CASE STUDY AS A NURSING RESEARCH METHOD: AN INTEGRATIVE REVIEW

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ABSTRACT

Objective: to analyze the application of the case study as a nursing research method in national and international scientific publications. **Method:** integrative literature review performed in the electronic bibliographic databases PubMed, CINAHL, LILACS and SciELO, using

Method: integrative literature review performed in the electronic bibliographic databases PubMed, CINAHL, LILACS and SciELO, using case study descriptors, research and nursing. Original articles were available in full online format, in Portuguese, English and Spanish, between 2010 and 2015.

Results: 624 studies were found, of which 50 met the objective. The authors Yin and Stake were the researchers whose methodological case study frameworks stood out in the context of research in the nursing area. The application of the method covered the different fields of activity of the profession: education, care/care and management/administration.

Conclusion: the case study as a research method has proved to be an important methodology that can be widely used by nursing in its various fields of action when seeking to understand phenomena related to individuals, groups or organizations.

DESCRIPTORS: Nursing. Search. Nursing research. Methods. Case studies.

O ESTUDO DE CASO COMO MÉTODO DE PESQUISA EM ENFERMAGEM: UMA REVISÃO INTEGRATIVA

RESUMO

Objetivo: analisar a aplicação do estudo de caso como método de pesquisa pela enfermagem nas publicações científicas nacionais e internacionais.

Método: revisão integrativa de literatura realizada nas bases bibliográficas eletrônicas PubMed, CINAHL, LILACS e SciELO, utilizando os descritores estudo de caso, pesquisa e enfermagem. Foram incluídos artigos originais disponíveis na íntegra no formato *on-line*, nos idiomas português, inglês ou espanhol, no recorte temporal de 2010 a 2015.

Resultados: foram encontrados 624 estudos, dos quais 50 atenderam ao objetivo. Os autores Yin e Stake foram os pesquisadores cujos referenciais metodológicos de estudo de caso se destacaram no contexto da pesquisa na área da enfermagem. A aplicação do método abrangeu os diferentes campos de atuação da profissão: educação, assistência/cuidado e gestão/administração.

Conclusão: o estudo de caso como método de pesquisa mostrou-se uma importante metodologia que pode ser amplamente utilizada pela enfermagem nos seus diversos campos de atuação ao buscar compreender fenômenos relacionados a indivíduos, grupos ou organizações.

DESCRITORES: Enfermagem. Pesquisa. Pesquisa em enfermagem. Métodos. Estudos de casos.

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RESUMEN

Objetivo: analizar la aplicación del estudio de caso como método de investigación por la enfermería en las publicaciones científicas nacionales e internacionales.

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Resultados: se encontraron 624 estudios, de los cuales 50 atendieron al objetivo. Los autores Yin y Stake fueron los investigadores cuyos referenciales metodológicos de estudio de caso se destacaron en el contexto de la investigación en el área de la enfermería. La aplicación del método abarcó los diferentes campos de actuación de la profesión: educación, asistencia/cuidado y gestión/administración.

Conclusión: el estudio de caso como método de investigación se mostró una importante metodología que puede ser ampliamente utilizada por la enfermería en sus diversos campos de actuación al buscar comprender fenómenos relacionados a individuos, grupos u organizaciones. DESCRIPTORES: Enfermería. Búsqueda. Investigación en enfermería. Métodos. Estudios de casos.

INTRODUCTION

The case study is a structured research method that can be applied in different situations to contribute to the knowledge of individual or group phenomena. As it is a research method, case studies have their own characteristics and can be conceptualized based on the positions of two of the most recognized experts in this method: Robert K. Yin¹ and Robert R. E. Stake².

Yin¹ defines the case study as an empirical research, which investigates contemporary phenomena within a real-life context, used especially when the boundaries between the phenomenon and context are barely evident. It gives purpose to exploring, describing and explaining the event, or providing a deep understanding of the phenomenon.

