The Qualitative Report

Volume 27 | Number 4 How To Article 9

4-5-2022

Qualitative Data Analysis for Health Research: A Step-by-Step Example of Phenomenological Interpretation

Sue Monaro
University of Sydney, Australia, sue.monaro@health.nsw.gov.au

Janice Gullick
University of Sydney, Australia, janice.gullick@sydney.edu.au

Sandra West
University of Sydney, Australia, shwest17@gmail.com

Recommended APA Citation

Monaro, S., Gullick, J., & West, S. (2022). Qualitative Data Analysis for Health Research: A Step-by-Step Example of Phenomenological Interpretation. *The Qualitative Report*, *27*(4), 1040-1057. https://doi.org/10.46743/2160-3715/2022.5249

Qualitative Data Analysis for Health Research: A Step-by-Step Example of Phenomenological Interpretation

Abstract

Phenomenological studies have been critiqued when analytic activities and intersection with the underpinning philosophy lack clarity. This methodological discussion paper describes data analysis in hermeneutic interpretive phenomenology. Data management strategies (transcript preparation, coding, philosophy application, tabling/concept maps, and Microsoft Word) and data analysis processes (reduction, display, and conclusion drawing/verification) are illustrated. Deconstruction, reconstruction, and reorganisation of themes/subthemes using hierarchical heading styles to populate the navigation pane and philosophical tenets acted as analytic hooks. This paper has outlined data analysis in hermeneutic interpretive phenomenology, including the use of MS Word and its functionality, which was supported by other data display strategies to enhance data visualisation and verification. Techniques described are transferrable to other qualitative methodologies.

Keywords

qualitative research, phenomenological interpretation, hermeneutics, rigour

The Qualitative Report 2022 Volume 27, Number 4, 1040-1057
https://doi.org/10.46743/2160-3715/2022.5249

Qualitative Data Analysis for Health Research: A Step-by-Step Example of Phenomenological Interpretation

Sue Monaro[1, 2], Janice Gullick[2], and Sandra West[2]
[1]Department of Vascular Surgery, Concord Repatriation General Hospital, Sydney, Australia
[2]Susan Wakil School of Nursing & Midwifery, Faculty of Medicine and Health, University of Sydney, Australia

Phenomenological studies have been critiqued when analytic activities and intersection with the underpinning philosophy lack clarity. This methodological discussion paper describes data analysis in hermeneutic interpretive phenomenology. Data management strategies (transcript preparation, coding, philosophy application, tabling/concept maps, and Microsoft Word) and data analysis processes (reduction, display, and conclusion drawing/verification) are illustrated. Deconstruction, reconstruction, and reorganisation of themes/subthemes using hierarchical heading styles to populate the navigation pane and philosophical tenets acted as analytic hooks. This paper has outlined data analysis in hermeneutic interpretive phenomenology, including the use of MS Word and its functionality, which was supported by other data display strategies to enhance data visualisation and verification. Techniques described are transferrable to other qualitative methodologies.

Keywords: qualitative research, phenomenological interpretation, hermeneutics, rigour

Aim

This paper aims to provide examples of data analysis strategies in hermeneutic interpretive phenomenological research to inform clinical knowledge and practice. There are few published examples of step-by-step analytical processes within the methodological literature for interpretative phenomenology. The described examples are grounded in concepts shared across qualitative methodologies yet are focussed on activities and assumptions congruent with the phenomenological tradition.

Background

Clinical researchers are increasingly using qualitative research as a way to access understanding of complex illness experiences. There is an expanding range of qualitative methodologies with variation in their techniques, complexities, and acceptability. These methodologies typically generate large volumes of data and researchers often struggle to describe the granular detail of their data analysis. The process and reporting of data analysis must be rigorous if findings are to be publishable and considered a trustworthy basis for clinical practice/systems improvement. The overarching methodological approaches to primary qualitative research continue to be distinguishable as either descriptive or interpretative.

Descriptive qualitative research, where the research is not necessarily grounded within a particular philosophy or prescriptive methodology, includes both thematic analysis (e.g., Miles & Huberman, 1984), and qualitative content analysis (e.g., Elo & Kyngäs, 2008). While

it is necessary to give an account of the analytic lens used to examine the data (Caelli et al., 2003), for example, detailing the theoretical or discipline-based assumptions about the phenomenon of interest that may be drawn from literature (Sandelowski, 2010), the researcher then tends to stay closer to the data (Sandelowski, 2000) using lower inference interpretation to describe common experiences. However, even in thematic description some level of abstraction is required to establish such themes, along with a need to describe the personal positioning of the researcher (their personal history, presuppositions and motives) that may influence interpretation (Jootun et al., 2009).

Interpretative qualitative research (including the theory-building methodology of Grounded Theory) uses methodologies that harness a theory or philosophy congruent with the research paradigm to provide a vehicle for the abstraction of data; for example, the application of symbolic interactionism within Grounded Theory or the existential philosophies of Merleau-Ponty (1945/1962) or Heidegger (1927/1996) within phenomenology. Given that a theoretical or philosophical lens establishes assumptions about how a phenomenon will be explored and influences the types of questions we ask of participants, theory and philosophy are ideally incorporated at the outset of a study. As analytical tools, philosophy and theory can also be used as either a deductive analytic framework (Gullick et al., 2020) or to refine and reframe the understanding of inductively derived themes (Gullick, Monaro, & Stewart, 2016; Sheils, Mason, & Gullick, 2019) and can even be employed retrospectively to help the researcher explain patterns emerging from data.

The debate about phenomenological research persists to some extent because of the frequently weak published descriptions of the analytical approach used in phenomenology and the often-cursory attention paid to the philosophical lens claimed by authors (Gullick & West, 2019, Paley, 2005, 2018). To assist, scholars such as Benner (1994) and van Manen (2016) have suggested steps in the interpretive phenomenological research process. Both offer simplified structures of philosophical thought in their seminal texts; for example, Benner (1994) republished Victoria Leonard's 1989 "Heideggerian phenomenological perspective on the concept of a person" to provide a simplified overview, while van Manen's existential domains of corporeality, spatiality, temporality, and relationality capture and simplify important elements of existentialist thought. Benner suggests identification of a "paradigm case" where a strong example of a certain way of being-in-the-world is identified, then used as a comparator to other cases through a thematic analysis. These methods have the benefit of practicality for novice researchers yet their application in nursing research is often reductionist. Smith et al. (2009) also provide a six-step approach to the method known as IPA (Interpretive Phenomenological Analysis), but this has been vigorously criticised in scholarly discourse, refuting its place as an interpretative/hermeneutic method (Giorgi, 2011; Paley, 2016). One critique is that Smith et al.'s work seeks a psychological understanding of a particular person's life experiences, and so differs vastly from the existential analysis that philosophically-based interpretive phenomenology offers in understanding the fundamental nature of human situations (van Manen, 2018).

