Literature review

Foundations for beginners in the qualitative research approach in medical education: a narrative review

Fundamentos para iniciantes na abordagem da pesquisa qualitativa em educação médica: uma revisão narrativa

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ABSTRACT | INTRODUCTION: Medical education research studies and analyzes teaching and learning in Medicine. It makes it possible to use evidence to support curricula construction, student assessment, pedagogical approaches and medical practice in health care. **OBJECTIVE:** To provide an introduction to the methodological bases of qualitative research in medical education. **METHOD:** A narrative review based on information extracted from secondary sources, from an exploratory search in the PubMed, Lilacs, ERIC, and SciELO databases. The data obtained was organized in a guideline, aiming to provide theoretical and practical support for the elaboration of future research in the area. **RESULTS:** The definition and structuring of a guideline to carry out qualitative research shows the foundation in the interpretive paradigm, the possible methodologies of qualitative research in medical education, the particularities of the mutual and continuous process of fieldwork and analysis. The principles of rigor and quantitative research in the development of qualitative studies were also problematized, which can interfere with the essence of what was sought to be understood, known, or analyzed. **CONCLUSION:** Qualitative research has a well-defined structure, objectives, and applicability, and it is up to researchers to recognize its characteristics and use them in the construction of projects that value subjectivity, context, and social and human phenomena.

KEYWORDS: Medical Education. Qualitative Research. Review.

RESUMO | INTRODUÇÃO: A pesquisa em educação médica estuda e analisa os processos de ensino e aprendizagem em Medicina. Possibilita utilizar evidências para embasar a construção de currículos, formas de avaliação estudantil, abordagens pedagógicas e a prática médica no cuidado à saúde. **OBJETIVO:** Oferecer uma introdução às bases metodológicas da pesquisa qualitativa em educação médica. **MÉTODO:** Revisão narrativa baseada em informações extraídas de fontes secundárias, a partir de uma busca exploratória nas bases de dados PubMed, Lilacs, ERIC e SciELO. Os dados obtidos foram organizados em forma de um roteiro, visando fornecer subsídio teórico e prático para a elaboração de futuras pesquisas na área. **RESULTADOS:** A definição e a estruturação do roteiro para a realização de uma pesquisa qualitativa evidenciam o embasamento no paradigma interpretativo, as possíveis metodologias de pesquisa qualitativa em educação médica, as particularidades do processo mútuo e contínuo de trabalho de campo e análise de informações. Também foram problematizados os princípios do rigor científico e a reprodução de terminologias utilizadas em pesquisa quantitativa no desenvolvimento de estudos qualitativos, o que pode interferir na essência do que se buscou compreender, conhecer ou analisar. **CONCLUSÃO:** A pesquisa qualitativa apresenta estrutura, objetivos e aplicabilidade bem definidos, cabendo aos pesquisadores reconhecerem suas características e empregá-las na construção de projetos que valorizem a subjetividade, o contexto e os fenômenos sociais e humanos.

PALAVRAS-CHAVE: Educação Médica. Pesquisa Qualitativa. Revisão.

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1. Introduction

Research in medical education aims to study and analyze teaching and learning processes in Medicine, encompassing all stages of professional training[1], in pursuit of outcomes with practical relevance[2-4].

In the 1950s, when organized movements in medical education research were beginning, studies placed greater emphasis on specific indicators, such as performance methods and assessment, primarily grounded in the rationalist/positivist paradigm. Over the decades, medical education research has expanded its scope to encompass disciplines such as the social and human sciences in health. Furthermore, multidisciplinary teams began to be incorporated including, for example, psychologists, sociologists, and anthropologists. This shift led medical education research to also adopt the interpretivist paradigm, hallmark of qualitative research. The scientific output on medical education in Brazil is expanding, with a growing presence of professionals specifically trained in the field. This evolutionary process has enhanced the field in both volume and the quality of research[3,5].

