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Title	Concept development in nursing and midwifery: an overview of methodological approaches
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Publication Date	2018-10-19
Publication Information	Beecher, Claire, Devane, Declan, White, Mark, Greene, Richard, & Dowling, Maura. Concept development in Nursing and Midwifery: An overview of methodological approaches. International Journal of Nursing Practice, 0(0), e12702. doi: doi:10.1111/ijn.12702
Publisher	Wiley
Link to publisher's version	https://doi.org/10.1111/ijn.12702
Item record	http://hdl.handle.net/10379/14696
DOI	http://dx.doi.org/10.1111/ijn.12702

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TITLE;

Concept development in Nursing and Midwifery: an overview of methodological approaches

ABSTRACT;

Background;

Over the past four decades, there has been a growing focus on the resolution of conceptual problems through the process of concept development. As the focus on this area has grown, so too has the number of debates in the literature on methodological aspects of concept development.

Aim;

To provide an overview of the essential methodological considerations of concept development.

Design;

Discussion paper. An overview is presented of the methodological considerations of commonly used concept development strategies and methods (Norris 1982, Walker & Avant 2018, Rodgers 2000 and Penrod and Hupcey 2005) within nursing and midwifery.

Data Sources;

Literature dating from the inception of concept development in nursing and midwifery.

Implications for Nursing and Midwifery;

The robust development of concepts is a vital component in advancing the knowledge base of nursing and midwifery theory and practice. However, the complexity of the concept development literature may serve to exacerbate the challenges of developing a given concept, in particular for the novice researcher.

Conclusion;

The methodological considerations discussed provides guidance in determining the most appropriate strategy and method of concept development.

SUMMARY STATEMENT;

What is already known about this topic?

- Over the past four decades there has been a growing focus on the resolution of conceptual problems in the nursing and midwifery domain through the process of concept development;
- The growing focus on the area of concept development has led to a proliferation of debates in relation to almost all aspects of the methodology of concept development. The complexity of these debates ensures that for the novice researcher the translation and effective utilisation of concept development literature is often problematic.

What this paper adds:

- The clarification of the intended use of various concept development strategies and explication of the fundamental methodological principles of four commonly used concept development methods will guide nurse and midwife researchers in their choice of concept development methodology.

The implications of this paper:

- The overview presented provides nurse and midwife researchers with a basis on which to build their knowledge of concept development.

KEY WORDS;

Concept analysis, concept clarification, concept development, method, midwifery, nursing, strategies.

INTRODUCTION;

The value of concept development in advancing the unique knowledge base of nursing and midwifery theory and practice has been widely acknowledged (Baldwin, 2008; Duncan, Cloutier, & Bailey, 2007; Penrod & Hupcey, 2005; Rodgers, 2000a, 2011). Concept development is also critical to the credibility of research without which “subsequent research may be based on false assumptions, false premises, and hypotheses that have no relevance in the real world” (Norris, 1982, p. 11).

Over the past four decades considerable attention has focused on the resolution of conceptual problems through the process of concept development (Beckwith, Dickinson, & Kendall, 2008; Meleis, 2007; Rodgers, 2011; Walker & Avant, 2018), with the first concept development method specific to a nursing and midwifery domain pioneered by Norris in 1982, followed shortly after by Walker and Avant in 1983.

The growing focus on this topic has led to a proliferation of debate in relation to all aspects of concept development, much of which centres around the philosophical perspectives of leading metatheorists. For example, debates abound on the interpretation of the term ‘concept’ (Penrod & Hupcey, 2005; Rodgers, 1989, 2000b; Walker & Avant, 2018), the nature of the relationship between concepts and theory (Bergdahl & Bertero, 2016; Morse, 1995; Paley, 1996; Risjord, 2010; Rodgers, 2000b) and the optimum strategies and methods to be used to effectively facilitate the development of concepts (Beckwith et al., 2008; Meleis, 2007; Penrod & Hupcey, 2005; Weaver & Mitcham, 2008).

Complexity of the concept development methodology literature exacerbates the challenges of developing concepts and for the novice researcher the translation and utilisation of this literature is often problematic. Despite these challenges, the knowledge base of nursing and midwifery continues to expand rapidly through research, therefore it is important that concept development methodology is not only understood but also utilised to ensure practice is informed by high quality evidence. The practice implications of concept development are evident for instance, by the recent development of the concept of ‘women’s experiences of their maternity care’ by the authors of this paper. The outcome of this development has highlighted aspects of the concept that were not initially evident, which has informed the ongoing development of a survey instrument to measure women’s experiences of the maternity care within the Republic of Ireland specifically; the results of which will be used to influence national policy and practice.

In response to an evident gap in the literature and supported by relevant literature and theory, an overview is provided here for the novice researcher, or those new to concept development, on the essential methodological considerations of concept development. When searching for and reviewing the supporting literature, no restrictions on year of publication were applied.