Philosophy forms the basis for sound interpretive phenomenology and ideally, the philosopher is chosen to align to the research problem. Heidegger (1927/1996), for example, explores one's embeddedness in-the-world alongside others and his temporal understanding of the world is framed by a sense of finitude. Merleau-Ponty (1962) offers an analysis of experience as "embodied" and so is useful to researchers of illness and injury. Gadamer (1960) "Truth and Method," is another frequently used framing for phenomenology with a focus on language as a means to cocreate meaning in a fusion of horizons between the researcher and the researched. Published descriptions of the techniques and strategies needed to conduct and analyse interpretive phenomenology are often lacking in granular detail – perhaps because specific strategies are frequently shaped by the particulars of a project and its data. Core

concepts in phenomenological nursing research have been well illustrated (Tuohy et al., 2013). Mackey (2005) established the importance of the philosophical and methodological foundations on which the method is built. Others have explored the ties between the operational elements of an interpretive phenomenological study and the philosophical tradition (Frechette et al. 2020).

As interpretive phenomenology is widely used but difficult to learn and teach, the aim of this methodological discussion paper is to describe one research team's application of interpretive phenomenology using an existential philosophical lens. Papers such as this, which provide more detailed descriptions of analytical processes, may assist clinical researchers using phenomenology in finding a way through the analytic maze to become more systematic and transparent about their methods.

Method

This methodological discussion, used as a vehicle in an interpretive phenomenological project that explored patient and family experiences of decision-making in the face of major amputation; a complex phenomenological analysis of a large data set reported within a doctoral thesis (Monaro, 2018). The authors have clinical backgrounds in acute care nursing. The doctoral student and advanced practice nurse (SM) and nurse academic supervisors (SW and JG) have expertise in the application of qualitative methods, and more specifically interpretive phenomenology, to understand the lived experience of illness. They have a particular interest in progressing the practical application of Heideggerian phenomenology to health research in ways that promote both philosophical and methodological integrity.

The granular techniques developed are not the only possible approach but provide some strategies to tackle phenomenological analysis. While the research steps within a qualitative project should be driven by the methodology, ethical considerations and the practicalities of generating data about a phenomenon, Miles and Huberman's "concurrent flows of activity" provide a useful structure for the organisation of our discussion of methods in this paper (1984, p. 21). Their seminal text describes process domains of *data reduction*, *data display*, and *conclusion drawing/verification* that can be applied across a range of qualitative methodologies and collectively contribute to a researcher's analytic choices. While later versions of this text have been published (Miles et al., 2014, 2019) and expand on thematic analytic method, these were not used pre-emptively as an analytic tool for this phenomenological study. The original 1984 version provided a simple organising structure as a vehicle for this present discussion. An overview of these "concurrent flows of activity" applicable to all qualitative methods provide a foundation for our later granular explanation.

Concurrent flows of activity in all qualitative research

Data reduction

Data reduction is a continuous process extending from establishing the research design (i.e., deciding what framework to use and what research questions to ask), through to the transformation of findings into publication. Data reduction processes include determining which chunks of data to code through initial allocation of a label to organise data, identifying and choosing to explore patterns between data elements, and processes of simplifying, summarising, and focussing interrogations of the data. These multiple reductive processes support the emerging development and critical interrogation of themes that contribute to understanding (Miles & Huberman, 1984).

Data display

Data display refers to the ways in which data are organised into forms that are more compact and accessible so the researcher can see patterns in the data and then can either draw clear, justifiable conclusions or be guided by the data display towards further analytic steps (Miles & Huberman, 1984). Data display, which may take the form of coding trees, mind maps (paper-based or digital), cardboard index cards, tables, diagrams, and/or text with headings and subheadings, is understood as a key element and indeed a cornerstone to rigorous analysis.

Qualitative research software programmes are designed to support analyses by providing tools for data organisation and display. Software packages offer benefits (e.g., easy filing and coding of large data sets and storage of references and memos), yet there are also limitations for phenomenology (Goble et al., 2012). There has long been concern that when using software, researchers may be seduced by the prioritisation of coding and conflate achieving a fully-coded data set with completion of analysis (Bong, 2002; Goble et al., 2012). The use of software should therefore be guided by the research questions and the chosen theoretical/philosophical framework (Jackson & Bazely, 2019). Similarly, it should be recognised that not all methodologies follow the same analytic patterns, which necessarily shape researcher interaction with the data (Atherton & Elsmore, 2007). Additionally, in interpretive qualitative methods where analytical uncertainty is a necessary stage of researcher reflexivity, the lure of a simplified structuring of data may provide a false certainty about interpretation.

Methodologies with highly systematic analytic processes such as Grounded Theory may lend themselves to data management software. However, in approaches such as interpretive phenomenology, it may de-emphasise the importance of writing and rewriting as a priority for a developing philosophical explanation (van Manen, 2003). There is also a danger of software fragmenting the data and increasing the risk of data elements being concealed so that possible links with other data elements are hidden during phenomenological interpretation (Goble et al. 2012). We argue here though, that there may be advantages to using simple data display technologies that allow a methodical way of organising and visualising emerging ideas, particularly for large, complex data sets.

Conclusion drawing and Verification

Conclusion drawing includes determination of early conclusions (hopefully held lightly and sceptically) that are then either refuted or developed into increasingly explicit and grounded understandings (Miles & Huberman, 1984). These conclusions may lead to further reframing/sampling, changing direction in analytic thinking, or, finally, proposing a rich and thick (Dibley, 2011) comprehensive description or interpretation of findings.

Verification may take the form of revisiting field notes/interview transcripts to check a point made, through to lengthy review between colleagues to argue for or against elements of the interpretation (Miles & Huberman, 1984). Member checking (where conclusions are presented to participants to confirm the validity of findings) is a feature of some methodologies for example, Collaizi's descriptive phenomenology (Collaizi, 1978, p. 6), but has been challenged as both impractical and problematic if a participant does not recognise their individual experience in an abstracted, theorised synthesis of participant experiences (Morse, 2015). Member checking is not a feature of interpretive phenomenology, although in a longitudinal study there is an opportunity to seek clarification or accuracy of wording within a transcript from an individual participant or explore how a developing understanding of the experiences of others resonates with an individual participant. This need to consider the fit of member checking with the study's epistemological stance is important (Birt et al., 2016), and

its application to synthesised, analysed data in interpretive phenomenology is argued to be redundant and inconsistent with, for example, Heideggerian philosophy (McConnell-Henry et al., 2011).

Most qualitative approaches have published criteria for rigour that guide method-specific strategies for data verification – for example, Elo et al.'s (2014) "Focus on trustworthiness" in qualitative content analysis, or the de Witt and Ploeg (2006) framework for rigour in interpretive phenomenological nursing research.

Analysing a hermeneutic phenomenological study: An example of an analytical process

Hermeneutics is a method and theory of interpretation of written records that can be traced back to the writings of Aristotle. Hermeneutic interpretation was fleshed out in the early 1800s by Ast (Dilthey, 1976) as an iterative movement between the "parts" (e.g., small segments of data, or elements relating to an individual) and the "whole" (e.g., data from across a whole sample or elements of greater context such as one's society and culture).

