

Review Article

An integrative review of case study methodologies in occupational therapy publications

Revisão integrativa sobre a metodologia dos estudos de caso publicados na terapia ocupacional

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<u>Abstract</u>

Introduction: The philosophy and practice of occupational therapy is subjective and this provides a challenge in reflecting the essence of practice within research methodologies for this profession. The individualistic practice of client centredness and the importance of context are core elements of occupational therapy. **Objective:** The aim is to conduct a descriptive analysis of contemporary use of case study research in occupational therapy based on selected articles using this methodology. Method: An integrative literature review was carried out to explore contemporary occupational therapy application of case study as an approach. The search comprised the publications between 2006-2016, containing the keywords: "case study method", "case study approach" and "case study methodology" were combined with "occupational therapy" in the following databases: CINAHL, MEDLINE and PSYCHINFO, and Royal College of Occupational Therapistsonline dissertation database. **Results:** Thirty-two papers were synthesised; the studies predominantly featured mixed method data gathering as would be expected within a case study approach. There was a global uptake of the case study approach; UK, Canada, USA, Australia, Qatar, Brazil and Hong Kong in order of incidence. There was a relatively equal division between explanatory case studies and exploratory case studies. Conclusion: The case study approach is a strongly viable and acceptable research tool to reflect the elements of occupational therapy practice and enhance the evidencebased practice of this profession. Occupational therapy research would benefit from a higher number of case study designs to reflect the complexity, subjectivity and person centredness of the profession.

Keywords: Research, Occupational Therapy, Methods, Case-control Studies.

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<u>Resumo</u>

Introdução: A filosofia e a prática da terapia ocupacional são subjetivas e representam um desafio para refletir a essência da prática dentro da metodologia de pesquisa. Objetivo: Analisar descritivamente o uso contemporâneo da metodologia de pesquisa de estudo de caso em terapia ocupacional. Método: Foi realizada uma revisão integrativa da literatura para explorar a aplicação contemporânea do estudo de caso na terapia ocupacional. A busca compreendeu publicações entre 2006-2016, com as palavras-chave: "método do estudo de caso", "abordagem do estudo de caso" e "metodologia do estudo de caso", combinadas com "terapia ocupacional". A busca foi feita nas bases: CINAHL, MEDLINE e PSYCHINFO e dissertações online do College of Occupational Therapists. Resultados: Trinta e dois artigos foram analisados. Os estudos apresentaram predominantemente coleta de dados de método misto. Houve uma aceitação internacional da abordagem do estudo de caso exemplificada pelos países Reino Unido, Canadá, EUA, Austrália, Qatar, Brasil e Hong Kong em ordem de incidência. Foi identificada uma divisão relativamente igual entre estudos de caso explicativos e estudos de caso exploratórios. Conclusão: O estudo de caso é um tipo de pesquisa viável e aceitável para refletir os elementos da prática da terapia ocupacional e aprimorar a prática baseada em evidência para a profissão. A pesquisa em terapia ocupacional se beneficiaria de um maior número de estudos de caso para refletir a complexidade, subjetividade e prática centrada no cliente.

Palavras-chave: Pesquisa, Terapia Ocupacional, Métodos, Estudos de Referência de Casos.

1 Introduction

According to Yin (2014) the case study approach provides an in-depth, multifaceted exploration of complex issues in their real life settings. This approach is widely utilised within education, business and social science but is relatively underused in health. This is surprising given the acceptance of the case study approach as a means of sharing learning within occupational therapy professional practice.

Whilst acknowledging the affinity occupational therapy has with the use of case study there is a subtle difference between the case study as used for practice and as a research approach. Crowe et al. (2011) strongly advocates the use of the case study approach within health research but agrees there is a clear distinction that needs to be made between case study in clinical practice and in research. The case study within professional practice is described as a detailed critique where insights to a clinical case are communicated and hence clinical lessons learnt (Crowe et al., 2011). In this way, case studies are widely utilised in case conferences, in-service training and within health and social care training programmes as an acceptable and recognised tool of learning. Many have reflected the virtue of the case study in terms of professionals adapting their practice; the case study being more interesting to the health professional learner than didactic material (Owens et al., 2002), enabling development of problem solving and analytical reasoning (Thoimas, 1993) and the ability to apply contextual learning due to the identifiable nature of a case study (Deaton & Cook, 2012)

In a research context, the case study is utilised to "investigate contemporary phenomena in its real-life context" (Yin, 2014, p. 16). It has the capacity to describe in-depth a clinical

intervention, understand effects of a service policy or explore professional attitudes. Comparable to the case study for the learner in clinical practice, it enables identification, enhances interest and enables analytical reasoning. Ultimately, the case study in research presents evidence which serves to convince the reader of a particular line of argument. It provides the analytical reasoning and attempts to refute alternative explanations.

