Seven steps for qualitative treatment in health research: the Clinical-Qualitative Content Analysis

Sete passos para o tratamento de dados qualitativos em pesquisa em saúde: a Análise de Conteúdo Clínico-Qualitativa

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Abstract Qualitative Health research procedures that are not always applied, mainly in the analysis phase. Our objective is to present a systematized technique of step-by-step procedures for qualitative content analysis in the health field: Clinical-Qualitative Content Analysis. Our proposal consider that the qualitative research applied to the field of health, can acquire a perspective analogous to clinical practice and aims to interpret meanings expressed in reports through individual interviews or statements. This analysis takes part of the Clinical-Qualitative Method. The literature review was realized through: a book chapter, eight original articles and three methodological articles. The Clinical-qualitative Content Analysis technique comprises seven steps: 1) Editing material for analysis; 2) Floating reading; 3) Construction of the units of analysis; 4) Construction of codes of meaning; 5) General refining of the codes and the Construction of categories; 6) Discussion; 7) Validity. The clinical-qualitative analysis presupposes and involves a critical reflection on the processes carried out at each step. This reflection is an extremely rich process, if carried out collectively and in dialogue with other researchers with some proficiency in qualitative methods.

Key words Qualitative Research, Qualitative Analysis, Methodology, Health Sciences

Resumo Os procedimentos da pesquisa qualitativa em saúde nem sempre são bem aplicados, principalmente na fase de análise de dados. Nosso objetivo é apresentar uma técnica sistematizada de procedimentos, passo a passo, para análise de conteúdo qualitativo no campo da saúde: A Análise de Conteúdo Clínico-Qualitativa. Nossa proposta considera que a pesquisa qualitativa aplicada ao campo da saúde, pode adquirir uma perspectiva analógica à prática clínica e visa interpretar significados expressos em relatos por meio de entrevistas ou depoimentos individuais. Esta análise faz parte do Método Clínico-Qualitativo. A revisão de literatura foi realizada por meio de: capítulo de livro, oito artigos originais e três artigos metodológicos. A técnica de Análise Clínico-Qualitativa de Conteúdo compreende sete passos: 1) Edição de material para análise; 2) leitura flutuante; 3) Construção das unidades de análise; 4) Construção de códigos de significado; 5) Refinação geral dos códigos e construção de categorias; 6) Discussão; e 7) Validade. A análise clínico-qualitativa envolve uma reflexão crítica sobre os processos realizados em cada etapa. Essa reflexão é um processo extremamente rico, se realizado coletivamente e em diálogo com outros pesquisadores com alguma proficiência em métodos qualitativos.

Palavras-chave Pesquisa Qualitativa, Análise Qualitativa, Metodologia, Ciências da Saúde

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Introduction

The interesting in qualitative research in the field of health stems from the fact that it allows us to understand in depth the psychosocial meanings in this scenery which cannot be answered by quantitative studies. It deals with life experiences of those involved in health-illness processes; with the interpersonal relations in health settings; with the characteristics of the clinical services, physical environments and the professional, among others. Qualitative method is especially appropriate to health environments research because can provide answers about how people feel about a particular space. Thus, many researchers from other methodological traditions in the health field are increasingly concerned with understanding qualitative methods, their application and results. Nevertheless, we perceive that qualitative research still has procedures that are not always understood and applied. The interchangeable use of methods and analysis strategies is a great problem, exposing the lack of clarity on the definition of the methodological path chosen. In this way, the rigor of the method is compromised. In the rigor of the method, we understand that the criteria of each study design, because they are different, should be described and contextualized from their own conceptions of knowledge and truth. For this reason, the epistemological description and foundation of each analysis strategy are so important.

Qualitative methodology encompasses several study modes, such as: grounded theory; phenomenological research; ethnography; psychoanalysis; among others. There are different schools of thought under the paradigm of qualitative research whose methods are derived from multiple humanistic disciplines with their own particular language. As a rule, when one of these formats is employed, it is defined as containing main three modalities: (1) in-depth individual or group interviews, (2) direct observation consisting of detailed descriptions of people’s activities, behavior and interactions and (3) written data, usually taken from quotations, excerpts, extracts from personal diaries, reports, medical files and open answers to questionnaires. Qualitative research “addresses the knowledge of a complex object: the subjectivity” and understands the researched subject as an active agent throughout the research and not simply as a reservoir of answers.