The hermeneutic phenomenological study that provides the vehicle for this paper explored 19 cases of critical limb-threatening ischaemia (CLTI) by analysing semi-structured interview data from 14 people with CLTI and 13 family members who were making decisions about major amputation (Monaro, 2018; Monaro, Gullick, & West, 2019; Monaro, West, & Gullick, 2021)). Heidegger's (1927/1996) articulation of the "parts" and the "whole" from an existential philosophical perspective requires application of his existentials; moving back and forth between a person's Being (for example, being-with-others, spatiality, temporality, being-towards death) and what is being asked about Being (e.g., our study of an illness experience). The use of these existential philosophical domains in providing "analytic hooks" in phenomenology have been described in detail (Gullick & West, 2019; Gullick et al., 2020).

Due to Heidegger's relative neglect of the body (Aho, 2010), the philosophy of Heidegger (1927/1996) (exploring one's being-in-the-world) was complemented by the philosophy of Merleau-Ponty (1968) (exploring the intertwining physical and existential body), which provided a different analytic lens to uncover the embodied disruption of CLTI (Monaro, Gullick, & West, 2019). The developing interpretation then explored the making of decisions about amputation in a changed body and the subsequent relationship to "Being," situated in a familial, relational, social, and cultural context.

We have used Miles and Huberman's (1984) concurrent flows of activity: data reduction, data visualisation, drawing conclusions, and verification in the following sections, where we attempt to describe these mechanics of analysis in detail. We note that, in reality, the steps described sometimes cross these artificial boundaries and the activities are iterative in nature and commonly grow in complexity over the life of the study.

Reducing Data

The research problem, identified through practical experience and a critical review of the literature, initially encompassed broader patient experiences of CLTI but directed the inquiry towards making subsequent decisions about amputation. Decisions were made about inclusion/exclusion criteria to guide purposive sampling of patients and their significant others and the timing of and rationale for longitudinal interviews. An interview guide focused on these conversational style encounters to elicit narratives that unveiled an ontological understanding of the body with CLTI in the face of its tasks.

Data analysis commenced with reading and screening verbatim transcripts that had been formatted for data tracking (Table 1), and immediate ideas about small parts of data were captured by highlighting any words, phrases, and sentences of interest with handwritten notes.

Data were reduced by collecting text with similar initial codes and clumping these using early category and subcategory labels. All data considered in any way relevant were coded, while parts of the story that were unrelated to the experience and its broader context were put aside (for example, initial ice-breaking conversations about the weather). Data were then cleaned, with repetitions and mis-starts removed without changing the meaning/nuance of the data. Superior exemplars were selected, duplicate quotes deleted, and a narrative style interpretation woven through to include interpretive philosophical touchpoints. A version of the initial coded data was retained so that a sense of "saturation" of themes could be revisited and reported.

Table 1
Data Management - *Transcript preparation

1. Verbatim transcription of digital voice file to a Microsoft Word file with transcript marked by line numbers and participant responses designated by individual codes to link participant to exemplar
2. Transcript checked against the digital voice file for accuracy and notation of non-verbal communication, which was inserted in parentheses
3. Where the subject had referred to an object or concept by "it" or "thing," the object or concept was specified in parentheses
4. Where the subject had referred to another person as "they" or "them" or had used the person's name, the person was specified by inserting their relationship to the subject in parentheses
5. Gender-specific references, e.g., "her" and "she" to surgeons, changed to masculine because of the possibility of identification of individual surgeons due to the low number of female vascular surgeons
6. Redundant or repeated words and phrases deleted if they did not add meaning or emphasis, e.g., "um", "you know," "ah."

Much of this early data coding was clinically oriented (reflecting the naïve understanding of the novice clinician-researcher), and an effort was then made to use language more relevant to the philosophical touchpoints and the patient and family experience. Van Manen's (1997) four domains of *corporeality*, *temporality*, *relationality* and *spatiality* were useful as an entree to philosophical thinking. They functioned as deductive analytical "hooks," allowing initial inductively coded data to be more selectively organised into data blocks. The main document containing blocks of data was separated into four Word files, one for each of van Manen's domains, making these sections less unwieldly to work with.

As the doctoral student became increasingly sensitised to this phenomenological theming, Victoria Leonard's (1989) work: "A Heideggerian phenomenological perspective on the concept of the person," was used to assist with deeper conceptual application and language for a novice philosophical researcher. The data was further reduced using this framework which loosely organises substantive Heideggerian concepts.

As the researchers began to immerse themselves into the primary philosophical texts of Merleau-Ponty and Heidegger and their understanding grew, the further reduction of the existentially-derived data blocks (see van Manen, 2003, then Leonard, 1989) were rescreened by reviewing words, phrases and quotes as the specificity of the philosophical lens was increased. This allowed additional reduction into philosophically-derived foci that captured and targeted both Merleau-Ponty's (1945/1962, 1968) and Heidegger's (1927/1996) important philosophical ideas.

The work of analytic reduction therefore involved a backwards and forwards approach that saw both a deconstruction of the texts and their situated meanings and then reconstruction through a philosophically-derived interpretation that reflected the lived experience of the individual against a larger, contextual historical/cultural perspective (Rescher, 1997). The list

of philosophically-derived themes was continually interrogated, extended, collapsed and intellectually challenged until they were reduced to a refined yet cohesive and interlinked set of explanatory themes. Table 2 provides a detailed outline of these steps illustrated by examples from the study and linking of the analysis process with de Witt and Ploeg's (2006) criteria for rigour. In the final phase of data reduction, we decided which findings would be included in the thesis and which might sit outside of that dissertation for separate publication.

Table 2
Data Analysis - Interpretative processes and steps

	Process	**Steps and Examples from study**
Stage 1: Initial data reduction of individual transcripts		
A.	Coding prepared transcripts for points of immediate interest.	Label identified points in transcript with "sticky"/ handwritten notes.
B.	Collating early meanings with attention to individual contexts **(conclusion drawing & data verification).**	Separate Word file with exemplars of early inductive meanings cut & pasted under category headings. Exemplars labelled with participant code & line number to ensure traceability (verification).
C.	Document early analytical thinking **(conclusion drawing).**	Writing a description of initial analytical thinking using explanatory text to provide both context & background for exemplars (conclusion drawing).
Stage 2: Initial application of the philosophical lens		
A.	Seeking ways to organise & visualise data categorised under philosophical concepts of interest (**data reduction & display**).	Began constructing a table of analytical ideas from all transcripts & aligning with Merleau-Ponty (MP) & Heideggerian (H) concepts. Large data volume was difficult to manage & the table approach was discontinued. Use of qualitative software considered but decided against due to concern about fragmentation & loss of visibility of the large volume of data.
B.	Organise selected data by analytical "hooks" (philosophically derived foci) (**data reduction & data display).**	Create a separate Word file for each the van Manen's (1997) four existentials as these capture important philosophical ideas/domains of MP & H: *Corporeality, temporality, relationality, spatiality* (analytic hooks).
C.	Use the conceptual framing of Victoria Leonard (1989) as an entrée to Heideggerian philosophy.	Rework data using the framework: The person as having a world / The person as a being for whom things have significance & value / The person as self-interpreting / The person as embodied /The person in time.
D.	Use of specific MP or H philosophical lenses to rescreen within the above data blocks (**data reduction & verification**).	Review words, phrases & quotes using an MP & H philosophical lens – Data associated with changes to the body were explored through MP, while the remainder of data were explored through an H lens.
Stage 3: Emergence & extension of an analytical structure		
A.	Use multiple hierarchical levels of headings of Word navigation pane tool to develop a philosophically guided sense &	The emergence of nine parts of the experience: Creeping decay (MP), Unclear boundaries of the body (MP), Changed boundaries of the body (MP) & space for living (H), Being towards death (H), No choice (H), Delay as a deficient mode of concern (H),

