



# QUALITATIVE RESEARCH: KEY CONCEPTS AND A BRIEF OVERVIEW OF ITS APPLICATION IN GERIATRICS/GERONTOLOGY

## Pesquisa qualitativa: conceitos importantes e breve revisão de sua aplicação à geriatria/gerontologia

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### ABSTRACT

**INTRODUCTION:** This paper is part of a special series designed to help health professionals to develop a research project. It reviews the importance, methodology, and applicability of qualitative research. **OBJECTIVE:** To discuss the methodology of qualitative research presenting validity criteria and emphasizing the scientific rigor, with focus in healthcare area, especially in geriatrics/gerontology. **METHODS:** The authors performed a non-systematic literature review (PubMed.gov – U.S. National Library of Medicine/National Institute of Health) and included articles that clarified the main themes. **RESULTS:** Qualitative research has grown considerably in the area of healthcare due to its ability to broaden the knowledge and interpretation of phenomena, experiences, behaviors, and their meaning in the lives of the people studied – elements not explored in quantitative methods. **CONCLUSION:** Qualitative approach has scientific rigor similar to quantitative research and manages to broaden understanding of participant behavior in a more holistic approach – which is extremely relevant in the area of geriatrics/gerontology. **KEYWORDS:** quantitative research; methods; geriatrics.

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**INTRODUÇÃO:** Este artigo faz parte de uma série especial destinada a contribuir para o desenvolvimento de projetos de pesquisa de profissionais de saúde. A proposta é rever a importância, a metodologia e a aplicabilidade da pesquisa qualitativa. **OBJETIVO:** Discutir a metodologia de pesquisa qualitativa, seus critérios de validade, seu rigor científico e sua aplicabilidade na área de saúde, com enfoque na geriatria/gerontologia. **MÉTODOS:** Foi realizada uma revisão não sistemática da literatura (PubMed.gov – U.S. National Library of Medicine/National Institute of Health) no intuito de detectar artigos relevantes na temática proposta. **RESULTADOS:** A pesquisa qualitativa tem crescido bastante na área de saúde devido à sua capacidade única de explorar de forma sistemática e completa questões a serem estudadas. Ela proporciona um conhecimento mais profundo para a interpretação de fenômenos, experiências e comportamentos e o significado deles na vida das pessoas estudadas – elementos esses não explorados nos métodos quantitativos. **CONCLUSÃO:** A abordagem qualitativa possui rigor científico similar à pesquisa quantitativa e consegue aprofundar o entendimento do comportamento do participante de forma mais holística – o que é extremamente relevante na área de geriatria/gerontologia.

**PALAVRAS-CHAVE:** pesquisa qualitativa; métodos; gerontologia; geriatria.

## INTRODUCTION

In the second half of the nineteenth century, a number of studies emerged to gather descriptive and qualitative data for a better understanding of complex phenomena (such as the meaning of behaviors and sociocultural influence within their context), which were not explored in quantitative research.<sup>1</sup>

Qualitative research is often less valued scientifically because involves methodologies of data collection that are less familiar to researchers. However, this type of research does apply systematic and exploratory approach for data gathering, uses structured methodology to identify and understand observed behaviors, phenomena, or processes. Unlike quantitative research, the qualitative approach enables a broader exploration, in which researchers are guided by subject matter and field observations. In qualitative research, the construction of knowledge occurs through the constant interaction between the researchers and the research object. This interaction with collected data is important for the reliable description of the meaning, motive, impact, and complexity of certain phenomena and behaviors representing the perspective of the participant and the context in which he or she is located.<sup>1</sup>

The purpose of this article is to present through examples, the main concepts of qualitative research, as well as to identify its fundamental methodological steps. Thus, it will hopefully assist with improvement of studies that use this methodology in the healthcare area. We briefly illustrate some study examples from the area of geriatrics and gerontology, where quantitative data are often insufficient to understand the complexity of different concepts that may influence the natural or pathological aging process.

## WHAT IS QUALITATIVE RESEARCH?

It is a method of study that values the description and explanation of the phenomena investigated using interviews and observations.<sup>1</sup> Initially, such procedures were restricted to anthropology and sociology. However, they gradually have gained ground in other areas of science, as they promote a holistic assessment of the population studied.

