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Qualitative research in dental public health care: An overview

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Abstract

The field of dental research is a systematic approach of judging, documenting, analysing and reporting unusual clinical observations that we come across in everyday clinical practice. Current issues in dentistry which include a focus on patients' wishes for outcomes and dentists' role in that process raise questions that can be addressed by Qualitative methods of study. Qualitative research is concerned with qualitative phenomena and includes subjective assessment of attitudes, opinions and behaviour. This present review was conducted with the objective of providing an overview of the potential role of Qualitative Study designs, understand the method of Qualitative research, its common approaches and resources to explore their potential for dental research. Identify and report the common approaches to Qualitative methods in Dental Research, understand the implications of Qualitative research in Dentistry and report a framework for conducting Qualitative research pertaining to Public Health Dentistry. Reference lists from relevant articles retrieved from electronic data bases from 1980 to 2013 and specific and standard textbooks related to Research Methodology and Qualitative Research methods for health research were used for the search. The initial search strategy yielded 650 articles of these 35 were considered in the present review. The identical key articles on Qualitative research methods have been used to provide practical methods and approaches in the present paper.

Keywords: Research Methodology, Qualitative Research, Dental Public Health Research, Phenomenological study, Ethnography, Biography, Case Studies, Grounded theory

1. Introduction

A pursuit to understand the new developments and progress in different aspects of life can be attained by treading and poking into the different templates of knowledge. Research is a scientific and systematic search for pertinent information on a specific topic and is vital in producing dependable knowledge [1]. In Public health, there are many different approaches of research in practice. The most widely used approach includes the Quantitative approach [2, 3]. Quantitative research is the numerical representation and manipulation of observations for describing and explaining the phenomena that they reflect and these researchers view the world as reality that can be objectively determined [4, 5]. Current issues in dentistry including a focus on patients' wishes for outcomes and dentists' role in that process raise questions that cannot be addressed by quantitative, statistical study alone. Qualitative research is concerned with qualitative phenomena and includes subjective assessment of attitudes, opinions and behaviour. It begins with a clearly defined problem; identifies the appropriate strategy to gather data from people, existing documents, and other sources of information that will help address the problem; uses a multifaceted tool kit of analytic methods to work with those data; and proceeds to investigate the data for their insight into the research problem and interpretation of the findings [6]. In qualitative research, the researchers themselves are the tool used in the research [7]. As this research provides a level of descriptive detail and depth that is impossible to achieve with other types of research, it is the best form of research for studying *how* and *why* individuals interact within social contexts [8].

This article provides an overview of the potential role of Qualitative Study Designs, identify and report the common approaches to Qualitative methods in Dental Research, understand the implications of Qualitative research in Dentistry and report a framework for conducting Qualitative research pertaining to Public Health Dentistry.

2. Methodology

This study aimed to review Qualitative research methods and designs published in the literature between 1980 and 2013.

Four electronic data bases like Pubmed, Ebscohost, Science Direct and Directory of open

access journals (DOAJ) were used for the initial search. The initial research also included Reference lists from relevant articles retrieved from electronic data bases. Search strategy used standard key words (text words) for retrieving the publications. Specific and standard textbooks related to Research Methodology and Qualitative Research methods for health research were also referred [1, 4, 7]. The initial search strategy yielded 650 articles.

2.1 Inclusion criteria

- 1) Based on the relevance of the study objectives, publications were selected from the search results.
- 2) Theoretical and descriptive papers were included.
- 3) Publications with valid and reliable information related to Qualitative research methods and published in the English language were included.

2.2 Exclusion criteria

- Case reports, editorials and short communications not relevant to the study objectives were excluded.

Application of broad based inclusion criteria significantly reduced the articles to 50, of which 33 were considered in the present review after application of exclusion criteria. The quality and appraisal of included papers were independently reviewed by two reviewers. Disagreement between reviewers was resolved through discussions and consensus. The identical key articles on Qualitative research methods have been used to provide practical methods and approaches in the present paper.

3. Outline of Qualitative Research

Qualitative research is concerned with the opinions, experiences and feelings of individuals producing subjective data. This research method describes social phenomena as they occur naturally. Understanding of a situation is gained through a holistic perspective. The purpose of Qualitative Research is to construct a valid theory that guides knowledge development within a discipline. This method is used when little is known about the phenomenon or when present theories need revising [9].