DISCUSSION;

Methodological considerations;

Concept development strategies;

The first step required by researchers when developing a concept is to choose a strategy that is most appropriate to the concept being developed. Concept development literature in the nursing and midwifery domain is replete with interchangeable terms relating to the strategies of concept development (Duncan et al., 2007; Fawcett, 2012; Meleis, 2007). For example, the terms concept analysis, concept clarification and concept exploration are widely used to describe concept development strategies within the nursing and midwifery domain (Duncan et al., 2007; Fawcett, 2012; Meleis, 2007; Walker & Avant, 2018). Each are vital for the progression of knowledge development in nursing and midwifery, however, the fundamental difference between each can be found in their intended use, as described in table 1 (Meleis, 2007). It is clear from these descriptions that choosing a concept development strategy wholly depends on the concept being developed and the conceptual problem that requires resolving. Researchers must therefore attempt to gain an insight into current understandings of the concept, through an examination of the literature, before deciding on an appropriate strategy.

(Note for publishers- insert table 1)

Concept development methods;

Once an appropriate strategy has been decided, researchers must then turn their focus to the methods recommended. The methods of concept development are frameworks that have been formulated to provide a structured approach to adequately implement the chosen concept development strategy. Rodgers (2000b, p. 31) states that “the selection of methods must be based on sound philosophical rationale and appropriateness for the purpose of the study”. However, little guidance is available on the process of identifying the

appropriateness of these methods, which means that ultimately the onus is on each individual researcher to decide on their choice of method (Rodgers, 2000b). It is apparent that many published concept development endeavours have not considered the fundamental methodological principles of the methods of concept development and instead state that the rationale in choosing a given method is based principally on ease of use or popularity, which ultimately throws into doubt the rigour of the concept development and the 'usefulness' of results (Rodgers, 2000b).

Over the past four decades as the focus on the area of concept development in nursing and midwifery has grown, so too has the number of concept development methods (Meleis, 2007; Walker & Avant, 2018). Four of the most commonly used concept development methods, as evident in contemporary publications, are presented here in relation to their fundamental methodological principles. Explication of the methods by Walker and Avant (2018), Rodgers (2000a), Penrod and Hupcey (2005) and Norris (1982) serve as a guide to aid researchers' decision making in choosing the most appropriate method to develop a given concept. Although it is evident that there has been little evolution of each of these methods from the time of their conception, some have used adaptations through a hybrid approach of such methods, for example Lewis (2018) used a combination of the methods by Penrod and Hupcey (2005) and Walker and Avant (2011) to analyse the concept of 'Fluency in Nursing Education and Simulation'. Moreover, it is important to highlight that there are other additional methods of concept development also used (albeit less commonly) within the nursing and midwifery domain, but not presented within this overview, namely, Chinn and Kramer (1995), Morse, Mitcham, Hupcey, and Tason (1996), Parse (1997) and Schwartz- Barcott and Kim (2000).

Table 2 provides additional information on each of the four methods by Walker and Avant (2018), Rodgers (2000a), Penrod and Hupcey (2005) and Norris (1982) including their individual philosophical perspectives and examples of use in contemporary literature. The philosophical underpinnings, data collection processes and the utilisation of collected data of each individual method should be compared against the complexity of the concept being developed, to facilitate the choice of the most appropriate method of development.

(Note for publishers- insert table 2)

Philosophical rationale;

The philosophical underpinnings of concept development have a fundamental influence on the design of concept development methodologies, the interpretation of subsequent findings and the application of any results (Rodgers, 2000b). Furthermore, a “strong and defensible philosophical rationale for decisions made by researchers is ultimately the primary ingredient in efforts to promote conceptual progress in nursing” (Rodgers (2000b, p. 34).

A wealth of literature is available on the philosophical underpinnings of concept development which is brimming with the diverse viewpoints of philosophers and metatheorists (Frege, 1970; Kant, 1965; Locke, 1975; Penrod & Hupcey, 2005; Rodgers, 2000b; Ryle, 1971; Walker & Avant, 2018; Wittgenstein, 1968). Moreover, there is an ever-growing body of secondary literature from those who then attempt to interpret these viewpoints (Beckwith et al., 2008; Duncan et al., 2007; Duncan, Cloutier, & Bailey, 2009; Risjord, 2009, 2010).

An in-depth discussion on the philosophical debates that flood the concept development literature is beyond the scope of this article, however where relevant the philosophical underpinnings of the four concept development methods will be referred to. These references merely serve to highlight the influence that philosophy has upon concept development methodology and to reiterate to researchers that these philosophical underpinnings are owed early consideration in their concept development journey in respect of the concept being developed. Table 3 provides descriptions of several philosophical terms used throughout the concept development literature.

(Note for publishers- insert table 3)

Origin of many concept development methods in nursing and midwifery;

When discussing methodological considerations of concept development in the nursing and midwifery domain it is imperative to acknowledge the work of Wilson (1963). As identified by Beckwith et al. (2008) all four concept development methods discussed here have been strongly influenced by the work of Wilson, as have the methods by Morse, Mitcham, et al. (1996), Schwartz- Barcott and Kim (2000) and Chinn and Kramer (1995). Wilson, an educationalist, originally formulated his method of concept analysis to facilitate his students successfully complete their school entrance exam. He constructed an 11-step tool, grounded in relativism (see

Table 3), that acknowledged the importance of applying context to concepts, which would then allow his students to identify the essential features of a concept through a focus on actual and possible use of words.

