Chapter-6

How to design a qualitative research?

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Research, is a commonly used term particularly among social, academic and scientific health care settings. “Research is a systematic process of collecting, analyzing, and interpreting data in order to understand a phenomenon about which we are interested or concerned”.[1] Research is not a blind trip into the unknown. It is, instead, a carefully planned journey and mainly originates with research question or objective (at least one) related to the topic of interest.

Approaches to conduct research

Quantitative, qualitative, and mixed methods are the three common approaches to conduct research. The two fundamental paradigms of research ***‘positivistic’*** and ***‘naturalistic’*** are referred to as ‘quantitative’ and ‘qualitative’ respectively and both are combined to make a mixed method research.[2] Scholars usually choose quantitative approach when numerical and statistical data is required, the qualitative approach when textural data is required and the mixed methods approach when both numerical and textural data are required to answer research questions respectively.[3]

Quantitative research is usually more structured, deductive in nature, uses statistical sampling methods with experiments and surveys as commonly used methods to get usually fixed measurable information. In contrast, ***qualitative research*** is considered relatively flexible, inductive, using purposeful

selection of participants with observations and interviews as commonly used tools to get less tangible, changing and open ended information.[2,4]

Quantitative researchers use reliability to authenticate while qualitative researchers use validity[4]. Quantitative and qualitative research are usually taken as opposite to each other. In reality both have their own strengths and limitations. Both have potential to explore similar issues but each will answer a different research question. That is how they ***complement each other*** to explore issues with mixed methods approach. Use of qualitative research is growing in health care research with socio-cultural factors being given more importance in this evolving evidence based era. This chapter is focused on how to design a qualitative research as elaborated in further sections of the chapter.

Qualitative Research

Qualitative research is a ***holistic approach*** that allows researcher to get highly involved and conduct research mostly in a natural setting to explore actual experiences with details covering all relevant aspects. Qualitative research encompasses process as well as outcome of the research.[5] The purpose of qualitative research is not only to ***describe*** but also ***explore and explain*** the phenomena of interest[6] with importance given particularly to understandings, opinions and experiences of the participants.

Types of qualitative research

Qualitative research within itself has more than 25 approaches that make it another challenge for researchers to choose one best for them.[7] Various terms used in this context include; narrative study, phenomenology, ethnography, grounded theory, life history, case study or report and ethnomethodology among many.[7-9] These approaches are sometimes synonymously used as qualitative research designs. Most commonly used in health care are phenomenology, ethnography, case report, and grounded theory.[2,4]

Narrative study includes autobiography, life or personal stories and biographies.[10] It focuses on ***narratives*** that are investigated within and across study participants and later after detailed investigation and analysis re-told or restated by the researcher.[10,11]

Though a narrative study involves life of a single individual, a ***phenomenological study*** deals with several individuals or group and captures the ***lived experience***. It usually doesn't aim to develop theories or models of the phenomenon being studied rather describes specific phenomena of interest in order to better understand what real experience means and are common in participants' lives.[10,12,13]

Ethnography has its roots in anthropology, which deals with values, beliefs, and practices of cultural groups.[14] Ethnography is used to acquire deeper investigation of a specific culture, group, or community and involves; ***experiencing*** (mostly by participant's observations), ***enquiring*** (mostly through interviews) and ***examining*** (mostly by study of relevant materials).[2,9,11] It is often time consuming and aims to explore culture from the people certainly living there.[12,14]

Case study or report is used mainly to study individuals (a case or multiple cases) and explore in depth, a complex phenomenon within specific contexts potentially with different data sources. It usually focus on processes that take place in that context and their interrelationship.[2,9]

Grounded theory is used to explore phenomena involving human experiences and behavior along with social processes thus aims to discover ***social and psychological factors***[15] and may lead to theory that arises from data.[11] The main features of grounded theory designs are theoretical sampling and constant comparison of data with emerging categories.[10]

Data collection tools in qualitative research

Data collection tools that can be used in qualitative research include; field notes, photographs, videos, participant

observations, recordings, artefacts, journals, in-depth interviews, and focus groups.[2,10-12] Participant's observations, in-depth interviews, and focus groups are more commonly used in health care and the forms of data these tools create usually transcripts, field notes and audio or video recordings.

Each tool has ***appropriateness*** for obtaining a specific type of data. ***Participant observation*** is usually preferable for data collection and exploring behaviors in naturally settings. ***In-depth interviews*** are relatively more appropriate for collecting data from individuals related to their perspectives and experiences, in particular when exploring sensitive issues. ***Focus groups*** are usually more effective in collecting data related broad overviews and cultural norms of concerned questions among participants representing relevant cultural groups or subgroups.