For Denzin and Lincoln, qualitative researchers scrutinize their object of study in its natural setting, endeavoring to interpret phenomena in the light of the meaning people attribute to them. This task in itself denotes that in this research model, the researcher has a different participation from the quantitative researcher. The presence of the researcher in the interactive situation represents an element of meaning that affects the involvement of the subject under study with the research in multiple ways. Thus, the importance of the researcher’s affinity with the epistemology of qualitative research and expertise in the methodological technique used becomes of paramount importance.

Minayo postulates that to do Science is to work simultaneously with theory, method and techniques, within a perspective in which this trio mutually conditions itself. To this trilogy can be added that the quality of an analysis also depends on the researcher’s art, experience and the capacity to go into depth.

As the researcher composes his worked a practical involvement with the method and with the object of study and context are required. The involvement is of such importance that qualitative methods demand an acculturative phase. This initial phase, prior to the data collection, comprises a period in which the researcher establishes a direct relationship with the population to be studied and making use of the language and ways of thinking of this population, making it possible to assign the method to be used and to refine the data collection.

Connelly and Peltzer describes three problems in qualitative methodological articles: unclear relationship to the underlying research method; depth in interviewing techniques, and lack of depth in the analysis. Those authors emphasized the importance of the time and effort that qualitative research requires of the researcher. A qualitative researcher should permanently improve their skills and practices.

Part of the quality of qualitative research stems from its very execution, its modus operandi in processing the material collected throughout the study, mainly from the data analysis phase. The analysis of qualitative data marks the challenging state when the researcher develops an understanding of the life experience of the participant(s) based on the objective of his study. Pope et al. affirm that qualitative research can produce great quantities of textual data. A thorough preparation and data analysis takes time and intensive effort, but they should not be seen as a systematic and rigorous analysis since analysis of textual data depends on the inductive and
analysis is a widely used qualitative research technique and shows different approaches. These approaches are used to interpret the meaning of the data content. The authors show the importance of delimiting the specific approach to content analysis they are going to use in their studies.

In light of these findings, the aim of this conceptual text is to present a systematized and concise technique of step-by-step procedures for qualitative content analysis in the health field, that here we call Clinical-Qualitative Content Analysis (CQCA). This article seeks to instrumentalize in a clear and simple way the health researcher that intends to do qualitative research. While the method points the way forward, we intend to demonstrate how this way must be covered in content analysis in order to arrive at qualitative research results.

Methods

In Brazil, many researchers consider that the qualitative research design, when applied to the field of health, can acquire a perspective analogous to approach in clinical practice, thus the denomination: clinical-qualitative content analysis CQCA. This analysis takes part of the Clinical-Qualitative Method (CQM) that is considered as a specific refinement of the qualitative methods emanating from the Human Sciences and particularly applied to the field of health. It is a method that seeks to understand and interpret the psychological and psychosocial meanings that the individuals involved in the setting of health give to phenomena in the health-disease field. The Clinical-qualitative methodology has three together pillars that sustain the method and make it unique: 1) Clinical Approach: The researcher should use their clinical training for looking at those who carry a pain. A clinical approach is necessary in different phases of the study: data collect and data analysis; 2) Existentialist Approach: there is an existentialist demand of the patients and relatives studied, who suffer with their illness and reported it. This pillar is referred to as human anguish. We consider here the concept of anguish by Kierkegaard; 3) Psychodynamic Approach: use of conceptions of psychological theories that consider the dynamics of the individual’s unconscious, both for the construction and application of techniques and instruments, and for theoretical reference in discussing the results.

We conceive that CQM can be defined as the study and construction of the epistemological limits of a certain qualitative method particularized in health settings, as well as the discussion about a set of techniques and procedures to describe and understand the meanings of human’s phenomena in this field. The approach of the method is interpretative and not descriptive. The Clinical-Qualitative method was born from the experience of clinical assistance to patients, recognizing the conscious and unconscious emotions present in the patient’s relationship with family members, health professionals and physical infrastructure of health services as facilitators or obstructers to patient adhering treatment.

The CQM has been developed and applied for the past 20 years, in investigations carried out by the Laboratory of Clinical-Qualitative Research (LPCQ), at the Faculty of Medical Sciences, State University of Campinas. It aims to register and analyze senses and meanings attributed by persons to phenomena relating to getting ill and caring their health problems. These are studies on the life experiences of patients, family members, members of the healthcare team and the community, already published in several scientific articles, as for example.

This article is part of an in-depth study of the CQ, through the experiences of the researchers from LPCQ. The proposal of systematization step by step of a qualitative analysis data is to instrumentalize researchers who aim to study the subjectivity and feelings of the people involved in the health setting. It is important to emphasize that the biomedical research model is predominant in this area of knowledge. Our study is grounded in literature consecrated in the area of qualitative research.