	understanding of the whole & parts of the data (see Figure 1) (**data display).**	Turning point/clearing (H), Difficulty with open conversations (H), & Being alongside (H) in a world of amputation.
B.	Re-check of all transcripts using new key ideas to locate any overlooked data (**data verification**).	Overlooked data assigned to part(s).
C.	Develop a written narrative to (a) explain, expand & refine each area identified & (b) establish concreteness of emerging findings (De Witt & Ploeg 2006) (**conclusion drawing & data reduction**).	(a) Word file with the navigation pane selected from the "View" tab allowed data visualisation of themes (headings) & sub themes (levels of subheadings) to organise meaningful units of analysis in the findings section. (b) Include participant's context (e.g., significant other, living environment, disease trajectory) at the start of each participant exemplar as part of the "whole" against which an exemplar (a part) could be examined (Figure 1).
Stage 4: Challenging analytical thinking & data organisation		
A	Support the criterion of openness (de Witt & Ploeg 2006) by using mind mapping of areas to challenge current thinking & explore analytical links between key thematic blocks (**data display**).	Hand drawn mind maps and schematics make visible the important stages of thinking & analysis (Figure 3).
	Process	**Steps and examples from the study**
B.	Reorganise initial ordering of data according to philosopher etc., re-order & regroup data to enhance linkages & allow a more temporally/chronologically coherent narrative (**data reduction, conclusion drawing**). Sections may either expand or collapse, changing the number of themes.	Reduced data into seven sections: The body with CLTI, Being-towards-death, Talking about CLTI, Making decisions about CLTI, Being alongside, The changed body & space for living, & The chaos of hospitalisation. Further development of the narrative to connect the philosophical interpretation to exemplars & participant contexts.
C	Link related areas to form consolidated blocks (**data reduction)**.	Consolidation of the experience of CLTI: including: 1. The body with CLTI & Being-towards-death. 2. Dealing with CLTI: including Talking about CLTI & Making decisions about CLTI. 3. The experience of major amputation: including Being alongside, The changed body & space for living & The chaos of hospitalisation.
D.	Compare original analysis document against refined analysis to ensure no loss or overlooking of key findings during data reduction (**data verification**).	Returned to original analysis document that used van Manen's four existential concepts & checked against the subheadings (in navigation plan) to re-check for any unintentionally omitted data.
Stage 5: Deeper refinement of analysis		

A.	Extract/separate findings outside of current decision-making interests (a phenomenon of interest & focus of research problem).	Parts extracted for possible later publication: (1) Recovery & rehabilitation (2) Chaos of hospitalisation.
B.	Look for negative cases &/or outliers across themes, an established criterion for rigour (Benner) (**data verification).**	To acknowledge the multiple truths accepted within an interpretive paradigm & to draw links between the contexts that underpin diverse cases.
C.	Linking of thematic parts, i.e., extremes of diverse findings that may exist along a continuum **(conclusion drawing).**	Linking of parts, e.g., talking about CLTI *versus* retreating to silence.
D.	Reorganising & re-titling parts **(data reduction).**	The final four parts related to decision-making: (1) Embodied CLTI (2) Being towards death (3) Being-with (4) Turning – these became separate findings chapters in the thesis.
Stage 6: Preparing final documentation of the research for dissemination		
A.	De-identification (**data display**).	Linking: 1) Pseudonyms (linked patient & family participants allocated pseudonyms paired with matching letters to assist the reader (e.g., Mel & Michael). Unique stories that could reveal participant identity considered.
B.	Final rewriting & analysis (**data reduction, display & conclusion drawing).**	Simultaneously using the navigation pane to view parts against the whole. Automatically generated table of contents (using heading function in Word) to view the whole.
C.	Congruence with further criteria for rigour in interpretive phenomenology (de Witt & Ploeg (2006), see Table 3) (**data verification**) Consolidated criteria for Reporting Qualitative research (COREQ) used to report in thesis and other publications **(data verification).**	Activities informed by De Witt & Ploeg (2006) - rereading to ensure a balance between the philosophical interpretation & the participants' voices. The interweaving of the philosophy with the findings: Provision of verbatim quotes from the existential philosophical texts (MP & H) supported the interpretation. Further grounding of the interpretation through carefully paraphrased concepts from the philosophical texts to make the ideas accessible to readers who are not conversant with the dense philosophies used. This paraphrasing also challenges the researcher to question the depth of their understanding. Ensuring upon final reading by the research team, that all interpretative meanings generated resonates & is supported by exemplars. COREQ (Tong et al., 2007) – Specific criteria within the domains of Research team & reflexivity; Study design; and Analysis and findings either reported or exclusions justified with references. COREQ Checklist appended to thesis.
D	Actualisation – looking for further realisation of the resonance of the study findings (**data verification**).	Dissemination of findings through conferences & research publications: feedback from conference attendees & peer-reviewers of manuscripts compels the researcher to re-examine & make further