Qualitative research process

Research process and its ***salient steps*** are explained in detail in literature starting from formulating the research problem to final dissemination of findings.[16] Kumar explained the process in sequence; deciding ***what to research, planning and conducting*** a research as major phases.[17] According to Maxwell, there is ***no "cookbook"*** available to plan and conduct qualitative research and the most appropriate answer to identify which approach to use is ***"It depends"***. Merely following recommended methodological rules in qualitative research does not guaranty the feasibility or quality whereas phenomena of interest, its setting and the actual consequences of your planned research activities also plays pivotal role.[18] Creswell described major attributes' of a qualitative research that included; natural setting and ***researcher as a key instrument***, multiple sources of data leading to inductive data analysis, participants' perspectives, interpretive and holistic inquiry along with emergent design.[10]

Qualitative research design

Design is defined as "An underlying scheme that governs functioning, developing, or unfolding" and "the arrangement of elements or details in a product or work of art".[19]

Research design has been identified as a ***key component*** of any research.[2,10,11,20] Research design is neither a method nor a tool of data collection as explained earlier in this chapter. In fact it can be considered as an overall logical structure of the research as compared to methods that relates to mostly logistic matters and involves several processes and appropriate data collection tools. Figure.1 outlines qualitative research

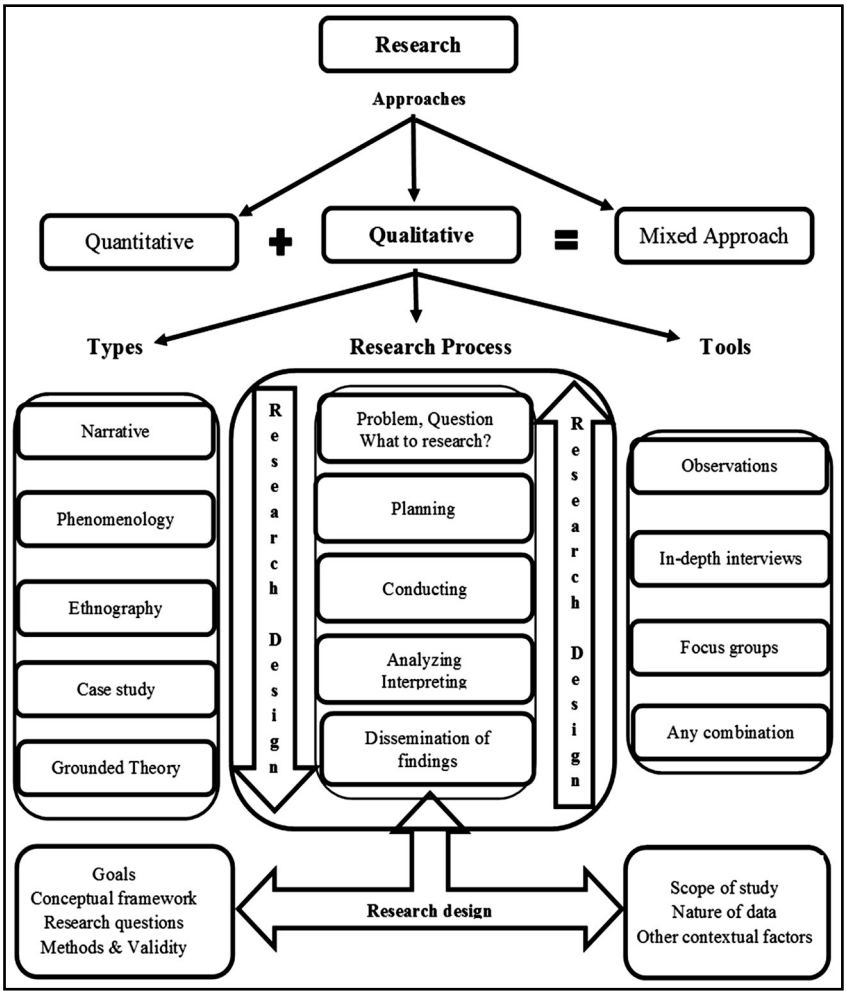

Figure.1: Outline of Qualitative Research.

along with its major types, used tools, process and design. Literature provides ***different definitions*** of research designs. Few significant and commonly followed are mentioned below:

"a blueprint for conducting a study with maximum control over factors that may interfere with the validity of the findings" as a research design.[21]

"a plan that describes how, when and where data are to be collected and analyzed".[22]

"A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research questions or problems. The plan is the complete scheme or programme of the research"[17]

Research designs can be ***fixed, flexible or responsive***. Usually quantitative studies are related to designs that are fixed, pre-determined and use intervention/s while on the other hand qualitative studies are expected to have emergent, flexible, guided by data and use no interventions.[2] Research design is ***vital but challenging***, yet it is the least discussed and elaborated particularly in context of qualitative research.[23] Research design needs to be considered not only prior to the ***beginning*** of any research but also ***throughout the research process***. Research design is expected to focus on the plans and events of investigation (strategies) and explicit methods with appropriate data collection, analysis and interpretation. Thus making this component a ***functional plan related to all steps*** starting from identification of a problem to final dissemination of results and increase study reliability and validity.[10,24] This concept is more aligned with Donabedian's quality improvement principle of input, process and output, providing a clear framework for research.[25]

