Qualitative methodology: revealing a new path for research in Dentistry

Metodologia qualitativa: evidenciando um novo caminho para a pesquisa em Odontologia

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ABSTRACT

Currently, it is easy to find health professionals who not only attach importance to qualitative methods, but also recognize their help to better understand their patients’ lives. However, its use in dentistry is still incipient, either due to ignorance or because of technical / operational difficulties in identifying possibilities for their use in research. Thus, the purpose of this study was to review the literature on the characteristics and peculiarities of the qualitative methodology, demonstrating their techniques of collecting, recording and analyzing data. For this, we performed a descriptive literature, from a survey in the “LILACS”, “BBO” and “PUBMED” databases, by keywords related to the theme, selecting only the papers that mentioned the “importance” of qualitative research, the “characteristics and fundamentals,” and the “techniques of collecting, recording and data analysis” involving this methodology. It was found that all studies have highlighted the importance of qualitative research to the construction of new knowledge that cannot be achieved by quantitative data. We found many different techniques to gather, record and analyze qualitative data applied to the dentistry field. It was concluded that qualitative research represents a new path to be followed by dentistry, so that we are able to plan actions in ethical and humane public health dentistry, bringing better results to the population, because of the depth of knowledge that your date can.

Indexing terms: Investigative techniques. Qualitative analysis. Qualitative research.

RESUMO

Atualmente, é fácil encontrar profissionais de saúde que não somente atribuem importância aos métodos qualitativos, mas também reconhecem sua ajuda para melhor compreender a vida dos pacientes. No entanto, na Odontologia seu uso ainda é incipiente, seja por desconhecimento ou por dificuldades técnicas/operacionais em identificar possibilidades para seu uso em pesquisa. Assim, o objetivo deste trabalho foi realizar uma revisão da literatura sobre as características e peculiaridades da metodologia qualitativa, evidenciando suas técnicas de coleta, registro e análise de dados. Para isso, foi realizada uma pesquisa bibliográfica descritiva, partindo de um levantamento nas bases de dados “LILACS”, “BBO” e “PUBMED”, através de palavras-chaves relacionadas ao tema, selecionando apenas os trabalhos que mencionassem a “importância” da pesquisa qualitativa, suas “características e fundamentos”, e as “técnicas de coleta, registro e análise de dados” que envolvem esta metodologia. Verificou-se que todos os trabalhos ressaltaram a importância da pesquisa qualitativa para a construção de novos conhecimentos que não podem ser alcançados pelos dados quantitativos. Foram encontradas várias técnicas para coletar, registrar e analisar dados qualitativos, sendo sua aplicação exemplificada na área da Odontologia. Concluiu-se que a pesquisa qualitativa representa um novo caminho a ser trilhado pela Odontologia, para que se tenha condições de planejar ações éticas e humanizadas em saúde bucal coletiva, trazendo melhores resultados à população, em razão da profundidade de conhecimento que seus dados podem gerar.


INTRODUCTION

The new requirements of knowledge production concentrate less in testing what is already well known (i.e. theories formulated beforehand) and more in discovering the new and developing empirically based theories.1 Within this new vision, it is found the qualitative paradigm (or comprehensive or naturalistic) of research, whose onset occurred somewhat naturally - the researchers realized that much of the information on the life of the populations could not be quantified and needed to be interpreted in a much wider way, rather than be confined to the simple objective data.2

Nowadays, it is easy to find health professionals who not only attribute importance to qualitative methods, but also recognize their help in better understanding the patients’ lives.3 However, in Dentistry, this use is still incipient, be it for not knowing the ontological and

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epistemological assumptions of the interpretation paradigm, with guide the qualitative methodologies, or for technical/operational difficulties in the identification of the possibilities for its use in research\(^6\).

We see emphasis in the quantitative aspect in the research models within Dentistry which often leaves unanswered questions, or ignores what can not be measured. The planning of actions in collective oral health should also consider the qualitative researches and not only the quantitative epistemological data when guiding their decisions\(^6\).