Stake² presents the case study as a delimited system and simultaneously emphasizes the unity and globality of this system. It focuses attention on the aspects that are relevant to the research problem, to allow a clearer view of the phenomena through dense description. The case study as a research method requires the researcher to carefully design the protocol, explaining the formal procedures and recognizing strengths and limitations of the study. In general, the choice of this method becomes appropriate when the researcher seeks to answer questions that explain current circumstances of some social phenomenon, in the formulation of how or why such a social phenomenon works.¹

Although it is a method capable of producing evidence based on different quantitative and/ or qualitative techniques of data collection and analysis, its application in the social sciences remains challenging, since the term "case study" has also been used as a technique, an instrument or an

approach. For example, in the educational field the case study can be used as a didactic approach to problematize a situation in order to approximate theory and practice. The term is also commonly used in medical and psychological studies to refer to a detailed analysis of an individual case that explains the dynamics and pathology of a given disease.^{1,3}

The publication of studies using the term "case", dissociated from the scientific method, and its corresponding attributes, causes confusion and discredit. The inadequate use of the term, either by the lack of a research protocol or by criteria that justify the choice of method, leads to an erroneous perception of its applicability in scientific research.⁴

This ambiguous way of using the terminology can also be seen in studies in the nursing area, when carried out without the proper rigor proposed by the method. This fact, together with the interest in scientific production while using the case study as a research method, motivated us to identify its application in nursing in the literature. Therefore, this study aimed to analyze the application of the case study as a nursing research method in national and international scientific publications.

METHOD

This is an integrative literature review, whose method allows the synthesis of several published studies based on the findings presented by the researches and resulting in an expanded analysis and visualization of existing gaps.⁵

The study design was based on the recommendations of the *Statement for Reporting Systematic Reviews and Meta-Analyzes of Studies* - PRISMA checklist and the elaboration of a protocol, validated by an expert reviewer, consisting of six methodological steps: ⁵ identification of the topic and selection of the

research question; establishment of the inclusion and exclusion criteria; identification of pre-selected and selected studies; categorization of selected studies; analysis and interpretation of results; and the presentation of the review.

The question for the review question was delimited in the first stage: how is the case study being applied as a nursing research method in national and international scientific publications?

In the second stage, Portuguese, English and Spanish languages were used as filters in the time period of 2010 to 2015. Original articles were available in full in the online format. Reports of experience, review studies, literature reviews, edi-

torial management reports, letters, opinion articles, comments, abstracts of essays, essays, duplicate publications, dossiers, official documents, theses, dissertations, books and articles were excluded which did not meet the scope of this review.

The electronic bibliographic bases were consulted on January 15, 2016 for literature, including: Public / PublishMedline (PubMed), Cumulative Index to Nursing & Allied Health Literature (CINAHL), Latin American and Caribbean Literature in Health Sciences (LILACS) and Scientific Electronic Library Online (SciELO). To compose the search strategy, we selected keywords and combined descriptors the following search keys were elaborated according to the database, according to table 1.

Table 1 - Database search strategy, 2015

Base	Key words
PubMed	("Case Reports" [Publication Type]) OR "Organizational Case Studies" [Mesh] OR case studies OR case studies approaches) AND "Research" [Mesh]) AND "Nursing" [Mesh]
CINAHL	(Case Stud* OR case stud* approach* OR case study research) AND (Research) AND (Nursing)
LILACS	Case studies [Subject descriptor] and research [Words] and nursing [Words]
SciELO	(case stud* OR case stud* approach* OR case study research) AND (research) AND (nursing)

From the search strategy, 624 studies were identified in the four searched electronic databases.

In the third stage, the identified studies were pre-selected through the reading of the titles, abstracts, keywords or descriptors, excluding those that did not meet the inclusion criteria, which totaled 206 articles. These were read in full, excluding the repeated ones and those that did not fit the scope of this review, totaling 50 studies. The flowchart of the method of searching and selecting the studies is presented in figure 1.

