Qualitative research methods in renal medicine: an introduction

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ABSTRACT

Qualitative methodologies are becoming increasingly widely used in health research. However, within some specialties, including renal medicine, qualitative approaches remain under-represented in the high-impact factor journals. Qualitative research can be undertaken: (i) as a stand-alone research method, addressing specific research questions; (ii) as part of a mixed methods approach alongside quantitative approaches or (iii) embedded in clinical trials, or during the development of complex interventions. The aim of this paper is to introduce qualitative research, including the rationale for choosing qualitative approaches, and guidance for ensuring quality when undertaking and reporting qualitative research. In addition, we introduce types of qualitative data (observation, interviews and focus groups) as well as some of the most commonly encountered methodological approaches (case studies, ethnography, phenomenology, grounded theory, thematic analysis, framework analysis and content analysis).

Keywords: focus groups, interviews, observation, qualitative, methodology

INTRODUCTION

On first encountering qualitative research, as a clinician or researcher, it is helpful to consider the differences between qualitative and quantitative approaches. While quantitative methods seek to understand the presence of a phenomenon by quantifying it within a particular context, undertaking statistical analysis and extrapolating to the population, qualitative research is largely disinterested in numbers:

By the term qualitative research we mean any type of research that produces findings not arrived at by statistical procedures or by means of quantification. [1, p.11]

Rather, qualitative research seeks to describe, explore, understand and explain phenomena through methods of inquiry that elicit qualitative, non-numerical data. Qualitative methods are particularly useful in generating in-depth information that would be difficult to quantify, such as meanings, understandings and experiences. They use a different lens and armoury of techniques to explore phenomena, seeking to observe, question and understand, through interacting with research participants or observing them in their natural environment:

Qualitative researchers study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them. [2, p.3]

The aim of this paper is to introduce qualitative research methods to the NDT audience and to share their potential value in the advancement of renal medicine. While some excellent qualitative studies have been carried out within renal medicine, qualitative approaches remain under-represented in the high-impact factor renal journals, compared with those of other specialities. However, qualitative research, with its focus on exploring lived experiences, understandings and behaviours, can be particularly beneficial in specialities such as renal medicine, where decisions about treatment options and future care are inherently complex and shaped by personal, social and environmental factors. Qualitative methods can help to inform understandings of decision-making processes, preferences and priorities for patients and their families, enabling healthcare professionals to deliver person-centred holistic care that evolves with the needs of the patient. Specifically, this paper discusses the value of qualitative research independently and alongside quantitative methodologies and introduces frequently encountered qualitative research methods. Throughout the paper, we draw on examples from the renal literature to exemplify different methodologies and reference key texts for further reading (Table 1).
Table 1. Examples from the literature, key characteristics and further reading