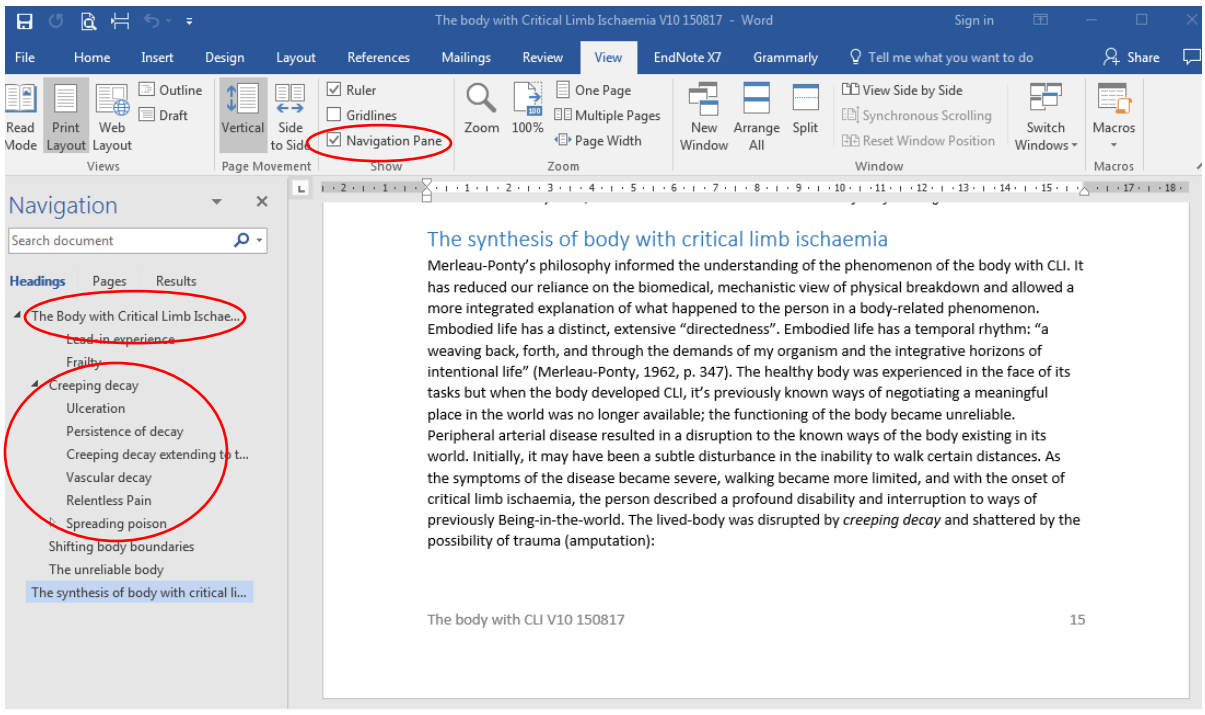
		refinements to the interpretation before publication &/or thesis examination.

Displaying Data

Seeking ways to organise and display data categorised under philosophical concepts of interest, we began to visualise data by constructing a table in Microsoft Word. However, due to the volume of textual data from the study's 42 interviews, this tabling became a difficult format to manage and was aborted. The possibility of using qualitative software was considered but not pursued due to concerns about fragmentation and the loss of visibility of the large volume of data.

A Microsoft Word (.docx) document with the navigation pane selected (from the "View" tab) allowed data visualisation of themes and subthemes (previously formatted using the heading function in "Styles"), so they appeared in hierarchical order in the navigation pane (Figure 1). The document contained multiple headings within hierarchical levels. For example, heading one was a theme and heading two a subtheme. Further breakdown of the parts meant that within some themes, there might have been subthemes down to level five or six. This data display allowed organisation of the data through visual clumping under these early theme headings (common ideas from raw data grouped under subheadings) that displayed on the left of the screen as a table of hierarchical content. 198 pages of themed participant quotes resulted.

Figure 1
Microsoft Word Navigation pane: Parts versus the whole (Monaro, 2018)



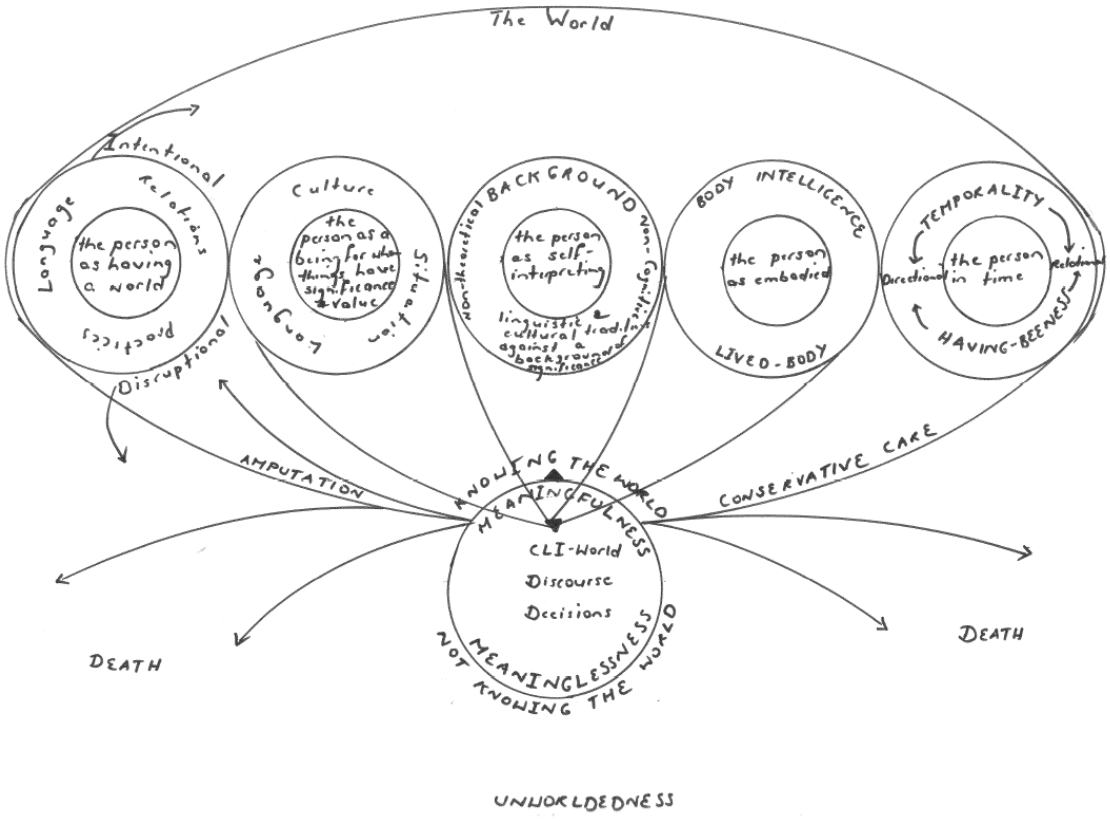
This visual format of the navigation pane facilitated seamless movement across a large document to, for example, quickly paste new data into an existing theme by simply clicking that heading in the navigation pane. It also facilitated the easy moving of whole sections of text to different parts of the document by dragging a subheading in the navigation plane to a new placement. As data analysis became more sophisticated, visualising the heading structures enabled a philosophically guided sense and understanding of the "whole" (tabulated thematic

list) and "parts" of the data (see Figure 1). This visualisation revealed that a restructure of the ideas was required to clarify the chronology and temporality of the CLTI experience. This provided context and ensured that the reconfiguration of sections was congruent with the parts against the whole. An early philosophical interpretation was then progressed between researchers using the "Insert Comment" function under the "Review" tab in Word to visualise emerging philosophical codes/rationale.

To assist the application of Leonard's (1989) summary of Heideggerian ideas, her conceptual work as it related to this themed data set was developed as a figure (Figure 2): the person as having a world; the person as a being for whom things have significance and value; the person as self-interpreting; the person as embodied; and the person in time.