Just as quantitative research must follow a structured plan with a clear definition of its objectives, qualitative research must also follow a coherent methodology which enables responses related to the theme being studied and provide a logical interpretation of the collected data to substantiate its conclusions. For example, if the objective of the study is to understand the impact of hospitalization of elderly people in a skilled nursing facility (SNF) it is not logical to interview only elderly people who do not reside in SNF or to collect medical records of the residents without interviewing them.

Qualitative research starts from broad questions that are refined throughout the process of data collection.<sup>1</sup> The largest contribution of qualitative research is to understand the meaning that a certain phenomenon has on people's lives, preferably in the natural environment of the subject, with the purpose of enabling a neutral and dynamic understanding of the human being.<sup>2</sup>

The field of research is the subject's environment, and the researcher is a fundamental instrument in obtaining the data to be collected in the most impartial way possible (Table 1).

Qualitative research, by definition, is descriptive, therefore data are not limited to variables, but rather generate themes that are observed and explored as a whole. The method of analysis is inductive or inferential, that is, the conclusions are derived from a deep analytical interpretation of the interviews and observations. Knowledge is given explicitly and descriptively.

This may be the most difficult and neglected step in conducting qualitative research. It is necessary to establish a process of cross-referencing information and data classification so that the interpretation is objective, precise, transparent, and reproducible in order to guarantee the scientific accuracy of the findings.

## DATA COLLECTION

A good qualitative study begins with a clear definition of the general theme to be studied. As mentioned, it is of utmost importance to ensure coherence between the question, methods, and approaches proposed for the generation of data that are valid, representative, and reliable.<sup>3,4</sup>

After determining the main objectives of the study, it is important to define the sample. The selection of the parameters of the studied population should be directly related to the capacity to supply representative information relevant to the main objectives of the study. For example, for a better understanding of the impact on the quality of life of the elderly patient admitted to SNF, it is not enough to include a population of elderly people in the research sample, but rather elderly people living at SNF. Consequently, the elderly people will have direct experience with this reality to share instead of just an opinion about it.<sup>5</sup>

It should be noted that, in qualitative analysis, the most important aspect is not the absolute number studied (the “n” of the quantitative approach), but rather the representativity.<sup>6</sup> It is possible to do good qualitative research with few cases, as long as the researcher completes a detailed and deep examination about the phenomenon being studied as well as the contextual limitation in the understanding of this phenomenon based on the sample. For example, instead of interviewing only elderly people about the impact of hospitalization at SNF, their relatives should also be included in order to comment on possible changes in the behavior of the elderly patient observed on a day-to-day basis, after the hospitalization. Consequently, the data becomes much richer, since it includes the perspective of the elderly subject and the changes in his or her behavior. Although the term “theoretical sample” is commonly used in these surveys, the traditional concept of sample size becomes unsuitable for qualitative research, because quality rather than quantity of the information is sought.<sup>7</sup>

The choice of the method to collecting data can be of natural occurrence – investigation of the phenomena in their natural settings (observations, interviews) – or generated – which involves a “reconstruction” of the studied phenomena (bibliographical survey, questionnaires).<sup>4</sup>

The collection of naturally occurring data is conducted mainly through observation of conversations. The data

generated are from individual interviews, in-depth interviews (with two or three participants) or focus groups. It is common to use a combination of these methods to deepen the analysis of the studied phenomena<sup>4</sup> (Table 2).

The closure of qualitative data collection does not occur due to statistical representativeness, but it arises when the sample contains a full representation of explanations that provide an understanding of the question being studied. The researcher should explicitly provide closure criteria in the section dedicated to presenting the methods. For example, there will be a large amount of information collected when interviews with the hospitalized elderly show a redundant theme (comments on autonomy, self-esteem, identity, quality of life, relationships) and no new information (comments on politics, which would be a possible new theme).

There are several closure techniques. Common ones include exhaustion and saturation. With exhaustion, the characteristics of the sample elements are predetermined (e.g. SNF Residents of the Southern Region), individuals with these characteristics are deliberately sought, and all of the people that are available are included.