Occupational therapy is challenged by the need to reflect its subjectivity, its contextual relevance of the client and its complexity of multiple factors. Creek et al. (2005) defined occupational therapy as a complex intervention and hence there is a challenge for the profession to evidence such complexity. Case study research methodology could be considered as an alternative which more reflects the essence of the profession. The case study approach has the potential to describe the person, the occupation and the environment encapsulating the complexity of subjectivity within it. Salminen et al. (2006), extolled the virtues of case study research for occupational therapists describing it as a scientific methodology that can be used to understand and develop occupational therapy practice yet with acknowledgement that little attention had previously been given to it by occupational therapy researchers.

The aim of this integrative review is to conduct a critical analysis of contemporary use of case study research in occupational therapy since Salimen's recommendations in 2006. The following research questions are addressed: What forms of case study research are applied in occupational therapy? Which settings apply case study research? The discussion will then address the strengths and weaknesses of the case study approach for occupational therapy based on the contemporary studies to date. The purpose of the review is to provide recommendations for application of case study research in occupational therapy.

2 Literature Review

The case study research design studies a phenomenon in depth including the minutia of context. Becker (2014, p. 14) explains: "[...] everything present in or connected to a situation I want to understand should be taken into account".

In so doing the case study focuses on the whole of the case; as in occupational therapy philosophy which encompasses the physical, cognitive and psychosocial systems of the person within their environment and their occupations. The case study research design therefore details the why and the how of the entirety of the case studied.

To understand case study design, an understanding of what constitutes a case is required. The "case" can also be termed as a unit of analysis (Yin, 2014) and as such can be single or multiple, bounded as individuals, small groups, service or clinical settings, decisions within policy, communities or specific events (Yin, 2014). The unifying point between all case studies is that they are a "[...] *specific, complex, functioning thing*" (Stake, 1995, p. 2).

To highlight some examples from occupational therapy as illustration; Preissner (2013) utilised case study approach to explore a fatigue management programme delivered via teleconference for people with multiple sclerosis. The unit of analysis is the programme within the teleconference delivery and hence this is the case study. The service users are participants within the case study, rather than individual case studies. Conversely, Lal & Mercier (2009) examines employment of individuals with mental illness with the case study being bounded as the partnership between public health and a local development service. In a third example, Stephenson & Chesson (2008) investigates the long-term implications of development coordination disorder and uses multiple case study design –

each case being presented as a parent of a child with development coordination disorder. The latter is perhaps a more traditional view of case study, more closely linked to the view utilised in practice. In a research sense, the case is a unit of analysis (Thomas, 2016); a means to gather varying aspects of data to enable a thorough depth of understanding into the reality and from it draw analytical elements which answer the research question.

Whilst the strength of case study research is the depth (Rodger & Brandenburg, 2009), reflection of reality and ability to create a multidimensional picture in a complex situation, there are limitations to the approach. The case study approach cannot be considered as generalisable in the context that positivist research define generalisation, and this is supported by advocates of the case study approach (Yin, 2014; Stake, 1995; Simons, 2009; Thomas, 2016). It is for the researcher to convey to the reader thorough understanding and interpretation of the case; it is through such depth of understanding that links, comparisons and contrasts can be made within relevance and significance. In fact, Thomas (2016) considers it is the strength of understanding what is termed the particularness of a case, not the representativeness, which provides the creation of knowledge for others.

In considering the elements of case study research design the elements of occupational therapy are illuminated; the complexity of real life situations, the understanding of the wholeness and the particularness of a unit of analysis. The flexibility of this approach enables these aspects to flourish; the case study design is inclusive of different methods of data collection and analysis (Stake, 1995). As such it can use qualitative, quantitative and mixed methods aspects within it, the focus being on studying a case in a natural context where controlling variables is not a focus (Gomm et al., 2000).

3 Method

3.1 Study design

An integrative review summarises literature to provide a comprehensive understanding of a phenomenon (Broome, 1993; Anthony & Jack, 2009). The synthesis of information combines qualitative and quantitative methodologies (Whittemore & Knafl, 2005) enabling new perspectives on a topic to be produced. An integrative review can consider mature or emerging topics (Torraco, 2005), in this case the review builds upon the case study application to occupational therapy first considered by Salminen et al. (2006); this review therefore reconceptualises and expands our knowledge exploring the viability of case based approach as a viable research approach for occupational therapy. It is appropriate that such a comprehensive perceptive tool is utilised to judge the viability within a profession of complexity of a comprehensive contextual research approach in occupational therapy.