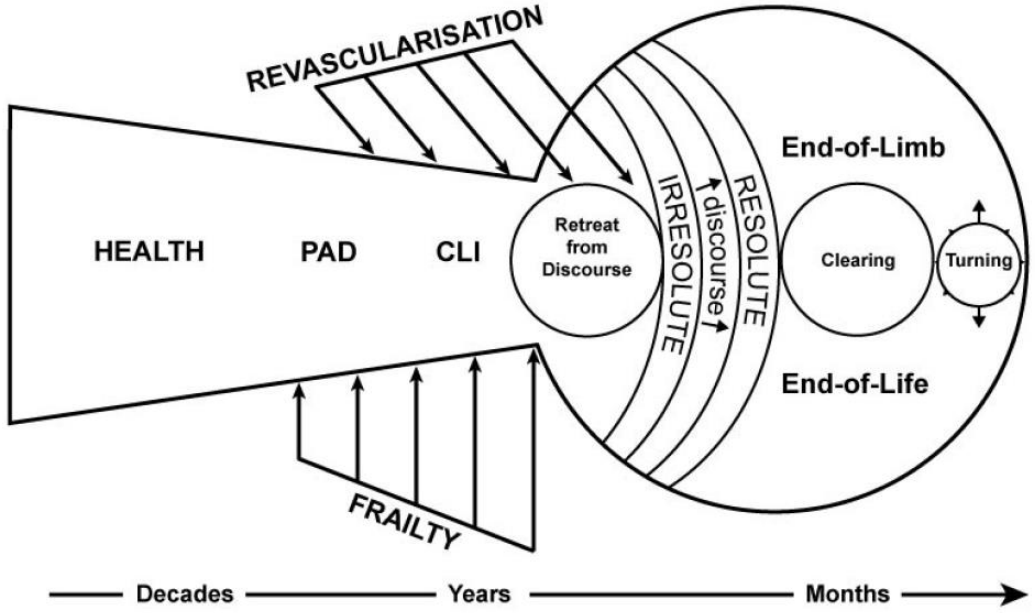
Figure 2

Superimposing Leonard's (1989) "Heideggerian concepts of the person" on the experience of CLTI) (Monaro, 2018)



Mind mapping was employed to draw out and connect ideas, challenge thinking, and explore analytical links between key thematic blocks (data display). These hand-drawn mind maps made visible the important stages of thinking and analysis: Figure 3 illustrates a representation of the temporality of disease progression. The process of mind mapping initiated thinking which linked the text (data) to the guiding framework for philosophical sensitivity. These mind maps were included in the methods section of the thesis.

Figure 3
Temporality of disease progression and making treatment decisions (Monaro, 2018)



Drawing (Tentative) Conclusions

The process of conclusion-drawing was tentative and iterative and required thorough immersion_in both the language and stories generated by the participants. Conclusion drawing spanned the life cycle of analysis – it began during transcription and then continued with repeated listening to recorded interviews while reading the transcripts. Such immersion required not only data familiarity but also a philosophically-informed response to the semantics (the meaning and intentions of participants words) and the syntax (the way words were arranged) (Gullick et al., 2017).

The analysis document containing the organised quotes (supported by the navigation pane) (Figure 1) was further developed by inserting initial descriptive analytic thinking using explanatory text to provide context and background to participant exemplars. This became richer and more nuanced as the staged theorising progressed (informed by van Manen, then Leonard, then Merleau-Ponty and Heidegger, enabled by mind-mapping).

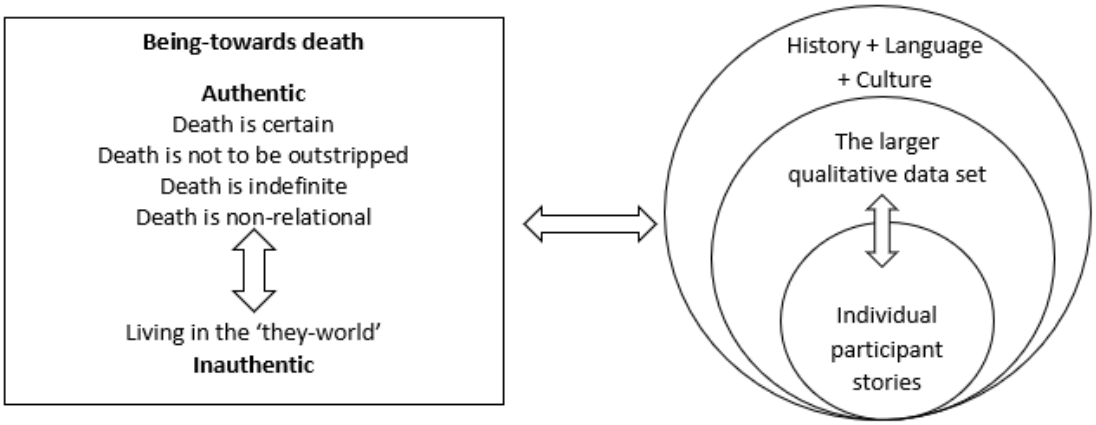
The process of working with the "parts" and the "whole" supported early *conclusion drawing* as individual words were considered against the context of a sentence, then parts of a participant's interview were interpreted against the whole of their interview. As part of the "whole" against which an exemplar (a part) could be examined, each participant's exemplar was preceded by relevant context (e.g., significant other, living environment, disease trajectory). The whole of the participant's interview was then interpreted against what was understood about the individual's health condition, their family, and their social world and culture.

Each interview was also considered against the whole of the other participants' aggregated data. Thus, the parts and the whole of the data were entered and re-entered to interpret the person and their family's experience. Collecting data at two references points: soon after the possibility of amputation had been raised (an interim understanding), and six months after it had been experienced (a more comprehensive temporal understanding), also facilitated further consideration of the "parts" and the "whole" relevant to this experience.

A structure for philosophically-informed conclusion drawing emerged from this process of moving between the parts and whole. Figure 4 illustrates this for two sections of the analysis by showing how hermeneutic interpretation moves between *the embodied disruption of CLTI* and Heidegger's philosophical structures of *Being-with;* a temporal sense of being already situated in the world, among others, with a sense of projected Being-towards (for example, the Heideggerian concept of Being-towards-death) (Monaro et al., 2021).

Figure 4

Analysis of Dasein with CLTI and Being-towards death (adapted (Monaro et al., 2021 and reproduced with permission).



An Application of Data Verification to Support Rigour

Processes for verification also spanned the cycle of analysis, ensuring the credibility of the research process. The initial, pre-reflexive ideas arising out of the data through early coding were initially generated independently by the group and consolidated by consensus. Data exemplars that had been cut and pasted from transcripts were labelled with the participant code and line number to ensure traceability. Pseudonyms were allocated to enhance the humanistic tone of the text and we used pseudonyms beginning with the same letter for linked participants (e.g., Michael and Mel) to make family connections easier to recognise.

After key concepts were themed, several iterations of document comparison occurred to capture any overlooked data/findings during data reduction: raw transcripts against original analysis, original analysis document against refined analysis (using the search function in word), and analysis using Van Manen's four existential concepts against the thematic structure in the final navigation pane.

In a further expression of data verification, the 32-item Consolidated criteria for Reporting Qualitative research (COREQ) reporting checklist (Tong et al. 2007) allowed reflection on elements of rigour expected for publication. However, not all points were relevant to phenomenological research, and these were thoughtfully rebutted.