<table>
<thead>
<tr>
<th>Methodology</th>
<th>Key characteristics</th>
<th>Example from the literature</th>
<th>Further reading</th>
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<tbody>
<tr>
<td>Stand-alone qualitative study</td>
<td>• Used to deliver on specific aims and objectives.</td>
<td>Davison and Simpson [3] carried out a stand-alone qualitative exploration of hope in the context of advance care planning for patients with end-stage renal disease in Canada. Nineteen patients were purposively sampled and participated in a semi-structured interview. Interviews were analysed using interpretive description. Participants identified hope as central to advance care planning, with more information earlier in the course of their illness allowing them to determine future goals. Facilitated advance care planning was associated with enhanced hope for these patients.</td>
<td>Denzin and Lincoln [2]</td>
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<tr>
<td>Mixed methods study</td>
<td>• Used alongside quantitative methods.</td>
<td>Sattoe et al. [4] utilized mixed methods to evaluate a peer-support programme for young Dutch people with end-stage renal disease. Semi-structured interviews were undertaken with initiators, participants and healthcare professionals, alongside questionnaires with 62 participants. Data were integrated throughout: findings from the interviews were used to inform development of the questionnaire, and the analysis was completed with comparison of quantitative and qualitative results. Participants reported increased self-confidence, self-efficacy and disease-related knowledge after participation in the programme. Further use of similar peer support programmes was recommended.</td>
<td>O’Cathain et al. [5]</td>
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<tr>
<td>Qualitative study to inform a trial</td>
<td>• Used to inform components of a trial or development of a complex intervention.</td>
<td>Ephraim et al. [6] used qualitative methods (focus groups and interviews) alongside a systematic review to inform the development of their intervention to overcome barriers to pursuit of living related transplantation for African American patients and families. The intervention was developed using an iterative process, incorporating feedback from patients with kidney disease and their families. A randomized controlled trial of the educational intervention is now being conducted.</td>
<td>O’Cathain et al. [7]</td>
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<tr>
<td>Observation</td>
<td>• Used to understand the meanings individuals attached to actions and events.</td>
<td>Waters [8] undertook an ethnography of a children’s renal unit, to explore the experiences of children and young people with long-term renal illness. The study involved participant observations and informal interviews over 16 months in the renal inpatient ward, haemodialysis unit and outpatient clinic of a hospital in Ireland. The study identified that compliance with renal treatment is very hard for children, and that ‘non-compliance’ is framed differently than in adults. However, the children exerted their own agency and learned to live with the uncertainty, invasive treatments, drug regimens and fluid restrictions. The study recommended further research into children’s units and the transition to adult renal units.</td>
<td>Silverman [9]</td>
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<tr>
<td>Interviews</td>
<td>• Used to explore experiences, attitudes and understandings of phenomena with individuals.</td>
<td>Tonkin-Crine et al. [10] carried out a qualitative exploration of the experiences of patients aged 75 and older attending pre-dialysis, receiving haemodialysis or conservative management for chronic kidney failure at UK nine renal units. Forty-two semi-structured interviews were carried out and analysed using thematic analysis. Patients’ beliefs about what dialysis could offer varied, and those attending a unit with a more established conservative pathway were more likely to have discussed the future, and less often believed dialysis would guarantee longevity. The authors report a need for better evidence about conservative management to support shared decision-making for older patients.</td>
<td>Cresswell [11]</td>
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<tr>
<td>Focus groups</td>
<td>• Group discussion with usually 6–10 individuals designed to elicit contrasting and shared views on a given topic.</td>
<td>Wilkinson et al. [12] undertook a qualitative exploration of end-of-life care for South Asian people in the UK with kidney disease, utilizing 16 interviews and 14 focus groups. They found that language barriers, and lack of awareness of their condition or of ‘end-of-life care’, made patients less able to be involved in decision making about their care. In addition, there was variation in care providers’ experience of providing end-of-life care to South Asian patients. Further research in this area was recommended.</td>
<td>Barbour and Kitzinger [13]</td>
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<tr>
<td>Methodology</td>
<td>Key characteristics</td>
<td>Example from the literature</td>
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<td>Case studies</td>
<td>• Seeks to delineate a phenomenon through in-depth study of one case/a few cases. &lt;br&gt;• Often longitudinal. &lt;br&gt;• May use interviews, focus groups and/or observation. &lt;br&gt;• Used for early or exploratory work.</td>
<td>Gill and Lowes [14] undertook a longitudinal case study of a family’s experiences of transplant failure in Wales, UK. They utilized semi-structured qualitative interviews, before transplant, and at 3 and 10 months post-transplant, as part of a larger qualitative interview study. The analysis revealed that transplantation is a significant source of hope, and that rejection is associated with feelings of grief, loss of an ‘imagined future’ and depression for the patient and family, who felt unprepared and poorly supported by healthcare professionals. This case study explored a previously under-researched area, the personal experiences of graft failure, and was used in the development of a subsequent 2-year longitudinal qualitative study of the personal experiences of transplant failure for patients and family.</td>