The CQCA was developed from content analysis of Bardin. She proposed a consistent organization to produce scientific knowledge and understand meanings. The CQCA approaches the essence of the content analysis proposed by Bardin and described by Downe-Wamboldt as a technique that aims to provide insights from the phenomenon under study. However, the CQCA has some applications particularities, since it is a technique developed for the clinical setting of health and uses medical psychology concepts.

The specificities of the CQCA technique concern the clinical attitude of the researcher. The researcher will carry out understanding through a clinical attitude, concentrating on the subject’s
anguish, that is transferred to the research context as an attitude of understanding the reported experience. This entails an interaction between researcher and participant does not generate an intervention, but rather gives rise to an understanding of the participant’s life experience. Equipped with these new concepts on how the persons think and why they act in certain mode, health professionals can improve their clinical practices.

Data collection takes place in the natural setting of the interviewees, that is, a place where patients are seen and where the researcher then develops acculturation. This initial experience of the researcher is reported by means of field notes, since it will be useful during the analysis.

For this study on Clinical-Qualitative Content Analysis a literature review was developed jointly by three qualitative researchers, members of the LPCQ (Clinical-Qualitative Research Laboratory/FCM/UNICAMP). These three researchers have practical experience with the Clinical-Qualitative Method and met fortnightly from August to December 2016. After the literature review the work was discussed with three other researchers in the health area.

The literature review for this paper included: Chapter 10 of the Clinical-Qualitative Research Methodology Treaty, eight original scientific articles and three theoretical articles. The Chapter 10 is entitled: Treating and discussing data for the researcher’s contribution to rethinking scientific knowledge. The original scientific articles used the Clinical-Qualitative Method and were read and discussed by the researchers. The inclusion criteria of these original articles were: publications in journals with a high impact factor in the medical sciences; or detailed description of the content analysis steps of the Clinical-Qualitative Method. The theoretical articles provided theoretical insights on the Clinical-Qualitative Method, especially the article by Campos and Turato which discuss specifically the Content Analysis in Clinical-Qualitative Research. Both Turato and Campos participated in methodological discussions with qualitative researchers and reviewed the final text of this work.

Results

This analysis technique, proposed in this paper, aims to listen, describe and interpret meanings reported by the research subjects. In the case of CQM the information needs to be found from the subjective viewpoint of the individuals being studied.

This form of analysis involves a process of organization, understanding and interpretation of material obtained through transcribing the individual interviews and statements that comprises Seven Steps to be carried out sometimes sequentially or simultaneously (Figure 1).

Step 1: Editing material

The first step occurs when the material is collected by means of an interview. It involves an editing process, since it organizes all the material collected, constituting a transcribed corpus and is here referred to as material for analysis.

The work of editing is made up of the literal transcripts of the interviews and the field notes of the researcher. The transcripts of the interviews when made by the interviewer is an opportunity to impregnate himself from the speeches. When it is carried out by a third party, the researcher must listen the interview recordings. This initial access to the audio recordings favors the perception of preliminary meanings, operating in accordance with this methodological proposal, which is to adopt a clinical attitude of listening vis-à-vis the material of each participant. With a view to this, at this point, the researcher also becomes involved with the forms of non-verbal expression (tear, tone of voice) used by the participant in the research. The use of non-verbal language, sometimes considered a disadvantage in scientific undertakings, is considered essential in CQM.

At this moment of analysis, the annotations made in the field diary of each interview should be separated from the text of interview. We recommend that these annotations should be separated from the interview text and included in the margin in such a way as to remind the researcher of these experienced and reported aspects at the time of analysis.

Step 2: Free floating reading

In this step, the researcher should allow himself to become impregnated by the reported life experience, by means of the called free-floating readings. It is a moment of reading with theoretical distancing in which there is not yet a direction for the aims and hypotheses of the research, since it involves an openness to all the experience related there. In a clinical attitude, this concentration refers to being alert to the completeness
of the subject so as to capture the impressions of the researcher \textit{vis-à-vis} the reported meanings life experience.

Free-floating reading does not cling to the repetition of words but to the psychodynamic movement of speech in the search for meanings attributed by participants and have the potential to answer the proposed research question. Also considered in this non-verbal reading are expressions of the interviewee.

**Step 3: Construction of the units of analysis**

In this step, part of the researcher’s creative work dealing with the emergence of meanings is concentrated. Based on a clinical attitude towards the material under analysis, the researcher apprehends meanings, selects the fragments and develops the first reflections.