Qualitative researchers generally operate from an epistemological perspective, such as constructionism, which assumes that knowledge is created by interaction between people and their world and adopts a foundationalist ontology based on positivism [10, 11].

4. Methods of framing a Qualitative Research

The tradition of qualitative inquiry selected by a researcher can shape the design of the study (Creswell 1998). The Five-Question Method is an approach to framing Qualitative Research, focusing on the methodologies of five of the major traditions in qualitative research: biography, ethnography, phenomenology, grounded theory, and case study. Asking Five Questions, novice researchers select a methodology appropriate to the desired perspective on the selected topic. This method simplifies the framing process promoting quality in qualitative research design [12].

Biography is the study of a single individual and his or her experiences as told to the researcher or as found in the documents and archival materials (Denzin, 1989). It broadly includes biographies, autobiographies, life histories, and oral histories. Analysis typically takes the form of stories, epiphanies, and historical content to yield a vivid picture of the life of the individual in question [13, 14]. These Biographies improves the efficiency of preventing and promoting oral

health from individual level to large populations thus acting as a helping hand in improving public health of society as a whole.

Phenomenology is described as the study of the shared meaning of the experience of a phenomenon for several individuals. The understanding of meaningful concrete relations implicit in the original description of experience in the context of a particular situation is the primary target of phenomenological knowledge [15, 16, 17].

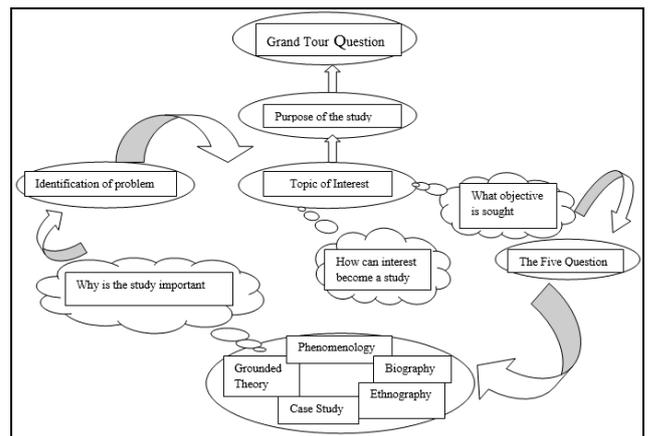
In **Grounded theory**, the researcher generates an abstract analytical schema of a phenomenon, a theory that explains some action, interaction, or process through collecting interview data, making multiple visits to the field (theoretical sampling), attempting to develop and interrelate categories of information via constant comparison, and writing a substantive or context-specific theory [18, 19]. In the perspective of Dental Public Health, patient satisfaction outcomes after dental treatments and quality of life compromised because of oral and dental problems can be studied by employing phenomenology and grounded theory methods.

Ethnography is described as a study of an intact culture or social group based primarily on observations and a prolonged period of time spent by the researcher in the field. The ethnographer listens and records the voices of the informants with the intent of generating a cultural portrait [9, 20, 21]. Ethnographic studies in public health dentistry can be employed to identify the role of myths, taboos and other cultural beliefs, traditions and practices in different socioeconomic strata affecting the oral health in turn affecting the general health.

A qualitative **case study** provides an in-depth study of a “system,” based on a diverse array of data collection materials. The researcher situates this system within its larger “context” or setting [16, 22]. The case studies are an essential part of research in Public health dentistry as it enables evaluating the oral and dental health of large populations.

The Five Question Method for framing a Qualitative Research Design [12]

(Figure in jpeg/word. format sent in different file.)



The Five Question Method for framing a Qualitative Research Design [12]

5. Research design

A common feature of qualitative projects is that they aim to create understanding from data as the analysis proceeds. The indications of form, quantity, and scope must be obtained from the question, from the chosen method, from the selected topic and goals, and also, in the form of an ongoing process, from the data [23, 24].

6. Sampling techniques

In qualitative research, only a sample (a subset) of a population is selected for any given study. The study's research objectives and the characteristics of the study population (such as size and diversity) determine which and how many people to select. When sampling, one must be aware of when one is working inductively and discovering and when you are working deductively and verifying [25, 26].

The three most common sampling methods used in qualitative research include: Purposive sampling, Quota sampling and Snowball sampling. **Purposive sampling** is one of the most common sampling strategies. It groups participants according to preselected criteria relevant to the particular research question. Sample sizes are often determined on the basis of theoretical saturation (the point in data collection when new data no longer bring additional insights to the research questions) [25, 26].