Despite significant advances, many physicians remain disengaged from the field. A potential reason is the lack of training in educational research methods, which can undermine their confidence in conducting studies in this field, especially those of a qualitative nature[6-8]. Generally speaking, medical training provides greater exposure to quantitative research. Consequently, professionals in the field are more inclined to gather empirical data grounded in an objective reality[9,10].

This article aims to provide an introduction to the methodological foundations of qualitative research in medical education, with the goal of offering theoretical support and assisting beginner researchers in developing projects in the field. This paper is the result of an Undergraduate Research project (IC) carried out in collaboration with the Núcleo de Estudos e Pesquisa em Educação Médica do Departamento de Medicina da Universidade Federal de São Carlos (NEPEM/UFSCar). This study was motivated by the identification, through an initial literature review, of a lack of Portuguese-language resources to support the development of research in medical education.

2. Method

This study was based on a narrative review of the literature[11]. The systematization process was grounded in international references offering research guidelines in medical education, particularly the *AMEE GUIDES* and the book *How to Design and Evaluate Research in Education*. A subsequent search was performed in the electronic databases PubMed, LILACS, ERIC, and SciELO, using the descriptors 'medical education', 'qualitative research design', and 'research methods'. Publications in English or Portuguese were included, with no time restrictions applied. Articles were selected based on their title and/or abstract, followed by full reading and critical analysis. Additional references cited within the selected articles were also included to further explore relevant concepts.

Most of the articles identified in the search were published internationally[2,3,5-8,10,12]. The search process was concluded when the collected information was deemed sufficiently robust. Based on a critical and analytical reading of the results, the narrative review was structured into two parts: 1) Theoretical and methodological foundations of qualitative research in medical education, and 2) A framework for designing qualitative research projects in medical education.

3. Results and discussion

3.1 Theoretical and methodological foundations of qualitative research in medical education

3.1.1 What is qualitative research?

Qualitative research seeks to identify the meanings of phenomena and to gain a deeper understanding from the perspective of the participants and/or through their interaction with the researchers. It follows the interpretivist paradigm, as it aims to understand the constructions, interactions, and intersubjectivities between subject and object, as well as the complex and inherently human nature of interpreting reality. This approach allows for an investigation of how social and human phenomena occur within their natural environments, seeking to make sense of them through the meanings that participants assign to these experiences[2,13-15].

Qualitative research does not regard truth as objective, but rather as a subjective reality experienced differently by each individual[15,16]. It therefore recognizes that science is a human construction9, as it is expressed through people with their own subjectivities and preferences. Because it intentionally creates relationships between groups and individuals, there is no researcher neutrality in the qualitative research process[17,18]. Uncovering and revealing human thoughts and actions contributes to cultural sharing and the organization of social groups around representations and symbolism. Furthermore, in the presence of theoretical gaps, qualitative studies have the potential to generate new theories[7,19,20].

In qualitative studies, hypotheses based on the data being collected emerge during the research process. What may exist at the outset are "propositions": initial ideas formulated by researchers before the study begins. Unlike hypotheses, propositions are not meant to be tested or refuted, but rather to help narrow the range of possible directions the research may take[13].

3.1.2 Considerations on methodology in qualitative research

The methodological approach of a qualitative study starts with an epistemological reflection on the research topic or object of study, followed by a well-grounded justification of the methods and techniques employed. Such coherence integrates theory, methods, and findings, allowing for analysis across multiple perspectives and dimensions, also acknowledging the researcher's experience, inherent non-neutrality, reflective capacity, and active engagement with the study's object or theme[21].

In order to conduct socially relevant research, the researcher must adopt a non-banking posture — as coined by Paulo Freire — in the act of researching. Thus, research that is methodologically constructed without considering the people involved, and that treats reality as something detached from their experience, reinforces the vertical and dualistic relationship between the researcher and the researched[18].

3.1.3 Theoretical and methodological approaches in qualitative research

3.1.3.1 Narrative research

Narrative research involves the study of an individual's lives experiences, shared with the researcher through conversations, recordings, and interviews, or found in documents and archives. These experiences serve as a foundation for understanding a particular phenomenon[13,22].