Albeit timidly, because inserted in a traditionally quantitative science, the qualitative research begins to observe what is hiding behind the odontological act in itself. Through systematic questioning it is sought to discover what is hiding in it, what is behind the immediatist act, its consequences, its image and its messages. To reflect the social reality, the research can not remain restrict only with the referential of the quantitative data. Thus, including the operational data and jointly with technical knowledge, any action of treatment, of prevention or planning should be aware of the values, attitudes and beliefs of the groups to whom the action is directed. It is necessary to understand that, when enlarging its conceptual basis, the health social sciences do not become less scientific; on the contrary they approach with greater luminosity to the real boundaries of the phenomena they encompass\(^7\).

Due to the great importance of the qualitative methodology for the solution of problems and facing the ignorance and technical/operational difficulties mentioned above, we believe to be relevant and necessary a compiling which embodied the characteristics and peculiarities of the qualitative research, emphasizing its techniques of collection, recording and analysis of data, being that the main purpose of this work.

**METHODS**

A descriptive bibliographic research was made from a survey of databanks of “Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS)” and of “Biblioteca Brasileira de Odontologia (BBO)”, utilizing the keywords “qualitative research” or “qualitative methodology” and “qualitative analysis”. Additionally, the databank “Pubmed” was searched through the descriptors “qualitative research” or “qualitative methodology” and “qualitative analysis”, without limitation of period for the searches.

After this procedure, all the articles found were saved in full and their thematic analysis was conducted. To be included in this work, the article should mention the “importance” of the qualitative research and/or its “characteristics and fundaments” and/or the “collection techniques and data analysis” which involve this methodology. The papers found were quoted along the discussion to have a better thematic contexture.

**RESULTS AND DISCUSSION**

Altogether 29 papers were selected and to make data presentation and discussion easier it was proposed a thematic grouping, considering: 1) fundaments and characteristics of the qualitative research; 2) techniques for the collection of qualitative data; 3) techniques to record qualitative data; 4) techniques for the analysis of qualitative data.

**Fundaments and characteristics of the qualitative research**

In the qualitative research the objective is to understand the meaning of the experience or to explore a phenomenon (to study the reality as a whole). We study a sample which represents what is happening. It originates from Anthropology, Sociology, Education and Psychology and is used when the knowledge about the phenomenon is scarce, but we want to generate its comprehension and when there is enough knowledge but it is necessary to obtain/identify new perspectives\(^6\).

To conduct this type of research it is mandatory to have a guideline for the execution, which is given by an initial project; for its turn, it represents a practical
instrument of orientation, facilitating the beginning of the research, which, once started, disconnects itself from the external control, becoming a process guided by the researcher, whose more significant moments are defined by the course of research itself.

In this project, it must be defined mainly the scenario of the research, the problem of research and the number of subjects to be studied. The scenario of the research is the presentation of the research through the creation of a communication and participation atmosphere which facilitates the involvement by people, such as a movie exhibition, the presentation of a conference or a round table, etc., that is, activities which should always incite a discussion that lead the participants towards their fundamental worries and needs. As for the definition of the problem of the research, on the contrary of what has been emphasized historically in the literature on the theme, its formulation is not a formal moment, but the progressive development of a representation which is not, nor should be perfect, and which will be subject of modification along the process9.

Regarding the number of subjects to be studied, the qualitative researcher defines the groups as a function of the needs that arise along the research, and the first attitude to be taken before selecting anybody is to get involved with the field to observe, to talk, and to know, in general, the peculiarities of the contest in which the research will be developed: the selection of the group will involve hypotheses formulated by the researcher9.

One way to establish or close the final size of a sample under study is the sampling by saturation which interrupts the captation of new components. It is the suspension of the inclusion of new participants when the data obtained begin to present, in the evaluation of the researcher, some redundancy or repetition, that is, the answers are repeated, being irrelevant to persist with the data collection. The information of the participants in the research would add very little to the material already obtained, no longer contributing significantly to the improvement of the theoretical reflection founded on the data being collected10.

In the qualitative paradigm, knowledge can not be accumulated in an absolute way; it grows and changes along a dialectic process of historic revision, which is continuous. The generalization (or transfer mechanism) occurs when different points of view, in different contexts, have similarity or when there are different contexts, with social, political, cultural, economical, and ethical circumstances of similar kind. An important transfer mechanism for knowledge is the provision of several experiences, in different contexts, which arrived at similar results, considering the communication of the researcher with his field of work and its members as an explicit part of the knowledge production. The direct contact, in the research field or in the planning of the actions, must show sensibility and scientific knowledge which extrapolate the biomedical explanations11.