Wilson's 11 steps, which are not mutually exclusive, are identified below;

1. **Isolating questions of concept;** Wilson describes three sets of questions which are related to the facts, values and meanings of a concept (Meleis, 2007).
2. **Finding right answers;** In reply to the isolated questions, as above.
3. **Model cases;** simply, this is the process of presenting an example of the concept which identifies its typical and atypical features.
4. **Contrary cases;** Cases which serve as an example of the exact opposite of the concept and its related properties. In identifying what is not the concept, an indication is made to the features that are essential to the concept.
5. **Related cases;** Cases which bear some similarities to the proposed concept- these cases can offer an insight into the concept's network of associations.
6. **Borderline cases;** These cases contain most, but not all of the defining attributes of the concept. These cases offer the author the opportunity to clarify what constitutes as the concept, and what does not.
7. **Invented cases;** This step may not be essential if a sufficient number of models have been identified through steps 3- 6 to elucidate the concept. Invented cases are those that are developed based on ideas that are outside the author's own experiences and are a magnification of the major features of the concept.
8. **Social context;** This is the identification of who may use the concept, why it may be used and how (Meleis, 2007).
9. **Underlying anxiety;** This is the determination of any 'feelings' that may be associated with a concept, for example uncovering any related stigma, debates or controversy.
10. **Practical results;** A description of the practical use of a concept and its application to practice.
11. **Results in language;** Simply put, this is describing the results of the previous 10 steps and the attachment of a descriptive 'label' to the concept.

Although Wilson's work is the basis for many of the commonly used concept development methods today, it is criticised heavily throughout contemporary literature as being focused on the enablement of critical thinking, rather than providing a solid base for the scientific examination of concepts (Beckwith et al., 2008; Hupcey & Penrod, 2005; Risjord, 2009). Furthermore, Beckwith et al. (2008, p. 1839) claim that Wilson's method, which was not created with the intent that it be modified for use in a realm such as nursing and midwifery, fails to provide sufficient depth that is required for the development of complex concepts within this domain, and that adaptations of his framework have been carried out in an "unjustified and ad hoc way". As each of the four concept development methods discussed here have originated from the work of Wilson (1963) it is unsurprising that all four methods share several key steps with regards to the collection, and subsequent utilisation, of data.

Data collection;

Each of the four methods begin by describing the processes for data collection. Norris (1982) pioneering concept clarification method, grounded in positivism (see table 3), suggests that data be collected by a combination of observing a concept through fieldwork and a systematic literature review. The suggested use of fieldwork as a means of observing a concept may be attributed to this method's development in 1982 at a time when the volume of literature available was significantly less than what it is in the present day. In response to the volume of literature now available to researchers, the data collection aspect of Norris' method is often completed through a systematic review alone. This is evident particularly in more recent work on developing abstract concepts for nursing and midwifery (Aroke, 2014; Kalmakis & Chandler, 2014; Levine & Lowe, 2014). This is despite Norris placing particular focus on the fieldwork aspect of data collection, and in doing so failing to provide any specific guidelines in respect of completing the literature review. This contrasts with the concept analysis method by Penrod and Hupcey (2005) which was created over 20 years later and provides researchers with significant guidance on the selection and sampling of data that is to be used in the development of concepts. For example, Penrod and Hupcey (2005) highlight that the selection of disciplinary literatures is one of the most important preliminary decisions in a concept development endeavour. Researchers are advised that the "selection of disciplinary literatures should be based on the potential for contribution to the understanding of the concept, not a rote listing of inter-related disciplines" (Penrod & Hupcey, 2005, p. 407). For clarity, Penrod and Hupcey (2005) provide the example of the development of the concept of trust. To effectively develop the

concept of trust, the authors (Hupcey, Penrod, Morse, & Mitcham, 2001) included literature from the disciplines of sociology, medicine, psychology and business with each of these disciplines contributing to a unique perspective and a deep understanding of the concept. The guidelines on the selection of disciplinary literatures set out by Penrod and Hupcey (2005) are similar to those provided within Rodgers (2000a) evolutionary concept analysis method, labelled so due to the basis of this method centring on the belief that concepts evolve in a cycle of significance, use and application. Rodgers (2000a), who shared a relativist viewpoint with Wilson (see table 3), also highlighted the importance of choosing literature across diverse disciplines. However, guidelines on the sources of literature from within these chosen disciplines are an aspect of data collection in which the methods differ.