With saturation, closure occurs when redundancy of the information obtained is achieved, where no new relevant knowledge is added, as demonstrated in the example above with the hospitalized elderly.<sup>8</sup> The saturation evaluation is a continuous process of analysis and occurs from the beginning

**Table 1** The main characteristics of qualitative research.

Data collected and observed in the natural environment
Researcher as main instrument
Descriptive evaluation
Including the importance and the meaning that people give to their life experiences
Behavioral observations and social interactions
Inductive focus

**Table 2** Sources of qualitative data.

Recordings and transcriptions of interviews
Questionnaires
Field notes
Video recordings
Case study notes
Documents
Press releases
Photographs

of data collection. The level of heterogeneity of the population directly influences the saturation.<sup>6</sup> This happens because there may be differences in the sample that indirectly influence the responses provided. A hypothetical example would be if the sample included only SNF of the Southern Region. If this region is a more socioeconomically privileged area and offers accommodations and privileges similar to pre-hospitalization this results in a lesser impact on the lives of these residents during their hospitalization. Although the findings are relevant, they are regional, and such information should be considered and emphasized in the discussion of results, as regional aspects limit the external validity of the study. Therefore, although the absolute number of individuals included is not determinant in qualitative research, it should be kept in mind that the sample size is a factor that indicates the representativeness of the conclusions.

### Interpretation and data analysis

Data analysis in qualitative research is probably the main challenge of the method, because it does not follow traditional statistical techniques, since its focus is on the interpretation of data, and not on the quantification of studied phenomenon.<sup>3,9</sup>

In qualitative research, there is a less familiarity with the proper analysis process used to generate impartial, reliable, and valid data. The analysis process varies in accordance with the question being studied and the nature of the material obtained. Just like in quantitative research, it should follow a systematic process that is replicable, stable, and valid.

This process requires decontextualizing and re-contextualizing of the data obtained in order to be certain that the researcher is not creating meaning other than that allowed by the context. The decontextualizing certifies that the findings are in accordance with the context in which they were collected.<sup>10</sup> Example: data collected are examined and subdivided into themes in order to identify emerging themes. Many times, these emerging themes facilitate the identification and the categorization of hypotheses and, based on that, the relevance of the findings is justified. Continuing with our example of elderly residents in SNF, the researchers would analyze the speech of elderly people, such as, for example, “I have to follow rules,” “I have to share a space with others,” and “my family has to come during visiting hours.” From this speech, the emerging idea is identified, which could be the change or restriction to the elderly people’s habits before hospitalization. A possible hypothesis would be the loss of autonomy of elderly people being hospitalized.

Commonly, two basic methodologies are referenced for qualitative analysis: an analysis of content and a phenomenological philosophical analysis.<sup>10</sup>

An analysis of content is nothing more than the organization of the material collected into themes. The generated themes are explored and coded into categories of analysis, and the presentation of results occurs according to themes. The phenomenological analysis takes into consideration the description of the behavior or the phenomena from the perspective of the subject, seeking an understanding of units of meaning by means of association of concepts verbalized by the subjects and association with some theoretical basis.<sup>11</sup>

Some useful approaches for data analysis in qualitative research involve the definition of the primary focuses studied and the creation of graphs or maps of analysis with keywords and categories defined in order to illustrate the association established.<sup>4</sup>

Nowadays, we have good computer programs that facilitate data analysis. By means of these programs, one can perform the examination of documents, create categories, cross-check information, code texts, establish standards for hypothesis elaboration, and present results.<sup>12</sup> These programs are important during data analysis as well as in all of the other phases of the study.<sup>3</sup> Some of the most used programs are the Atlas TI ([www.atlasti.com](http://www.atlasti.com)), the MAXqda ([www.maxqda.com](http://www.maxqda.com)), and the NVivo ([www.qsrinternational.com](http://www.qsrinternational.com)).

It is important to indicate which computer program was used in the methodology. The main observed parameters and the recognition models should be included, the creation of categories should be detailed, and the balance between flexibility and rigor in the construction of parameters determined for the analysis should be clarified.<sup>10</sup>

### Scientific rigor in qualitative research

Qualitative research is often criticized for its credibility and objectivity due to possible biases, the small scale of individuals surveyed as compared to quantitative research, as well as the misuse of classic statistical criteria. However, when conducted with rigor, the concepts of validation and reliability, traditionally used in quantitative analyses, are equivalent. The validity of the findings of qualitative research is similar to quantitative research and aims at a reliable representation of the phenomena, behavior, or observation studied. Reliability means that the findings are reproducible and their data are consistent.

