


Processual Validity in Qualitative Research in Healthcare

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Abstract

Knowledge development has been continuously challenging. Qualitative research seems to be promising; however, there are difficulties and complexities involved, one of which is validity. Qualitative research is based on different paradigms, ontologies, theories, and methods, and validity assessment may vary. We argue that processual validity can positively influence qualitative health care research. Processual validity is a methodological construction that involves all research steps, including those before and after data collection and analysis. We selected a processual validity model and two cases to illustrate its use and demonstrate processual validity's importance and applicability. One case explores the gap between medical education and patients' needs in primary health care. Other studies focus on health care improvements in hospitals. Our results highlight the benefits of processual validity to ensure the transparency and reliability of the research process and provide evidence of the findings to positively influence thinking and the execution of qualitative research in health care.

What do we already know about this topic?

Although qualitative research represents a broad range of traditions and the research design and methods can differ significantly from one study to another, there is a growing consensus about preoccupation with and adoption of rigorous quality criteria. Some scholars prefer to treat qualitative validity in the same way as quantitative validity. Other scholars prefer radical positions, such as eschewing validity. However, most qualitative researchers prefer a balanced method, where it is possible to guarantee some level of quality and flexibility. However, processual validity has only recently been treated as a scientific base. Thus, every stage of qualitative research is significant, and a processual approach to ensure validity can influence the quality of the evidence generated.

How does your research contribute to the field?

Understanding and ensuring research quality are crucial for science and practice. Our research provides additional insights for enhancing the credibility of qualitative research. Health care researchers that adopt the processual validity approach can build *ex-ante* field research validity, validity at moments of truth (during fieldwork), and *ex-post* field research validity.

What are your research implications for theory, practice, or policy?

The proposed and assessed processual validity approach is intended to deal with different perspectives of qualitative studies, with diverse quality dimensions resulting from various epistemological and ontological positions. In maintaining the flexibility, these different views on doing qualitative research require, the processual approach is intended to improve the quality of the entire research process and, consequently, of the evidence generated, including validity-related actions at all research steps. Thus, our processual validity approach benefits researchers and practitioners by describing validation actions at all steps of the qualitative research process and providing a structured approach to develop better qualitative health care research practices.

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Keywords

validity, processual validity, qualitative research, healthcare

Introduction

Society and the scientific community are undergoing significant changes. New technologies, new approaches to non-mainstream problems, and even the revival of old situations (the novel coronavirus [Covid-19] pandemic) have been challenging science to come up with new solutions and more knowledge. In this context, health care and its practices exhibit geographical and social characteristics that must be considered in research design and validation procedures.¹

Although quantitative research approaches in health care are well represented, the potential of qualitative research is still underrepresented or misunderstood.² Lack of training in and for qualitative methods,³ as well as lack of transparency and secure evidence in published qualitative articles,⁴ coupled with the deep, intrinsic relationship between qualitative research and the philosophy of science,⁵ are some of the difficulties that concern qualitative methods in the field. Although these difficulties are Herculean, the rewards are promising.⁶ High-quality qualitative research can lead to insightful contributions to providing secure evidence for decision-making in health care⁷ by answering what, how, and why questions about the social aspects of our society's current health and health care problems.¹

Qualitative research is promising, albeit with new challenges, such as thinking about the criteria needed to obtain high-quality research.⁹ Given that there are many different approaches to qualitative studies, the criteria can differ.^{10,11} However, there is a growing consensus about preoccupation with and adoption of rigorous quality criteria.^{12,13} The present article does not offer an extreme or "one best way" answer regarding the different qualitative research approaches; rather, it is an attempt to promote dialog and development in the field in order to improve the quality of qualitative research.^{14,15} This article proposes a flexible and prudent way to ensure quality through the elicitation of different research steps. At each step, there are activities to construct and enhance validity and overall quality. Qualitative researchers should manage their ability to attend diverse activities from the beginning to the end. The processual approach is not a straitjacket to define what activities should be performed because it depends on the nature and purpose of the research project. Several researchers have reported different concepts of quality and rigor, such as trustworthiness and appropriateness, defining them as proxies to highlight the intellectual effort involved in and the seriousness of the research,^{16,17} or as "accountability" to the scientific community, readers, and the researched people.¹⁸ However, the problem is not the label or the concept per se, but rather the

need to adopt a broader view of rigor in qualitative research. However, a major concern regarding qualitative research is the great variety of epistemic, philosophical, and ontological aspects involved.^{13,14,18} Recent evidence suggests that some structured ways of dealing with the diverse quality dimensions of qualitative research, such as internal and external validity, reliability, objectivity, credibility, transferability, dependability, and confirmability,¹⁹ can facilitate the teaching and diffusion of acceptable qualitative research practices.²⁰