The methods of concept analysis proposed by both Rodgers (2000a) and Walker and Avant (2018) endorse a broad review of the available literature including dictionaries, thesauri and popular press, in addition to scientific data. Conversely, Penrod and Hupcey (2005) state that only scientific literature should be included in the analysis as a means of producing an evidence based theoretical definition of a concept that has not been “intuitively or creatively derived” (Penrod & Hupcey, 2005, p.408.). Further differences between the methods proposed by Penrod and Hupcey (2005) and Rodgers (2000a) are evident in their data sampling guidelines. Penrod and Hupcey (2005) describe the importance of using a conceptually driven sampling approach which focuses on the adequacy and appropriateness of the sample to the concept of interest, whereas Rodgers (2000a) suggests a conflicting approach. Rodgers’ data sampling guidelines, which were originally published in the 1980’s and as per Norris (1982) may be reflective of the volume of literature available to researchers at that time, specify that the data be sorted by discipline and by year before a computer generated, stratified systematic sampling technique is applied and a final cohort of material for analysis is produced. Penrod and Hupcey (2005) have criticised this technique of delimiting the sample, as random selection may lead to the omission of the most relevant pieces of literature. Furthermore, Beckwith et al. (2008) suggest that Rodgers’ aim of acknowledging the evolving state of concepts is precluded by this selection procedure as the randomised stratification does not allow for assurance for the inclusion of all literature that may allow the identification of the evolving state of the concept over time.

Utilisation of collected data;

There are similarities across all four methods in regard to the utilisation of the collected data, which is unsurprising given each of the methods are based upon the work of Wilson. Similarities include Walker and Avant (2018) stipulation that the defining attributes of a concept must be identified, as do (Rodgers, 2000a) and Penrod and Hupcey (2005) under their 'analyse data' and 'Integration of the assessments into a singular theoretical description' steps respectively. However, the methods by both Walker and Avant (2018) and Rodgers (2000a) have been subject to criticism for their failure to provide an adequate description of the criteria for identifying these attributes (Paley, 1996). Ultimately, this has resulted in many authors refraining from justifying their choice of defining attributes of a concept, which has been referred to as a principle weakness of published concept analyses (Hupcey & Penrod, 2005; Paley, 1996).

Furthermore, (Walker & Avant, 2018) instruct the researcher to identify the antecedents (predecessors) and consequences (result, or effect) of a concept, which is also included in the method by Rodgers (2000a), again within the 'analyse data' step. Similarly, Norris (1982) instructs the researcher to categorise the observations and descriptions of the concept by establishing patterns, categories and hierarchy through the identification of the causes and effects of a concept. Although Meleis (2007) has suggested that concept clarification does not require the development of antecedents or consequences, which are important in understanding the social context in which the concept is used (Walker & Avant, 2005), identifying possible causes and effects of a concept are essentially similar to identifying antecedents and consequences. Moreover, the final step of the method by Penrod and Hupcey (2005) is the integration of the data assessments into a singular theoretical description of the concept. Although the use of antecedents and consequences is not specifically mentioned by Penrod and Hupcey (2005) in the development of this description, it is evident in the literature that they are identified and reported in the description of conceptual components, which in turn inform the description (O'Malley, Higgins, & Smith, 2015; Smith, Devane, & Murphy- Lawless, 2012).

The use of model or associated cases as integral steps in the interpretation of a concept is an additional commonality evident across the works of Norris (1982) and Walker and Avant (2018) and would appear to directly mirror the work of Wilson (1963). It has however been argued that the use of model cases that transcend context by identifiably realist methods (see table 3), such as those presented by Norris (1982) and Walker and Avant (2018), are in contrast to the relativist perspective of Wilson, who had originally used model cases to describe contextual bound examples (Duncan et al., 2007).

There has been particular criticism focused on the heavy reliance by Walker and Avant (2018) on the use of model and associated cases. Risjord (2009) suggests that the use of such a volume of cases by Walker and Avant may serve to illustrate, rather than provide evidence of, a concept. Furthermore, Rodgers (1989) states that the reductionism (see Table 3) of a concept through the use of borderline, contrary, illegitimate and invented cases lends itself to isolation of the apparent essence of a concept, rather than providing a focus on the vast number of interrelationships it may hold. It is important at this point to acknowledge that within Rodgers (2000a) method, the identification of an exemplar of a concept is indicated with comparisons evident in the literature between the use of this exemplar, and the use of model cases. These comparisons have prompted Rodgers (2000a, p. 96) to explicitly state that “this exemplar does not constitute a model case or prototype of the concept. Instead, it serves to provide a practical example of how the concept might appear in ‘real life’ for purposes of clarity”. Nonetheless, comparisons and criticisms remain based on the boundaries the identification of an exemplar would impose on a concept (Beckwith et al., 2008; Duncan et al., 2007).

Beckwith et al. (2008, p. 1834) also criticise the reliance on cases, or reconstructions, in the approaches proposed by Wilson (1963), Norris (1982) and (Walker & Avant, 2018). They state that the use of cases raises concerns based on the hypothesis that “truths are revealed as a result of a causal explanation of the effects of a social action within the ‘pure case’ and the distance and difference between it and other cases”. This hypothesis is based on the philosophical theories of casuistry and causality (table 3).