Quota sampling, sometimes considered a type of purposive sampling, is also common. In quota sampling, it is decided while designing the study as to how many people with what characteristics are to be included as participants. This method of selection is used in interview selections. As it not random and its use is to target a specific group, it is not the most effective or reliable method for success [25, 26].

A third type of sampling, **Snowballing** – also known as chain referral sampling – is considered a type of purposive sampling. In this method, participants or informants with who contact has already been made use their social networks to refer the researcher to other people who could potentially participate in or contribute to the study. Snowball sampling is used for rare studies or research limited to rare small groups of the population [25, 26].

7. Data collection methods

Qualitative approaches to data collection usually involve direct interaction with individuals on a one to one basis or in a group setting. Data collection methods are time consuming and consequently data is collected from smaller numbers of people. The benefits of using these approaches include the richness of data and deeper insight into the phenomena under study [27, 28, 29]. The main methods of collecting qualitative data are:

Interviews, focus groups and observation. Interviews resemble everyday conversations, although they are focused on the researcher's needs for data. The purpose of the research interview is to explore the views, experiences, beliefs and/or motivations of individuals on specific matters. The primary purpose of clinical encounters is for the dentist to ask the patient questions in order to acquire sufficient information to inform decision making and treatment options. In a qualitative interview, good questions should be open-ended, neutral, sensitive and understandable. Interviews can be highly structured, semi structured or unstructured. Group interviews may be more appropriate for some sensitive topics structured and it gives a gist about the social structure of the community and an in-depth understanding of the context and social fabric of the community, and of how opinions and knowledge are formed in social contexts. A group interview includes focus group and natural group. In a focus group, the participants are selected to meet sampling criteria. It is formal, performed in a controlled pre-arranged time and place. It is usually audiotaped and transcribed for analysis. It is used in testing health promotion materials and exploring service users' views [15, 28, 29]. To understand fully the complexities of many situations, direct participation in, and observation of, the phenomenon of

interest may be the best research method. The data collected must be descriptive so that the reader can understand what happened and how it happened. Observational data is very useful in overcoming discrepancies between what people say and what they actually do and might help uncover behaviour of which the participants themselves may not be aware of [9, 28, 29].

8. Handling and compilation of data

Handling and compilation of data includes confidentiality and security and recording and transcribing data. Notes are written at the same time while speaking, or it is written later or even audiotape. The best method is generally to ask a transcriber to take notes whilst taping, and ask the transcriber to go through the notes he has taken afterwards checking with the recording whether s/he has forgotten anything [30].

9. Analysis of data

Analysis of data in a research project involves summarising the mass of data collected and presenting the results in a way that communicates the most important features. There are two fundamental approaches to analyzing data- deductive and inductive approach. Deductive approaches involve using a structure or predetermined framework to analyse data. This approach is useful in studies where researchers are already aware of probable participant responses. Inductive approach involves analysing data with little or no predetermined theory, structure or framework and uses the actual data itself to derive the structure of analysis. Inductive analysis is the most common approach used to analyse qualitative data. The language used in Qualitative data analysis includes Interim analysis, thematic analysis, Tape analysis, Computerised data analysis and Content analysis [30, 31].

10. Presentation of data

Qualitative data are subjective, interpretative, descriptive, holistic and copious. A good starting point is to look at the themes and categories which have emerged and to use these to structure the results section of the research report. This structure can be set out at the beginning, either as a list or in diagrammatic form. The themes are then presented in sections with the categories as sub sections. In this way, the categories of data are used to construct a case that the themes are the main findings of the study. Further "evidence" to support the findings is provided by using direct quotations from respondents. Key quotations are selected to illustrate the meaning of the data [31, 32].

In qualitative research, an Introduction, Methods, Results and Discussion (IMRAD) format is followed for communicating something as complex as a primary source research report [8].

11. Conclusions

The present review was conducted with purpose of understanding the method of Qualitative research, its common approaches and resources to explore their potential for research in dental public health. The intriguing complexities and ambiguities that are emerging with ever-improving techniques and materials in dentistry, as well as competing demands for attention in dental health, require a range of research methodologies like qualitative methods to address important existing and future research questions. The use of Qualitative Research in the in the field of Dental Public Health can broaden the evidence base and practice because it allows researchers to answer important research questions that are

difficult to address satisfactorily using other research methods.

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