



Case Study Research Methodology in Nursing Research

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Through data collection methods using a holistic approach that focuses on variables in a natural setting, qualitative research methods seek to understand participants' perceptions and interpretations. Common qualitative research methods include ethnography, phenomenology, grounded theory, and historic research. Another type of methodology that has a similar qualitative approach is case study research, which seeks to understand a phenomenon or case from multiple perspectives within a given real-world context (Taylor & Thomas-Gregory, 2015). Case study research has been described as a flexible but challenging methodology used in social science research. It has had the least attention and support among social science research methods, as a result of a lack of a well-defined protocol, and has had limited use in nursing research (Donnelly & Wiechula, 2012; Taylor & Thomas-Gregory, 2015; Yin, 2012, 2014). Three methodologists, Yin, Merriam, and Stake, have been credited as seminal authors who have provided procedures for case study research (Yazan, 2015). This article will describe and discuss case study research from the perspective of these three methodologists and explore the use of this methodology in nursing research.

Definition

The term *case study* is well known in the nursing profession as a teaching strategy to analyze a patient's clinical case. *Case study research* is less employed and is defined similarly by all three methodologists as a research approach that focuses on one phenomenon, variable or set of variables, thing, or case occurring in a defined or bounded context of time and place to gain an understanding of the whole

of the phenomenon under investigation (Merriam, 2009; Stake, 1995; Yin, 2014). The phenomenon or case can be a person, a group, an organization, or an event. The overall goal of case study research is to seek the "how" or "why" a phenomenon works, as opposed to other qualitative research approaches that seek to define the "what" of a phenomenon (Polit & Beck, 2012). Case study research usually requires detailed study during an extended period of time in an effort to obtain present and past experiences, situational factors, and interrelationships relevant to the phenomenon. Case study research has been viewed by some authors as a qualitative research methodology (Polit & Beck, 2012), and others view this type of research as flexible, using a mix of qualitative and quantitative evidence (Taylor & Thomas-Gregory, 2015; Yin, 2014).

Case Study Designs

Merriam, Stake, and Yin each have a differing perspective on case study design. Merriam (2009) purports a flexible design that allows researchers to make changes throughout the research process that is based on two or three research questions that construct and guide data collection. Stake's (1995) design is based on a literature review that is the foundation of the research questions and theoretical framework but assumes that major changes may occur throughout the research as part of a process described as progressive focusing. Yin's (2014) design is based on a sequence and includes several design options for the researcher. The selection of a case study design is based on the chosen theory and the case to be studied. The first decision is to determine

whether the case study will use a single case or multiple cases. The use of a single case study is an appropriate design for certain circumstances, including when the case represents (a) a critical case to test theory, (b) an unusual or unique case, (c) a common case that can capture an understanding of usual circumstances, (d) a revelatory case that previously has been inaccessible, or (e) a longitudinal case (Yin, 2014).

A multiple case design is used when two or more cases are chosen to examine complementary components of the main research question (Yin, 2012). The multiple case design may be selected when the researcher is interested in examining conditions for similar findings that may be replicated or in examining conditions for contrasting cases. When choosing multiple cases, no formula exists to determine the number of cases needed, unlike power analysis to determine sample size (Small, 2009). In general, including more cases in a multiple case study will achieve greater confidence or certainty in a study's findings. Conversely, the use of fewer cases will yield less confidence or certainty.

Single and multiple case studies can use holistic or embedded designs. A holistic design comprehensively examines a case or cases, and an embedded design also analyzes subunits associated with the case or cases.

Case study research is flexible and can use multiple sources of data. Yin's (2014) methodology incorporates qualitative and quantitative data sources, and Merriam's (2009) and Stake's (1995) methodology exclusively use qualitative data

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sources. Multiple sources of evidence provide breadth in comprehending a case or cases and enhance confidence in the study findings. Common sources of evidence include direct observations of human behavior or physical environment, interviews, archival records, documents (e.g., newspaper articles, reports), participant observation, participant records, surveys, photographs, videos, or questionnaires.

Data analysis for case study research uses qualitative and quantitative data analysis methods, depending on the selected methodology, with the focus on describing the case or cases. Merriam's (2009) data analysis is a process of consolidating, reducing, and interpreting procedures that occur simultaneously through data collection and analysis. Six analytic strategies are ethnographic analysis, narrative analysis, phenomenologic analysis, constant comparative method, content analysis, and analytic induction. Stake (1995) similarly employs data collection and analysis procedures through the use of two strategies—categorical aggregation and direct interpretation. Yin (2012) recommends initially categorizing the data then organizing the data by four techniques—pattern matching, explanation building, program logic models, and time-series analysis. Multiple case studies also would include an additional technique called cross-case synthesis to search for any repetition in the case. The final product of case study research is a narrative report that tells the story of the case and enables the reader to fully understand the case from the narrative (Taylor & Thomas-Gregory, 2015).

Methodologic Issues

An important aspect of case study research is ensuring study rigor similar to other qualitative studies. Strategies to ensure rigor include the maintenance of a diary or journal by the researcher to document personal feelings and reactions and minimize researcher bias, expert verification, an audit trail, use of thick descriptions, long-term observation, multisite designs, and member checking to ensure accuracy of findings by the participants (Taylor & Thomas-Gregory, 2015). Another methodologic issue is ensuring content validity. This can be achieved by the researcher's final report that should include sufficient evi-

dence and display a deep understanding of the case by the researcher.

Application of Case Study Design in Nursing Research

In this issue of *Oncology Nursing Forum*, Walker, Szanton, and Wenzel (2015) present their study exploring post-treatment normalcy using a multiple case design. The purpose of the study was to develop a better understanding of how adult survivors of early-stage breast and prostate cancers manage the work of recovery, which exemplifies the goal of case study research by asking "how" a phenomenon works. Multiple case study design was used through data collection that included self-reports, biweekly phone interviews, in-depth interviews, and written journals to evaluate existing theoretical knowledge and generate new theoretical knowledge about the process of managing recovery. The authors describe study rigor by illustrating expert validation and a constant comparative process of data analysis. From the data, the authors provide the reader with a detailed, narrative description of how adult survivors work toward normalcy that is engaging and tells the survivors' story of life post-treatment.

Conclusion

Despite the lack of a well-defined protocol for case study research, Merriam, Stake, and Yin provide similar yet distinctive philosophies and procedures that researchers can use when embarking on a case study research project. Walker et al. (2015) provide an excellent exemplar of executing case study research in oncology through the investigation of the illness trajectory framework and how survivors work toward normalcy after treatment. Through this research approach, oncology nursing knowledge can benefit from a better understanding of the "how" and "why" of numerous phenomena that have

implications for nursing practice and ultimately improve patient outcomes.

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Methods & Meanings

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