Notably, knowing the theoretical background of qualitative research and exposure to relevant literature may assist but might not be sufficient enough to choose and plan a suitable research design. ***Nature*** of the research problem, ***stakeholders*** of the study and the ***researchers' personal life experiences***

may guide further to plan a good research design.[10] It is not only important to ***consider*** strengths of a ***good design*** that let all research components work together and allow smooth proceedings but also a ***faulty design*** that may compromise research process and subsequently its outcome.[18]

Usually questions, problem, and method are to guide research designs.[26] Richard and Morse explained that researchers need to create their own research designs while trying to see study at different levels ***in advance and throughout***. It is shaped by the method, and is reactive to the settings and study participants. Despite this, there might be need to change or reconsider design decision during the study.[23]

Planning research design

The overall design of any research should be intended to answer research question. Literature guides with ***different recommendations*** and models to start and plan qualitative research designs with few commonly used are explained in this chapter. To start and develop a qualitative research design, it is recommended to ***identify the research question***, the most significant early part of research process. Identification of correct research problem and question will get researcher half way there. Patton and Cochran recommended few issues to be considered at this stage:[26]

- Is this a real research problem that needs to be addressed?
- Has this research already been done? That will be explored through a literature search and critical reading. This will let you know and understand relevant studies and their designs.
- Is a qualitative approach appropriate?

One of the most simple and commonly used model to plan qualitative research designs was suggested by Maxwell with five components, each of which relates to a different questions set crucial to the study, as mentioned below:[18]

Goals:

Why this research?

What will it clarify and influence?

What knowledge gap will it fill?

Conceptual framework:

What is background of issue, settings and population?

What previous theories, beliefs and research findings will guide study?

What literature and other studies or personal experiences will you draw?

Research questions:

What phenomenon you want to understand?

What is not known about the issue?

What questions will study answer?

How these questions are related?

Methods:

What will you actually do to conduct study?

What approaches and techniques will be used to collect and analyze data?

How do you establish an integrated strategy?

Validity:

How might your results and conclusions be wrong?

What are the plausible alternative interpretations and validity threats?

How will you deal with these threats?

How can the data that you will collect, support or challenge your ideas about what's going on?

How will your results be trustworthy?

Besides these five components, Maxwell also proposed to consider many ***other contextual factors*** that either relate to;

study environment (settings) or outcomes of research. Research skills, perceived problems, ethical standards, available resources, the research setting, and the data and preliminary conclusions were among many in that category. The above mentioned components are not markedly different from relevant literature of qualitative research[9,27] but Maxwell's approach to explain the ***interactive nature among these components*** was significant. Furthermore, he also debated not to consider ***ethics***, as a separate component of research design as it has gained importance in recent decades[8,28] due to the assumption that ethical apprehensions are involved in all aspects of research process.[18]

On the other hand Richard and Morse suggest to start ***aligning*** with study ***scope*** (both limits of study; topic and settings) ***and nature of the data*** (may change during study) required to answer research question.[23]

A qualitative research design is more like a ***journey of hope and fear***. Roller and Lavrakas, based on Deming's classification of potential error in survey research, identified 13 factors impacting the quality of qualitative research and classified them in to; environmental, dynamics and moderator related factors. These were mostly process related factors.[20] In fact, ***quality concerns*** encompass ***all steps of the qualitative research process***.

According to Kothari, a design may be considered as good if it minimizes bias and maximizes the reliability of the data (collected and analyzed), and is flexible, appropriate, efficient and economical. Importantly, a single research design may not be appropriate for all types of research problems. A design may be quite suitable in one case but not in other, depending upon many factors such as research problem, question, objective and nature[16]. Qualitative studies are ***dynamic*** with assumptions that there is ***no single constant reality*** (as it is based on perceptions that are different for different individuals and may change over time) and what we understand today has meaning only within a given ***context or situation***. Considering the holistic

and challenging nature of qualitative studies, it is hard to pick one right model for qualitative research design. However, consideration of few significant but common recommendations and gaining experience under experts in qualitative research field may assist in a better way.

Summary

Overall, this chapter is intended to encourage the reader to understand the basics of qualitative research and develop the necessary skills to design a qualitative research that requires utmost consideration. There is no one precise way to create a perfect qualitative research design. Research design is advance planning of research process and touches almost all aspects of it, preferably starting from research question to the final dissemination of results. It is needed for efficient and smooth proceedings of research activities, in order to achieve maximum information within given resources to answers research questions or problems. This chapter discussed salient factors and recommendations in order to design a qualitative research. Researcher needs to consider multidimensional but flexible approach according to scope of the study, nature of the data, study settings, resources and other factors that may impact research process or outcome. In general, research design proposes the overall structure of the study to make sure that all parts of the research process are accurately placed and aligned with each other and demands extra attention to the influences one part can have on the other.

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