**Techniques for the collection of qualitative data**

Countless papers described the techniques for collecting data, being seven of them the main ones for the use of qualitative methodology.

**Qualitative interview**

It is the most commonly used in institutions for health care, and basically may be of three kinds: structured, semi-structured and in depth.

The structured interviews consist of the administration of structured questionnaires, and the interviewers are trained to make questions (mostly with fixed options for the answer) in a standard way, being the semi-structured conducted based in loose structure, which consists of open questions that define the area to be explored, at least in the beginning, and from where the interviewer or the interviewee may diverge in order to proceed with an idea or an answer in greater detail12.

For their turn, the in-depth interviews are less structured than that, and may cover only one or two aspects but, in general, with a lot more detail. Such interview may start with the interviewer saying: “This study is about what people think about their own health. Could you tell me about your own experiences in terms of health?” Additional questions from the interviewer may be based on what the interviewee said, and consist mainly of clarifying and search for details2.

The qualitative interview is a powerful and flexible tool which may reveal many new areas for research. It is worth to remember that the answers to questions in the interview on behavior will not correspond to the observational studies. Because what people say they do is not necessarily the same that to observe them doing it.

It should also be kept in mind that the qualitative research processes, depending on the techniques utilized to gather data, an interview, for instance, have the power to provoke change in perception in the answering subject, to the point of making him to critically reflect on the theme in discussion and rethink his practices13.
In Dentistry, countless are the papers which may be conducted through this data collecting technique. One example is the study of Garbin et al.\textsuperscript{14} which evaluated the knowledge of the graduate students in Dentistry regarding some concepts and norms established by resolution 196/96, by means of a semi-structured form, where they concluded that, in spite of the divulgence and importance of this Resolution, a large part of the students do not know it.

**Focal groups**

Focal groups are a kind of group interview that valorizes the communications among the research participants in order to generate data. This means that, instead of the researcher asking to each person to answer one question at a time, people are stimulated to talk to each other, asking, exchange stories and commenting their experiences and the point of view of all of them\textsuperscript{15}.

It is an effective method for the obtainment of information on the comprehension and experience of people regarding some matter, and may be very useful for the exploration of taboo topics, besides extracting information even from the shyest, because the less inhibited “breaks the ice”, facilitating the externalization of thoughts and ideas which very unlikely would not be accessible in a face to face interview.

To conduct a focal group study it is necessary to have in mind some precautions, observing important items, such as: sampling and composition of the team, duration of the focal group, choosing and organization of the place of the sessions of the Focal Group. The sample is intentional and will depend of the design objectives and of the resources available, taking into account for the group composition that the components have, among them, at least a common important trace, such as social class, age, gender, civil status, cultural differences, experience level and users and non users of some product\textsuperscript{16}.

As for the duration of the focal group, ideally, the time designated to the sessions is from one and a half to two hours, being necessary to consider the warm up period to attain good levels of interaction which, in turn, will reflect on the debate\textsuperscript{17}.

According to Debus\textsuperscript{17}, some appropriations are recommended such as: an environment which assures privacy, a comfortable place facilitating the debate, “neuter” environment, whose installation do not inhibit the answers or provoke answering in a “socially desirable way”, a place easy to reach by the participants and seat disposition with a good eye contact with the participants.

The group facilitator must explain that the objective is to stimulate people to talk to each other and not to direct themselves to the researcher; he may seat in the back, at the beginning, making possible a kind of “structured clandestine listening”. Later, during the session, the facilitator may adopt a more interventionist style, stimulating the continuation of the debate beyond the stage it would otherwise ended, and encouraging the members of the group to discuss the divergences both among participants and with themselves. The divergences within the group may be used to stimulate the participants to solve their points of view and to clarify why they think that way\textsuperscript{12}.

It is up to the observer to record the happening of the group as a whole and in its significant particularities. In syntony with the coordinator (moderator or facilitator), he helps with the conduction of the session, in a way to intervene to get clarifications when perceiving that certain due procedures were not taken, even because, frequently, the coordinator may have missed or not recognized the necessity as such\textsuperscript{18}.

