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The Headaches of Case Study Research: A Discussion of Emerging Challenges and Possible Ways Out of the Pain

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Abstract

Case study research is a widely-used approach in qualitative research. The advantages of case study research include its ability to investigate complex social phenomena and to handle dense data. However, it has several drawbacks, such as defining the case and ensuring rigour. The large variety in descriptions of case study implementation makes the application of case study research a challenge for novice and experienced researchers alike. The aim of this paper is to describe a novice's foray into case study research, illustrating advantages, drawbacks, and applications of case study research through examples from a previously conducted case study. By mapping consistencies and differences in the case study descriptions, this paper offers a way for novice researchers to familiarize themselves with the range of case study perspectives and with the choices and considerations that must accompany the choice of case study research. This paper shows the definitional and structural challenges that case study researchers may face. We identified 14 descriptions of case study research with unclear or overlapping distinctions. Despite the large number of variations in case study descriptions, we singled out one main distinction: the distinction between multiple and single case studies. The sheer proliferation of how case study research should be conducted underlines the great responsibility case study researchers have when choosing an analytical and methodological approach and ensuring rigour in their research.

Keywords

case study research, novice researchers, generalizability, health services research

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The Headaches of Case Study Research: A Discussion of Emerging Challenges and Possible Ways Out of the Pain

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Case study research is a widely-used approach in qualitative research. The advantages of case study research include its ability to investigate complex social phenomena and to handle dense data. However, it has several drawbacks, such as defining the case and ensuring rigour. The large variety in descriptions of case study implementation makes the application of case study research a challenge for novice and experienced researchers alike. The aim of this paper is to describe a novice's foray into case study research, illustrating advantages, drawbacks, and applications of case study research through examples from a previously conducted case study. By mapping consistencies and differences in the case study descriptions, this paper offers a way for novice researchers to familiarize themselves with the range of case study perspectives and with the choices and considerations that must accompany the choice of case study research. This paper shows the definitional and structural challenges that case study researchers may face. We identified 14 descriptions of case study research with unclear or overlapping distinctions. Despite the large number of variations in case study descriptions, we singled out one main distinction: the distinction between multiple and single case studies. The sheer proliferation of how case study research should be conducted underlines the great responsibility case study researchers have when choosing an analytical and methodological approach and ensuring rigour in their research.

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Introduction

Yin (2014, p. 3) starts *Case Study Research: Design and Methods* with the statement: "Doing case study research remains one of the most challenging of all social science endeavors. Do not underestimate the extent of the challenge." Although standards or general guidelines for reporting (Rodgers et al., 2016) and conducting case studies have been developed (Gerring, 2017; Yin, 2012), case study research remains a method or a study design with various standards of implementation, depending on the author. It can therefore be difficult, for novice and experienced researchers alike, to conduct case study research. Yet, case study research is a common way to conduct qualitative inquiry (Stake, 2005).

Despite its known challenges and critiques, case study research has been recognized as a fruitful approach to understanding complex social phenomena. It has a unique ability to handle a variety of evidence, and to reflect the contextual conditions in which the case is situated, thereby retaining a holistic and real-life perspective of the subject (Flyvbjerg, 2006; Stake, 2005; Yin, 2014).

This paper presents some of the advantages, challenges, and applications of case study research which have been discussed in previous literature. In addition, the paper discusses key themes in case study research such as generalizability, definition of cases, and the definition of case study research, using examples from our newly conducted case study on hospital readmissions from the perspective of primary health care services (Glette, 2020). Box 1 describes our study.

Box 1. Case Study used to investigate hospital readmissions (Glette, 2020)

Example of a case study

Design: Qualitative explorative multiple comparative case study

Rationale: To explore hospital readmissions from a primary healthcare perspective, to increase knowledge of the factors leading to hospital readmissions from the primary healthcare service. More specifically, the study generates new knowledge about a) GPs' and nursing home physicians' decision-making in hospital readmissions; b) the role of nursing home resources in readmissions processes (e.g., staffing, nurse competence, physician coverage); and c) hospital physicians' view on hospital discharges to, and readmissions from, the primary healthcare services.

Case definition: A case was defined as a municipality with primary healthcare services and a common hospital. The subunits consisted of four nursing homes, each of which had nursing home nurses and leaders, primary care physicians (GPs and nursing home physicians) and hospital physicians.

Recruitment: A meeting with the director of health, the care manager, the municipal director and the manager of community services and healthcare in both municipalities was held. The care manager recruited the nursing homes, and the nurses were recruited by their supervisors. GPs were initially contacted by the manager of community services before the project leader made second contact. Hospital physicians were recruited through the hospital's administrative staff (coordination consultant) (Glette et al., 2020).

Data collection: Semi-structured interviews with GPs, nursing home leaders and hospital physicians. Focus group interviews with nurses. Observations in nursing homes. Document analysis of commissioner's documents.

Data analysis: All data material was analyzed using Graneheim and Lundman's (2004) content analysis.

Dissemination: The results were disseminated through three published papers (Glette, Kringeland, et al., 2018; Glette et al., 2019; Glette, Røise, et al., 2018) describing the results from each health personnel group: Paper I: GPs/nursing home physicians and observations; Paper II: nursing home nurses and leaders; Paper III: Hospital physicians, and a PhD thesis describing and discussing all results (Glette, 2020).

The research team: The research team consisted of a PhD student with background as a nurse (first author), the main supervisor – a safety scientist with extensive experience in research on patient safety (second author) – and two co-supervisors, one physician and a midwife, both with a profound research background in healthcare.

Healthcare Context: The Norwegian healthcare system, which was the context of the PhD study, is separated into two management lines. The specialist healthcare service (somatic and psychiatric hospitals) is managed by the state, and the primary healthcare service (GPs, nursing homes, home care services, health centers, emergency rooms (ERs) and rehabilitation services) is managed by the municipalities.

Rationale for choosing the case study approach in the PhD study: Case study research allowed us to analyze our cases across and within cases. Moreover, it was essential to focus on the context of the cases under study, to be able to address the hospital readmissions problem properly, whereas attention to context is a hallmark of case study research. Additionally, hospital readmissions are influenced by many factors at different levels in the healthcare service. This made it necessary to collect several kinds of data from these levels to arrive at the overall readmission picture, which case study research also facilitates. Although ethnography or situational analysis could have been relevant choices in this context, ethnographies tend to ask much broader questions, in much longer studies than case studies, which, are more focused, and designed to produce in-depth descriptions in a shorter period of time (Hays, 2004). Moreover, the need for data collection in different organizations and organizational levels would make ethnography challenging both in terms of organizing and access, and with regards to ethical approval. Situational analysis also could have been a fruitful approach for gathering and analyzing the data we needed for our study, however in situational analysis the data material is considered to represent the full range of discursive positions on key issues in the situation under investigation, whilst groups or persons are not articulated (Clarke et al., 2015). In our study, we wanted to focus on context and the groups within that context, in addition to the dynamic between these groups, making case study research the better fit.