3.2 Databases and keywords

A comprehensive electronic search of the following databases was conducted: CINAHL, MEDLINE and PSYCHINFO followed by a search of College of Occupational Therapists online dissertation database. These databases were selected due to their health context and prevalence of occupational therapy literature. Keywords of "case study method", "case study approach" and "case study methodology" were combined with "occupational therapy".

3.3 Criteria

A ten-year period enabled contemporary occupational therapy practice to be reflected within the search whilst producing a robust number to compare between. Inclusion criteria were empirical studies of English language and transparently related to occupational therapy practice. Exclusion criteria were studies not associated with occupational therapy practice, and articles focussed upon case study theoretical discussion. Single case studies were also avoided as the single case is a largely descriptive study which does not produce triangulation of data. (Table 1). An initial sample of 47 were obtained; a sample of 32 were eligible for analysis (Table 2.)

Inclusion criteria	Exclusion criteria	
January 2006 to January 2016	Conference proceedings	
Primary source	Editorials	
Transparent occupational therapy focus	Secondary source	
English language	1age Theoretical discussion focu	
	Single case study design	

Table 1. Inclusion and Exclusion Criteria.

Table 2. Search Detail.

Database	Key words	Hits obtained	Exclusions	Accepted
Cinahl	"Case study method" and "occupational therapy"	3		3
	"Case study approach" and "occupational therapy"	0		
	"Case study methodology" and "occupational therapy"	0		
Medline	"Case study method" and "occupational therapy"	0		0
	"Case study approach" and "occupational therapy"	8		8
	"Case study methodology" and "occupational therapy"	7		7
Psychinfo	"Case study method" and "occupational therapy"	0		
	"Case study approach" and "occupational therapy"	17	7 duplications 3 single descriptive clinical education cases	7
	"Case study methodology" and "occupational therapy"	7	5 duplications	2
RCOT Dissertation	"Case study method" and "occupational therapy"	0		
	"Case study approach" and "occupational therapy"	5		5
library	"Case study methodology" and "occupational therapy"	0		

4 Data Analysis

Studies were synthesised by categorising each study within the main characteristics of case study research: 1) Study purpose was exploratory or explanatory. Explanatory category also included descriptive studies; 2) Study was multiple or single case study design; and 3) The unit of case was a service/policy or service user focussed unit.

The data was critiqued using the Holland & Rees (2010) critique framework for both qualitative and quantitative studies and the synthesis utilised to answer the key research questions which structures the results and discussion.

5 Results

Thirty-two papers were synthesised; the studies predominantly featured mixed method data gathering as would be expected within a case study approach. There was a global uptake of the case study approach; UK, Canada, USA, Australia, Qatar, Brazil and Hong Kong in order of incidence. Settings were wide and varied both in clinical setting, condition and age range of service users. This spread of studies within the review demonstrates the wide, global application of case study approach within occupational therapy research.

5.1 What forms of case study research approach are applied in occupational therapy?

There was a relatively equal division between explanatory case studies and exploratory case studies. Forty-six per cent of explanatory studies focus on the "how" questions; these studies explain how an occurrence or set of occurrences became evident. The fifty four percent of exploratory studies focus upon the "why" questions.

The predominant case study unit (sixty percent of the total number of studies) was investigating a specific occupational therapy service; these studies have a service evaluation purpose. The remaining forty percent were interventions related to either service users or students. This is a proportionally small number of studies for a health and social care delivery profession where its primary unit is service users; the case based approach of multiple design with specific interventions upon service users is appropriate for investigating complexity and hence generating and evidence base for the occupational therapy profession but is small in number in comparison to service evaluation.

5.2 Which occupational therapy settings utilise case study approach?

The highest proportion of studies focussed upon the adult vocational rehabilitation setting (23%), where mixed data collection methods were used to positive effect, balancing within the studies the impact of policy and the experiences of service users and occupational therapists within the field. The paediatric settings amounted to a quarter of the total studies; in each of these studies multiple data methods were utilised to triangulate the findings. This enabled a greater depth of information in multiple case study designs. Two of the studies were based within the education sector, again being able to benefit from a variety of methods to triangulate data findings.