Finally, a methods-specific framework provided the final structure to verification, as we sought congruence with de Witt and Ploeg's (2006) criteria for trustworthiness in interpretive phenomenological nursing research. These criteria and their application are detailed in Table 3.

Table 3
Criteria for rigour (de Witt & Ploeg, 2006)

Criteria	Demonstration
Balanced integration	The balance between the philosophical interpretation and the participants' voices; further grounding of the interpretation through carefully paraphrasing concepts from the philosophical texts to make the ideas accessible to readers who are not conversant with the dense philosophies. This paraphrasing also challenged the researcher to question the depth of their understanding.
Openness	Every time a research-related decision was made (e.g., data collection, changes to the analytical process, emerging ethical issues), they were documented in an audit trail. The developing philosophical understanding and the processes for getting there were exhaustively described in the thesis and subsequent publications, including the use of mind maps.
Concreteness	The data was considered in a way that was useful to practice – (the philosophical lens did not obliterate the clinicians apriori understanding and communication of the world of amputation). Enough context was provided to allow an informed reading of the data by others.
Resonance	The wording of themes allowed an intuitive grasp of the embodied meaning of something (for example, "creeping decay" to describe the impact of deteriorating peripheral ischaemia on the fleshiness of the body).
Actualisation	We looked for further realisation of the resonance of the interpretation through preliminary dissemination. We used feedback from conference attendees and peer-reviewers of manuscripts which compelled us to re-examine and refine the interpretation before final publication and/or thesis examination.

Discussion

The work of Miles and Huberman (1984) provided a useful framing for this paper and supported the idea that there is more that unites strong qualitative approaches than divides. It allowed us to explain the reduction of data from initial narrowing of the research interest to a research problem and articulating the sampling strategy, through to refinement of final themes and decisions about what and how to publish. It provided the opportunity to communicate the value of visual aids in displaying data to share ideas and enabled an explanation of the navigation pane as a simple but effective analytic tool for high-level analysis of a large and complex data set. Many of our verification strategies were common to other qualitative approaches and are described in qualitative reporting guidelines. The doctoral work that provided the vehicle for this paper started with the intentional use of Heideggerian philosophy, which required an eventual deep familiarity. This can be challenging for novice researchers who are simultaneously developing an understanding of general methodological rigour. In this case, a gradual introduction to philosophical thinking using the work of van Manen (2017) and Leonard (1989) provided an early establishment of assumptions, philosophical sensitivity, and a gentle immersion into these complex ideas. Growing expertise in applying Heidegger's (1927/1996) and Merleau-Ponty's (1945/1962, 1968) philosophies then provided analytical hooks on which to frame a nuanced philosophical interpretation. It is recommended that researchers who are new to interpretive phenomenology seek supervision and support from philosophical/methodological experts.

Implications for Practice

Research into complex illness experiences using philosophically-based, interpretative qualitative methods is challenging to novice clinical researchers. Phenomenology has specific considerations related to the philosophical framework which underpins interpretation. Clear and detailed articulations of such processes have been explained. Our use of Microsoft Word and the functionalities of the navigation pane generated by hierarchical heading styles, comments, and search functions provided techniques to manage and interpret large volumes of complex and diverse data. Mind maps are particularly useful data visualisation devices which increase the transparency of the analytic process. We have confirmed the value of Miles and Huberman's (1984) seminal text and have applied it to describe our analytical techniques and, in so doing, have provided granular guidance to clinicians commencing research using interpretive qualitative methodologies. Given the subjective, context-bound nature of qualitative research (acknowledged as a strength), the importance of a clear and extensive description of the research activities and processes of analysis is vital to help readers determine the strength and trustworthiness of their work to inform clinical practice. Many of the approaches described here are transferrable to a range of descriptive and interpretative qualitative methods. Establishing the specific criteria for rigour within one's chosen methodology and wrestling in a supportive manner with the underpinning philosophy or theory allows rigour to be fully realised.

References

Aho, K. A. (2010). *Heidegger's neglect of the body*. SUNY Press.

Atherton, A., & Elsmore, P. (2007). Structuring qualitative enquiry in management and organization research: A diologue on the merits of using software for qualitative data analysis. *Qualitative Research in Organizations and Management, 2*(1), 62-77. https://doi.org/10.1108/17465640710749117

Benner, P. (1994). *Interpretive phenomenology: Embodiment, caring, and ethics in health and illness.* SAGE.

Birt, L., Scott, S., Cavers, D., Campbell, C., & Walter, F. (2016). Member checking: A tool to enhance trustworthiness or merely a nod to validation? *Qualitative Health Research, 26*(13), 1802-1811. https://doi.org/10.1177/1049732316654870

Bong, S. A. (2002). Debunking myths in qualitative data analysis. *Forum: Qualitative Social Research, 3*(2). https://doi.org/10.17169/fqs-3.2.849

Caelli, K., Ray, L., & Mill, J. (2003). 'Clear as mud': Toward greater clarity in descriptive qualitative research. *International Journal of Nursing Methods. 2*(2), 1-13. https://doi.org/10.1177/160940690300200201

Collaizi, P. (1978). Psychological research as the phenomenologist views it. In R. Valle & M. King (Eds.), *Existential-phenomenological alternatives for psychology* (pp. 48-71). Oxford University Press.

de Witt, L., & Ploeg, J. (2006). Critical appraisal of rigour in interpretive phenomenological nursing research. *Journal of Advanced Nursing, 55*(2), 215-229. https://doi.org/10.1111/j.1365-2648.2006.03898.x

Dibley, L. (2011). Analyzing narrative data using McCormack's lenses. *Nurse Researcher, 18*(3), 13-19. https://doi.org/10.7748/nr2011.04.18.3.13.c8458

Dilthey, W. (1976). *W. Dilthey, selected writings* (H. P. Rickman, Ed., Trans.). Cambridge University Press, Cambridge.

Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *SAGE Open, 4*(1).

https://doi.org/10.1177/2158244014522633

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115. https://doi.org/10.1111/j.1365-2648.2007.04569.x

Frechette, J., Bitzas, V., Aubry, M., Kilpatrick, K., & Lavoie-Tremblay, M. (2020). Capturing lived experience: Methodological considerations for interpretive phenomenological inquiry. *International Journal of Qualitative Methods, 19*. https://doi.org/10.1177/1609406920907254.

Gadamer, H.-G. (1960). *Truth and method.* The Crossroad Publishing Company.

Giorgi, A. (2011). IPA and science: A response to Jonathan Smith. *Journal of Phenomenological Psychology, 42*(2), 195-216. https://doi.org/10.1163/156916211X599762

Goble, E., Austin, W., Larsen, D., Kreitzer, L., & Brintnell, E. S. (2012). *Habits of mind and the split-mind effect: When computer-assisted qualitative data analysis software is used in phenomenological research.* Paper presented at the Forum Qualitative Sozialforschung/Forum: Qualitative Social Research.