<td>Yin [15]</td>
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<td>Ethnography</td>
<td>• Seeks to describe a culture and its community members. &lt;br&gt;• Longitudinal. &lt;br&gt;• Emergence in culture and extensive data collection (observation and interviews), and fieldwork.</td>
<td>Tranter et al. [16] carried out an ethnography of a hospital haemodialysis unit in Sydney, Australia, to understand how nursing care was conducted and to identify any cultural or structural barriers, or enablers, to the provision of patient-centred care. The researcher observed in the unit for 280 h, including reviewing case notes, documentation, interviewing staff and patients and keeping field notes. The ethnography, entitled ‘Nursing the Machine’, revealed that the dialysis nurses were ‘technologically enframed’ due to the pressure of the unit, with an emphasis on attending to the machine as opposed to the holistic care needs of the patient, particularly regarding discomfort and suffering. Following the ethnography, in recognition of the barriers and challenges it described, the haemodialysis nurses in the unit undertook practice development to facilitate a more patient-centred care focus.</td>
<td>Wolcott [17]</td>
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<td>Phenomenology</td>
<td>• Seeks to describe a phenomenon from the experiences of many. &lt;br&gt;• Longitudinal or single time point. &lt;br&gt;• May use interviews, focus groups and/or observation.</td>
<td>Monaro and Stewart [18] undertook a phenomenological study of haemodialysis patients in Sydney, Australia. They interviewed patients who had recently started haemodialysis, and carers. The analysis revealed a loss of self, as recognized in other chronic disease literature, as well as a loss of spontaneity, personal freedom and social connectedness. They recognized a need for additional support and care frameworks during transition to dialysis, earlier in the disease trajectory.</td>
<td>Moustakis [19]</td>
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<td>Grounded theory</td>
<td>• Seeks to develop theory arising from the data. &lt;br&gt;• Longitudinal or single time point. &lt;br&gt;• May use interviews, focus groups and/or observation.</td>
<td>Dolan et al. [20] used unstructured interviews and grounded theory in their exploration of workplace stressors for renal nurses in a metropolitan hospital and satellite units in Australia. They identified blurring of emotional boundaries due to prolonged patient contact and proposed a model of emotional distancing, rather than detachment, to avoid burnout. They recommended further exploration of their model, using quantitative methods, as well as exploration of individual and local factors that may influence its implementation.</td>
<td>Charmaz [21]</td>
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<td>Thematic analysis</td>
<td>• Seeks to describe patterns in qualitative data. &lt;br&gt;• Longitudinal or single time point. &lt;br&gt;• May use interviews, focus groups and/or observation.</td>
<td>Rifkin et al. [22] utilized semi-structured interviews and thematic analysis in their exploration of medication behaviours and adherence by people receiving care at a tertiary nephrology centre in Boston, USA. Their analysis demonstrated that most patients expressed intention to be adherent, but many regularly skipped medications they viewed to be less important, prioritizing based on the perceived effects of the medication, side effects, and physical, logistical and financial barriers to its use. The authors recommended further quantitative exploration to ascertain the extent of the problem and further exploration of communication about medication.</td>
<td>Miles and Huberman [23]</td>
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<td>Framework analysis</td>
<td>• Seeks to describe themes within data. &lt;br&gt;• Driven by policy and a priori issues. &lt;br&gt;• Uses a matrix to present data, by case and theme. &lt;br&gt;• May use interviews, focus groups and/or observation.</td>
<td>Swallow et al. [24] carried out a qualitative exploration of family and professional preferences of a web-based support application to support home-based care of childhood chronic kidney disease stages 3–5 in the UK. Qualitative interviews were undertaken with patients, parents and professionals, and interviews were analysed using framework analysis. All groups expressed an interest in an application that enabled care in the home, with reliable accessible materials and a closed communication system to facilitate contact between families living with CKD. Such an application could maximize utility and self-efficacy, and optimize outcomes.</td>
<td>Ritchie and Spencer [25]</td>
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<tr>
<td>Content analysis</td>
<td>• Seeks to describe the content of qualitative data using a conventional, directed or summative approach. &lt;br&gt;• May use interviews, focus groups and/or observation.</td>
<td>Mitchell et al. [26] undertook a qualitative exploration of patients’ experiences of transition onto haemodialysis in the UK. Semi-structured qualitative interviews were carried out with 10 patients within 6 months of commencing haemodialysis. Interviews were analysed using interpretive content analysis. Three main themes emerged around preparation (education and choice), cognitive style and social support. The study highlighted the positive and active approach many patients take to transitioning to haemodialysis, but recognised a need for better support at this challenging time. The authors recommend further quantitative research to understand the effectiveness of the interventions proposed in the study.</td>
<td>Hsieh and Shannon [27]</td>
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RESEARCH PARADIGMS