Qualitative validity is also too important and rich to be based on only a few fixed measures at the end of the study, such as Cronbach's alpha among the quantitative research methods.^{21,22} Every stage of qualitative research is significant, and a processual approach to ensure validity can influence the quality of all stages.^{13,14} The process is the heart of our understanding of qualitative research, considering duration and movements, conscience and liberty, knowledge and reflection, experience and interpretation, and researcher and researched matter.²³

Thus, this article aims to explore the application of the processual validity approach, which was developed in the context of the social sciences, to the specific context of health care.^{1,24} Two healthcare case studies were analyzed to explore the approach's applicability and the benefits obtained. The benefits are threefold. First, a processual approach can highlight a means to obtain a rigorous, quality research process and secure evidence of the results and findings in qualitative studies. Second, a processual approach may reinforce the importance of qualitative research in the field. For example, Lee et al.²⁵ used a qualitative method to develop a better understanding of the social and cultural factors affecting Cambodian-American refugees/immigrants and constructed a tailored research instrument for investigating hepatitis B virus (HBV) and human papillomavirus (HPV) prevention behavior. Third, a processual approach is useful to gain a better understanding of the nature and challenges of qualitative research, mainly through opportunities to break with the dualism and separation of researchers and participants,²⁶ while also promoting systemic reflexivity and a self-conscious research design for or between researchers.^{23,27}

Processual Validity

In qualitative research, validity does not present a unitary concept.^{12,28} Therefore, a processual approach may offer qualitative research more flexibility to adapt projects to different situations, contexts, epistemological paradigms, and personal styles in conducting research. In addition, qualitative methods should not use very strict or "one best way" strategies.²⁹ Moreover, in qualitative research, all steps matter.

From the beginning of problem construction to the delivery of articles and the final report, preoccupation with and surveillance of validity should be constant.²⁴ Furthermore, processual validity is not a checklist,^{6,30} and it can positively influence research toward holism.³¹ Processual validity is a methodological construction that involves all the research steps, including those before and after field data collection and analysis.

In other words, the processual operationalization of validity can be planned and implemented in the following sequence: *ex-ante* field research (Step A), moments of truth (Steps B, C, D), and *ex-post* field research (Step E). Although the framework is organized linearly, conducting research implies transversal activities such as reflexive analysis and triangulation.

Step A—Ex-ante Field Research

This step includes activities to get acquainted with the research field; establish the research domain, design, and limits; converse with experts and/or visit the field with a broad and open mind; plan the formal research with its protocols and objectives; and develop a pilot test. On the other hand, prolonged engagement, assessing whether the research subject is exciting and innovative, and forecasting theoretical contributions are critical validity criteria.¹⁷ Furthermore, qualitative research is time-intensive;³² the researcher requires time to go beyond the studied phenomenon's superficial responses.

Adopting some authors'¹⁹ definitions of the dimensions of qualitative validity, the *ex-ante* field research step contributes to assessing the research process's reliability and transferability.

Steps B, C, and D—Moments of Truth

Step B comprises participant or non-participant data collection using interviews, focal groups, virtual interactions, etc. Step C includes analyzing and codifying the data, structure concepts, and developing categorical evidence and connections. Step D includes activities that support the construction of illations through reflection and reflexivity, the saturation and triangulation of refined data, and temporary knowledge of the phenomenon. Reflection is to "think about it,"²³ whereas reflexivity is an immensely personal and intimate experience that is very close to the researcher. Therefore, prolonged engagement; persistent observation; detailed and rich descriptions of concepts, categories, and structures and processes revealed by the data; explicit separation of the first- and second-order findings; triangulation of data types; interrater reliability; negative case analysis (reflexivity); clarifying researcher bias; peer debriefing; and member checks are important qualitative validity techniques.¹⁷

On the other hand, data integrity, meticulous data management, and recording, that is, verbatim data transcriptions, careful observation notes, clear notes on theoretical and methodological decisions, and accurate records of contacts

and interviews, as well as a balance between subjectivity and reflexivity, should be considered as validity techniques involved in qualitative research.³³ In addition, saturation occurs when the researcher continues sampling and analyzing rich and diverse data until no more useful data or information emerges.³⁴ In other words, even with additional effort and time, there are no further incremental improvements in quality and knowledge if saturation is achieved.