CONCLUSION;

Over the past four decades, concept development has been a vital component in advancing the unique knowledge base of nursing and midwifery theory and practice. However, it is apparent that since the publication of Norris’ first concept development method specific to the nursing and midwifery domain in 1982 there has been a proliferation of literature that debates almost every aspect of developing concepts, much of which can be attributed to the diverse philosophical viewpoints of leading meta-theorists. Ultimately, the complexity of this literature exacerbates the challenges of effective concept development, in particular for the novice researcher. Further exacerbating this challenge is the dearth of knowledge evolution in concept development within nursing and midwifery. It is evident from the literature that there has been relatively little evolution of the seminal methods of concept development since their inception. This highlights a need for

review and possible advancement of the existing methods to ensure compatibility with the complexity of current concepts within this domain.

In addition, we acknowledge the assertion by Fawcett (2012, p. 285) that the first step in undertaking a concept analysis is to choose a conceptual model that provides “the frame of reference or context” for the analysis and data collected should be focused within the context of the chosen model. This suggestion has the potential to inform further development of current conceptual models in nursing. For instance, Neuman’s systems theory (Neuman & Fawcett, 2011) would provide a frame of reference for a concept analysis of alarm fatigue, a contemporary concept of importance in critical care nursing.

In conclusion, we have provided guidance here on the methodological considerations of concept development by identifying the importance of choosing the most appropriate strategy and method based on the concept that is being developed and the conceptual problem that needs to be resolved. The paper therefore builds on the critique by Risjord (2009) of concept development where he highlights the gaps between data and results evident in many concept analyses. We provide further clarification on the approaches to data collection in concept development and how the explosion of nursing and midwifery knowledge has influenced trends in data collection. Clarification has also been provided on the intended use of various concept development strategies that have, in the past, been used interchangeably under the umbrella term of concept development.

Finally, four of the most commonly used methods of concept development methods by Walker and Avant (2018), Rodgers (2000a), Penrod and Hupcey (2005) and Norris (1982) have been discussed in regard to their basic fundamental methodological principle, with additional information provided in the supporting tables. It is hoped that this attempt to explicate the fundamental methodological principles of each method will assist the decision making of novice researchers and provide a basis on which to build their knowledge of concept development.

Aroke, E. N. (2014). Full Nursing Potential: A Concept Clarification. *Nurs Forum*, 49(4), 278-287. Doi: 10.1111/nuf.12096

Baldwin, M. A. (2008). Concept analysis as a method of inquiry. *Nurse Res*, 15(2), 49-58. Doi: 10.7748/nr2008.01.15.2.49.c6329

- Beckwith, S., Dickinson, A., & Kendall, S. (2008). The "con" of concept analysis A discussion paper which explores and critiques the ontological focus, reliability and antecedents of concept analysis frameworks. *Int J Nurs Stud*, 45(12), 1831-1841. Doi:10.1016/j.ijnurstu.2008.06.011
- Bergdahl, E., & Bertero, C. M. (2016). Concept analysis and the building blocks of theory: misconceptions regarding theory development. *J Adv Nurs*, 72(10), 2558-2566. Doi:10.1111/jan.13002
- Chinn, P. L., & Kramer, M. R. (1995). *Theory and Nursing: A systematic Approach* (4th Edition ed.). St. Louis: Mosby. ISBN: 0801679478
- Devine, C. A., & Chin, E. D. (2017). Integrity in nursing students: A concept analysis. *Nurse Educ Today*, 60, 133-138. Doi:10.1016/j.nedt.2017.10.005
- Devine, C. A., & Chin, E. D. (2018). Integrity in nursing students: A concept analysis. *Nurse Educ Today*, 60, 133-138. Doi:10.1016/j.nedt.2017.10.005
- Duncan, C., Cloutier, J. D., & Bailey, P. H. (2007). Concept analysis: the importance of differentiating the ontological focus. *J Adv Nurs*, 58(3), 293-300. Doi:10.1111/j.1365-2648.2007.04277.x
- Duncan, C., Cloutier, J. D., & Bailey, P. H. (2009). In response to: Risjord M. (2009) Rethinking concept analysis. *Journal of Advanced Nursing* 65(3), 684-691. *J Adv Nurs*, 65(9), 1985-1986; author reply 1987-1989. Doi:10.1111/j.1365-2648.2009.05076.x
- Fawcett, J. (2012). Thoughts on concept analysis: multiple approaches, one result. *Nurs Sci Q*, 25(3), 285-287. Doi:10.1177/0894318412447545
- Frege, G. (1970). Function and Concept. In P. Geach & M. Black (Eds.), *Translations from the Philosophical Writings of Gottlob Frege* (pp. 21-41). Oxford: Blackwell. ISBN: 978-0631058106
- Garcia-Moyano, L., Altisent, R., Pellicer-Garcia, B., Guerrero-Portillo, S., Arrazola-Alberdi, O., & Delgado-Marroquin, M. T. (2017). A concept analysis of professional commitment in nursing. *Nurs Ethics*, 969733017720847. Doi:10.1177/0969733017720847
- Guba, E., & Lincoln, Y. (1994). Competing paradigms in Qualitative Research In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 105-117). London: Sage. ISBN: 9780803946798
- Hupcey, J. E., & Penrod, J. (2005). Concept analysis: examining the state of the science. *Res Theory Nurs Pract*, 19(2), 197-208. Doi: 10.1891/rtnp.19.2.197.66801
- Hupcey, J. E., Penrod, J., Morse, J. M., & Mitcham, C. (2001). An exploration and advancement of the concept of trust. *J Adv Nurs*, 36(2), 282-293. Doi: 10.1046/j.1365-2648.2001.01970.x
- Kalmakis, K. A., & Chandler, G. E. (2014). Adverse childhood experiences: towards a clear conceptual meaning. *J Adv Nurs*, 70(7), 1489-1501. Doi:10.1111/jan.12329
- Kant, I. (1965). *Critique of Pure Reason*. New York: St. Martins Press.
- Levine, M. S., & Lowe, N. K. (2014). Nurse attitudes toward childbirth: a concept clarification. *Nurs Forum*, 49(2), 88-99. Doi:10.1111/nuf.12040.
- Lewis, A. (2018). Fluency in Nursing Education and Simulation: A Concept Analysis. *Nurs Educ Perspect*, 39(1), 19-22. Doi:10.1097/01.nep.0000000000000245
- Locke, J. (1975). *An Essay Concerning Human Understanding*. Oxford: Oxford University Press. Doi: 10.1093/actrade/9780198243861.book.1
- McKenna, H. P., Pajnikihar, M., & Murphy, F. A. (2014). *Fundamentals of Nursing Models, Theories and Practice* (2nd ed.). West Sussex: John Wiley & Sons. ISBN: 978-0470657768
- Meleis, A. I. (2007). *Theoretical Nursing: Development and Progress* (4th ed.). Philadelphia: Lippincott, Williams & Wilkins. ISBN: 9780781736732
- Mestdagh, E., Van Rompaey, B., Beeckman, K., Bogaerts, A., & Timmermans, O. (2016). A concept analysis of proactive behaviour in midwifery. *J Adv Nurs*, 72(6), 1236-1250. Doi:10.1111/jan.12952
- Morse, J. M. (1995). Exploring the theoretical basis of nursing using advanced techniques of concept analysis. *ANS Adv Nurs Sci*, 17(3), 31-46. Doi: 10.1097/00012272-199503000-00005