To understand different approaches to qualitative research, it is helpful to consider the schools of thought (paradigms) from which they evolved. As a researcher, your paradigm represents how you view the world and what you believe it is possible to know about the world (ontology). It is also shaped by how you believe it is possible to know something and your relationship to that knowledge (epistemology), including whether the world is independent of, or affected by, the research you conduct [28]. Your research paradigm is therefore intimately related to the principles that guide your chosen research practice (e.g. the methodologies associated with an experimental, interventional or observational study) and the tools and approaches you use (methods), such as surveys, interviews or observation (Figure 1).

Quantitative research, broadly speaking, developed from a positivist paradigm. In its most extreme form, positivism states that only that which can be identified through processes of deduction and empirically tested through observation can be counted as knowledge. In contrast, qualitative research developed from a diverse range of ontological and epistemological stances and academic disciplines, resulting in a broad spectrum of qualitative research paradigms, from post-positivism to social constructivism. Broadly speaking, a positivist approach assumes one reality, independent of the researcher, their beliefs and understandings. Post-positivism, although assuming one reality, relies on context to interpret that reality, accepts the limitations and fallibility of human knowledge and takes into account the potential influence of the characteristics of the researcher on the phenomenon. In contrast, social constructivism endorses the view that, at least in the social world, there are multiple realities that are socially constructed and dependent on shared meanings and understandings [29].

That being said, qualitative researchers in general do share some core beliefs: for example, that the social world is inherently complex, multi-faceted and experienced in diverse ways by different individuals; that social context is always relevant and should be taken into account throughout the research process; and that the researcher is an intrinsic component of the research process and hence shapes the product of research. For further reading on qualitative research paradigms, see Ref. [29].

WHY DO QUALITATIVE RESEARCH?

Central to the development of any research protocol is the research question, and this is another area where qualitative research differs from quantitative. While quantitative research seeks to ask ‘when?’, ‘where?’ and ‘for whom?’, a phenomenon occurs; qualitative research looks to understand ‘how?’ and ‘why?’ it occurs, and the meanings and experiences associated with it. Qualitative methods thus enable the researcher to ‘step beyond the known and enter into the world of participants, to see the world from their perspective and in doing so make discoveries that will contribute to the development of empirical knowledge’ [30, p.16].

Qualitative research can be performed as a stand-alone research project to deliver on specific aims and objectives. It is particularly appropriate for preliminary exploration, where knowledge of a phenomenon or experience is limited or incomplete, or where the information sought is difficult to quantify (see examples from the literature in Table 1).

For further reading on qualitative research, see Ref. [2]. Qualitative research can also be used as part of a mixed methods approach. Although quantitative and qualitative research studies ask different questions about a phenomenon, often findings are intersecting and complementary—effectively, two sides of the same coin. Indeed, the rise of mixed methods approaches to research is indicative of this complementarity. Qualitative research provides a different lens through which to view phenomena, enabling a more complete understanding.
than quantitative methods alone [5], and a mixed methods approach has been recommended in renal palliative care research [31].

For further reading on mixed methods research, see Ref. [5].

The synthesis of qualitative research, akin to quantitative systematic reviews, has also gained popularity in recent years as a source of evidence to shape healthcare delivery and policy. Methods of synthesizing the findings of multiple studies include thematic synthesis, meta-ethnography, meta-study, critical interpretive synthesis and narrative synthesis [see ENTREQ guidance (Enhancing Transparency in REporting the synthesis of Qualitative research) for further details] [32]. However, in light of the rise and acceptance of qualitative research and the complementarity it lends in mixed methods research, the inclusion of qualitative and quantitative studies in systematic reviews has also been advocated to aid the interpretation of findings, give a complete picture of existing evidence and inform the translation of evidence into practice [33].

