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Evaluating the quality of research is essential if findings are to be utilised in practice and incorporated into care delivery. In a previous article we explored 'bias' across research designs and outlined strategies to minimise bias.<sup>1</sup> The aim of this article is to further outline rigour, or the integrity in which a study is conducted, and ensure the credibility of findings in relation to qualitative research. Concepts such as reliability, validity and generalisability typically associated with quantitative research and alternative terminology will be compared in relation to their application to qualitative research. In addition, some of the strategies adopted by qualitative researchers to enhance the credibility of their research are outlined.

### Are the terms reliability and validity relevant to ensuring credibility in qualitative research?

Assessing the reliability of study findings requires researchers and health professionals to make judgements about the 'soundness' of the research in relation to the application and appropriateness of the methods undertaken and the integrity of the final conclusions. Qualitative research is frequently criticised for lacking scientific rigour with poor justification of the methods adopted, lack of transparency in the analytical procedures and the findings being merely a collection of personal opinions subject to researcher bias.<sup>2-3</sup> For the novice researcher, demonstrating rigour when undertaking qualitative research is challenging because there is no of accepted consensus about the standards by which such research should be judged.<sup>2</sup>

Although the tests and measures used to establish the validity and reliability of quantitative research cannot be applied to qualitative research, there are ongoing debates about whether terms such as validity, reliability and generalisability are appropriate to evaluate qualitative research.<sup>2-4</sup> In the broadest context these terms are applicable, with validity referring to the integrity and application of the methods undertaken and the precision in which the findings accurately reflect the data, while reliability describes consistency within the employed analytical procedures.<sup>4</sup> However, if qualitative methods are inherently different from quantitative methods in terms of philosophical positions and purpose, then alternative frameworks for establishing rigour are appropriate.<sup>3</sup> Lincoln and Guba<sup>5</sup> offer alternative criteria for demonstrating rigour within qualitative research namely truth value, consistency and neutrality and applicability. Table 1 outlines the differences in terminology and criteria used to evaluate qualitative research.

### What strategies can qualitative researchers adopt to ensure the credibility of the study findings?

Unlike quantitative researchers, who apply statistical methods for establishing validity and reliability of research findings, qualitative researchers aim to design and incorporate methodological strategies to ensure the 'trustworthiness' of the findings. Such strategies include:

- 1 Accounting for personal biases which may have influenced findings;<sup>6</sup>

**Table 1** Terminology and criteria used to evaluate the credibility of research findings

Quantitative research terminology and application to qualitative research <sup>4</sup>	Alternative terminology associated with credibility of qualitative research <sup>5</sup>
<p><i>Validity</i> The precision in which the findings accurately reflect the data</p>	<p><i>Truth value</i> Recognises that multiple realities exist; the researchers' outline personal experiences and viewpoints that may have resulted in methodological bias; clearly and accurately presents participants' perspectives</p>
<p><i>Reliability</i> The consistency of the analytical procedures, including accounting for personal and research method biases that may have influenced the findings</p>	<p><i>Consistency</i> Relates to the 'trustworthiness' by which the methods have been undertaken and is dependent on the researcher maintaining a 'decision-trail'; that is, the researcher's decisions are clear and transparent. Ultimately an independent researcher should be able to arrive at similar or comparable findings.</p> <p><i>Neutrality (or confirmability)</i> Achieved when truth value, consistency and applicability have been addressed. Centres on acknowledging the complexity of prolonged engagement with participants and that the methods undertaken and findings are intrinsically linked to the researchers' philosophical position, experiences and perspectives. These should be accounted for and differentiated from participants' accounts</p>
<p><i>Generalisability</i> The transferability of the findings to other settings and applicability in other contexts</p>	<p><i>Applicability</i> Consideration is given to whether findings can be applied to other contexts, settings or groups</p>



**Table 2** Strategies for enhancing the credibility of qualitative research

Truth value	<ul style="list-style-type: none"> <li>▶ Reflexivity and reflection on own perspectives:               <ul style="list-style-type: none"> <li>– Reflective journal maintained and decisions documented</li> <li>– Peer debriefing to assist the researcher to uncover taken for granted biases, or assumptions, for example, the initial qualitative interviews with patients were medically focused and subsequent interviews took a more holistic approach.</li> </ul> </li> <li>▶ Representativeness of the findings in relation to the phenomena:               <ul style="list-style-type: none"> <li>– The sample of 19 carers of patients managed in a renal supportive care service and a willingness to share their experiences in depth and over time enabled clarification of findings as an ongoing process;</li> <li>– Semistructured audio recorded interviews allow for repeated revisiting of the data to check emerging themes and remain true to participants' accounts of caring for patients with renal disease managed without dialysis;</li> <li>– Use of rich and thick verbatim extracts from carers of patients managed without dialysis assists the reader to make judgements about whether the final themes are true to participants' accounts;</li> <li>– Participants invited to comment on the research findings and themes</li> </ul> </li> </ul>
Consistency/ neutrality	<ul style="list-style-type: none"> <li>▶ Achieving auditability:               <ul style="list-style-type: none"> <li>– Transparent and clear description of the research process from initial outline, through the development of the methods and reporting of findings. In addition maintaining a research diary documenting challenges and issues assisted in maintaining cohesion between the study's aim, design and methods;</li> <li>– Emerging themes discussed with research team members who had palliative and qualitative research expertise in an open process where assumptions could be challenged and consensus reached</li> </ul> </li> </ul>
Applicability	<ul style="list-style-type: none"> <li>▶ Application of findings to others contexts:               <ul style="list-style-type: none"> <li>– Rich detail of context, the renal setting, including the patients managed within the service, facilitates the evaluation of study conclusions and transferability to other renal units</li> </ul> </li> </ul>

2 Acknowledging biases in sampling and ongoing critical reflection of methods to ensure sufficient depth and relevance of data collection and analysis;<sup>3</sup>

3 Meticulous record keeping, demonstrating a clear decision trail and ensuring interpretations of data are consistent and transparent;<sup>3 4</sup>

4 Establishing a comparison case/seeking out similarities and differences across accounts to ensure different perspectives are represented;<sup>6 7</sup>

5 Including rich and thick verbatim descriptions of participants' accounts to support findings;<sup>7</sup>

6 Demonstrating clarity in terms of thought processes during data analysis and subsequent interpretations<sup>3</sup>;

7 Engaging with other researchers to reduce research bias;<sup>3</sup>

8 Respondent validation: includes inviting participants to comment on the interview transcript and whether the final themes and concepts created adequately reflect the phenomena being investigated;<sup>4</sup>

9 Data triangulation,<sup>3 4</sup> whereby different methods and perspectives help produce a more comprehensive set of findings.<sup>8 9</sup>

Table 2 provides some specific examples of how some of these strategies were utilised to ensure rigour in a study that explored the impact of being a family carer to patients with stage 5 chronic kidney disease managed without dialysis.<sup>10</sup>

In summary, it is imperative that all qualitative researchers incorporate strategies to enhance the

credibility of a study during research design and implementation. Although there is no universally accepted terminology and criteria used to evaluate qualitative research, we have briefly outlined some of the strategies that can enhance the credibility of study findings.

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Competing interests None.

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