- Morse, J. M. (2000). Exploring Pragmatic Utility: Concept Analysis by Critically Appraising the Literature. In B. L. Rodgers & K. A. Knafl (Eds.), *Concept Development in Nursing: Foundations, Techniques and Applications*. (2nd ed., pp. 333-352). Philadelphia: Saunders. ISBN: 9780721682433
- Morse, J. M., Mitcham, C., Hupcey, J. E., & Tason, M. C. (1996). Criteria for concept evaluation. *J Adv Nurs*, 24(2), 385-390. Doi: 10.1046/j.1365-2648.1996.18022.x
- Neuman, B., & Fawcett, J. (2011). *The Neuman Systems Model* (5th ed.). Upper Saddle River, New Jersey.: Pearson. ISBN: 9780135142776.
- Norris, C. M. (1982). *Concept Clarification in Nursing*. Maryland: Aspen Systems Operation. ISBN: 9780894438257.
- O'Malley, D., Higgins, A., & Smith, V. (2015). Postpartum sexual health: a principle-based concept analysis. *J Adv Nurs*, 71(10), 2247-2257. Doi:10.1111/jan.12692
- Paley, J. (1996). How not to clarify concepts in nursing. *J Adv Nurs*, 24(3), 572-578. Doi: 10.1046/j.1365-2648.1996.22618.x
- Parse, R. R. (1997). Concept inventing: unitary creations. *Nurs Sci Q*, 10(2), 63-64. Doi:10.1177/089431849701000201
- Penrod, J., & Hupcey, J. E. (2005). Enhancing methodological clarity: principle-based concept analysis. *J Adv Nurs*, 50(4), 403-409. Doi:10.1111/j.1365-2648.2005.03405.x
- Polgar, S., & Thomas, S. A. (2013). *Introduction to research in the Health Sciences* (6th ed.). Edinburgh: Churchill Livingstone. ISBN: 9780702046698
- Risjord, M. (2009). Rethinking concept analysis. *J Adv Nurs*, 65(3), 684-691. Doi:10.1111/j.1365-2648.2008.04903.x
- Risjord, M. (2010). *Nursing Knowledge. Science, Practice and Philosophy*. West Sussex: Wiley-Blackwell. ISBN: 9781444358605
- Rodgers, B. L. (1989). Concepts, analysis and the development of nursing knowledge: the evolutionary cycle. *J Adv Nurs*, 14(4), 330-335. Doi: 10.1111/j.1365-2648.1989.tb03420.x
- Rodgers, B. L. (2000a). Concept analysis: An Evolutionary View. In B. L. Rodgers & K. A. Knafl (Eds.), *Concept Development in Nursing: Foundations, Techniques and Applications* (2nd ed., pp. 77-102). Philadelphia: Saunders. ISBN: 9780721682433
- Rodgers, B. L. (2000b). Philosophical Foundations of Concept Development. In B. L. Rodgers & K. A. Knafl (Eds.), *Concept Development in Nursing: Foundations, Techniques and Applications* (2nd ed., pp. 7-37). Philadelphia: Saunders. ISBN: 9780721682433
- Rodgers, B. L. (2011). The Evolution of Nursing Science. In J. B. Butts & K. L. Rich (Eds.), *Philosophies and Theories for Advanced Nursing Practice* (pp. 19-50). Massachusetts: Jones & Bartlett Learning. ISBN: 9780763779863
- Ryle, G. (1971). *Collected Papers* (Vol. 2). London: Hutchinson House.
- Schwandt, T. A. (2000). Three Epistemological Stances for Qualitative Enquiry: Interpretivism, Hermeneutics and Social Construction. In N. Denzin & Y. Lincoln (Eds.), *Handbook of Qualitative Research* (Vol. 2, pp. 189-213). Thousand Oaks: Sage. ISBN: 9780761915126
- Schwartz- Barcott, D., & Kim, H. (2000). An Expansion and Elaboration of the Hybrid Model of Concept Development In B. L. Rodgers & K. A. Knafl (Eds.), *Concept Development in Nursing. Foundations, Techniques and Applications* (2nd ed., pp. 129-159). Philadelphia: Saunders. ISBN: 9780721682433
- Scotland, J. (2012). Exploring the Philosophical Underpinnings of Research: Relating Ontology and Epistemology to the Methodology and Methods of the Scientific, Interpretive and Critical Research Paradigms. *English Language Teaching*, 5(9), 9-16. Doi:10.5539/elt.v5n9p9
- Smith, V., Devane, D., & Murphy- Lawless, J. (2012). Risk in Maternity Care: A Concept Analysis. *International Journal of Childbirth*, 2(2), 126- 135. Doi: 10.1891/2156-5287.2.2.126
- Sofronas, M., Wright, D. K., & Carnevale, F. A. (2018). Personhood: An evolutionary concept analysis for nursing ethics, theory, practice, and research. *Nurs Forum*. Doi:10.1111/nuf.12267