Gullick, J., Krivograd, M., Taggart, S., Brazete, S., Panaretto, L., & Wu, J. (2017). A phenomenological construct of caring among spouses following acute coronary syndrome. *Medicine, Health Care and Philosophy*, *20*(3), 393-404. doi: 10.1007/s11019-017-9759-0.

Gullick, J., Monaro, S., & Stewart, G. (2016). Compartmentalising time and space: A phenomenological interpretation of the temporal experience of commencing haemodialysis. *Journal of Clinical Nursing*, *26*(21-22), 3382-3395. doi: 10.1111/jocn.13697

Gullick, J., & West, S. (2019). Heideggerian hermeneutic phenomenology as method: Modelling analysis through a metasynthesis of articles on being-towards-death. *Medicine, Health Care and Philosophy, 23*(1), 87-105.

Gullick, J., Wu, J., Reid, C., Tembo, A. C., Shishehgar, S., & Conlon, L. (2020). Heideggerian structures of Being-with in the nurse–patient relationship: modelling phenomenological analysis through qualitative meta-synthesis. *Medicine, Health Care and Philosophy, 23*(4), 645-664.

Heidegger, M. (1927/1996). *Being and time: A translation of Sein and Zeit* (J. Stanbaugh, Trans.). State University of New York Press.

Jackson, K., & Bazely, P. (2019). *Qualitative data analysis with NVIVO*. SAGE.

Jootun, D., McGhee, G., & Marland, G. (2009). Reflexivity: Promoting rigour in qualitative research. *Nursing Standard, 23*(23), 42-46. https://doi.org/10.7748/ns2009.02.23.23.42.c6800

Leonard, V. (1989). A Heideggerian phenomenologic perspective on the concept of the person. *Advances in Nursing Science, 11*(4), 40-55. https://doi.org/10.1097/00012272-198907000-00008

Mackey, S. (2005). Phenomenological nursing research: methodological insights derived from Heidegger's interpretive phenomenology. *International Journal of Nursing Studies, 42*(2), 179-186. https://doi.org/10.1016/j.ijnurstu.2004.06.011

McConnell-Henry, T., Chapman, Y., & Francis, K. (2011). Member checking and Heideggerian phenomenology: A redundant component. *Nurse researcher, 18*(2). https://doi.org/10.7748/nr2011.01.18.2.28.c8282

Merleau-Ponty, M. (1945/1962). *Phenomenology of perception* (C. Smith, Trans.). Librairie Gallimard.

Merleau-Ponty, M. (1968). *The visible and the invisible*. Northwestern University Press.

Miles, M. B., & Huberman, A. M. (1984). Drawing valid meaning from qualitative data: Toward a shared craft. *Educational Researcher, 13*(5), 20-30.

https://doi.org/10.2307/1174243
Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed). SAGE.
Miles, M. B., Huberman, A. M., & Saldaña, J. (2019). *Qualitative data analysis: A methods sourcebook* (4th ed.). Sage.
Monaro, S. (2018). *Grappling with making decisions about amputation for Critical Limb Ischaemia: the patient and family experience.* (PhD), The University of Sydney, Sydney. Retrieved from https://ses.library.usyd.edu.au/handle/2123/20199
Monaro, S., Gullick, G., & West, S. (2019). The body with Chronic limb-threatening ischaemia: A phenomenologically derived understanding. *Journal of Clinical Nursing, 29* (7-8), 1276-1289.
Monaro, S., West, S., & Gullick, J. (2021). Chronic limb-threatening ischaemia and reframing the meaning of 'end'. *Journal of Clinical Nursing, 30*(5-6), 687-700.
Morse, J. (2015). Critical analysis of strategies for determining rigor in qualitative inquiry. *Qualitative Health Research, 25*(9), 1212-1222. https://doi.org/10.1177/1049732315588501
Paley, J. (2005). Phenomenology as rhetoric. *Nursing Inquiry, 12*(2), 106-116. https://doi.org/10.1111/j.1440-1800.2005.00263.x
Paley, J. (2016). *Phenomenology as qualitative research: A critical analysis of meaning attribution*. Routledge.
Paley, J. (2018). Phenomenology and qualitative research: Amedeo Giorgi's hermetic epistemology. *Nursing Philosophy*, e12212.
Rescher, N. (1997). *Objectivity: The obligations of impersonal reason*. University of Notre Dame Press.
Sandelowski, M. (2000). Combining qualitative and quantitative sampling, data collection, and analysis techniques in mixed-method studies. *Research in Nursing & Health, 23*(3), 246-255. https://doi.org/10.1002/1098-240x(200006)23:3<246::aid-nur9>3.0.co;2-h
Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing & Health, 33*(1), 77-84. https://doi.org/10.1002/nur.20362
Sheils, S., Mason, S., & Gullick, J. (2019). Acceptability of External Jugular Venepuncture for Patients with Liver Disease and Difficult Venous Access. *Journal of the Association of Vascular Access, 24*(2), 9. Smith, J., Flower, P., & Larkin, M. (2009). *Interpretative phenomenological analysis: Theory, method and research*. Sage.
Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care, 19*(6), 349-357. https://doi.org/10.1093/intqhc/mzm042
Tuohy, D., Cooney, A., Dowling, M., Murphy, K., & Sixsmith, J. (2013). An overview of interpretive phenomenology as a research methodology. *Nurse Researcher, 20*(6). https://doi.org/10.7748/nr2013.07.20.6.17.e315
van Manen, M. (2003). *Researching lived experience: Human science for an action sensitive pedagogy*. The Althouse Press.
van Manen, M. (2017). Phenomenology in its original sense. *Qualitative Health Research, 27*(6), 1-16. https://doi/10.1177/1049732317699381
van Manen, M. (2018). Rebuttal rejoinder: Present IPA for what it is – interpretative psychological analysis. *Qualitative Health Research, 28*(12), 1959-1968. https://doi.org/10.1177/1049732318795474
van Manen, M. (1997). From meaning to method. *Qualitative Health Research, 7*(3), 345-369. https://doi.org/10.1177/104973239700700303
van Manen, M. (2016). *Phenomenology of practice: Meaning-giving methods in*

phenomenological research and writing. Routledge.

Author Note

The authors, Sue Monaro (https://orcid.org/my-orcid?orcid=0000-0002-4172-4932), Janice Gullick, and Sandra West, work in the Susan Wakil School of Nursing and Midwifery in the Faculty of Medicine and Health at the University of Sydney, Australia. This body of work arises from a PhD that used phenomenology to explore the patient and family experience of chronic limb-threatening ischaemia. The research team has collaborated on other projects and have created a community of practice for qualitative research in clinical settings.

Correspondence concerning this article should be addressed to Sue Monaro, Level 3 West Cardiovascular Ambulatory Care, Concord Repatriation General Hospital, Concord, New South Wales, 2138, Australia. Email: sue.monaro@health.nsw.gov.au

Article Citation

Monaro, S., Gullick, J., & West, S. (2022). Qualitative data analysis for health research: A step-by-step example of phenomenological interpretation. *The Qualitative Report, 27*(4), 1040-1057. https://doi.org/10.46743/2160-3715/2022.5249