This is the moment when the researcher, reading certain excerpt, questions himself as to what this passage is expressing. He asks himself: what is the participant trying to say.

The operating of this step is carried out through reports of emerging commentaries to be noted throughout the material for analysis. These can take different shapes:

1) grouping together the reports that suggest the same meaning;

2) highlighting significative reports, that albeit present solely in the material for analysis of just one participant in the research, reveal relevant meanings for the development of later understandings.

It is important to bear clearly in mind the motives behind choosing this or that fragment, since the relation between the researcher and the material for analysis is one of interdependence. Once again, it is a question of clinical and psychologic attitude in action, as if in the assistance setting, the patient and health professional were interacting.

**Step 4: Identification of cores of meaning**

The fourth step will proceed in the direction of the first codes of meaning. This is based on a re-reading of the units of analysis, previously identified, in order to give them a code (entitling them). In this way, other passages from the same material for analysis can be gathered under the same code expressing the same life experiences, thus addressing the aim of the study. Various units can be dismissed, since not everything that was expressed by the participant will be not directly connect with the aim of the study.

This same step will be reproduced with the material for analysis of each participant, allowing new codes to be created or previous ones recovered. Operationalizing this step considers the closure of the chosen sample, be it by saturation or exhaustion criterion. The closure of the sample, much used by clinical-qualitative researchers, demands that the analysis begin immediately after

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![Flow chart of the Clinical-Qualitative Content Analysis.](image-url)
the interview is carried out or the testimony is obtained, thus making it possible to accomplish step two with the material of one participant, at the same time as step four is carried out, for example, with the material of another participant.

**Step 5: Consolidation of categories**

While steps one to four were carried out with the material of each participant, step five works with the material of all the participants so as to construct categories. Nevertheless, it is important to highlight that steps one to four can be constructed in sequence and/or simultaneously for the material for analysis of each participant. However, all the material for analysis needs to reach step five so that the completeness of the analysis attains a second moment when the study categories will be configured. Step five is the moment when there will be initially a shaping of the organization of the material for analysis of all the participants with a view to categorization.

After the general refinement of the cores of meanings, the process of categorization begins. This consists of establishing a structure of thematic ideas, that is, the totality of the codes from the analysis that will explain the life experiences of all the participants, understood in accordance with the aim of the study. While the codification is intuitive and descriptive, involving an inductive approach, categorization is an analytical and theoretical moment. As a theoretical moment we mean that the researcher must, at this step, work simultaneously with theory, method and technique. It does not yet mean a theoretical discussion, but an attention to the Theoretical Framework at the time of categorization. The prioritization of meanings, which will be discussed later, depends fundamentally on the attention and clarity about where the researcher is speaking from. The absence of this clarity may interfere with the fragility of the study and the difficulty in answering the research objectives.

The process of categorization, according to several possible criteria, must take place within the principle of relevance, thus avoiding a certain orthodoxy, present in the content analysis, for example. A spoken point is highlighted, without necessarily presenting a certain repetition of the material for analysis, but that from the viewpoint of the researcher constitutes discourse rich in content.

The categories need to be exhaustive and mutually exclusive. This means that no data related to the objective of the study, as aspects of visions under study, will be included in more than one category.

In the categorization process, it is important to verify the following possible situations:
- If there is consistent material to construct a category.
- If the codes arising from the different materials brought by the participants really point to the same meaning and/or to potentially aggregated meanings.

The final product is a greater clarity as to the categories to be interpreted and discussed and that will lead the researcher to the answer to his/her research question. In this phase is relevant to make successive presentations for academic peers, discussing the material, structuring it from those significative speeches and so clarifying them evolutionarily.

**Step 6: Discussion of the topics**

After refining the cores and their structuring into categories with their due understandings, based on the theoretical framework, the step to be developed is linked to the debate with the literature. The understanding and interpretation need to be underpinned and the interventions must begin to be mapped out. This is the proposal of Step Six. The theoretical discussions about the categories should be in agreement with the theoretical framework applied at the time of categorization (Step 5). Thus, there will be sufficient theoretical support to respond to the research objectives and make the study strong and methodologically adequate.

The discussion of the categories is separated here from step five only for didactic purposes, since it can be done in conjunction. In this step, the researcher dialogues with the available literature, including the previously read and reflected theory, which will now give scientific consistency to the results as well as to the insertion of new readings.