Biographical studies and life histories are examples of narrative research. The analysis of the historical context in which the research participant is situated is essential for understanding their attitudes and decision-making processes. Furthermore, the researcher must reflect on their own personal and political background, recognizing how it may influence the description of the individual's life story under research[13,22].

3.1.3.2 Phenomenology

It starts from a situation (phenomenon of interest) and seeks to understand the subjective experience of the individuals who have lived it. This approach centers on individual experiences and perceptions, seeking to identify, comprehend, and describe the similarities between the narratives of individuals who have undergone the same experience[5,7,8,10,13,14,23].

An example in medical education would be to analyze and describe the experiences of undergraduate students who witnessed the death of a patient during their clinical rotations. The resulting outcome may be an enhanced understanding of the emotional, social, and professional implications of this phenomenon, as well as the development of strategies to promote well-being and resilience[7,8,13,14].

3.1.3.3 Grounded theory

Grounded theory is an approach in which the theory is developed inductively during the research process itself, rather than formulated in advance[5,7,8,10,13,14].

As data are collected and analyzed, researchers begin to construct theories, which are continuously created, tested, discarded, and revised until a fit is reached between the emerging theory and the collection of gathered data[7,8,13,14]. The processes of sampling, data collection, and data analysis occur simultaneously and continuously until data saturation is achieved and the theory is concluded.

Grounded theory is a valuable approach for addressing questions such as "What is the process of making a specific medical diagnosis?"[7,8]. An example of a qualitative study using grounded theory would be the evaluation of medical students' communication skills in delivering bad news to patients and their families, analyzing similarities and differences between new and previously collected data in order to develop a theory about the most effective techniques for breaking bad news[7,8,13,14].

3.1.3.4 Case study

Case studies seek an in-depth understanding of a single case that is illustrative of a broader issue of interest. The term "case" may refer to various elements, such as an individual, a classroom, a course, or a teaching-learning process. The goal is to conduct an in-depth exploration of a case so that its findings may inform similar situations elsewhere[5,7,8,10,13,14].

An example would be the study of a specific case involving the leakage of confidential patient information on a student's social media profile, and how such a situation might be prevented or addressed both within the institution studied in the case and in other similar settings[14].

3.1.3.5 Ethnography

Ethnography is a method employed to comprehend individuals in their own contexts, document their culture, perspectives and their habits within their environments[5,7,8,10,13,14]. It explores the influence of culture, social setting and values on individuals' behavior. Ethnographers convert tacit sociocultural knowledge, the kind that is so deeply embedded in cultural experiences that participants don't even talk about it, into explicit knowledge[5,7,8,10,13,14,23].

It is mainly based on the direct observation of research participants in an immersive way. Interviews and document analysis can also be used.

Ethnographic research in medical education can study the development of professional attitudes of interns in the ward through observations based on immersion in the care routine, team meetings, and clinical case discussions. The study's outcome can help in understanding the influence of clinical experiences on professional development[14].

3.1.3.6 Participatory research

It compiles various styles and trends of participatory research, such as: participative research, investigation action, research action, participatory investigation, participant observation, systematization of experiences, among others.

Participatory research originates from the works of European and American authors, with Kurt Lewin as a key reference. Currently, one of the main scholars and a major Brazilian reference on action research is Michel Thiollent[24]. In Latin America, it is well established by Paulo Freire and popular education, especially in Brazil.

This article emphasizes the Latin American approach to participatory research, as it offers a comprehensive perspective for addressing complex challenges with a transformative and emancipatory vocation in social reality, including the discussion of alternative forms of empirical investigation and the role of science in society. It links scientific research work to pedagogical and political activity, as it employs active methods in the training, participation, and mobilization of human groups and social classes. It presupposes the active and critical participation of research participants in defining the research problem, which is often different from what researchers initially consider important[25], since dialogical interaction and the exchange of knowledge are built between researchers and local groups.

We highlight works that address participatory research in higher education institutions, referred to as participatory action research in the co-creation of health-promoting higher education institutions. These studies bring into research concepts such as plurality;

collective inquiry; transformation through human agency; critical reflexivity; and locally co-created, dialogical, relational, and reflective knowledge[26].

