with a word of caution. We have outlined some standard procedures used by qualitative researchers but this is a flexible method and there are numerous ways in which valid research can be done. The only rule is that the reader should be given explicit information on the research processes used to ensure a valid study.

## In this issue

The next editorial comes from John Boffa, Public Health Medical Officer of the Central Australian Aboriginal Congress. Like many populations where there is high health need, Aboriginal communities in the Northern Territory are denied adequate access to good primary medical care because of a lack of medical workforce. The editorial recommends policy reforms based on financial and non-financial incentives to address the maldistribution of general practitioners. Also set in the Northern Territory is the study by Zhiqiang Wang and Wendy Hoy. It addresses an intriguing finding. Many of us regard it as an impediment to health to be 'overweight'. In Aboriginal adults in a remote community, high body weight would seem to be protective of health rather than the reverse.

The next section continues the theme of social disadvantage. Lillian Hayes and co-workers show that in Sydney between 1970 and 1994, socio-economic status (SES) and mortality were inversely related. For males, the differentials increased, despite efforts made to reduce health inequalities; for women the results were less clear. The authors use this as an opportunity for detailed methodological discussion of this ecological study. The following paper by Andrew Page et al. is complementary, address-

ing suicide differential by SES and demonstrating the care that needs to be taken when deciding between various measures of SES. The third study, from Rosemary Korda and colleagues, addresses the relationship between occupational status and the health of the Australian workforce. Blue collar workers not only have the lowest health status but are the most likely to present to work when unwell.

The section on research methodology starts with a description by Priscilla Pyett of a difficult and often contentious research method: collaborative participatory research. She presents this method as an important way of addressing health inequalities in hard-to-reach populations. Anne Kavanagh and colleagues then pose a considerable challenge to researcher, research funders and policy makers to rethink a decision making process that appears to favour cross-sectional surveys, with implications for the public health knowledge base. Kristy Sanderson and Gavin Andrews focus is on validating the use of the Medical Outcomes Study Short-Form Health Survey in its shortened form – the SF-12. The last paper in this section by Tim Driscoll and Leigh Hendrie addresses the value of general practice data for assessing work-related health problems.

The section on methadone and other drugs starts with discussion of the results of a census of clients of treatment services by Fiona Shand and Richard Mattick and then moves on to a paper from John Caplehorn and Olaf H. Drummer addressing fatal methadone toxicity and the use of benzodiazepines. This paper's conclusions draw a vigorous commentary from Andrew Byrne, with the two contributions useful in introducing us to the problems of research in this area. Elizabeth Ernst and co-workers return to topic of methadone-related deaths showing that there was not a significant increase in Western Australia in 1993-99.

The last section returns us to issues of improving health rather than reducing death. Michel Booth and co-workers address physical activity participation in school students and Jan Payne and co-workers address nutrition education in residential camps. Finally, Melanie Wakefield and others show that the smoke-free law did not have a deleterious effect on restaurant business in South Australia.