6 Discussion

6.1 Strengths and weaknesses of the case study approach for contemporary occupational therapy research

The ability to provide a rich description of a situation is a luxury afforded to the case study approach (Stake, 1995) and is in direct contrast with the experimental approaches which encapsulate a narrow field of investigation. Utilising case-based approaches to research provides unique insights which enable broader recommendations to be drawn (Crowe et al., 2011), Preissner (2013) illustrates such insights when studying people's experiences of teleconference within a multiple sclerosis fatigue management programme. Preissner describes how she endeavoured to use words which focussed upon emotion to describe their perception of individual experience of fatigue. Such rich description enables Preissner to illuminate the experience of the cases. This case study provides rich description as the experiences of the participants are illuminated throughout the cases.

Furthermore, insights to the mourning felt by the participants following completion of the programme and the perceptions of their fatigue are understood through the approach rather than conveyed through the narrow viability of the programme. In this study therefore, by illuminating the unit of analysis, the intervention upon the cases, the understanding of the intervention impact is understood more comprehensively by the reader.

The strength of the case study approach is that it enables complexity of a multitude of elements to be broken down, investigated and analysed. Lal & Mercier (2009) reflects the subjective complexity of the profession through a study of vocational intervention. Lal focuses on delivery of intersectional action with the purpose of improving employment for individuals with mental illness. Data collection methods included semi structured interviews, participant observation and clinical documentation. The exploratory description intertwines legislation, policy and parameters of working in addition to occupational therapists perceptions and documentations. This variety of data sources enables a triangulation which provides clarity to the strengths and limitations of present provision. Occupational therapy is recognised as a complex intervention in terms of its multifactorial demands (Creek et al., 2005) and Lal's study reflects this complexity. By triangulation of data, the case study approach has the potential to describe the person, the occupation and the environment encapsulating the complexity of subjectivity within it. Yet the rich depth of study on single units of analysis within the case based approach accommodates the individualistic nature of occupation.

A robust case study approach however cannot rely on data sources alone; a strong narrative is essential to develop insight into the phenomenon studied. The narrative needs to be focussed yet all encompassing, wide in its cover yet narrow within its insightfulness. Takatori & Oshiro (2009) demonstrates this use of narrative when studying new ways of playing. The occupational therapy observation is described through a narrative of the intervention cycle and details how the occupational therapist enables a child to know their own limitations and possibilities. It is through the narrative that the reader gains insights to the reasoning of the occupational therapist; both subjective complexities.

The use of narrative is a communication method occupational therapists utilise in daily practice; the discourse of telling a story with themes and concluding with a message is

applied to their clinical practice and professional development regularly. Narrative is utilised when occupational therapists glean information from their clients, educate their clients and share experiences with colleagues (Mattingly, 1998). Similarly, in general discourse outside of clinical practice the telling of stories is a natural learning method (Connelly & Clandinin, 1990). The case study approach transfers this story-telling skill into research. A well-written and robust case study should enable the reader to follow the line of enquiry (Spouse, 2003), be transparent to the reader the emerging themes within it and conclude with logical lessons learnt from practice and hence recommendations for development.

The contemporary occupational therapy narrative for multiple case study approach needs to present comparisons and contrasts between each case (Ross, 2008). An example of cross analysis (comparing cases to illuminate pertinent knowledge) can be found within Pickett et al. (2007) study on Telehealth and constraint induced movement therapy. Two case studies were selected and the experiences of both are cross analysed through clinical documentation, observation and interviews. Recommendations are formed both from comparisons and contrasts between the two cases. The ability to cross reference between a rich data pool in the form of multiple case studies enables recommendations to be drawn and hence lessons to be learnt from the uniqueness yet similarities of the cases (Phelan & Kinsella, 2013). Occupational therapy focuses practice on the uniqueness of each person; this is otherwise termed client centredness. Multiple case studies can therefore reflect such a client centred paradigm.

A challenge for the case study approach, as with other forms of research, is its claim for generalisability (Thomas, 2016). Generalisability is not reliant on the number of case studies, rather the selection of the case and the distinct transparent features brought from each. Graham et al. (2010) studied three parent-child dyads as case studies with the purpose of explaining parent experiences of engaging with a therapist using occupational performance coaching. The contextual differences between each of the parents and their children are significant but in identifying and exploring such differences, summaries are constructed.

By utilising an approach where individual contexts are celebrated rather than hidden, the occupational therapy paradigm is transparently studied. This study demonstrates that the success of a case study in terms of generalisability is the extent of the depth of the analysis rather than the increased participant number. Case study selection can be through the "typicalness" of the case (Dhas et al., 2014) or the uniqueness of the case (Restall et al., 2011); both have potential for high validity with a sufficient depth of analysis. This again, translates to daily occupational therapy practice which is cognisant to the portrayal of both typical and atypical case studies as valuable learning material.