Validity can be evaluated by several techniques and includes the need to share the data with other researchers in order to verify whether the understanding, explanation and interpretation of data generated by the collection method remains objective. Among the techniques, there are triangulation, the use of contradictory evidence, respondent validation, and constant comparison.<sup>13</sup>

The technique of triangulation consists of the use of more than one quantitative or qualitative approach in order to avoid distortions, depending on a theory, a method or even a researcher. There are several ways of doing triangulation (the use of several data sources, the participation of different researchers, multiple methods of observation and data collection), but the basic principle aims at achieving the most complete and rich representation of the behavior or phenomenon studied from different perspectives. This technique increases the validity of analysis, since it evaluates the object of study from different angles, enriching the description of the phenomenon.<sup>4,10,14-16</sup> For example, when the elderly people report the need to follow rules in SNF, this can be interpreted in different ways. For some, perhaps, this is a positive aspect, since rules generate a routine that facilitates day-to-day activities, or it could be negative, since rules eliminate individuality. Both interpretations are correct, but they should be placed in context, and observed from the perspective of the elderly people, the environment in which they live, and the way in which the information was collected.

Contradictory evidence is applied to non-standard cases in order to ensure that the researcher's bias does not interfere with the interpretation of the data.

The respondent validation technique is a method of checking inconsistencies in the findings, in which the participants read the data and the analyses of the researchers, providing feedback and allowing reanalysis of the data in the case of some inconsistency.

The constant comparison technique involves a continuous data analysis in order to identify convergent and divergent themes during the investigation.

These techniques preserve accuracy, enabling contextual confirmation and representativeness of the data collected.<sup>16</sup>

### Qualitative research applied to geriatrics and gerontology

One of the society's greatest achievements in the 20th century was the increase in life expectancy. Nowadays, we have more than 800 million people in the world aged over 60 years, and it is estimated that by 2050, there will be 2 billion.<sup>17</sup>

The meaning of aging is intimately tied to social, economic, and cultural contexts in which the elderly person is situated. Each society attributes different values and interests to old age and the process of aging. Qualitative research shows the representation of old age under the lens of the elderly, allowing the researcher to perceive and discuss a larger range of questions, including psychological, social, or cultural ones that are involved in the treatment of the elderly

person. The qualitative approach promotes an understanding that, up until then, was not possible with the methodology of quantitative research.<sup>18</sup>

Only with the broad assessment of the social and cultural context of the elderly population can one understand the dimensions of the specific needs faced by them. Exemplifying how qualitative research offers the gerontologist an in-depth evaluation of complex social phenomena associated with aging, we can mention the study carried out by Cobb and Forbes,<sup>5</sup> which was conducted with nursing home residents, illustrating and defining the main reasons and social processes that affect the admission and stay of these residents in these institutions. MacDonald et al.<sup>19</sup> demonstrated how the degree of physical activity at the time of retirement influences the elderly after this period. These aspects would not be captured using only the quantitative method, as they would illustrate the amplitude, the frequency and the occurrence, but would not allow for a greater understanding of the reasons that led to these behaviors.

By adding qualitative research to quantitative data, important modifications have occurred in the health policies and clinical management in the area of geriatrics/gerontology. In Brazil, for example, the National Health Policy for the Elderly,<sup>20</sup> Ordinance of October 19, 2006, was created based on work done with the elderly, in which the main social behaviors for the preservation of functional capacity, autonomy, and maintenance of the quality of life for an aging person to be considered healthy, were raised.<sup>21</sup>

## CONCLUSION

Qualitative research is not based on intuition, but rather on theoretical assumptions with a systematic data collection process directed toward the investigated subject, in which the analysis and the construction of knowledge occur in the interaction between the researcher, the research environment and the question studied.

In the area of geriatrics/gerontology, where complex social, psychological, economic, and family relationships exist, qualitative research can contribute to a better understanding of the difficulties faced by the elderly from their own perspective. Specific methods discussed in this article should be used to improve the validity and reliability of qualitative research in order to achieve scientific merit and complement quantitative research.

## CONFLICTS OF INTEREST

The authors declare that there are no conflicts of interest.

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