Lastly, qualitative methods can be used to inform qualitative studies, clinical trials and the development and evaluation of complex interventions. In particular, qualitative research is valuable in shaping the development of an intervention, exploring its feasibility, acceptability and appropriateness, and ascertaining the optimum evaluation design, as recommended by the Medical Research Council—the UK government agency responsible for funding and coordinating medical research—in its guidance on the development and evaluation of complex interventions [34]. Qualitative methods can also be used to interpret the findings of an evaluation, for example in determining how and why an intervention is effective or not and the processes underlying its effects on outcomes (its active ingredients and mechanism (s) of actions), ensuring effective implementation in practice. However, historically many studies have taken a tokenistic approach to the inclusion of qualitative components within trials, and qualitative findings have been poorly integrated in data analysis [7]. Fully embedded qualitative components have the potential to improve the quality and appropriateness of an intervention, ensure appropriate outcomes are measured and increase a trial’s viability, feasibility and likelihood of success [7, 35].

For further reading on using qualitative methods to inform quantitative studies, see Ref. [7].

**Types of Qualitative Research Data**

Most qualitative studies will utilize one or more of three methods of data collection: observation, interviews and focus groups.

**Observation**

Developed in anthropology, observation of individuals or communities in their natural environment enables a researcher to understand the meanings that individuals attach to actions and events. Observation can be structured (e.g. recording when, how often or for how long a pre-coded behaviour occurs) or unstructured (informal observation without a pre-specified theoretical framework), depending on the research question, and will look to observe at the micro (e.g. individual interactions) and the macro levels (e.g. the influence of social and economic forces). The researcher will choose the level of immersion into the environment, which will determine their role on a continuum from complete observer (as if behind a one-way mirror) to complete participant (becoming a member of the community and observing from within). The researcher will take field notes to capture observations, as well as perhaps gathering artefacts, which form the data for analysis. This method is time consuming and challenging to predict, and relies on a skilled and experienced researcher. However, if the aim of the research project is to understand culture and behaviours, the approach is unparalleled.

For further reading on observation, see Ref. [9].

**Interviews**

Alternatively, many qualitative studies use interviewing as their method of data collection. Interviews can occur in the subject’s natural environment or are often conducted in a location of their choosing. Interviews can be structured, semi-structured or unstructured, depending on the research question. For example, a structured interview would have a strict set of questions to follow and a semi-structured interview a selection of preferred topics to cover, while an unstructured interview may take a more narrative approach, simply asking the participant to tell their illness story and allowing the participant to guide the flow of topics. The success of the interview depends on the skills and sensitivity of the interviewer, particularly when exploring challenging or emotionally laden subjects. Interviews are usually audio- or video-recorded, and the recording along with a verbatim transcript, and sometimes field notes, will form the data for analysis.

For further reading on interviews, see Ref. [11].

**Focus groups**

Lastly, focus groups are a group discussion, of usually 6–10 individuals, designed to understand participants’ views and experiences of a given topic and to elicit contrasting and shared views. Focus groups are not a replacement for interviews, but rather used so that group discussion can take a given subject further, and in different directions, than is possible with an individual interview. Careful selection of participants is essential to ensure a useful discussion, and group discussions are not appropriate for all subject matters. Focus groups are challenging to organize and facilitate, and ideally require two facilitators, one to guide and facilitate discussions and another to take notes. Again, they are audio- or video-recorded, and the verbatim transcript, recording and field notes form the data for analysis. While challenging for the uninitiated, they are particularly useful when wishing to explore collective views or consensus on a subject, or when time for data collection is limited.