3.1.4 Data collection methods in qualitative research.

3.1.4.1 Interview based methods

Methods based on interviews are used in situations where a conversation with participants can provide insights into their experiences and how they interpret their context. They are also useful for exploring past events that cannot be replicated or phenomena for which direct observation is not feasible. Interviews can be conducted individually or in groups (focus groups). Focus groups are conducted when the research topic is best explored through interactive discussions, allowing for analysis of group dynamics. Sensitive topics or those involving the participant's privacy are more appropriately addressed through individual interviews[13,14].

The interview guide is prepared in advance and may include: open-ended, semi-structured, or structured questions. During fieldwork, the researcher may adjust the questions and their sequence according to the dynamics of the individual or group. Interviews aim to encourage participants to reflect so they can describe their experiences in detail[13,14]. The use of videos, problem-situations, and other tools to stimulate reflection is welcome[13,14].

3.1.4.2 Direct observation

It involves a wide range of activities, from brief ones such as team meetings to more extended ones, in which the researcher is present throughout the length of the occasion. The details that can be analyzed through direct observation are numerous; therefore, the researcher needs a semi-structured guide outlining the main points to be recorded[13,14].

The most commonly used data sources in direct observation are field diaries, which should include brief notes taken during the observation and reflections written afterward. In addition to describing the setting, people, dynamics, and observed events, researchers also include comments with their reactions, speculations, and interpretations. Audio and video recordings are useful when the object of study is complex and nuances of interactions and gestures — which might otherwise be missed — need to be analyzed. The researcher may complement their observations by selecting certain participants for more in-depth interviews[13,14].

In studies that use direct observation, a major concern for researchers is the Hawthorne Effect, recently renamed to as "participant reactivity"[5,13,14,26]. This effect occurs when observed participants behave differently than they would if the observer were not present. However, a surprising point is that participant reactivity has never been described in qualitative research manuscripts in the field of medical education. One possible explanation is that these individuals are already accustomed to being observed by other professionals, students and interns[13,14,27].

3.1.5 Generalization in qualitative research

Generalization is the ability to apply the results of a study to more than one individual, group, object, or situation, being a foundation of the positivist paradigm. It is inappropriate to expect generalizability from a qualitative study or to devalue it for lacking generalizable results, as this is not the objective of qualitative research[14,28]. In qualitative research, the object of study pertains to the symbolic realm and is therefore not generalizable[9,28].

Transferability, also referred to as applicability, is a criterion that assesses the extent to which the knowledge generated, or a particular finding can be transferred to other contexts. It is the readers themselves who draw these conclusions based on their own experiences or realities. To this end, it is the researcher's responsibility to provide detailed descriptions of the entire research process and the context analyzed, so as to supply the reader with sufficient information to determine whether the transferability of those results to their own context is feasible[7,8,14,15,29].

3.1.6 Principles of rigor in qualitative research

Rigor is the means of demonstrating the credibility of research. In qualitative studies, there is much debate regarding ways to assess methodological rigor, due to the involvement of subjective and contextual aspects[7,8,15].

The researcher is primarily responsible for compiling information in qualitative research. Therefore, the researcher must be able to engage in self-criticism and recognize their own judgments and interpretations regarding the phenomenon in question, incorporating this information into the material systematized during fieldwork. This process refers to the concept of reflexivity. Subjectivity should not be regarded as bias or eliminated but rather employed as an enriching and inevitable resource in research, allowing the reader to evaluate its influence on the work[7-9].

3.1.7 Ethics and qualitative research

Approval of the ethics committee must be obtained before beginning fieldwork activities[7,8,13,15]. Research projects must be submitted to the Research Ethics Committee (REC) through the Plataforma Brasil system in order to undergo evaluation. As part of the research protocol, the Research Ethics Committee (REC) requires an Informed Consent Form (ICF) or an Informed Assent Form (IAF), which may be oral and/or written, depending on the research context.