- Spigelmyer, P. C., Hupcey, J., & Kitko, L. (2018). A Concept Analysis of Resistiveness to Care. *Clin Nurs Res*, 1054773818789862. Doi:10.1177/1054773818789862
- Stanek, S. (2017). Goals of care: a concept clarification. *J Adv Nurs*, 73(6), 1302-1314. Doi:10.1111/jan.13243
- Walker, L., & Avant, K. (2005). *Strategies for Theory Construction in Nursing* (4th ed.). New Jersey: Prentice Hall. ISBN: 9780131191266
- Walker, L., & Avant, K. (2011). *Strategies for Theory Construction in Nursing* (5th ed.). New York: Prentice Hall: Pearson. ISBN: 9780132156882
- Walker, L., & Avant, K. (2018). *Strategies for Theory Construction in Nursing* (6th ed.). New York: Pearson. ISBN: 9780134754079
- Watson, D. S. (2015). Concept Analysis: Wrong-Site Surgery. *AORN Journal*, 101(6), 650-656. Doi: 10.1016/j.aorn.2015.03.012
- Weaver, K., & Mitcham, C. (2008). Nursing concept analysis in North America: state of the art. *Nurs Philos*, 9(3), 180-194. Doi:10.1111/j.1466-769X.2008.00359.x
- Wilson, J. (1963). *Thinking with Concepts*. Cambridge: Cambridge University Press.
- Wittgenstein, L. (1968). *Philosophical Investigations* (3rd ed.). New York: Macmillan. ISBN: 9780024288004
- Yamanaka, M. (2018). A Concept Analysis of Self-Management of Cancer Pain. *Asia Pac J Oncol Nurs*, 5(3), 254-261. Doi:10.4103/apjon.apjon_17_18

Table 1. Concept development strategies;

<i>Strategy name</i>	<i>Description</i>
<i>Concept analysis</i>	Concept analysis, considered to be the most familiar of concept development terms (Rodgers, 2000b), is a means of further developing a concept that has previously been defined, clarified and utilised in nursing and midwifery literature (Meleis, 2007). Concept analysis methods include the work of Wilson (1963), (Walker & Avant, 2018), Rodgers (2000a) and Penrod and Hupcey (2005).
<i>Concept clarification</i>	Concept clarification is used for the refinement of existing concepts that have been accepted into the nursing and midwifery domain without a “clear, shared and conscious agreement on the properties or the meaning attributed to the concept” (Meleis, 2007, p. 167). A common concept clarification method used in the Nursing and Midwifery literature is by Norris (1982).
<i>Concept exploration</i>	Concept exploration may be employed by researchers who aim to raise and answer questions on ambiguous concepts whose relationship to the nursing and midwifery setting may be at the preliminary stages (Meleis, 2007). For example, concept exploration may be used for the development of newly identified concepts, concepts that have been uncritically adopted

from other healthcare settings, or concepts so familiar to a discipline that their application and relevance to the development of practice is unknown or undervalued. The exploration of many concepts is influenced by the work of Morse et al (Morse, 2000; Morse, Hupcey, et al., 1996).