For further reading on focus groups, see Ref. [13].
For interview and focus group studies, the selection of participants is of central importance and will broadly follow one of three approaches:

(i) Purposive sampling: participants are selected for particular characteristics of relevance to the research question. For example, sampling by ethnicity, age and disease group may be needed to elicit diverse experiences of the phenomenon of interest (maximum variation sampling).

(ii) Theoretical sampling: sampling evolves as the study progresses, to inform the researcher’s developing understanding of a particular phenomenon.

(iii) Convenience sampling: a more opportunistic approach often used in hard-to-reach groups. The researcher will recruit all those who would be eligible for the study, regardless of other characteristics. The researcher may, for example, use a snowball approach, asking each individual to suggest someone else who may be willing to participate.

In general, sampling of new participants will continue until data saturation is achieved, when no new codes, themes or categories are emerging from the data and the relationships between them can be explained.

For further reading on sampling, see Ref. [36].

It is not possible in this paper to provide an exhaustive description of the methodologies in which the above data would be utilised; rather, we focus here on some commonly encountered methodological approaches: case studies, ethnography, phenomenology, grounded theory and thematically flexible modes of qualitative data analysis (thematic analysis, framework analysis and content analysis). Key features of these approaches are presented in Table 1 along with examples of their use in the renal literature and suggestions for further reading.

**Case studies**

Case studies are a familiar construct to most health professionals, as they are regularly used to exemplify an interesting or unusual clinical case. In qualitative research, the case study methodology involves in-depth analysis of one or several individual cases [37]. However, in this context, a case can refer to an individual or a clinical setting, with a focus on the circumstances, complexities and dynamics of that case. Often qualitative case studies will be longitudinal, involving multiple data collection points, and may use different methods, such as observation and interviews, with the type of analysis depending on the research question. They are often used at early or exploratory stages of research, to generate hypotheses and further research questions. The limitations of this approach include the potential for exaggerating or simplifying a phenomenon, and the limited transferability of the findings.

For further reading on case studies, see Ref. [15].

**Ethnography**

While case studies seek to delineate a phenomenon or issue through describing one or more cases, ethnography is inward-looking, seeking to understand the culture and tacit knowledge of a community and its members. Ethnography seeks to describe and interpret language, values and beliefs through observation, interviews and immersion in the culture (for example, hospital culture or the culture of the dialysis unit). Rooted in anthropology, ethnography can take many forms depending on the research paradigm and research questions. ‘Ethnography’ is both the approach to, and output of, the research, which often takes the form of a narrative, with more overlap between results and discussion than is customary in biomedical research, due to interpretation being embedded within the process of ethnography. It involves extensive fieldwork, data collection and immersion in the culture. Again, the methods of analysis will be dependent on the research paradigm. Ethnography provides rich data, but is labour intensive, involving extended periods of fieldwork and large quantities of data which can be challenging to analyze, integrate and present. It also relies heavily on skilled and careful observation by the researcher, and the findings may not be transferable to other cultures. That being said, ethnography is an ideal methodology if the aim of the research is to understand culture and behaviour.

For further reading on ethnography, see Ref. [17].

**Phenomenology**

In contrast to describing one case, or a culture or society, other types of qualitative research seek to describe phenomena or lived experiences by drawing on the experiences of many. One such approach is phenomenology, rooted in the philosophy of Heidegger and others, which seeks to identify essential features of the experiences of many to come to a deeper understanding, or essence, of a phenomenon. Phenomenology draws on unstructured interviews and observation as data sources but might also incorporate diaries and journals. Phenomenologists view human experience as central to knowledge about a particular phenomenon and explore this by eliciting shared experiences from multiple participants. Careful processes of bracketing are used to take into account potential sources of personal bias prior to commencing the research. Phenomenology provides depth of understanding about a phenomenon; however, challenges remain in managing personal understandings and biases in the interpretation and analysis.

For further reading on phenomenology, see Ref. [19].