The identities of participants must be protected at all times. In qualitative research, the researcher knows the participants, which makes anonymity unfeasible and increases the importance of maintaining the confidentiality of their identities[7,8,13,15]. Care must be taken to ensure that participation in the research does not cause embarrassment or harm. If confidentiality cannot be guaranteed, participants must be informed and given the opportunity to withdraw from the study.

Participants must always be treated with respect and informed about the purpose of the study, the type of information being collected, and how it will be used. Researchers must never deceive participants or record any conversation using a hidden device. Researchers should make every effort to ensure that no physical or psychological harm is caused to any individual as a result of the study.

3.2 Guidelines for developing a qualitative research project in medical education

The qualitative research process tends not to follow a linear sequence. One reason is that qualitative data analysis occurs concurrently with data collection. The results of this analysis guide how the data collection process, which takes place simultaneously, will proceed[7,8,13,14].

The purpose of presenting a step-by-step guide is to offer a clear and pedagogical framework. The terminology used to describe characteristics, types, nature, methods, or techniques in qualitative research may vary among authors. This guide adopts the nomenclature presented by Bosi and Gastaldo in their work[28].

3.2.1 Step one: identification of the research topic and definition of the study's objective

The first step is to identify a specific object or topic to be investigated. An example would be a researcher aiming to study the decision-making process of newly graduated physicians when choosing a workplace14. Based on the topic of interest, a research question is formulated. Qualitative approaches are used to answer questions such as "why?", "how?", or "what is the nature of?"[2,15], by investigating how things unfold in real-world settings, including their processes, phenomena, and configurations[2,14,15].

As the study progresses, the research question may be revised or reformulated. It is important for the researcher to articulate clear justifications to enhance the credibility of the study[15], taking into account the scientific literature, their positionality, prior experience in the field, and the motivations behind the choice and delimitation of the research topic. The study objectives should be developed based on these elements and serve as a guide for the subsequent stages of the research.

3.2.2 Step two: identification of the study context and participants

Engagement with the context is a crucial phase: becoming close to the participants through dialogical immersion and, depending on the research, living alongside people within a specific reality. This process involves the rapprochement of the intersubjectivities of individuals.

For sampling in qualitative research, non-probabilistic designs (also called purposive or intentional sampling) are used, in which the researcher selects individuals who have the potential to be a richer source of information[7,8,13,14].

Qualitative samples tend to be small because the processes of data collection and analysis are more complex. However, this is not problematic, as the goal is not to generalize results[4,15]. The decision on sample size can be guided by the theory of sufficiency, which is reached when new data no longer provide additional information about the phenomenon[5,7,8,13,14]. However, the Theory of Sufficiency has been criticized for lacking rigor and being unlikely, since there is no guarantee that new information would not emerge in subsequent interviews[30]. In this context, there is the concept of "Information Power," which refers to the stage at which the collected material has proven sufficient to provide a solid argument grounded in the understanding of that experience[9,30].

3.2.3 Step three: selection of the approach for qualitative research

There are numerous qualitative research methodologies. It is possible to combine more than one approach within a single study. However, to facilitate understanding, the approaches most commonly used in health sciences and medical education[13,14] have been individually described in the section “theoretical-methodological approaches in qualitative research”.

3.2.4 Step four: literature review

Literature review’s purpose is to provide an objective account of what has already been published on a given subject and to serve as a foundation for structuring subsequent research. The placement of the literature review in qualitative research depends on the theoretical-methodological approach to be employed.

The grounded theory assumes data collection without any predetermined conceptual framework, as its objective is to generate a theory. The literature review is therefore conducted after this entire process, and the researcher must justify how the literature will be used to determine similarities or differences with the research findings. In other approaches, the literature review is conducted prior to data collection and analysis, aiming to provide a comprehensive and balanced account of previous studies, identifying relevant themes, conceptual models, and theoretical frameworks that offer a solid foundation for the research[23].

3.2.5 Step five: fieldwork

When conducting fieldwork, researchers need to understand the study context in order to observe, interact, and construct information relevant to the research and/or the participants' interests.