Finally, some authors^{35,36} have observed the importance of verifying with the interviewees whether the data were correctly understood and receiving feedback on the content of the research report. All tools and techniques contribute to ensuring overall qualitative validity through different steps and activities.³⁷

Following some authors,¹⁹ important dimensions of the qualitative validity of the research process to assess moments of truth are reliability, objectivity, and transferability of the research process, as well as the credibility of the results obtained.

Step E—Ex-Post Field Research

This step comprises the communication and discussion of the findings and results with other researchers through the presentation of conference papers and submission to peer-reviewed academic journals. Criteria that contribute to the validity of qualitative research are accountability to the scientific community, readers, and the researched people,¹⁷ and the clear communication of findings.¹⁹ In addition, it is important to verify the findings in the "real world" and with other stakeholders, such as the community and journalists, for instance, to obtain insights for generalization and even serendipity.³⁸ The actions researchers perform at this step contribute decisively to assessing the dependability of the entire research process and the confirmability of the results obtained.

All the steps involved in processual validity matter, and personal and/or group debriefing and reflection are constant. Moreover, the researcher engages in continuous analysis in the field, as the senses capture, select, and analyze everything.³⁹ In a sense, processual validity implies the importance of verification strategies and the need for preoccupation with different stages of the research process and the researchers.⁴⁰ Thus, researchers are essential knowledge construction players in processual validity due to the research field and researchers' interactions at different times and moments. The process is ongoing, and prudence, transparency, conscience, and attitudes represent essential aspects of qualitative researchers' skills.²⁴

Illustrative Cases

To demonstrate the importance and applicability of processual validity, we selected two illustrative cases (Cases 1 and 2) based on the following criteria: knowledge field, health care, and its practices; research articles recently published (2019 or after) in high-quality peer-reviewed journals (impact

factor higher than 1.0 or H index higher than 40); access to complete information about the research and methodological choices; research involving different research strategies and designs (i.e., exploratory, descriptive, or explanatory studies, and cross-sectional or longitudinal studies) as well as different methods (i.e., case studies and qualitative inquiries), and research based on different data collection procedures and data analysis methods.

Analysis of Illustrative Cases

Case 1⁴¹ explores the gap between medical education and patients' needs in primary health care, especially for the most vulnerable population. Strong social inequalities characterize Brazil, and one of the challenges for medical education is to overcome the biomedical paradigm, which is physician- and hospital-centered, and move toward primary health care practices centered on the suffering individual, who is inseparable from their social condition. This investigation used formative evaluation documents, namely field records (i.e., weekly field journals, final reports, and focus group transcripts produced by medical students during a 22-week internship course). To analyze these data, the authors adopted a critical approach grounded in dialectical hermeneutics, cultural-historical activity theory, and the sociocultural theory of learning. In addition, the authors grouped the narratives into five axes. As a result, the research shows how internships reduce the gap between clinical views and user needs.

Case 2⁴² presents a qualitative study to explain health care improvements. The authors emphasize the complexity of healthcare organizations. They continuously seek to improve the population's health and patient experience, while simultaneously attempting to reduce costs and adopt quality improvement strategies. An explanatory case study was conducted at a university hospital. Thirty semi-structured interviews and 250 hours of observations were recorded over 3 years, and 198 reports were gathered. Data were structured and submitted for content analysis based on complexity theory and the adaptive leadership framework. The results showed that quality improvement efforts could benefit from an understanding of the importance of learning and sharing responsibility to deal with the coexisting degrees of contextual complexity in modern health care.

Our Analysis of the Two Cases Followed the Processual Validity Approach

Step A: *Ex-ante* field research aims to establish the research domain, define the subject of investigation, and recommend previous immersion in the field. At this point, both studies describe previous exposure to the field. Case 1 analyzed data from a course assessment based on the weekly field journals (22) of 55 medical students from two different semesters for a duration of one semester. Four weekly field journals and final

reports were selected from this database and analyzed (pre-analysis) to build a preliminary analysis grid. One of the researchers worked as a doctor for several years and developed a critical approach to analyze the data. In Case 2, the authors selected a university hospital to study changes and improve health care. This research was linked to a broader research project at the university. Intensive study of the health sector and in-depth description of the environment and the case facilitate comprehension of the field and the research objective. We found a detailed description of the selected research field and how data were collected in both cases.