Table 2. Additional information on discussed methods;

	<i>Concept analysis: (Walker & Avant, 2018)</i>	<i>Concept analysis: (Rodgers, 2000a)</i>	<i>Concept analysis: Penrod and Hupcey (2005)</i>	<i>Concept clarification: Norris (1982)</i>
<i>Philosophical underpinnings (Beckwith et al., 2008; Duncan et al., 2007; Rodgers, 2011)</i>	Reductionist, realist, positivist	Relativist	Reductionist, realist	Reductionist, realist, positivist
<i>No. of steps</i>	8	6	3	5
<i>Basic outline of steps</i>	<ol style="list-style-type: none"> 1. Selection of concept 2. Determine aim of analysis 3. Identify all uses of concept 4. Determine defining attributes 5. Construct a model case 6. Construct additional cases (such as borderline, related, 	<ol style="list-style-type: none"> 1. Identify the concept and associated expressions (such as surrogate terms). 2. Select an appropriate data collection realm. 3. Collect data. 4. Analyse data. 5. Identify an exemplar of the concept. 	<ol style="list-style-type: none"> 1. Identification of a concept and collection of literature. 2. Assess literature in accordance with the criteria supported by the epistemological, pragmatic, linguistic and logical principles. 	<ol style="list-style-type: none"> 1. Observe & describe the concept. 2. Categorize the observations. 3. Write an operational definition. 4. Create a model. 5. Formulate hypotheses.

	contrary, and invented)	6. Identify implication's and propose hypotheses.	3. Integration of the assessments into a singular theoretical description of the concept.	
	7. Identify antecedents and consequences			
	8. Define empirical referents			
<i>Examples of use</i>	1. 'A concept analysis of proactive behaviour in midwifery' (Mestdagh, Van Rompaey, Beeckman, Bogaerts, & Timmermans, 2016);	1. 'A concept analysis of professional commitment in nursing' (Garcia- Moyano et al., 2017);	1. 'Postpartum sexual health: a principle-based concept analysis' (O'Malley et al., 2015);	1. 'Adverse childhood experiences: towards a clear conceptual meaning' (Kalmakis & Chandler, 2014);
	2. 'Integrity in nursing students: A concept analysis' (Devine & Chin, 2017);	2. 'A Concept Analysis of Self- Management of Cancer Pain' (Yamanaka, 2018);	2. 'Concept analysis: Wrong-site surgery' (Watson, 2015);	2. 'Full Nursing Potential: A Concept Clarification' (Aroke, 2014);
	3. 'Integrity in nursing students: A concept analysis' (Devine & Chin, 2018).	3. 'Personhood: An evolutionary concept analysis for nursing ethics, theory, practice, and research' (Sofronas, Wright, & Carnevale, 2018).	3. 'A Concept Analysis of Resistiveness to Care' (Spigelmyer, Hupcey, & Kitko, 2018).	3. 'Goals of care: a concept clarification' (Stanek, 2017).

Table 3. Descriptions of philosophical terms;

<i>Philosophical term;</i>	<i>Description</i>
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<i>Positivism</i>	The view that genuine scientific knowledge can only be achieved through the unbiased, rigorous ordering of confirmable observation (McKenna, Pajnikihar, & Murphy, 2014). As such, “the ontological position of positivism is one of realism” (Scotland, 2012, p. 10, p.10)
<i>Realism</i>	The view that the world exists as an ontologically independent reality (Polgar & Thomas, 2013; Risjord, 2010).
<i>Logical positivism</i>	Developed by members of the Vienna Circle the logical positivism paradigm, in comparison to positivism, places an even greater emphasis on the importance of confirmable observation and scientific verification with logical positivists believing that for a statement to be meaningful it must be verifiable (McKenna et al., 2014; Risjord, 2010).
<i>Interpretivism</i>	Interpretivism, formed as an opposing view to the philosophy of positivism in the late 19 th and early 20 th centuries, is the view that reality is based on meanings and understanding (Schwandt, 2000) and consequently, “the ontological position of interpretivism is relativism” (Scotland, 2012, p. 11, p.11).
<i>Relativism</i>	The belief that reality is subjective and varies based on the beliefs of each individual or culture (Guba & Lincoln, 1994).
<i>Reductionism</i>	“The process of reducing complex phenomena to simpler, more fundamental elements” (Polgar & Thomas, 2013, p. 13, p. 13).
<i>Causality</i>	“The theory that one action or outcome can be identified as a consequence of another “(Beckwith et al., 2008, p. 1835).
<i>Casuistry</i>	The theory that one action or outcome sets precedence for other similar cases. It has been stated that if the lowest standards of nursing and midwifery are practiced then “the use of precedents based on case studies from this arena to make judgements in other analogous cases could drive down standards overall” (Beckwith et al., 2008, p. 1835).