It is a dialogue included later to the understanding of the categories and that discusses the findings in such a way as to consider the application of the conclusions for health professionals in their care for patients and relatives. It is a moment in which all the clinical attitude involved here produces a result that will return to this assistance setting.
Step 7: Validity

Qualitative research is sometimes perceived in function of pre-established criteria for this kind of research, thus its validity is also sought. However, far from the positivist scope, qualitative research cannot be measured by the criteria of absolute truth. This is not a process that occurs only at the moment of analysis; rather it exists since the creation of the research project. In this way, it must be emphasized that the proposed steps of the analysis always presuppose a reflection group to discuss the rigor and appropriateness of the method, of the theme, and principally the rigor vis-à-vis the clinical attitude applied to the material for analysis and to the subsequent understanding attained.

The CQM presupposes and involves a critical reflection on the processes carried out at each step. This reflection is understood here as an extremely rich process, if carried out collectively and/or in dialogue with other researchers with some proficiency in qualitative methods and not necessarily with regard to the subject under study.

The results of these researches should favor multiprofessional health team and instrumentalize it to improve care for patients. The research question that leads to the clinical-qualitative study is part of the practice of health professionals in their clinical care and should therefore bring results to their practice, as shown in Figure 2.

Discussion

The Clinical-Qualitative Content Analysis utilizes emic perspective of genuine research, that is, the researcher respects the position of the insider, being faithful to the discourse of those interviewees, interpreting the results in accordance with their own logic, bearing in mind the relation of meaning they establish33. It must be understood that the meanings given to a life experience are partially created by the way in which the message is communicated34.

When the researcher questions himself as to what this passage is expressing, he asks himself: what is the participant trying to say. This question will lead to an understanding, to a description of the phenomenon under study, which, according to Heidegger, is unavoidably an interpretation. Interpreting what is understood means articulating explicitly, making intelligible, unveiling, and thematizing as structures35.

The codes concept used in step four, was based on what Gibbs35 described as way of organizing the researcher’s thoughts so as to construct a text. As for the construction of the categories in step five we highlight that a category needs to encompass a set of codes, that are not simultaneously considered by other categories, since within a given category a homogeneity of ideas exists and between categories, a heterogeneity of ideas36. Nevertheless, due to the nature of human perception, it is not always possible to create mutually exclusive categories when the text deals with experiences. The categories answer the question what?, and can be identified by clues through the codes, which in turn answer the question how?. The category refers mainly to an underlying meaning36.

The validity of qualitative research aligns itself much more with the scientific posture of the researcher, emerging as a space for discussion and debate in the scientific field37. The methodologic rigor in research process is a responsibility of researcher and it is what guarantees the scientific research. For Morse et al.38 without rigor, the study is worthless and loses the utility.

Guba39 development important benchmarks to ensure the trustworthiness of our qualitative research: containing four aspects: credibility, transferability, dependability, and confirmability. These were fundamental to situate this within a language appropriate to qualitative research.

The activity carried out in qualitative research settings called validation, is considered here as a process of reflexivity40, also already re-
ferred to by other authors as a critical reflection on the research, which lends it rigor. Peer review is also imperative and yet some care is needed as Botomé alerts that the evaluations among academic peers should avoid deviations, turning an academic evaluation into a political, ideological or personal evaluation.

**Conclusion**

Qualitative research in health field has gained space and recognition in the scientific sphere. However, this recognition and affirmation, in a field where quantitative methods prevail, is clearly characterized by the parameters and paradigms of Natural Sciences. We believe that this conceptual article brings depth to the methodological discussion of qualitative research, above all in the clinical-qualitative analysis of data, based on paradigms and techniques that emerge from the praxis of qualitative researchers in the health field. It is a proposal for systematization qualitative content analysis procedures in order to bring clarity to the researcher who intends to do qualitative research and ensure quality of the analysis, which is the densest phase of the work within a qualitative research and in which researchers find it more difficult to articulate knowledge and apply procedures. It is a technique indicated for questions arising in an assistance setting and that seek to encourage reflections an interventions for professionals faced with the life experiences of their patients and their environment.

**Collaborations**

DB Faria-Schutzer contributed to study design and conceptualization, literature review, methodology and drafted the manuscript. FG Surita contributed to study design and conceptualization and critical review of the manuscript. VLP Alves contributed to study design and conceptualization, literature review, methodology, drafted, and critical review of the manuscript. RAP Bastos contributed to study design and conceptualization, literature review, methodology and drafted the manuscript. CJG Campos contributed to conceptualization and manuscript revision. ER Turato contributed to study design and conceptualization, literature review, methodology and critical review of the manuscript. All authors read and approved the final manuscript.
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