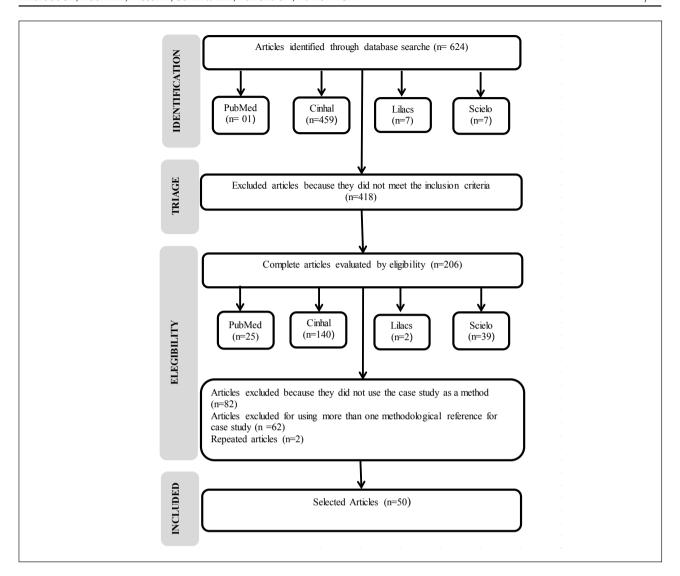


Figure 1 - Flowchart of the method of searching and selecting studies, adapted from PRISMA

In the fourth step, the selected studies were categorized with the support of an instrument for recording information extracted from the articles, consisting of the following items: database, periodical, year of publication, author, title, methodological reference and form of the case study application.

The fifth step provided the analysis, interpretation of the results and discussion, addressing the ways of applying the method according to the fields of nursing action: education, care/care and administration / management. The explicit fields of action of nursing, as categories for the merging of the studies of this review, took into consideration fields that involve the work process of the nurse, including: educate, care and administer.⁶

Finally, in the sixth stage, the review and synthesis of the knowledge produced in the application of the case study as a nursing research method in the

national and international scope was presented. The results were organized by fields of nursing practice.

RESULTS

The results of this study showed that 574 (92%) of the articles found use the term case study inappropriately in nursing research as they do not use the corresponding methodology. Although the terminology appears in the title, the summary and descriptors did not follow methodological rigor. Thus, of the 624 articles found, only 50 (8%) met the study objective and were selected. From these selected studies, 40 (80%) followed the methodological framework proposed by Yin¹ and ten (20%) follow the methodological orientation of Stake.²

The studies are indexed in the electronic bibliographic databases CINAHL (34; 70%), SciELO

(12; 24%) and PubMed (4; 6%), distributed in 41 journals: *Journal of Advanced Nursing* (7%); Nursing Journal, Nursing School Magazine of the University of São Paulo and Latin American Journal of Nursing presented two (5%) studies each. The other studies were in different journals.

The year 2011 presented the most publications, with 14 (28%) studies, followed by 2012, with nine (18%), and 2015, with eight (16%), 2010 and 2013, with seven (14%), studies each year and 2014 with five (10%).

The qualitative approach was used by 46 (92%) of the studies, followed by mixed methods with four (8%) publications. The case study may be of the single or multiple type containing analysis units. In

this review, 26 (52%) of the surveys were multiple cases and 24 (48%) were single case studies.

The grouping of the studies in this review took into account the fields that involve the nurses' work process, 6 notably education, care / care and management / administration. Based on this grouping, and for each field, the themes that were studied with the case study application method emerged.

The education field is directly related to the training of nurses, the curricular development that determines the foundation for the exercise of the profession, the pedagogical practices and methodologies focused on nursing. Table 2 presents the main themes of the studies analyzed in this review according to the field of nursing education.