Costa et al.\textsuperscript{19} mapped and identified the Social Representations which permeate the dental attention to the women during pregnancy, from the medical, dental and the patient herself stand point through the focal groups technique, from which emerged four categories: Attendance Practices, Treatment Means, Description of the attendance and Conceptions on the attendance.

The data were analyzed under the light of the descriptive statistics, with figures and tables which represent the quantitative characteristics of the research; besides the Content Analysis, technique which will be approached later in detail, which analyzed the manifested content from the qualitative standpoint in each category. After the data analysis, it was possible to observe that the dentist group is the one most prejudiced regarding dental treatment during pregnancy.

**Observational methods**

Differently of the previously mentioned methods, where the research collects the data about what people say, in the observational methods the researcher observes behaviors watching people and events, instead of making questions. This is beneficial if we consider that we can not be sure about if what people say is what they really do.

Besides, the observational techniques are extremely useful to “discover” new aspects of a problem.
This becomes crucial in situations where there is no solid theoretical basis to guide the data collection. It also allows for the collection of data in situations where other forms of communication are not possible. For example, when the informant cannot talk - case of the babies - or when the person does not deliberately want to provide a certain kind of information, by several motives.

Thus, the observations may be in a direct manner or in a participant one. The direct observation, also called structured or systematic, presupposes a planning regarding data collection, to observe in loco the possible data that must be researched in relation to the pre-established objectives and hypothesis. That way, it is possible to observe the acts in their context and circumstances in which the attitudes and reactions are happening.

In the participant observation, the researcher must interact with the context being researched, that is, he must establish a direct relationship with groups and persons, following them in informal or formal situations, questioning them about the acts and their meaning through a constant dialogue.

**Documental analysis**

Although little explored, the documental analysis may constitute a valuable technique to approach qualitative data, be it by complementing the information obtained through other techniques, be it by unveiling new aspects of a theme or problem. “Any written material which may be used as source of information on human behavior” are considered documents. These include laws and regulations, norms, reports, letters, memoranda, personal diaries, autobiographies, newspapers, magazines, speeches, radio and television broadcast scripts to books, statistics and school files.

According to Holsti, the use of documental analysis is appropriate when the access to the data is problematic or when it is intended to ratify and validate information obtained with other collecting techniques, such as, for instance, the interview, the questionnaire or the observation. Another situation in which this technique may be utilized is when the researcher’s interest is to study the problem from the expression of the individuals in itself, that is, when the language of the subjects is crucial for the investigation.

Once selected the documents, the researcher will proceed with the actual analysis of the data. In order to do that, he usually uses the content analysis methodology. It was through the “Documental Analysis” technique that Tanaka & Garbin analyzed, according to the Consumer Protection and Defense Code (Procon), the complaints against the surgeon-dentists in the Procon of Presidente Prudente (SP), in the period of 1997 to 2001, verifying the motives which led patients to complain about those professionals, the areas of Dentistry which had more complaints, the type of refund asked by the consumers and the conclusion by Procon.

In the analysis of the documentation obtained, it was verified that 80% of the motives which led the patients to complain about those professionals were the non-compliance of the contracts, the error and the omission of treatment. The Dentistry areas which had the most complaints were Prosthesis, Restorative Dentistry and Endodontics. The type of refund more commonly asked by consumers was de devolution of the payment or the remake of the service executed. It was verified that most consumers obtained a satisfactory result with Procon, and that the population is becoming more conscious, thus requiring its consumers’ rights.

**Elaboration drawings**

The drawing elaboration technique consists in proposing to the researchers that they graphically represent a certain situation or conception, being appropriate in cases where the oral communication is not sufficient to gather impressions from the interviewee. From the drawing, researcher and person initiate a discussion which rests on the elements originated from the drawing. The elaboration of drawings as a qualitative research technique in health is similar to projective techniques used mainly in psychology, since they are based on the assumption that the informants, when in contact with the proposed instruments, will “project” their social representations about the phenomenon in focus.