By using our case study as a basis for various case study examples and illustrations (e.g., illustrating how different case and case study definitions can be applied in a study on hospital readmissions), this paper describes a novice's introduction to case study research, highlighting the main obstacles and difficulties during the design and implementation of our case study. This was the first empirical study conducted by the first author; the second author supported and supervised the research. This paper therefore presents a novice researcher's perspective of the learning process.

Choices and Encountered Challenges

Hospital readmissions is a complex phenomenon involving several stakeholders (e.g., patients, next of kin, health personnel), numerous influencing factors (e.g., organization, staffing, resources) and bodies (e.g., hospitals, nursing homes, home care services) (Donzé et al., 2013; Kristoffersen et al., 2017). To explore this phenomenon, it was necessary to collect data from general practitioners (GPs), nurses, nursing home leaders and hospital physicians, and use a range of data collection methods (individual interviews, focus group interviews, observations, and document analysis). Case study research appeared to be the natural choice for this topic, given its "unique strength in its ability to deal with a full variety of evidence, documents, artifacts, interviews and observations" (Yin, 2014, p. 12).

Although the appropriateness of the case study method for answering the research questions became evident early in the process, the literature describes case study research in a variety of ways. This made it difficult to decide which descriptions to adopt and which literature to use. We began our research process with a review of the approaches to case study research. The purpose of this process was to map consistencies and differences among some of the best-known case study authors and create an overview of case study perspectives. We share the results of this process in this paper. Although several guides for conducting and reporting case study research have already been developed (Algozzine & Hancock, 2017; Rodgers et al., 2016; Yin, 2012), this paper complements these guides by sharing a novice's journey into becoming familiar with case study research, demonstrating the many options, choices and considerations that need to be considered.

What is Case Study Research?

There are many interpretations of what constitutes a "case study." The main disagreement has revolved around the question: is a case study a research design (the structure of the project) or a method (the data collection procedure, process, tool or analysis) (Hamel et al., 1993; Jones & Lyons, 2004)? This disagreement remains unresolved, as seen in the interchangeable use of the two terms in the literature.

Additionally, there are many definitions and explanations of case study research, as we demonstrate in Table 1. We argue that an inclusive description of case study research is that *case studies are used to investigate one or more cases (bounded areas of interest) comprehensively within their contexts; the purpose is to identify their uniqueness, complexity or/and similarities, and to arrive at a broad, in-depth understanding of the case(s).*

Another key point of discussion in case study research concerns the definition of the "case." Ragin and Becker (1992) wrote an entire book to answer the question, 'what is a case?' That said, this question can be challenging to answer, because it can be difficult to know exactly what the "case" is and where its boundaries fall. Within the literature, there are many definitions and explanations of "a case" (Table 1). Drawing on the five case definitions described in our table, we argue that a case can be *a specific thing, a contemporary phenomenon, a bounded object, a process, a class of events, a single event, an organization,*

or a group (Gerring, 2017; Ragin & Becker, 1992; Stake, 1995; Yin, 2014). What most case definitions have in common, and what is particularly expressed by Yin (2014), is that the case must be defined in terms of its beginning and end points, and be a bounded area of research, defined by the research question under study. In addition to portraying how seven case study authors define and explain *the case* and *case study research*, Table 1 provides examples of how these definitions could be applied in research on hospital readmissions.

Table 1.

Definitions of the case and case study research, including explanations and examples related to research on hospital readmissions

Author	Definition of case study research	Definition of a case	Description	Examples related to our hospital readmission study
Stake	“The study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (Stake, 1995, p. xi).	“The case is a complex specific, functioning thing” (Stake, 1995, p. 2).	The case is something specific, not something general and without boundaries. As stated by Stake (1995, p. 2): “A child may be a case, a teacher may be a case. But her teaching lacks the specificity, the boundness, to be called a case.” In social sciences and human services, the case is likely to be purposive, to have a self, and thereby an integrated system. The parts in this system may not be working well and their purpose may be confusing, but it is still a system (Stake, 1995).	<i>The case could be the primary healthcare service within a municipality. The primary healthcare service is a “functioning thing” because it has its organizations within (e.g., nursing homes, home care services), which again, has its own organizations (e.g., nurses, physicians, patients), and all these organizations interact with each other, and with outside organizations (e.g., hospitals). To be able to investigate the complexity or particularity of the case, it needs to be bounded (we cannot investigate all available primary healthcare services). Boundaries can then, for example, be set by municipal boundaries – study primary healthcare services within one or several municipalities.</i>
Yin	“A case study is an empirical inquiry that investigates a contemporary phenomenon (the “case”) in depth and within its real-world context, especially when the	Yin defines the case a <i>contemporary phenomenon</i> within its real-world context (Yin, 2014, p. 16).	The research question(s) should form the basis for defining the case. This means that the research question(s) should lead the researcher to a specific unit of analysis. When setting the	<i>The research question “how do health personnel perceive factors affecting hospital readmissions from a primary healthcare service?”, will lead us to the primary healthcare service as the unit of analysis. What subunits within the primary healthcare service to include should be based on</i>
	boundaries between phenomenon and context may not be clearly evident” (Yin, 2014, p. 16).		boundaries of the case, the topic of the case study must be distinguished from the context. Further, a time boundary (a beginning and an endpoint for the case) should be specified. Such determinations will help decide the scope of the data collection and how to separate data about the topic (the case) from the context (the data beyond the boundaries) (Yin, 2014).	<i>the value these subunits will have in answering our research question (GPs, will for example have firsthand experiences with making hospital readmission decisions and could be a valid subunit). Furthermore, we must set boundaries, as we will not be able to investigate all existing primary healthcare services. Additionally, we need to focus our research area to be able investigate it in-depth. Boundaries can, for example, be set by using municipal boundaries. The healthcare services within one municipality is one case, as exemplified above. Although delimiting the case, one could get information about the case’s context, such as the processes outside the case affecting hospital readmissions (e.g., regulations, resources, routines).</i>
Ragin & Becker	“In short, ideas and evidence are mutually dependent; we transform evidence into results with the aid of ideas, and we make sense of theoretical ideas and elaborate them by linking them to empirical evidence. Cases figure prominently in	“A case may be theoretical or empirical or both; it may be a relatively bounded object or a process; and it may be generic and universal or specific in some way. Asking ‘What is a case?’ questions many different aspects of empirical social science” (Ragin & Becker, 1992, p. 3).	The case is probably not entirely specified until the research is finished, and the more unsure the researcher is of what the case is, the better the research will be, because then the researcher must ask the question “what is the case?” throughout the whole research process (Ragin & Becker, 1992).	<i>This could be about collecting data to investigate a research question concerning hospital readmissions from the primary healthcare services, where the case of the study reveals itself as new knowledge about the subject under investigation emerges. One can for example discover subunits which are important to answer the research question, which one was not aware of in the beginning of the research period. The</i>

	<p>both of these relationships” (Ragin & Becker, 1992, p. 218).</p>			<p>research can for example reveal that the patients and their next of kin are important to increase knowledge about hospital readmissions. The patients and their families are then included in the case, even though this was not planned from the start.</p>
<p>Gerring</p>	<p>“A case study is an intensive study of a single case or a small number of cases which draws on observational data and promises to shed light on a larger population of cases” (Gerring, 2017, p. 28).</p>	<p>“A case connotes a spatially and temporally delimited phenomenon of theoretical significance” (Gerring, 2017, p. 27).</p>	<p>However a case is defined, it must cover the phenomena that the study attempts to describe or explain. For example, if the behavior of individuals is being studied, the case(s) will consist of individuals (Gerring, 2017).</p>	<p>Within this definition, the case must involve limitations in terms of time and space. This means that the case could be “hospital readmissions” which are limited by when it occurs and who it occurs to (when someone is admitted to the hospital and then readmitted again within a specific time period). Or the case could be a municipality, as exemplified above. However one chooses to define the case, or where the boundary of the case is set, it must ensure that the readmission phenomena can be explained in depth. This means that we need to include subunits involved in the readmission process, for example nursing homes, home care services or GP offices as they can provide knowledge about the problem under study.</p>
<p>George & Bennett</p>	<p>“The case study approach (is) the detailed examination of an aspect of a historical episode to develop or test historical explanations that may be generalizable to other events” (George & Bennett, 2005, p. 5).</p>	<p>“We define a case as an instance of class of events” (p. 17). “The term “class of events” refers here to phenomenon of scientific interest, such as revolutions, types of governmental regimes, kinds of economic systems, or personality types that the investigator chooses to study with the aim of developing theory (or “generic knowledge”) regarding the cause of similarities or differences among instances/cases of that class of events” (George & Bennett, 2005, pp. 17-18).</p>	<p>The case selection needs to be an integral part of the research strategy in achieving well-defined objectives of the study. The primary criterion for the case selection is therefore its relevance to the research objective of the study. Cases should further, be selected to provide the kind of control and variation required by the research problem. For example, if a case study is comparative, there is a need to include cases from different subclasses or units (within or across the cases) so that they can be compared (George & Bennett, 2005).</p>	<p>The class of events or the phenomenon can, in a hospital readmissions study, be hospital readmissions. In order to bound the case, we can talk about hospital readmissions from the primary healthcare service, and exclude other readmission perspectives (e.g., the hospital perspective). The aim of the study could be to develop knowledge about hospital readmissions, or a theory, which aims to explain the differences and similarities among the class of events (hospital readmissions). To be able to enlighten this perspective we can collect data from different primary healthcare services, preferably healthcare services which have different experiences with hospital readmissions (for example one primary healthcare service with high readmission rates and one with low readmission rates).</p>
<p>Hays</p>	<p>“Case study research can involve the close examination of people, topics, issues or programs. These studies may explore student experiences in a law school or cheating at a community college (...) or other entities. These entities are known as particular cases unique in their content and character” (Hays, 2004, p. 218).]</p>	<p>“The case can be an individual, a group of people, a school, a school district, decisions about programs, a program implementation process, an organizational change, or other issues, and of course they could be about issues and programs outside of education” (Hays, 2004, p. 226).</p>	<p>Boundaries must be set before the case study begins. The case may be bounded using the research questions at hand, whereas these questions will continue to focus the researcher throughout the study, The first step of bounding the case is to decide on the case. Once the case is defined, the unit of analysis must be decided (Hays, 2004). “The unit of analysis is defined as where the researcher obtains the data for the case study” (Hays, 2004, p. 226).</p>	<p>In this example the aim could be to increase knowledge about hospital readmission rates and what effect the implementation of an indicator, measuring readmission rates can have on both key health personnel and the readmission rates themselves. We can define the implementation process as the case and study the implementation of the new indicator. This process can be studied over a two-year period to observe eventual adaptations and effect of the implementation using different data collection methods. The research question ensures that the researcher retains focus on the subject under study.</p>

Fitzgerald & Dopson	"Case studies (in organizational research) involve the collection of empirical data from multiple sources to explore an identified unit of analysis such as an organization or part of an organization or a division or a group and the characteristics of its context" (Fitzgerald & Dopson, 2009, p. 465).	A case may be "an organization, part of an organization, a division group, and the characteristics of its context. The case unit of analysis can also be an event or an event sequence" (Fitzgerald & Dopson, 2009, p. 465).	The case is the unit of analysis, whether the case is based on an organization or parts of an organization. Each case must be constructed, both in multiple and single designs (Fitzgerald & Dopson, 2009).	<i>If we want to increase knowledge about hospital readmissions of elderly from the primary healthcare services, we need to identify units of analysis which can provide knowledge of this subject – the primary healthcare service including its nursing homes, GP offices and home care services. In most cases, studying a primary healthcare service in its entirety is too large a task when doing qualitative inquiry. We therefore need to construct the case to be able to investigate it, in-depth. Not all parts of the primary healthcare services are relevant (e.g., youth health centers, public physiotherapist services, public treatment offers for drug addicts) and can easily be eliminated from the case. On the other side, there might be several nursing homes, GP- offices and home care services within the same primary healthcare service which, may be of interest. In this context, the researcher must choose what entities are most relevant to include in the case. This way the case is constructed by ruling out parts of the research area which is not of interest (parts of the primary healthcare services which is not of interest when exploring hospital readmissions).</i>
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Variations in Case Study Research

In addition to providing several definitions of a case study, the case study authors presented in Table 1 suggest ways of conducting a case study through "subcategories" or variations within case study research (Table 2). The authors' descriptions and designations of these case study approaches vary. For example, Fitzgerald and Dopson (2009) describe four types of multiple case studies: *matching or replication* designs that explore or confirm ideas, *comparison of differences* (between cases), *outliers* that compare extremes, and *embedded case study* designs where multiple units (within a case) are examined to identify similarities and differences.

Stake (1995) presents three types of multiple and single case studies. *Intrinsic case studies* are undertaken to learn more about a case and to distinguish the uniqueness of the research topic. The *instrumental case study* investigates a specified issue or phenomenon that this case has or represents (Stake, 1995). In the *collective case study*, multiple cases are examined simultaneously or sequentially to arrive at a broader understanding with richer information of an issue than if only one case is investigated. According to Stake (1995), these three types of case studies are not mutually exclusive.

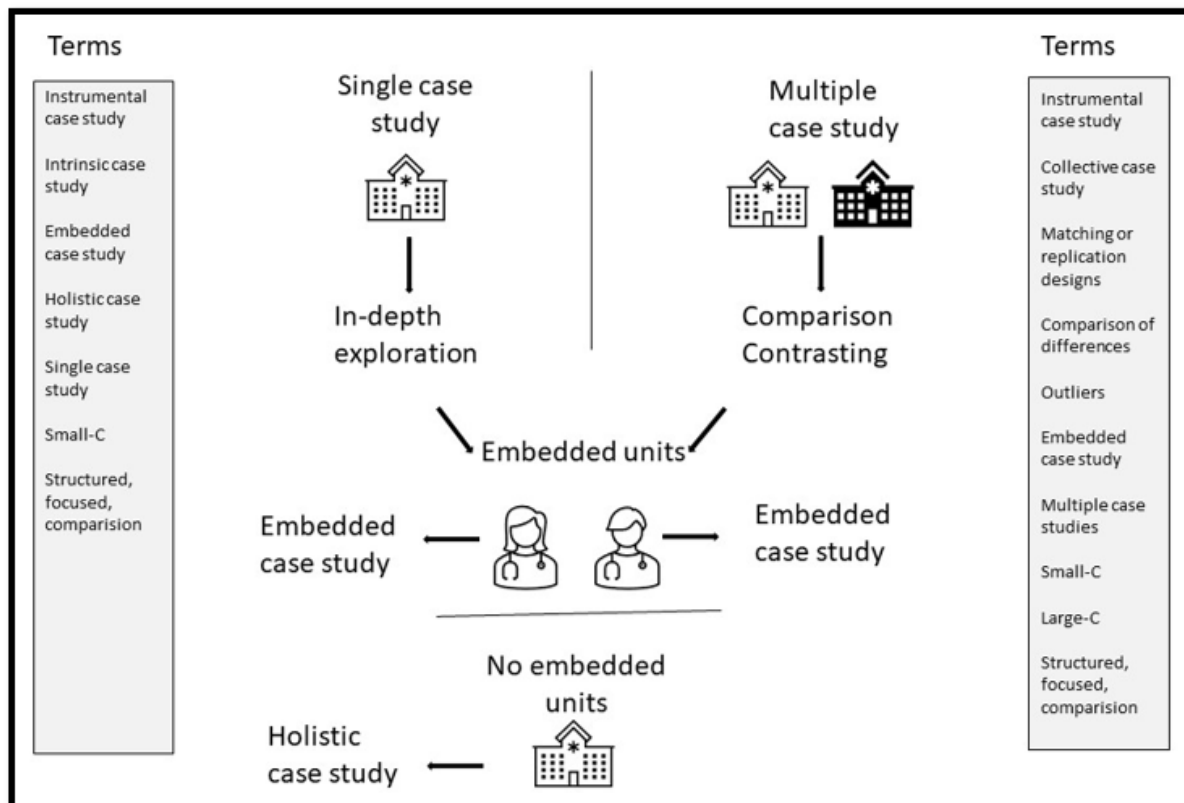
However, a closer look at these variations reveals one main distinction between them – they are either conducted as multiple- (several cases included) or single- (one case included) case studies. Yin (2014) supports this claim by stating that multiple- and single-case studies are variations on the same methodology, where the main distinction is the number of cases included. Despite the distinction we identify here, these 13 terms are used interchangeably in case study research. In Table 2, we demonstrate that all of the descriptions of multiple case studies can be related to our hospital readmission study, although here we have applied Yin's description.

Table 2.
Variations in case study designs – with examples related to our hospital readmission study

Terms	Case study type	Description	Examples related to hospital readmissions
Instrumental case study (Stake, 1995)	Single or multiple case study	Using a case to answer a research question.	<i>In our study we learned about hospital readmissions through two cases (the included municipalities and their subunits).</i>
Intrinsic case study (Stake, 1995)	Single case study	Studying the case to learn about the case.	<i>An example could be to study a municipality (the case) to learn about its organization.</i>
Collective case study (Stake, 1995)	Multiple case study	Studying multiple cases to create a broader understanding of an issue.	<i>In our study, we included two municipalities (and their affiliated primary healthcare services) with variations in readmission rates. In addition, we included the hospital affiliated to the two municipalities to obtain hospital physicians view on readmissions from the primary healthcare service. This provided a broad understanding of influencing factors in readmission from the primary healthcare service.</i>
Matching or replication designs (Fitzgerald & Dompson, 2009)	Multiple case study	To explore or confirm ideas.	<i>Although this was not the focus of our study, we had a suspicion that a new health reform (introduced to the Norwegian healthcare services in 2012) had something to do with an increase in hospital readmission rates. Although this idea was not confirmed, we found that the readmission rates had a peak in the years after the introduction of this reform before it evened out and went back to "normal". This discovery was discussed in our study.</i>
Comparison of differences (Fitzgerald & Dompson, 2009)	Multiple case study	Comparison of differences (between cases), also between cases which are selected on the basis of their (different) characteristics.	<i>In our study we recruited two municipalities with differences in readmission rates. Although these rates evened out during our research period, we managed to compare the two cases, and also, the subunits within each of the cases.</i>
Outliers (Fitzgerald & Dompson, 2009)	Multiple case study	Compare extremes to describe key factors and the shape of a field.	<i>The cases we included in our study had higher readmission rates than the national average, and where therefore perceived as cases which could provide valuable information on the readmission issue.</i>
Embedded case study (Fitzgerald & Dompson, Yin, 2014)	Single or multiple case study	Designs where multiple units (within the case) are examined to identify similarities and differences.	<i>We included subunits in both of our cases (primary healthcare services with included GPs, nurses, nursing home physicians, nursing home leaders etc.) and examined similarities and differences both between the two cases (municipalities) and between the subunits within the cases (e.g., between the long- and short-term nursing home in one municipality).</i>
Holistic case study (Yin, 2014)	Single case study	To study the global nature of a case without including subunits.	<i>One example could be to study the organization of a municipality (e.g., resources, distribution of funds, employment politics) and how this affects hospital readmissions.</i>
Single case studies (Yin, 2014)	Single case study	A case study involving one case (all single case studies can be embedded or holistic).	<i>One example could be to explore another municipality (than the once you have studied before) to confirm or refute the factors identified as influential in the first study.</i>
Multiple case study (Yin, 2014)	Multiple case study	Includes two or more cases, intended to find similar or contrasting results.	<i>We explored two municipalities with subunits (embedded units) to identify factors affecting hospital readmissions, and to compare the results to find differences or similarities between the municipalities.</i>
Case study or small-C (Gerring, 2017)	Single or multiple case study	Few included cases studied allowing in-depth studies (may include cross-case comparison and within-case analysis).	<i>We studied our two municipalities, with included embedded units, in-depth, conducting cross-case and within-case analysis, and compared the municipalities with each other and compared the different nursing homes within their respective municipalities.</i>
Large-C (Gerring, 2017)	Multiple case study	A larger number of included cases (more than in a small-C) (may include cross-case comparison and within analysis).	<i>If we were to conduct a Large-C study, we would have needed to include more cases (municipalities) for comparison. The depth of the knowledge obtained would then have been reduced.</i>
Structured, focused comparison (George & Bennett, 2005)	Multiple case study	Asks a standardized set of general questions of each case. Questions must be carefully developed to reflect the research objective and theoretical focus of the inquiry.	<i>In our study we developed questions closely related to the objective of our study and asked these questions within each case (nurses in both municipalities, regardless of the type of nursing home they were working in, where asked the same questions). This way the data collection remained somewhat standardized (as far as qualitative research can be standardized) and a comparison of the findings was easier to conduct.</i>

In addition to these variations in case study research, Yin (2014) adds the term *embedded units*, which are subunits within in the case(s) (e.g., the nursing homes and health personnel within the studied municipalities in our case study). Subunits can be included in both single- and multiple-case studies and allow for several levels of analysis. If the study includes embedded units, it will in Yin's (2014) tradition, be termed an *embedded case study*. If it does not include embedded units and the goal of the inquiry is to study the overall nature of the case, the study is termed a *holistic case study* (Yin, 2014). Figure 1 provides an overview of the single- and multiple-case study types presented in this paper and illustrates the placement of embedded and holistic case studies.

Figure 1
Illustration of case designs and related terms



Conducting Case Study Research

Developing a Plan for the Study and Identifying and Defining the Case

When the research question(s) has been formulated, and the research design is ready to be developed, selecting and defining the case is the researcher's first task (Crowe et al., 2011; Miles & Huberman, 1994; Yin, 2014). The lack of standard procedures in designing case study research gives the researcher great responsibility when it comes to planning each step of the study. This planning should, according to Yin (2014), be carefully conducted before starting the research project. As stated by Crowe et al. (2011, p. 5), "when planning and undertaking a case study, the crucial stages are: defining the case; selecting the case(s); collecting and analyzing the data; interpreting data; and reporting the findings." Even though the conduct of case study research has not been standardized, there are some basic methodological grounds (Yin, 2014). These components are presented and exemplified with elements from our hospital readmission study.

a) A research question:

A municipal health and care manager introduced the readmissions problem in the municipalities to the research group. She expressed a need for more information about the occurrence of hospital readmissions from the primary healthcare services, as they were experiencing readmission rates above the national average with consequent risk of reduced quality of healthcare, unnecessary use of resources, and threats to patient safety. Based on this request, a general review of the literature was conducted to map the readmissions field.

During this search we soon discovered that there was limited research on hospital readmissions from the primary healthcare service perspective, particularly qualitative research. This discovery, along with the request from the municipal health and care manager, became the basis of the research question for our study.

b) Its propositions, if any:

Possible reasons for hospital readmissions were discussed within the research group (i.e., staffing, resources, competence levels). The research group consisted of researchers with different backgrounds (a midwife, a physician, a safety scientist, and a nurse), each of whom brought a different perspective to the discussions. The discussions, and the information from the identified literature, served as the basis for the development of the research design, and later the interview/observation guides.

c) Its units of analysis (the case):

The first selected municipality (Case A) was chosen because it had higher readmission rates than the national average. The second case needed to be similar in size and location and needed to be affiliated with the same hospital to facilitate our planned comparison. Given these considerations, the municipality we included (Case B), was the most appropriate. Both cases fell naturally within municipal borders; however, we needed to decide which and how many subunits (health personnel groups) to include. We evaluated which health personnel groups were the most likely to provide in-depth information about the readmissions issue, and decided to consult general practitioners (GPs) (who serve nursing homes, the home care service, and the general population), nursing home physicians (for in-depth information about how decisions of readmissions are being made in nursing homes with older, frail patients), emergency room (ER) doctors (who serve nursing homes, home care services and the general population, often during acute medical incidents), nurses in nursing homes (who provide patient care on a daily basis), nursing home leaders (who are responsible for the organization of the nursing homes, including staffing and capacity building) and hospital physicians (who hold information about the discharge process and an outside view on hospital readmissions from the primary healthcare services, since the two healthcare services are managed and run separately). Although the inclusion of the patient perspective could have generated valuable information about the readmission problem, patients were not included in this study. Based on the research question at hand, and the evaluated propositions, we concluded that health personnel experiencing readmissions firsthand would be the best source of information on factors in the primary healthcare service affecting hospital readmissions because they experience the phenomenon in its real context, over time, and from different angles and responsibilities.

d) The logic linking the data to the propositions:

Since the case study literature did not provide specific standards for conducting content analysis of case study data material, we turned to Graneheim and Lundman's (2004) approach to content analysis. The decision to apply their approach was made early in the process and was based on the amount and variety of qualitative data we were planning to collect (interviews, observations, document analysis). Other ways of using content analysis could have been applied, such as thematic analysis (Braun & Clarke, 2006) or systematic text condensation (Malterud, 2011). We found Graneheim and Lundman's approach more suited to our study due to the amount of data and level of detail in how they describe the analytical

process going from meaning unit to subcategory, category, and themes. We also wanted to apply a cross-case analysis (described later in this paper) because this would allow us to compare the two municipalities. This was particularly interesting since the two included municipalities had different readmission rates. Since there was a variety of subunits included in each case; we found it natural to apply a within-case analysis to search for similarities and differences within and between the units, prior to the cross-case analysis (more details can be found below). To facilitate an appropriate comparison, we needed to collect data from similar health personnel groups in both municipalities. By adopting this approach, we were able to incorporate diverse perspectives from the subunits and professional groups within each case and across the two case municipalities and the affiliated hospital.

e) The criteria for interpreting the findings:

We collected data on the municipalities' outcomes on national quality indicators to monitor change over time during the data collection period (2016 – 2019). The difference in readmission rates between the municipalities decreased during the data collection period, which forced us to change our mindset from a contrasting to a comparative perspective when analyzing the results. This implied that we needed a stronger focus on how organizational, contextual, and cultural factors are part of the hospital readmission problem (e.g., resources, cooperation and coordination between healthcare services or competence) (Glette, 2020).

Analysis in Case Study Research

The last challenge presented in this paper is the analysis of the collected data material. Analysis in case study research is, according to Yin (2014), an undeveloped aspect of the method. There is limited information on how to proceed, no step-by-step guide or detailed information on how to conduct the analysis. It is essential that the analysis method applied is thoroughly described and discussed, and its shortcomings acknowledged (Rodgers et al., 2016). Several researchers have offered suggestions on how to conduct the analysis (Houghton et al., 2015; Miles & Huberman, 1994; Yin, 2012, 2014), and many methods of analysis which have not been tailored to case studies are available (Clarke & Braun, 2014; Graneheim & Lundman, 2004; Malterud, 2011).

No matter what analysis method one chooses to use, one main distinction remains: *within-case* versus *across-case analysis* (Stake, 2005; Yin, 2014). *Within-case analysis* describes the details of each case and its themes (Eisenhardt, 1989 in Houghton et al., 2015). *Cross-case analysis* identifies differences and similarities across cases and investigates the findings' applicability to similar settings (Miles & Huberman, 1994; Yin, 2012). In the words of Miles and Huberman (1994, p. 173), "do these findings make sense beyond this specific case?"

Our readmission study applied a combination of within- and across-case analysis. This was painstaking analytical work where each health personnel group, within each of the four nursing homes was analyzed separately. Then the health personnel groups within each municipality (e.g., nursing home leaders and nurses) were analyzed as a whole, before the cross-case analysis between the two municipalities and the different nursing homes. Although this approach was time consuming, it generated in-depth information and understanding about the cases and the institutions within the cases (the different nursing homes and health personnel groups in the municipality or hospital).

Regardless of the method of analysis, the researcher must formulate and follow a clear plan (Houghton et al., 2015; Yin, 2014). This is especially important in case study research, as data often are large, and from multiple sources of evidence, necessitating a rigorous analysis

method to handle the data (Houghton et al., 2015). As previously mentioned, we used Graneheim and Lundman's (2004) content analysis in our study and followed their steps strictly: (1) read through data several times to obtain a sense of the whole; (2) identify meaning units; (3) condense meaning units; (4) label meaning units with codes; (5) sort codes into categories and/or subcategories; and (6) formulate the latent content into themes.

Critique of Case Study Research: Possible Pitfalls and How to Avoid Them

Case study research has traditionally been viewed as a less desirable form of inquiry for many reasons, which according to (Flyvbjerg, 2006) and Yin (2014), is a flawed critique. The reasons are presented below.

Rigour

One claim clouding the reputation of case study research is the assertion that case studies lack rigour. According to Yin (2014), this claim is grounded in the lack of systematic implementation in previous case study research, which can be affected by a lack of methodological texts to guide the researcher through the research process. On these grounds, Yin urges novice researchers to avoid the kind of practice where systematic procedures are not followed, resulting in unclear, or lacking evidence, which is insufficient to justify eventual conclusions (Yin, 2014).

In our hospital readmission study, rigour was ensured through systematic data collection and sampling, research activity was continually logged, data sources were followed over time (e.g., the national hospital readmission data issued annually), the steps of Graneheim and Lundman were strictly followed, and a detailed project plan was developed and approved by a doctoral committee.

Generalizability

Another concern of case study research is its apparent lack of generalizability (or transferability, in qualitative research). According to Flyvbjerg (2006), this is a common concern among proponents of the natural science ideal within the social sciences. Yin (2014) argues that generalization of case study research is possible, but not in the same way as statistics are generalized. Case study research may be generalized to theoretical propositions (generalizing the lessons learned from the case study). This means that the findings may be applied in contexts or situations other than those in the studied case.

Analytical generalization has links to external validity and how findings from a case study can be analytically generalized to other situations than, for example, this study of hospital readmissions (Yin, 2014). This entails a thorough description of contextual settings and description of theory or theoretical propositions that guided the initial phases and developed through the empirical findings.

Hays (2004) states that the aim of case study research is not to generalize, but to discover the uniqueness of each case. Flyvbjerg (2006) adds that studies which cannot be generalized carry value in themselves, and that the generalizability issue involves a misperception of theoretical knowledge as more valuable than practical knowledge. There seems to be a consensus that generalization in case study research is possible (Flyvbjerg, 2006; Hays, 2004; Yin, 2014) but its value and necessity remain debatable.

In our study, generalizability (or transferability) was ensured through a thorough description of contextual settings and theoretical perspectives in human factors (Karwowski, 2012), resilience in healthcare (Hollnagel, 2015), and case-based decision-theory (CBDT)

(Gilboa & Schmeidler, 1995) that were used in the initial design. Additionally, we described how the completion of the case study contributed to advancing of these perspectives. For example, we identified that adaptations (e.g., resilience in healthcare) occur in the interface between care levels, and not only on micro levels, which is the most explored area in resilience research (Berg et al., 2018). Furthermore, our results demonstrated that context plays a critical role in decision-making on hospital readmissions, and that CDBT did not consider this aspect sufficiently. Our study enabled refining these aspects.

Moreover, we provided sound descriptions of hospital readmissions in general, of the readmission problem in the studied municipalities, of the context of which the study was conducted, of the participants, of the analysis process, of the Norwegian healthcare service in general, and lastly, a rich description of the results (including quotations). Through these descriptions, we enabled the readers of the study to decide whether or not the results were applicable to their context (Shenton, 2004).

Personal Interpretation as Possible Bias

As in other qualitative and quantitative research designs, in case study research there have been concerns that research is used to validate a predetermined perception of a problem. According to Yin (2014), case study researchers are particularly vulnerable to this problem because they must get extremely close to the problem they are investigating. This is also relevant to researchers in other designs and presents a risk of being guided towards supportive evidence in the course of data analysis (Yin, 2014). To reduce bias, Yin (2012) suggests that researchers test their own involvement in, and openness to contradictory findings in studied cases by reporting preliminary findings to colleagues for critical feedback, alternative explanations, and suggestions.

In our hospital readmission study, we addressed this problem by being transparent about the researchers' backgrounds and roles (e.g., the first author's previous role as a nurse and the possible preconceptions that this role entails) (Malterud, 2001). Further, any influence from personal bias was countered through discussions and dialogue with the research team, all of whom came from different backgrounds. Possible team biases were addressed through external evaluations as a part of the doctoral program, additionally, all published articles were peer reviewed, and preliminary findings were presented to other colleagues and the practice field for feedback. Any bias on the team was also mitigated by ongoing discussions and the fact that the team consisted of multidisciplinary researchers; this helped to identify and counteract any possible biases. For example, we responded to biases connected to the first authors' status as an early career researcher, which may have affected the choice of method, fieldwork, theories and presentation of results, through close cooperation and discussions with the research team, all of whom were experienced researchers.

Discussion

According to this paper, case study research faces numerous definitional and structural challenges. Ragin and Becker (1992) state that the term "case" is losing its meaning because like many other terms, it has become corrupted. Corruption occurs when a term acquires multiple and sometimes contradictory meanings. Andersen (1997) supports this statement by saying that a problem with case study literature is that there is no agreement on what constitutes a case as part of a research strategy. Gerring (2017) problematizes the large number of near-synonyms to case studies (case-based, case-control, case history), which have led to unresolved discussions over the meaning of these terms. A novice researcher should therefore select one author, staying true to his or her description of the case, and to the case study approach itself,

as well as staying aware of other conceptualizations of case study research, and remain susceptible to other legitimate points-of-view in other case study descriptions. In our study, Yin's (2012, 2014) descriptions and definitions were chosen, although the knowledge of the variety, critiques, and options of case study research and the extensive literature in the field, were crucial for the positioning as these illustrate the complex methods literature within which we must navigate.

As shown in Table 2, these distinctions among concepts of case studies are unclear. The authors seem to seek the same results, but still use different terms. For example, case studies including more than one case are called "multiple case studies," "comparison of differences," "collective case study," "matching or replication designs" and "outliers." Despite these different designations, all these studies involve several cases and attempt to broaden the understanding of an issue by identifying similarities and differences. Case studies consisting of only one case are termed "single case study," "holistic case study," and "intrinsic case study," but all are intended to learn about the overall nature of the case. There are also differences in how the authors separate multiple- and single-case studies. Some authors have clear distinctions, for example, Yin (2014), who separates them based on number of cases included. If there is one case, it is a single case study; if there is more than one case, it is a multiple case study. Stake (2005) presents three types of case studies (instrumental, intrinsic, and collective) but, ultimately, these types are distinguished from each other based on the number of included cases, similar to Yin's distinction. Additionally, Stake argues that these case study types are not mutually exclusive, meaning that they all can be conducted as both multiple- and single- case studies. Embedded and small C studies are in the same category and may be conducted in both ways.

It therefore seems that even if there are 13 variations of case study research, there are not 13 ways of conducting case study research. The terms are overlapping, so we end up with two categories as the main difference between the authors' descriptions – single and multiple case studies – although reaching a full agreement of the distinction between the two has yet to be done.

While case study research demonstrates difficulties in defining both the case and the approach (Andersen, 1997; Gerring, 2007; Ragin & Becker, 1992; Yin, 2012), case study researchers continue to develop new terminology. This can create a vicious cycle where new and "better" concepts are presented without the retiring of old ones, resulting in even more concepts for case study researchers to grasp. As Gerring cleverly wrote in his book on case study research, "The key term of this book is, admittedly, a definitional morass" (2007, p. 17). Counting the 200-page book by Ragin and Becker (1992) dedicated to the question "what is a case?", the "muddiness" of case study research as a method or a design is amply illustrated. Fortunately, this problem has been addressed by several authors (Crowe et al., 2011; Flyvbjerg, 2006; Hamel et al., 1993; Jones & Lyons, 2004).

The latest contribution to this discussion was a comprehensive review by Rodgers et al. (2016) which set new reporting standards for organizational case study research. Similar attempts to set standards for the implementation of case study research could have been useful; however, this could raise new questions and discussions: who sets the standards? In the next phase, will alternative views be silenced? Our paper highlights these questions.

The structural challenge with case study research is its lack of a clear structure. This means that the researcher has the flexibility but also the heavy burden of deciding what methodological and analytical approach to take. Furthermore, although case study research distinguishes within-case from cross-case analysis, it offers little information on how to conduct either of them. What the case study authors do offer, though, is an agreement on the importance of formulating and adhering to a plan. This is the only way to ensure validity and rigour of the study, and to work efficiently with large amounts of data. Both Yin (2014) and

Miles and Huberman (1994) offer suggestions on how the analysis may be conducted (using matrices, schematic representation, pattern matching and explanation building) which have been proven useful in previous research (Houghton et al., 2015; Rosenberg & Yates, 2007). An analysis method developed for different types of case study research, although difficult to implement, could have been valuable. Fortunately, the authors of case study literature seem to agree on this structural problem and many attempts to strengthen the reputation of case study research have been made.

Conclusion

This paper reflects on the challenges and solutions associated with case study research in light of case study literature and a previously conducted case study. The paper identified several challenges in case study research (e.g., study definition, case definition, rigour and generalizability), and demonstrated that numerous case study authors are working to address these challenges (Gerring, 2004; Yin, 2014). Additionally, the paper illustrates that the dedication of both new and experienced researchers to thoroughness and structural rigour when conducting case studies is a part of the solution. Moreover, this paper concludes that despite a large variety of case study definitions, the main distinction remains between multiple and single case studies. Case study research is particularly valuable in trying to understand complex social phenomena and is a necessity in health services research. This has been illustrated in this paper by examples from a case study on hospital readmissions, and how headaches and challenges in that project have been approached and solved (Glette, 2020; Glette, Kringeland, et al., 2018; Glette et al., 2019; Glette, Røise et al., 2018).

References

- Algozzine, B., & Hancock, D. (2017). *Doing case study research: A practical guide for beginning researchers* (3rd ed.). Teachers College Press.
- Andersen, S. S. (1997). *Case-studier og generalisering: Forskningsstrategi og design*. Fagbokforlaget.
- Berg, S. H., Akerjordet, K., Ekstedt, M., & Aase, K. (2018). Methodological strategies in resilient health care studies: An integrative review. *Safety Science*, 110(2018), 300-312. <https://doi.org/10.1016/j.ssci.2018.08.025>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Clarke, A. E., Friese, C., & Washburn, R. (2015). Introducing situational analysis. In A. E. Clarke, C. Friese, & R. Washburn (Eds.), *Situational analysis in practise: Mapping research with grounded theory* (pp. 11-50). Left Coast Press.
- Clarke, V., & Braun, V. (2014). Thematic analysis. In T. Teo (Ed.), *Encyclopedia of critical psychology* (pp. 1947-1952). Springer.
- Crowe, S., Creswell, K., Robertson, A., Huby, G., Avery, A., & Sheikh, A. (2011). The case study approach. *BMC Medical Research Methodology*, 11(1), 100. <https://doi.org/10.1186/1471-2288-11-100>
- Donzé, J., Lipsitz, S., Bates, D. W., & Schnipper, J. L. (2013). Causes and patterns of readmissions in patients with common comorbidities: retrospective cohort study. *BMJ*, 2013(347), f7171. <https://doi.org/10.1136/bmj.f7171>
- Fitzgerald, L., & Dopson, S. (2009). Comparative case study designs: Their utility and development in organizational research. In D. A. Buchanan & A. Bryman (Eds.), *The SAGE handbook of organizational research methods* (pp. 465-499). SAGE.
- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry*,

- 12(2), 219-245. <https://doi.org/10.1177/1077800405284363>
- George, A. L., & Bennett, A. (2005). *Case studies and theory development in the social sciences*. MIT Press.
- Gerring, J. (2004). What is a case study and what is it good for? *The American Political Science Review*, 98(2), 341-354. <http://www.jstor.org/stable/4145316>
- Gerring, J. (2017). *Case study research: Principles and practices* (2nd ed.). Cambridge University Press.
- Gilboa, I., & Schmeidler, D. (1995). Cased-based decision theory. *The Quarterly Journal of Economics*, 110(3), 605–39. <https://doi.org/10.2307/2946694>
- Glette, M. K. (2020). *Exploring hospital readmissions from the primary healthcare service: A multiple case study* [Doctoral thesis, University of Stavanger].
- Glette, M. K., Kringeland, T., Røise, O., & Wiig, S. (2018). Exploring' physicians' decision-making in hospital readmission processes - A comparative case study. *BMC Health Services Research*, 18(1), 725. <https://doi.org/10.1186/s12913-018-3538-3>
- Glette, M. K., Kringeland, T., Røise, O., & Wiig, S. (2019). Hospital physicians' views on discharge and readmission processes: A qualitative study from Norway. *BMJ Open*, 9(8), e031297. <https://doi.org/10.1136/bmjopen-2019-031297>
- Glette, M. K., Kringeland, T., Røise, O., & Wiig, S. (2020). Would you be interested in participating in a study about hospital readmissions...? *Tidsskrift for omsorgsforskning*, 6(2), 178-183. <https://doi.org/10.18261/issn.2387-5984-2020-02-14>
- Glette, M. K., Røise, O., Kringeland, T., Churruca, K., Braithwaite, J., & Wiig, S. (2018). Nursing home leaders' and nurses' experiences of resources, staffing and competence levels and the relation to hospital readmissions – A case study. *BMC Health Services Research*, 18 (955), 1- 15. <https://doi.org/10.1186/s12913-018-3769-3>
- Graneheim, U. H., & Lundman, B. (2004). Qualitative content analysis in nursing research: Concepts, procedures and measures to achieve trustworthiness. *Nurse Education Today*, 24(2), 105-112. <https://doi.org/https://doi.org/10.1016/j.nedt.2003.10.001>
- Hamel, J., Dufour, S., & Fortin, D. (1993). The case study: Differing perspectives. In *Case study methods* (pp. 2-18). SAGE.
- Hays, P. A. (2004). Case study research. In K. deMarrais & S. D. Lapan (Eds.), *Foundations for research: Methods of inquiry in education and the social sciences* (pp. 217-234). Taylor & Francis.
- Hollnagel E. (2015). Making health care resilient: From Safety-I to Safety-II. In E. Hollnagel, J. Braithwaite, & R. L. Wears (Eds.), *Resilient health care. 1.* (pp. 3-26). Ashgate
- Houghton, C., Murphy, K., Shaw, D., & Casey, D. (2015). Qualitative case study data analysis: An example from practice. *Nurse Researcher*, 22(5), 8-12. <https://doi.org/10.7748/nr.22.5.8.e1307>
- Jones, C., & Lyons, C. (2004). Case study: Design? Method? Or comprehensive strategy? *Nurse Researcher*, 11(3), 70-76. <https://doi.org/10.7748/nr2004.04.11.3.70.c6206>
- Kristoffersen, D. T., Hansen, T. M., Tomic, O., & Helgeland, J. (2017). *Kvalitetsindikatoren 30 dagers reinnleggelse etter sykehusopphold. Resultater for helseforetak og kommuner 2016.* (English title: *The quality indicator 30 day readmission after hospitalization results for Norwegian health trusts and municipalities 2016*) (10/2015). Folkehelseinstituttet. <https://www.fhi.no/globalassets/dokumenterfiler/30-dagers-reinnleggelse-etter-sykehusopphold-resultater-2016.pdf>
- Malterud, K. (2001). Qualitative research: Standards, challenges, and guidelines. *The Lancet*, 358(9280), 483-488. [https://doi.org/https://doi.org/10.1016/S0140-6736\(01\)05627-6](https://doi.org/https://doi.org/10.1016/S0140-6736(01)05627-6)
- Malterud, K. (2011). *Kvalitative metoder i medisinsk forskning: En innføring* (3rd ed.). Universitetsforlaget.
- Miles, M. B., & Huberman, M. A. (1994). *Qualitative data analysis*. SAGE.

- Ragin, C. C., & Becker, H. S. (1992). *What is a case? Exploring the foundations of social inquiry*. Cambridge University Press.
- Rodgers, M., Thomas, S., Harden, M., Parker, G., Street, A., & Eastwood, A. (2016). Developing a methodological framework for organisational case studies: A rapid review and consensus development process. *Health Services Delivery Research*, 4(1), 1-139. <https://doi.org/10.3310/hsdr04010>
- Rosenberg & Yates. (2007). Schematic representation of case study research designs. *Journal of Advanced Nursing*, 60, 447-452. <https://doi.org/10.1111/j.1365-2648.2007.04385.x>.
- Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information*, 22(2), 63-75. <https://doi.org/10.3233/EFI-2004-22201>
- Stake, R. E. (1995). *The art of case study research*. SAGE.
- Stake, R. E. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (Eds.), *The SAGE handbook of qualitative research* (3rd ed., pp. 443-466). SAGE.
- Karwowski, W. (2012). The discipline of human factors and ergonomics. In G. Salvendy (Ed.), *Handbook of human factors and ergonomics* (4th ed., pp. 3-37). Wiley & Sons.
- Yin, R. K. (2012). *Applications of case study research* (3rd ed.). SAGE.
- Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). SAGE.

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