Table 2 - Subjects addressed in selected studies in the field of nursing education

Nursing Education				
Themes	Authors			
Nursing training	Breen LJ et al., 2010. ⁷ Pront L et al., 2013. ⁸ Silva APSS, Pedro ENR, 2010. ⁹ Silva APSS, Pedro ENR, Cogo ALP, 2011. ¹⁰			
Curricular training of the baccalaureate program in nursing	Villela JC et al., 2013. ¹¹ Shattell MM et al., 2013. ¹²			
Pedagogical practices / methodologies	Fortugno M et al., 2013. ¹³ Johansson P, Petersson G, Nilsson G, 2011. ¹⁴ Cogo ALP et al., 2011. ¹⁵			
Teacher experience	Ramos FRS et al., 2011. ¹⁶ Ramos FRS, et al., 2010. ¹⁷			
Patient experience in nurse training	Webster BJ et al., 2012. ¹⁸			

Regarding the field of nursing care, the studies of this review focused on nursing care practices aimed at the prevention of falls, elderly health, emergency care, cancer patients and palliative care, psychological illness and primary health care assistance. They also addressed the impact of the nurses' performance; the models of health service provision, programs and protocols directed to nursing care. Table 3 presents the main themes with the case study method in the field of nursing care.

Table 3 - Subjects addressed in selected studies in the field of nursing care

Nursing care/assistance			
Themes	Authors		
Nursing care practice	Sousa LD et al., 2013. ¹⁹ Barros EJL et al., 2014. ²⁰ Duarte SCM et al., 2012. ²¹ Reed CC et al., 2012. ²² Addicott R, 2011. ²³ Bergdahl E et al., 2013. ²⁴ Moore J, Prentice D, Taplay K, 2015. ²⁵ Bells A, 2010. ²⁶ Almond P, Lathlean J, 2011. ²⁷ Linder LA, Christian BJ, 2013. ²⁸ Silva VG, Motta II MCS, Zeitoune RCG, 2010. ²⁹ Favero L, Mazza VA, Lacerda MR, 2010. ³⁰ Kennedy C et al., 2011. ³¹ Kirk PH et al., 2014. ³² Musau J et al., 2015. ³³		
Advanced nursing practice	Shiu ATY, Lee DTF, Chau JPC, 2012.34		
Continuous care	Suter E et al., 2014. ³⁵		
Care in various care settings	Baillie L, Gallagher A, 2012. ³⁶		
events in the circumstances of care from the perspective of Nurses and caregivers	Wegner W, Pedro ENR, 2012. ³⁷		
Nursing care program	Hesselink AE, Harting J, 2011. ³⁸ Stringer B et al., 2015. ³⁹		
Long-term hospitalization in the Intensive care unit from the perspective of patients, family members and health professionals	Minton C, 2015.40		
Resilience when faced with the experience of cancer	Ishibashi A et al., 2010. ⁴¹		
The nurse consultant	Gerrish K, McDonnell A, Kennedy F, 2013.42		
Models of health services provision	Elboune HF, May A, 2015. ⁴³ Leach LS, 2012. ⁴⁴ Birks M et al., 2010. ⁴⁵		
Protocol implementation	Kaasalainen S et al, 2015.46		
Theory generation model	Havenga Y, Poggenpoel M, Myburgh C, 2014. ⁴⁷		

The studies that dealt with the field of nursing management/administration are highlighted as they solely used the author Robert K. Yin¹ as a methodological reference, revealing topics related to hospital services management, critical incident reports, workload, quality and nursing care planning. Table 4 presents the main themes

of the studies analyzed in this review, organized according to the application of the method in this field.

Table 5 shows the stages of the case study development according to the recommendations of the authors Yin¹ and Stake.²

Table 4 - Subjects addressed in the selected studies in management/administration in the nursing field

Nursing management / administration			
Themes	Authors		
Care management	Santos JLG, Lima MADS., 2011. ⁴⁸ Richards J, 2011. ⁴⁹ Fleiszer AR et al.,2015. ⁵⁰		
Nursing workload	Locke R et al, 2011. ⁵¹		
Organizational and extra-organizational factors	Berta W, Laporte, Kachan N, 2010. ⁵² Harrington C, Ross L, Kang T, 2015. ⁵³		
Nursing care planning	Jeong SY, Higginns I, McMillan M, 2011. ⁵⁴ Senna MH, Andrade SR, 2015. ⁵⁵		

Table 5 - Case study development steps

1. Definition of the research theme / problem¹-²	
2. Definition of cases: 2.1 single, multiple, holistic and / or integrated 2.2 single, intrinsic or instrumental ²	
Description of theoretical prepositions ¹	
Elaboration of the case study protocol ¹	
Data collection - use of multiple sources of evidence ¹⁻²	
Analysis and interpretation of results ¹⁻²	
Preparation of the report ¹⁻²	

DISCUSSION

The analysis of the selected literature revealed the case study application method in nursing research, using the two main authors of this method, Yin and Stake as references¹⁻² Considering the prevalence of studies with a qualitative approach and practically proportional single cases (46%) and multiple (54%), it is important to clarify the bases with which the referenced authors use.