Amorin utilized this methodology to obtain the vision a child has of the dentist, through the interpretation of drawings collected from children age 7 to 12, in public and private schools. It was also obtained a written questionnaire and a recorded interview during the elaboration of the drawings, to complement the analysis of the results. The image of the dentist found was predominantly hostile, but what seems to lead to this image is not the person of the dentist himself, but the instruments and equipment needed. Similarly, the exodontia seems to be the procedure best associated with the dentist and generator of conflict. It was concluded that the attitude of the professional in acting in a curative form and not with a preventive posture, avoiding the disease to set in, formed, throughout the years an image of the professional mutilator.
Classification/ordination of photos or gravures

The classification/ordination technique of photos and gravures consists in the presentation, to the informants, of a given number of photos of persons in different situations or with different physical conditions (fatter or leaner, taller or shorter, simpler or more sophisticated, more modern and more old-fashioned people), asking the informants to place them in order according their state of health - from the healthier to the sickest, from the type more prone to contaminate himself by some etiologic agent to the one considered free from risk; aesthetics - health or sexual practices associated; possibility of establishing a relationship - preferred type as sexual partner; among other things. The same may be done for types and colors of medicines and food, in order to know the representations and the values attributed by the informants to the elements presented.

Word association test: stereotypes and connotations

The word association test, the oldest of the projective tests is very simple to be applied. The subjects are asked to associate, free and quickly, from the hearing of the inducer words (stimuli), other words (answers) or induced words.

A synchronic comparison with some years of interval or between different generations would show, perhaps, an evolution of the persistence of some elements. Similarly, a comparison according to different social or political groups would indicate, probably, an insistence of one trend or another.

It is important to have in mind that the procedures, as well as the research subjects/objects are not chosen at random, because each research must define the appropriate procedures for its goals, and, once established the research object, the next step is to decide how to collect information to study it.

Through the examples of papers which used qualitative methodology to collect, record and analyze the data, we can perceive the wealth of material which may be produced through these techniques. It is possible to explore an infinity of themes within Dentistry, being sufficient for that the knowledge of assumptions which guide this methodology, thus minimizing the technical/operational difficulties for use in research.

Registration techniques for the qualitative data

There are basically three forms for registering qualitative data: notes written on the spot, notes written later and audio recording. However, it is necessary to consider that, while notes written on the spot may cause interference with the interview process, those written later probably will leave some detail behind.

However, recently, other methods are being used because of the growing improvement of technological resources for capturing images and sounds, such as the use of filming, which is a valuable instrument for the collection and generation of qualitative data. However, it should be used judiciously, considering the preparation of the researcher, which encompasses, besides the technical aspects, other requirements of personal nature.

Data analysis techniques

Currently, and in general, it is assigned under the term of content analysis: “a set of analyses techniques of the communications seeking to obtain, through systematic procedures and objectives of description of the images, indicators (quantitative or not) which permit the interference of knowledge regarding the production/reception conditions (inferred variables) of these messages.”

Categorial analysis

Chronologically it is the oldest and, in practice, the most used, and may be applied when we want to analyze the results of a word association test, to analyze the answers in open question or to analyze inquiry interviews.

It is an operation of constitutive elements of a set, through differentiation and, often, by regrouping according to kind (analogy) with previously defined criteria. The categories are headings or classes, which unite a group of elements (register units, in the case of content analysis) under a generic title, being the grouping made because common characteristics of these elements.

Collective Subject Discourse (DSC)

The DSC, while qualitative research technique is a procedure of tabulation of verbal statements, which basically consists in analyzing the collected material from interviews conducted from a script of open questions, extracting from each answer the Central and/or Anchorages and their correspondent Key-Expressions which represent in the best possible manner, all the central ideas with the same sense; with the Key-Expression of the Central Ideas or similar Anchorages, one or several DSCs are composed, being synthesis discourses enunciated in the first person of the singular, as if it were the speech or statement of a collectivity.
CONCLUSION

The analysis conducted in this paper permitted to point out that the qualitative research represents a new way to be pursued by Dentistry, representing an approach of impact, for considering subjectivity of the subjects, involving feelings, ideas, life experiences, perceptions, the meaning of the phenomena, manifestations, occurrences and facts; finally, all that models people's lives, and the quantitative data cannot measure.

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Received on: 10/11/2009
Final version resubmitted on: 31/10/2010
Approved on: 27/1/2011