The term "negotiated production of evidence" is more appropriate than "data collection" in qualitative research. In this type of research, there are no ready-made data to be collected; rather, there are intersubjective constructions embedded in social relationships that go beyond a mere application of techniques[9]. Moreover, the term “data” often conveys the notion of objectivity.

In qualitative research, the negotiated production of evidence is a continuous process that requires commitment and dedication. The information obtained is complemented by the researchers’ own opinions and perceptions regarding what they have witnessed[7,8,13-15].

There are numerous ways to document fieldwork in qualitative research: interview transcripts and audio and/or video recordings, field journals, photographs, personal notes, among others. Data should be collected in the form of words or images, rather than numbers or symbols. Every gesture or expression captured by the observer is noteworthy and holds significance for the analysis and interpretation of the findings. Reducing the information obtained to symbols or numbers may ultimately weaken the purpose of qualitative research[7,8,13-15].

3.2.6 Step six: analysis of field material

In qualitative research, the analysis of field material is a repetitive and continuously comparative process that involves synthesizing, retrieving, and interpreting information. In most of the interactions, this material is taken in text format[13,14]. There are various ways to categorize raw data, which vary according to the research question and the approach adopted. The most important aspect is that the process is described with sufficient detail so that the reader can judge whether the analysis of the field material is consistent with the research question and the theoretical framework presented in the literature review[15,28]. Researchers should also disclose their own ideas and perspectives regarding the object/topic of study when interpreting their findings[7,8,13,14].

The analysis of field material aims to achieve three objectives: overcoming uncertainty, enriching interpretation, and integrating the findings[21]. These objectives can be assessed through reflective questions: Is what I perceive contained within the field material? Have I gone beyond what is explicit and uncovered implicit contents or structures? Have I used the social context to integrate the findings present in the field material?

Qualitative research also encompasses a range of analytical methods. Content Analysis includes various modalities[21]: Lexical Analysis; Expression Analysis; Relational Analysis; Evaluative or Representational Analysis; Enunciation Analysis; and Thematic Analysis. Other qualitative research analytical methods include Discourse Analysis, the Method of Interpretation of Meanings, and Analytical Devices.

One of the most widely used methods in the health field is the thematic modality of Content Analysis, which consists of identifying core meanings. Thematic Content Analysis is conducted in three stages: 1) pre-analysis – an exhaustive reading of the field material to become fully immersed in its content, organize the data according to the research objectives, and verify whether the material effectively addresses the research question; 2) material exploration – this stage begins with the coding of the data, which involves transforming raw material into units of meaning that may take the form of words, phrases, themes, characters, or events. Coding entails the creation of labels that represent key concepts for the research and are later grouped into thematic categories. These categories may be predefined (established prior to data analysis, based on existing theories or hypotheses) or emergent, identified through an in-depth reading of the participants' narratives; 3) treatment of results and interpretation – the codes may undergo statistical treatment to determine the frequency with which they appear, or they may be analyzed based on their meanings[13,14,21,29].

As thematic content analysis, depending on how it is applied, does not necessarily break away from the rationalist/positivist paradigm, we consider it appropriate to introduce analytical methods that are more consistent with the interpretive paradigm.

Discourse Analysis assumes that there is no discourse without a subject, and no subject without ideology. Since ideological positions are constructed by the socio-historical context in which subjects are embedded, the aim is to identify the "repetition of the identical" present in the field material. After the full transcription and organization of the field material, excerpts are selected and grouped into discursive blocks. Some guiding questions can support both the internal analysis of the material (What does the field text say? How does it say it?) and the external analysis (Why does this text say what it says? What is the socio-historical context?)[21].