Yin¹ proposes the single case study as an exploration of a limited system, through detailed analysis and systematic description to understand a specific situation, an individual, a small group, an institution, a government program or an event. On the other hand, a multiple case study allows comparison, especially in several contexts. In both situations, the case study may be holistic or have integrated units of analysis, defining, in the latter, a central unit with subunits.

Stake² outlines the case study as intrinsic,

instrumental or collective. The intrinsic case study seeks to obtain a better understanding of a particular case only by the interest aroused by that particular case. On the contrary, in the instrumental case study the interest in the case is due to the belief that it may facilitate the understanding of something broader, as it can serve to provide insights on a subject or to challenge a widely accepted generalization. The collective case study intends to offer a better understanding, or even better theorization regarding a larger set of cases.

Focusing on the conceptual bases of the authors of reference, it is possible to establish a parallel between Yin's post-positivism and Stake's social constructivism and to synthesize two distinctive criteria of the case study application method: the first as an investigation that focuses on a social phenomenon, original and complex, retaining the holistic characteristics of the life events; and the second, as an in-depth and contextualized study of a

phenomenon, which constitutes a delimited system.

This review revealed that the the case study application method in nursing research covered the different fields of activity of the profession, in particular education, care / care and administration / management.⁶

In the field of nursing education, the selected studies addressed the evaluation of new teaching methodologies,¹³ the analysis of technological teaching tools,^{9-10,14-15} pedagogical practices,^{7-8,11-12} and the ethical dimension in the training of nurses.¹⁶⁻¹⁷

In addition to these, other areas can be deepened by the case study method, with research focused on educational policies, school and intermediate management, climate, culture and leadership, supervision, continuous and specialized training, teacher satisfaction, professional identity, curriculum, didactic and pedagogical practices, educational projects, teaching-learning models and strategies, and evaluation.³

The studies developed in the area of education that used the single case study, defined by Yin, were performed with groups, which represented the unit of analysis within the studied phenomenon; or with a single individual indicating the case, being justified as it represents a peculiar case which can be investigated. As an example of the method application considering the case as a group can be seen in a study conducted in Canada, 13 which addressed a group of four students from different undergraduate courses and analyzed the inter-professional relationship in an educational environment. In another study,¹¹ conducted in Brazil, the case was a group of 60 nursing undergraduates, in the first semester in the 4th academic year, during the teaching of the mental health discipline, and verified how teaching in this area has influenced nursing training. In the UK, the single case study consisted of a group of 18 volunteer patients and evaluated their experiences in providing feedback to students in a simulated learning environment.¹⁸

Regarding the studies that applied the method considering the case with a single individual, a survey conducted in Sweden, the study was a developed by a nursing student in the course completion process and described his experience of using the personal digital assistant.¹⁴

Yin was also used in multiple case studies that sought to investigate the same phenomenon in different educational institutions.^{7,16-17} In studies conducted in Brazil, the cases were represented by six undergraduate nursing courses with the objective of discussing the indicative changes identified

by teachers in the nursing training scenario in relation to their ethical dimension and to characterize the teachers regarding the experiences and motivations for teaching ethics and bioethics in nursing courses. ¹⁶⁻¹⁷ In Australia, the cases corresponded to six programs whose objective was to provide an indication of how future health professionals are prepared to deal with issues surrounding pain and loss issues in their practice.⁷

The case study method encourages the use of multiple sources of evidence through data triangulation, allowing the researcher to address wide variation in the same phenomenon. The case studies that use the methodological framework of Yin in the field of education used documental research as a source of evidence, through the analysis of teaching plans and the schedules of undergraduate disciplines, The interviews Test focus groups, and direct observation.