The first step of the processual approach aims to foster the researchers' attention to better understand the object and the studied phenomenon, thus amplifying their perception of the entire context. Contextual information helps the external observer to get a better sense of the "big picture" and, consequently, of the subtle nuances. Detailed information about the context is needed to increase the results' credibility.⁴³

Step B concerns data collection. Both cases used a considerable amount of secondary data and several sources to gather data for their investigations. The Case 2 database comprised 22 weekly field journals and final assessment reports produced by 55 students from two different semesters of a medical internship. These reports were developed by medical students and sent to their supervisors. The supervisors returned them with feedback, and final reports were formulated at the end of the internship. Additionally, the researchers used data from focus groups conducted with students at the start and end of the internship to assess their learning experience in contact with patients. In Case 2, data were collected over 3 years. A total of 198 documents (working documents, process maps, presentations, meeting notes, action plans, hospital reports, newspaper articles, and departmental newsletters), 30 semi-structured interviews with people involved with the research problem, and 250 hours of observations conducted in camps, meetings, and workshops composed the data collected. The extensive time the first author spent in the field was integral to collecting this volume of data from different sources, making triangulation feasible.

Step C comprises data codification and analysis. Case 1 used four field reports to perform a pre-analysis and 20 reports—10 field journals and final reports and 10 focal group transcripts (5 from the start and 5 from the end of the course)—to structure the final analysis. Case 2 shows the researchers' prolonged field exposure (from 2013 to 2018). The first author spent 100 hours in workshops/seminars and 185 hours attending internal meetings. To manage all the data and organize and structure it chronologically and thematically, NVivo software was used.

At Step D, both studies used several data sources to deepen the data analysis by providing multiple detailed descriptions of the phenomena. The adoption of different sources facilitates in-depth analysis and enables researchers to create data

Table 1. Recommended actions and elements and activities analyzed.

Step	Recommended Actions	Case 1	Case 2
A—Field immersion (before data collection)	<ul style="list-style-type: none"> - Self-immersion in the field - Read previous research in the same field - Attend conferences, symposiums, and events related to the research field - Interview or dialog with key actors (in loco participation) - Pilot test 	One author who conducted the research worked in the research field for several years as a doctor and sought information to make the first approach to the field data	The research was linked to a broader research project developed at the university. A previous study on the health sector conducted by the first author, together with the field research, an in-depth analysis of the case, and exploration of the environment favored immersion in the research field
B—Data selection (during data collection and analysis)	<ul style="list-style-type: none"> - Check available data from secondary sources - Use several data sources to make triangulation feasible - Explain how the respondents or informants were selected - Call field experts to analyze the selected informants 	The case used secondary data from 22 weekly field notes from final reports and focus group transcripts produced by 55 students from two different semesters of a medical internship. These data were collected in 2017 to assess the students' learning experience. Twenty field reports—10 weekly field journals and final reports, and 5 transcripts from focus groups held at the start and 5 held at the end of the internship—were selected and analyzed	This research used both primary and secondary data. Thirty semi-structured interviews were conducted with representative people involved in the change process in health care (12 managers and 18 randomly selected staff). Additionally, observations totaling 250 hours were held, and 198 documents were used to complete the dataset.
C—Data codification (during data collection and analysis)	<ul style="list-style-type: none"> - Adopt a timeline to organize all the collected data before starting the codification - Use two-step codification to enable code adjustments during data analysis - Use codification checks with research participants - Test interrater reliability - Use software to organize a large amount of data 	Researchers used a two-step codification process. After reading 4 field notes and final reports, a preliminary analysis grid was developed. Further, 20 additional field notes (10 weekly journals and final reports and 10 focus group transcripts) were selected to develop the final analytical grid used to code and analyze the data. The selection criteria were students' reflexivity in their reports and parity between student gender and semester of inscription. A dialectical hermeneutics approach was adopted to critically analyze the data. Analytical saturation was obtained with 20 reports	Data from interviews and observations were transcribed verbatim. To store and code all the data collected over the 3 years, data were organized chronologically and then thematically. The first author performed qualitative content analysis of the interviews and observational field notes, and organized the observational field notes and 86 documents containing relevant information, as well as other documents and field notes. Follow-up interviews were conducted with department managers to validate this analysis. NVivo was used for codification (1100 codes were extracted and categorized). Coding and subsequent analysis were done in English to involve all the authors in strengthening trustworthiness and mitigating the bias risk
D—Data comprehension (after data analysis)	<ul style="list-style-type: none"> - Use the triangulation of several sources - Use of reflexive analysis - Check the data saturation using different datasets or extended time in the field 	The use of several reports and field notes complemented by focus group data supported the critical approach to enhance understanding of the studied phenomena	As part of the larger project, there was triangulation between several complementary studies. A consistent set of theories and frameworks was used to provide broader perspectives on the identified empirical patterns
E—Discussion of results (after data analysis)	<ul style="list-style-type: none"> - Attend conferences - Present the concepts and or pre-results in doctoral consortia - Discuss with peers and specialists 	A paper related to the thesis was presented at the 21 st world conference of family doctors. One of the co-authors served as a family doctor working at the Rio de Janeiro city hall	Throughout the research, results were presented at the ECIC 2017 and further discussed at the EAWOP research seminar with different peers in a different country. This research (a doctoral thesis) had one supervisor and three co-supervisors

and theoretical triangulation. Thus, compiling different pieces of knowledge favors saturation.