Multifaceted explorations are actively encouraged within the case study approach. Yin (2009) advocates the use of multiple sources as a key achievement in triangulation. Case study sources can include field notes from observations, documentary evidence (Shaw et al., 2008), demographic data, interviews and focus groups (Rosenfield et al., 2011). The multiple sources contribute to the in-depth detail which a case study provides with the goal being to amass converging evidence (Simons, 2009). The challenge for the researcher however is gathering, investigating, analysing and reporting on such multiple sources in an organised and cohesive manner (Yin, 2014) and then clearly conveying this to the reader. Gossett et al. (2009) employed in-depth interviews with key decision makers,

non-participant observations at design meetings, and on site tours. Retrieving a high volume of multifaceted data revealing complex interactions between accessibility, universal design and sustainability. The mixed methods data enables the reader to immerse themselves within the investigation and draw their own conclusions as the study progresses, whilst the narrative of the cases enable the researcher to argue their analysis. The complexity in which occupational therapy operates cross disciplinary and cross organisationally benefits from such a multifaceted exploratory approach.

The case study approach has the ability to reflect naturalistic enquiry where there are multiple factors to be considered. For example, within an investigation into whether purposeful occupation has capacity to plateau symptoms in motor neurone disease, lines of enquiry include the delivery approach of the occupational therapist, impact of motivation, type of occupation delivered and period of intervention (Carey, 2017). Such naturalistic design enables contemporary phenomena to be studied. Similarly, Carmody et al. (2007) investigated the opportunities and challenges for occupational therapists through the Kawa Model (Iwama, 2006). Therapist preconceptions, facilitation of occupation based practice and participant uncertainty were all lines of enquiry.

Colborn (1996) and Yin-Han Chung et al. (2011) considers the case study approach as essential to enable understanding of the application of occupational therapy theory within a specific real context. In clinical practice, the exhibition of a case study whether due to its uniqueness or its normality is presented, discussed and recommendations for learning are made. The case study is therefore a prerequisite to in-service-training, within supervision or within mentoring contexts (Fulton, 2015). It is therefore logical to transfer this skill within occupational therapy research design. According to Bjornsdottir (2001) research needs to be an integral part of everyday practice, a way of posing questions and reflecting on answers. Gagnon (2010) emphasises the importance of distinguishing from the case study in research to the case study use in practice as a learning component yet it is essential for occupational therapists to utilise an approach, they are well versed in. Clinicians may well prefer to draw from a case-based design which resonates with their daily practice and development.

High quality studies demonstrate the importance of the case study approach (Bronwen & Connelly, 2008; Campbell & Turpin, 2010; Copley & Ziviani, 2007; Egan et al., 2010; Eyres, 2007; Gewurtz et al., 2012; Horowitz et al., 2013; Kessler et al., 2014; Lord-Vince, 2010; McClure, 2009; Martin, 2007; Morrison & Smith, 2013) . Nurses have embraced the concept and advanced knowledge from case study to positive effect (Anthony & Jack, 2009) yet occupational therapy can be considered to remain reticent to its application and approach. The case study approach could be utilised as a vehicle to advanced evidence-based practice in occupational therapy.

7 Conclusion

Occupational therapy is often misunderstood due to its multifaceted elements; the emerging of the physical and mental health with the environment and occupation, the subjectivity of occupational engagement and the complexity of interaction between client and therapist. Such complexity requires multifaceted inspection to fully critique effect. The case study approach enables a rich source of diverse methods of data such as interviews, case records, standardised assessments and narrative discussion which triangulate to produce an all round understanding of the effect. Occupational therapy benefits from an approach which reflects its multifactorial yet subjective experience and not be confined by the narrowness of other research methodology.

The case study is becoming increasingly acceptable within research paradigms. The positive attributes of the approach point to its utility within occupational therapy research design. Contemporary occupational therapy studies demonstrate the versatility and appropriateness of this approach but the number of occupational therapists applying a case based approach remains limited. Attributes for utilising this approach is the ability to explore a multitude of multifaceted elements and the ability to explore a naturalist environment which contains subjectivity and complexity. By embracing this approach occupational therapy has potential to study, critique and develop from a familiar, appropriate tool which can reflect the true complexity of this profession.

To conclude, the study demonstrates the effectiveness of a case study approach for occupational therapy research; by demonstrating the incidence of contemporary occupational therapy case-based studies, elements of occupational therapy are reflected providing an argument that this approach can appropriately encapsulate occupational therapy evidence base.

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