The methodological framework proposed by Stake was used in the field of nursing education, mostly with single case studies, which analyzed the use of virtual learning methodologies in undergraduate nursing teaching. ^{10,15} In relation to multiple cases, a study conducted in the United States, examined a baccalaureate pre-licensure nursing program at a public university. ¹²

In the field of nursing care, the case study method has been used in different areas, such as the health of the elderly, ^{20,23,26,43} home care and palliative care, ²⁴ oncology, ^{25,41} women and child health, ^{28,36,38} surgical patients, ^{19,21} mental health, ³⁹ and adverse events in care. ³⁷ According to the produced evidence, the method has contributed to the improvement of care practices when investigating nursing care from the perspective of patients, ²⁰ Families ⁴⁰ and professionals. ^{19,21}

It is observed that among the performed studies , the single case study according to Yin's methodological framework has been applied with groups of professionals, making it possible to describe the development of multi-professional teams in intermediate care, 43 the nurse's work in team leadership and collaboration among nurses working in specific sectors and in order to understand the best way to support, promote and improve collaborative practice among professionals.²⁵

Yin's framework of multiple case studies addressed programs, institutions, and functions related to caregiving. In the evaluation of programs a study in the Netherlands evaluated multiple perinatal risk factors.³⁸ Studies involving institutions commonly consider specific sites that are a refer-

ence for the service provided, such as hospitals,⁴⁴ maternity hospitals,³⁸ clinics,³⁴ and long-term institutions.²⁴ In the evaluation of the role, the case study has explored the role played by nurses as an agent of change in protocol implementation.⁴⁶

The single case studies in the field of nursing care / assistance which used the method proposed by Stake were used with groups of nurses and with a multi-professional team.^{32,38,45} In multiple cases,² they consisted of nurses evaluating the impact of its performance on patients, professionals and the organization,⁴² other health professionals and patients and their families.⁴⁰

Finally, nursing research in the administration / management field has only used the referential described by Yin, in single or multiple cases. This review identified studies focused on care management, nursing workload, 51 and nursing care planning. 54

In care management, a single case study involving nurses working in the hospital service sought to foster discussion, reflection and understanding of the importance of nurses' managerial practices for the quality of care and the assistance provided by health services. ⁴⁸ The assessment of the nurse manager's workload was also carried out with a pilot project that introduced administrative assistants to health facilities in England. ⁵¹ The case study method has also been applied to evaluate care planning. In Australia this topic was explored focusing on advanced care planning and advanced home care guidelines for the elderly, focusing on the experiences of patients and families from three residences, and sought to plan the best care for the elderly in the final stage of life. ⁵⁴

Studies related to health organizations analyzed the influence exerted by the set of organizational and extra organizational factors on the operational efficiency and quality of care provided in long-stay homes. A multiple case study with 16 analysis units, identified team characteristics and physical structure as well as extra organizational influence as the main factors influencing operational efficiency and quality of care. ⁵² Another case study described, in a systematized manner, the experiences and the flows of institutions, identifying how adversities are recognized and resolved. ⁵⁷

Due to the diverse purposes and modalities of the application of the case study method, it is important to assess whether an investigation can be classified as such. An investigation is characterized as a case study when there is a need to understand complex social phenomena of real-life events using a planning protocol, data collection and analysis. ^{1,56} Not everything can be considered a case, because a

case is a specific unit, or rather, a delimited system whose parts are integrated.²

CONCLUSION

This integrative review identified that the authors Yin and Stake were the researchers whose methodological frameworks of case studies were highlighted in the context of research in the fields of education, care / care and nursing management/administration. Yin's methodological framework has been the most frequently used in nursing research that uses the case study as a method.

It can be emphasized that the references used are adequate for the nursing area, since the studies in this field focus on the complex phenomena of life and allow the researchers to study them intensively and deeply, with multiple sources of evidence, in order to understand the facts related to individuals, groups or organizations. The case study as a research method is an important research resource, and it has been used by nursing in its various fields of activity.

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