**Grounded theory**

Another approach commonly used to explore phenomena and ‘lived experience’ is grounded theory, which was developed in the 1960s by Glaser and Strauss [38]. Unlike other approaches, grounded theory, as the name suggests, has the primary purpose of developing theory ‘from the ground up’, i.e. staying close to the data. While in other methodologies the
researcher may consider other theories and literature prior to commencing the study, in grounded theory the researchers enter the field ‘naïve’, allowing theory to emerge from the data (observations, interviews, artefacts or focus groups) through an iterative and clearly defined process of coding, conceptualization, categorization and theory development. Challenges to using grounded theory include being truthful to the approach. Many studies will claim to take a grounded theory approach, meaning they avoid preconceived theories and analyse data taking a ‘ground up’ approach, but do not follow the prescribed steps to ensure rigour.

For further reading on grounded theory, see Ref. [21].

THEORETICALLY FLEXIBLE METHODS OF ANALYSIS

Some methods of qualitative analysis are theoretically flexible, i.e. not allied to a particular research paradigm or methodology. That is not to say that they are incompatible with any particular epistemological or ontological stance, but that the methods themselves are not bound by theory and can be adapted to a researcher’s own paradigm and research questions.

Thematic analysis

One such method is thematic analysis, which looks for patterns and themes within data, inductively (‘bottom up’, emerging from the data) or deductively (‘top down’, exploring pre-existing theory), through processes of familiarization, coding, theme development, defining themes and reporting. Criticisms of thematic analysis are that it is often ill-defined; however, its simplicity and structured approach mean it is increasingly popular within healthcare research.

For further reading on thematic analysis, see Ref. [23]

Framework analysis

Framework analysis, also theoretically flexible, utilizes similar processes of coding and theme development as thematic analysis (familiarization, identifying a theoretical framework, indexing, charting and mapping), but is often driven by a priori concerns and pre-determined questions such as those of social or health policy. Developed by Ritchie and Spencer [25], the framework approach uses a matrix to present the data, by case and by theme, aiming to create order to facilitate interpretation.

For further reading on framework analysis, see Ref. [25].

Content analysis

Finally, content analysis is a theoretically flexible approach used to describe the content of qualitative data. Content analysis includes three different approaches to analysis: (i) Conventional content analysis is an inductive approach to describe a phenomenon through coding, and the identification of categories within the data. Contrastingly, (ii) directed content analysis takes a more deductive approach to explore existing theories, extending or validating them, using predetermined coding strategies. Lastly, (iii) summative content analysis takes a more quantitative approach, counting and comparing words and content, before engaging in a more interpretative analysis. The quantification stage allows for exploration of the data, while the interpretive stage explores the context and meaning of the words or content.

For further reading on content analysis, see Ref. [27].

DOING HIGH-QUALITY QUALITATIVE RESEARCH

As in all research methodologies, rigour is of central importance in qualitative research. Owing to the diversity of approaches within qualitative research, there has been some debate about the applicability and appropriateness of strict quality criteria for qualitative research. However, there are now several useful frameworks to judge the quality of qualitative research while respecting methodological diversity [39]. A particularly useful resource is the COREQ guidance (CONsolidated criteria for REPorting Qualitative research), a set of criteria for reporting qualitative research mandated by many high-impact journals [40]. The COREQ guidance, with its focus on the experience and potential biases of the researcher, the appropriateness and rigour of the research design, and transparency and clarity in the analysis and findings, is a useful resource when planning and undertaking qualitative research.

CONCLUSION

We hope in this article to have demonstrated the value of qualitative research, which, although increasingly common in healthcare, is relatively under used in renal medicine. Qualitative methods are ideal when seeking to understand the meanings and experiences associated with a phenomenon rather than simply exploring its presence. They offer a depth of understanding which is unparalleled, particularly when the concepts or phenomenon of interest are difficult to quantify, where knowledge is limited or incomplete, or for preliminary exploration. A mixed methods study design harnesses the benefits of both qualitative and quantitative approaches and is particularly useful in the development and evaluation of complex interventions. We hope that the introduction to qualitative research and examples from the renal literature given in this article catalyse interest in qualitative methodologies and act as a ‘jumping off point’ for renal professionals interested in undertaking a piece of qualitative research.

CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES
