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## Exploring the application and significance of case study research in nursing

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Why you should read this article

- It offers a timely reflection on the relevance and impact of case study research (CSR) in nursing, highlighting its value in understanding complex healthcare issues and application in real-life situations.
- It discusses the evolution and methodological diversity of CSR, making it a crucial read for those looking to deepen their knowledge in this area.
- It includes practical examples, as well as recent studies that have used CSR, highlighting the method's flexibility and adaptability in studying dynamic healthcare environments.

## Exploring the application and significance of case study research in nursing

### Abstract

**Background:** Case study research (CSR) has gained popularity across disciplines due to its ability to provide detailed insights into specific phenomena.

**Aim:** To explore the philosophy and methodology of CSR, drawing from notable authors who have contributed to its development.

**Discussion:** This article discusses the characteristics of CSR in terms of design and method in both quantitative and qualitative approaches. It examines CSR's advantages and disadvantages as a research method. It draws on two example case studies to emphasise the use of CSR for exploring complex healthcare and social care settings.

**Conclusion:** CSR has proven valuable in nursing research for investigating complex clinical problems, patientcare scenarios, and organisational dynamics and phenomena.

**Implications for practice:** CSR provides a methodological framework for nursing research that offers a unique lens for exploring multifaceted, complex issues. This ultimately improves patient care outcomes.

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### Keywords

methodology, qualitative research, research, research methods, study design

### Introduction

Case study research (CSR) is used widely across a variety of disciplines including nursing (Crowe et al 2011). It is a valuable research methodology for investigating complex issues, particularly those relevant to nursing (Crowe et al 2011, Cronin 2014a). It sits well with the notion of realism, and is suited to examining and exploring the nature of healthcare and social care organisations' everyday practice. It enables nurse researchers to gain an in-depth understanding of complex issues in real-life situations, with nursing case studies typically exploring a particular clinical problem or patient care scenario.

Ten years have passed since the publication of Cronin (2014a) and Cronin (2014b). The former explored the value of CSR design for nursing research, practice and education while the latter examined using CSR to explore the complex relationship between the learner and the learning environment of the workplace in healthcare and social care settings. The work continues to be cited in *Nurse Researcher* and the author's research continues to centre on healthcare workplaces.

Consequently, this is an opportune time to revisit it and highlight CSR's value in nursing, particularly in the complex organisations where nurses impact the workplace.

This article seeks to demonstrate how researchers can use CSR to explore different healthcare and social care settings. It provides some background about CSR philosophy and methodology, then discusses and reflects on them, drawing from two recent nursing studies that used CSR.

### Background

Bromley (1990)'s definition of CSR is dated but straightforward and clear: the intensive systematic study of a case(s) with definable boundaries, conducted within the context of the situation and examining in-depth data about the background, environmental characteristics, culture and interactions. It is characterised by its contextual, exploratory, holistic, descriptive and interpretive nature.

CSR offers a versatile approach to nursing research guided by several philosophical assumptions that shape its methodology. It is flexible and adaptable, and enables researchers to modify their approach and methods based on the research question – it can be intrinsic, instrumental, collective (Stake 1995), exploratory (Merriam 1998), interpretive,

experimental or explanatory (Yin 2009), or descriptive; it can also involve a single or a multiple-case design (Yin 2017). The level of analysis varies from factual or interpretive to evaluative, with the unit of analysis a single person, family, community or institution.

One purpose of CSR is to expand the understanding of phenomena about which little is known. The data can then be used to formulate hypotheses, plan larger studies, test theories, and develop descriptions and explanations (Yin 2017).

### **The development of CSR**

CSR is a diverse and evolving methodology with many contributors having shaped its development and use across many disciplines. Its roots can be traced to the late 19th century when researchers started using case studies to explore phenomena in depth (Flyvbjerg 2011). Freud, Jung and other early psychologists used case studies for clinical diagnosis and treatment. In the mid-20th century, CSR started to become popular in other areas, first in anthropology and sociology, then education, nursing and business.

Several influential authors and researchers have contributed to the development of CSR, notably Yin, Stake, Merriam, George, Bennett, Thomas and Flyvbjerg:

- » Yin has written numerous books about CSR, including the classic text Yin (2009).
- » Stake (1994) was a qualitative account exploring a range of CSR methodologies (Stake 1995). Its underlying theme was how to explain how a case is selected.
- » Merriam takes a practical approach to qualitative research. She has written extensively on CSR in the field of adult education (Merriam 1998).
- » George and Bennett used case studies extensively to build and test theories in their research on political science. George and Bennett (2005) is widely regarded as a seminal work in the field of CSR.
- » Thomas used case studies extensively in his research (Thomas 1927). He is best known for Thomas and Znaniecki (1918), which is considered a classic example of sociological CSR.
- » Danish scholar Flyvbjerg is known for his work on social science methodology emphasising the importance of reflexivity in CSR. He has made significant contributions to the field (Flyvbjerg 2006, 2011).

However, CSR's methodological status still appears somewhat contested and many continue to argue that there is still no consensus on design and implementation (Cronin 2014a, Yazin 2015).

Flyvbjerg (2006) challenged five common concerns about CSR:

1. He disputed the idea that theoretical knowledge outweighs practical knowledge.
2. He argued against the belief that generalisation is impossible from a single case.
3. He corrected the misconception that case studies are only useful for generating hypotheses, and showed they can contribute to hypothesis-testing and theory-building.
4. He addressed the bias toward verification in case studies and acknowledged the difficulty of summarising specific cases.
5. He argued that case studies are vital for scientific disciplines and advocated for several well-executed social science case studies.

Nevertheless, Yazan (2015) said that aspiring case study researchers will still find CSR to be a terrain marked by a variety of perspectives and approaches. This remains true, but it is also true for almost all theories, frameworks and research methodologies – a myriad opportune philosophies exist and aid our ontology and how we understand and represent the reality in which we live.

### **CSR in nursing research**

Several authors have contributed to the development and use of CSR in nursing.

- » Bergen and While made a case for CSR, when exploring the design in community nursing research (Bergen and While 2000). They argued that CSR has become an accepted vehicle for conducting research in a variety of disciplines and that it is a credible option for nursing research, with the appropriate subject matter, context and research aims.
- » Anthony and Jack's integrated review of CSR (Anthony and Jack 2009) found it to be entrenched within nursing research as an established methodology for studying phenomena, and its growing use warranted continued appraisal to promote the development of nursing knowledge.
- » De Chesnay (2016) offered guidance on using CSR in a wide range of nursing-related topics. The author argued that CSR is a powerful, in-depth tool for examining evidence-based practice around patient care, family dynamics, professional roles and organisational systems (De Chesnay 2016). Together with a full understanding of the elements and processes, CSR can promote authenticity and methodological quality (De Chesnay 2016).
- » Nurse researchers in the field have also contributed guidance on using CSR to explore complex healthcare and nursing practice issues. Bosley et al (2021) systematically explored in a postcode area in a UK city antibiotic prescription and factors that influence mothers when they consider seeking antibiotics for their young children. The authors used CSR design and a mixed methods approach for the study.

### **Why use CSR**

CSR can provide detailed information about specific cases, situations or cohorts, enabling researchers to gain a comprehensive understanding of the issues being investigated. There is flexibility in CSR that enables researchers to tailor their approach to suit their research questions and adapt to various contexts.

With a clear and transparent research protocol, CSR can ensure that the research process is rigorous (Cronin 2014b). Moreover, CSR supports the exploration of complex nursing issues by examining the reality of interactions between multiple factors that influence patient outcomes. Through detailed analysis, CSR can contribute to evidence-based practice by identifying effective nursing interventions and best practices.

CSR also enhances nurse researchers' understanding of nursing practice by providing insights into the experiences of nurses, patients and families. This understanding can inform the development of more effective nursing interventions and improve the overall quality of care.

Ultimately, however, the decision to use CSR will depend on the nature of the research question and its objectives:

### **To investigate a complex phenomenon**

CSR can be a useful way to gain a detailed understanding of a phenomenon that cannot easily be studied using quantitative methods. It enables researchers to investigate the phenomenon in its natural context and to collect rich and detailed data about it.

### **To generate new hypotheses**

CSR can help to develop a more nuanced and detailed understanding of a phenomenon and identify patterns and relationships that may not be apparent through quantitative methods. This can lead to new insights and hypotheses.

### **To investigate rare or unique cases**

CSR can provide detailed information about the case, its context and its unique characteristics. This can be useful in understanding how the case differs from others or how it fits into a larger pattern.

### **To explore the experiences of individuals or groups**

CSR enables researchers to collect rich and detailed data about the experiences of individuals or groups. This can be useful in developing a deeper understanding of their perspectives and experiences and exploring the factors that influence them.

### **To evaluate an intervention or programme**

CSR can provide detailed information about the implementation of the intervention or programme, as well as its effects on individuals or groups.

## **Advantages of CSR**

CSR has several advantages:

- » It provides a detailed and in-depth insight into the reality of a particular phenomenon within an identified timeframe.
- » Researchers can use it to explore complex and dynamic relationships between various factors and their effects. Here qualitative and quantitative methods can complement each other (see Case study 2).
- » Multiple sources of data can be used to triangulate and validate the findings (see Case studies 1 and 2). Sources may include interviews, observations, documents and artefacts.
- » It enables researchers to understand participants' perspectives and experiences within a collective case using complementary methods.
- » Researchers can use CSR to generate new theories and hypotheses to inform other methods, such as experiments or surveys.

## **Disadvantages of CSR**

As with most research designs, there are disadvantages to using CSR:

- » It can be time-consuming and expensive, especially when studying multiple cases.
- » In small defined cases, there are elements of subjectivity, so researchers' interpretations and biases can influence the findings.
- » It can be limited by the presented sample size being too small, which affects the generalisability of the findings to other cases or populations.
- » It can be difficult to replicate, especially when the findings are based in reality on a single case.
- » It can be affected by the Hawthorne effect in which participants' behaviours and responses may be influenced by the researcher's presence or attention. It is therefore very important for the researcher to reflect on and acknowledge their position in the research (Flyvbjerg 2011, Charmaz 2014).

## **Reflection on CSR**

### **Philosophy**

CSR assumes that reality is socially constructed, and that knowledge is subjective and depends on the context – the participants' perspectives, experiences and social interactions shape the meaning and interpretation of a phenomenon. This makes it a popular design for nursing research, but a sense of philosophical duality prevails as its philosophical position can be perceived as a challenge to both those with a quantitative, positivist stance and those who are rooted in the quantitative research paradigm.

For example, Yazan (2015) saw Stake (1995) as being explicitly constructivist and motivated in understanding the meaning and experiences of the context. However, Yazan (2015) saw Yin as more aligned to a positivist approach. Yin (2017) emphasised understanding the meaning and complexity of human experiences and behaviours in their natural settings, as well as taking a procedural approach to understanding a case. It would appear he conceptualised CSR as being able to combine aspects of the subjective and context-dependent interpretative approach of qualitative research with

elements of the deductive reasoning in quantitative approaches. But Yin (2017) did not make this epistemological position clear, so confusion persists.

CSR also assumes that a phenomenon is a complex and dynamic system that cannot be understood by analysing its isolated parts. It therefore takes a holistic approach, examining what underpins nursing practice and the interactions between various factors and their effects on a phenomenon (Stake 1995, Merriam 1998). Collective CSR involves studying multiple cases that are related to each other by either a common theme or a research question (Stake 1995).

CSR assumes that a phenomenon is embedded in its social, cultural and historical context and that it is essential for the researcher to understand those contexts if they are to also understand the intersectionality of the phenomenon being explored (Stake 1995). It acknowledges the researcher's and participants' subjectivity and biases, and attempts to be transparent about the research process and the interpretation of the findings.

### **Epistemology**

Those who intend pursuing this methodological route need to understand as they embark on their research journey that they must study philosophy and epistemology in depth to reach the right ontological viewpoint.