Step E consists of *ex-post* field research and is related to discussing the results with peers and other researchers to complete the theorization process. Researchers should attend scientific events, and peer reviews should be administered to assess the communication of the results. At this step, Case 1 reinforces the findings through one researcher's practical activities as a family doctor working at the Rio de Janeiro city hall. In addition, an article was produced and presented at the 21st World Conference on Family Doctors. Case 2 used several sources to validate the analysis and results. This was first done with the head of the studied hospital and the research project's three co-supervisors (a PhD thesis). One author also attended the ECIC—European Congress on Intrapartum Care—2017 conference as a speaker and Dublin's EAWOP—European Association of Work and Organizational Psychology—research seminar. This step is particularly important for improving and deepening knowledge because it represents an opportunity to receive criticism, comments, and suggestions, and refine the results.

Based on our literature review, a summary of recommended actions to be taken at the various steps that comprise the processual approach as well as a synthesis of the elements and activities analyzed in the two cases are presented in Table 1.

It is important to highlight that all steps are recursive. More than standard criteria, qualitative research depends on the researcher's prudence, transparency, conscience, and attitudes.²⁴ Ensuring research validity can be laborious; our processual framework seems to help researchers with this relevant task.

Discussion, Implications, and Conclusion

As we pointed out, all the steps involved in processual validity matter, and the proposed integrated approach helps to appropriately link researchers, fields, and data to obtain high-quality results. Both cases illustrate the five processual validity steps, demonstrating the benefits of adopting good research procedures to promote reflexivity and increase the rigor of the study and the quality of the results.

Analyzing the research procedures adopted in Case 1, we first highlight participants' representativeness, a detailed explanation of the data used, and the researcher's prolonged exposure to the field. One of the co-authors works as a family doctor. Understanding the field helps the researcher appropriate the "field's language," which improves open coding procedures when analyzing the data. The researcher then used double coding techniques (provisional and final analysis grid) and several data sources, which facilitated triangulation and helped engage in reflection and achieve saturation. The adoption of dialectical hermeneutics to analyze the data made it possible to combine interpretive and critical elements, dive deeply into the phenomenon, and promote systematic reflexivity regarding how to make medical students' internships more effective and more closely aligned with the most vulnerable population's primary

health care needs, thus improving the study's social relevance. Analyzing the dimensions of validity in Case 1, the transparency of the hermeneutic data analysis process was weak. Missing details compromise reliability and transferability. Rigor in hermeneutic research is much more processual than in methodological research, once the researcher is at the center of the process.¹⁴ In addition, discussion of the results in the *ex-post* step of the field research has not been detailed, weakening the confirmability of the findings.

In Case 2, the researcher also had long field exposure, but the methodological approach was different, as it was a positivist case study. The data were coded and analyzed using *ex-ante* analytical categories from two theoretical frameworks and qualitative content analysis. The authors of this article fulfilled all five processual validity steps of the proposed approach, showing high rigor, objectivity, and credibility to secure evidence. A significant difference between studies is related to the delimitation of the five steps identified in Case B and is a consequence of a more objectivist approach.

In a sense, processual validity attempts to create harmony and equilibrium between the "big picture" of the event's context and the subtle details. In addition, the field and scientific peers can influence approximation, mainly at the last step (E) in the framework. Therefore, a sense of objectivity and intersubjectivity is a condition *sine qua non* for the quality of qualitative research.

This paper argues for the benefits of adopting a processual approach to validity in health care research. However, both case studies are exploratory, with inherent limitations concerning data and literature. Consequently, it was impossible to present more explanatory conclusions, and further research is required.

Regardless of the qualitative researcher's epistemological or ontological position, the procedural approach to qualitative studies' validity proved useful and applicable. According to the proposed framework, we aimed to improve the quality of qualitative research in health care, while helping to clarify some misunderstandings and providing conditions for continuous research development.^{9,38} The qualitative researcher is not just at the center of the research process; they are also the manager of an *equilibrium* between the creativity of the arts and the rigidity of science. Hence, every step matters for continuous co-construction.^{23,37} High-quality qualitative research can yield insightful contributions to providing secure evidence for health care decisions.³⁹ Thus, in a modified quote, "Validity is not a destination; it is a way of thinking, doing, and living research."

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