The Method of Interpretation of Meanings is based on the Hermeneutic-Dialectic approach. Hermeneutics is concerned with understanding the other by putting oneself in their place, while dialectics involves critical inquiry and highlighting contradictions. Therefore, Hermeneutic-Dialectics requires a close connection

with the social context, reflective analysis, recognition of intersubjectivity, and the pursuit of perspectives that illuminate both what is shared and familiar, as well as what is specific and unfamiliar, thereby building an articulation between consensus and dissent[21]. The Interpretation of Meanings Method31 involves three sequential phases: description, analysis, and interpretation. After thoroughly reading the field material, the description stage is carried out, during which a text is prepared summarizing the information provided by the study participants. In the analysis stage, explicit and implicit categories are identified based on the information contained in the field material. In the interpretation stage, the aim is to uncover the meanings behind participants' statements and actions, seeking an understanding that goes beyond what is merely described and analyzed. An interpretive text is then written, articulating the study's objective, the findings from the field material, and the theoretical framework established in the literature review.

Analytical Devices[32] are also grounded in hermeneutic-dialectical principles, but they challenge us to (re) think qualitative research analysis by resisting the systematization of this process into sequential steps. For the analysis, nine interrelated analytical devices are proposed: (1) reflexivity; (2) everything is data; (3) reading the invisible; (4) reading in search of anomalies; (5) generative coding; (6) Gestalt reading; (7) heuristics for theorizing; (8) writing as analysis; and (9) creativity.

The reflexivity device prompts the researcher to ask: What is my reaction to the situation being researched, and what does it reveal to me? Which side am I on? For whom might the potential findings be useful or significant? What power relations did I identify in the field material[32]?

By considering that "everything is data," the researcher should not limit themselves to formally collected data. Reading the invisible involves asking: What lies between the lines and within the silences? Reading in search of anomalies highlights dissent, rather than merely focusing on consensus.

Generative coding involves the construction of analytical categories, in which information from the field material is consolidated. Gestalt reading requires a holistic analysis based on the socio-historical context, considering that the whole is greater than the sum of its parts.

Heuristic for theorizing is a device that revisits the theoretical frameworks from the literature review to support the analysis of the findings from the field data.

Writing as analysis highlights the need to write, rewrite, and analyze continuously throughout the development of the research. The creativity device encourages moving beyond the comfort zone of a mere descriptive analysis, with the objective to produce a complex and enriching interpretation.

4. Final considerations

The present study aimed to offer an introduction to the theoretical and methodological foundations of qualitative research in medical education, presenting a structured framework intended to support and guide beginner researchers in this field. It brings to the fore the axiological debate by compiling the values and attributes of qualitative research and critically addressing the "positivist-origin" logic, which reinforces a dichotomous view that hinders the discussion on the topic.

Although less widespread in medical education and health sciences in general, qualitative research possesses a well-defined structure, objectives, and applicability, befitting the responsibility upon researchers to recognize the particularities of this type of study and to employ it coherently in order to develop projects that deepen the understanding of processes experienced within medical education settings.

Qualitative research and the notion that it is grounded in an axiology (a set of values) rooted in the interpretative paradigm are fundamental for understanding its particularities and potentialities. Thus, it becomes evident the misconception of applying positivist paradigm concepts — such as generalization, probabilistic/random sampling, and neutrality/bias — to evaluate the quality of a qualitative study.

In this work, we do not aim to create a dichotomy between qualitative and quantitative research, as they are complementary when considering the multidimensionality of medical education. The objective was to provide greater clarity on when and how qualitative research should be employed, according to the research topic, research question, and study objectives.

A limitation of this study is that it is a narrative review, in which the selection of articles was guided by the researchers' interests and needs. Thus, this publication did not aim to exhaust the topic but rather to broaden the debate and support the development of this field of knowledge in Brazil.

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Authors' Contributions

The authors declare having made substantial contributions to the work in terms of the conception or design of the research; the acquisition, analysis, or interpretation of data for the work; and the drafting or critical revision of intellectual content. All authors approved the final version to be published and agreed to take public responsibility for all aspects of the study.

Competing interests

No financial, legal, or political conflicts involving third parties (such as government, companies, or private foundations) have been declared for any aspect of the submitted work (including, but not limited to, grants and funding, participation in advisory boards, study design, manuscript preparation, statistical analysis, etc.).

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