Case study researchers must capture the knowledge and experience of the 'reality' of the case. CSR provides not only a framework but also a philosophical approach, and researchers must choose the right method to investigate a case. There are several options, with Yin, Stake and Merriam authoritative authors in the field (Stake 1995, Merriam 1998, Yin 2009).

The epistemological approach is key for the researcher and depends on the research question. Merriam (1998)'s key philosophical assumptions in qualitative research lie in how individuals interact and construct their social reality, so the qualitative researcher should focus on how the case study is constructed. Stake (1995), in contrast, regarded qualitative case study researchers as interpreters and gatherers reporting the interpretations of constructed reality. Yin (2009)'s orientation shares the two research approaches, not overtly favouring the philosophical orientation of either qualitative or quantitative research.

The two traditions of qualitative and quantitative work pragmatically together or separately, but essentially function as an instrument of design and methods that illustrate the case study in the best light, attending to the aims of the research question. A combination of qualitative and quantitative methods can sometimes be the best route to illustrate the case study, and equally this approach is suited to nursing research.

### **Methodology**

CSR's philosophy is reflected in the methods and approach the researcher chooses, which emphasise the complexity and richness of a phenomenon through in-depth exploration and analysis (Stake 1995, Yin 2009). It values participants' perspectives and experiences, and attempts through the use of a clear research protocol to provide researchers with transparency and reflexivity in the interpretation of their findings (Yin 2017). Finally, single or multiple-case design involves studying the case or multiple cases with the aim of comparing and contrasting their similarities and differences (Yin 2017).

CSR uses inductive reasoning: it starts with observations and data collection from a place of reality from which the researcher can develop hypotheses and theories. This contrasts with deductive reasoning, which starts with a theory or hypothesis that the researcher tests using empirical data.

CSR uses multiple sources of data, such as patient records, observations, interviews with patients, families and healthcare providers, and relevant documents for a defined case. Triangulation then increases the validity of its findings (Cronin 2014a). These cannot necessarily be generalised to other cases or populations but can nevertheless contribute to the development of theories and hypotheses that can be tested in other contexts (Yin 2017).

CSR must be conducted in the context of an individual or group as beliefs and values are integral in defining and influencing people's behaviour and experiences (Yin 2017). Cases must also be present-oriented in real time – even though a case may include historical data about the phenomenon being studied, the study must focus on the present day and makes a good case for studying nursing phenomena prospectively.

### **Method**

CSR typically involves several steps:

1. Identify the research question: This should address a particular clinical problem or patient care scenario. The research question should be specific and focused on a particular aspect of nursing practice and define the case(s) to be studied.
2. Collect the data: This involves gathering information about the case(s) through various sources, such as patient records, interviews, and observations over a specific timeframe. Data collection should be systematic and rigorous, ensuring that all relevant information is captured.
3. Analyse the data: The data collected can be analysed using a variety of methods: content analysis, thematic analysis and narrative analysis. The aim is to identify patterns, themes and relationships in the data that help to answer the research question.
4. Draw conclusions: The final step is to draw conclusions based on the analysis of the data. The conclusions should be grounded in the data and should address the research question.

### **Examples of CSR in practice**

Case studies 1 and 2 show examples of CSR conducted in different nursing education and healthcare settings. CSR can be

used to study a case and answer questions of explanation, such as why subjects think or behave in certain ways. The cohort of students in Case study 1 was examined to understand the learner's willingness to learn. But the study also highlighted the unpredictable nature of healthcare workplaces as learning environments. This research still resonates today for many of our learners in the changing healthcare landscape.

CSR can also be used to explore a problem. Case study 2 focuses on the case of a complex healthcare organisation. Systematic study of the case using multiple sources of data collated from a survey, interviews and documents led to several recommendations being made about menopause in the workplace.

### **Case study 1. Cronin (2014b)**

The aim of this study was to investigate the complex relationship between learners and their learning environments, particularly in the context of vocational programmes in healthcare. The study used a CSR design to explore the experiences of five students enrolled in a two-year, health studies further education programme. It focused on their learning in healthcare settings such as nurseries, nursing homes and hospitals. The methods used included observations, interviews and course documents.

The findings of the study highlight the learning environment as a multifaceted entity consisting of six significant processes: physical environment, interaction communication, self-awareness, tasks, feelings and learning. These processes are interconnected and coexist within the learning environment, illustrating its multidimensional nature. The paper emphasises the importance of understanding these processes and their impact on the learning experience for policymakers, academics and educators who seek to enhance students' learning in the workplace. The practical implications of the study are particularly relevant for professions such as nursing, where workplace experience plays a crucial role in the educational curriculum. The research identifies similarities between the experiences of the studied student group and pre-registration nurses or other professionals studying in higher education, where a significant portion of the learning occurs in the workplace.

The paper provides valuable insights into the learning experiences of students in healthcare settings and acknowledges certain limitations. The study has a small sample and focuses on specific healthcare settings within a specific geographical area but through case study design (Yin 2009) provides in-depth contextual qualitative data of a case in the learning environment.

### **Case study 2. Cronin et al (2024)**

The aim of this study was to explore and understand the organisational culture regarding support and well-being for employees experiencing perimenopausal and menopausal symptoms in a local organisation (the case). The study used a CSR (Yin 2017) approach when collecting data between March and June 2022. The methods included an online survey of all employees (n=6,905), interviews with managers (n=7) and a review of workplace documentation (n=13).

The survey aimed to determine the prevalence and severity of perimenopausal and menopausal symptoms among employees, explore factors influencing these symptoms, and assess how the organisation can assist affected employees. The interviews involved seven managers who were interviewed remotely using a semi structured schedule. Thirteen workplace documents, including policies, procedures and presentations, were analysed for content.

Data analysis involved both quantitative and qualitative methods. Descriptive and inferential analyses were conducted on the quantitative data using SPSS, while qualitative data from the survey responses, interviews and documents were thematically analysed using NVivo and the Braun and Clarke framework.

The organisation reported it had a majority-female (81.9%) workforce, with 41% aged between 41 and 55 years old; this suggested 33% were working through perimenopause and menopause. In the sample surveyed, 66% reported experiencing menopausal symptoms, with 38% reporting mild symptoms, 49% moderate symptoms and 13% severe symptoms. Through analysis of documentation, it was found the organisation had various resources and policies related to menopause support. However, interviews and the survey showed varying levels of engagement and knowledge among employees regarding menopausal symptoms.

The study highlighted the need for improved awareness and support for employees experiencing menopausal symptoms in the organisation. Overall, this case study provides insights into the organisational culture surrounding menopause support and identifies areas for improvement to better assist employees during this transitional phase.

### **Conclusion**

CSR has emerged as a valuable research method in nursing due to its ability to provide a detailed understanding of complex nursing issues in real-life situations (Cronin 2014b, Cronin et al 2024). It offers several advantages that contribute to the development of evidence-based practice, generate new knowledge and enhance critical thinking skills (De Chesnay 2016). By examining specific cases or situations, researchers can gain in-depth insights into the multifaceted aspects of nursing practice – as the examples in this article illustrate. This depth of understanding is crucial for addressing complex problems and developing effective interventions that can improve patient care and healthcare delivery (De Chesnay 2016). Furthermore, CSR generates new nursing knowledge by exploring real-life scenarios, enabling researchers to uncover novel findings and contribute to the existing body of knowledge (Cronin 2014a). This can inform nursing practice, patient care and healthcare delivery, ultimately leading to improvements in the quality and effectiveness of nursing interventions (De Chesnay 2016).

CSR contributes to evidence-based practice by analysing various cases and situations (Yin 20217). Researchers can

identify best practices and effective interventions in nursing that can be translated into evidence-based guidelines to support nurses delivering high-quality, evidence-based care to their patients (De Chesnay 2016). This approach requires a critically reflexive approach for patient care scenarios and complex issues, and considers multiple factors that influence outcomes. Engaging in CSR can enhance nurses' ability to think critically and apply an evidence-based approach to decision making in the context of daily practice (Cronin 2014a, 2014b).

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