

CHAPTER 5: Theory Analysis and Evaluation

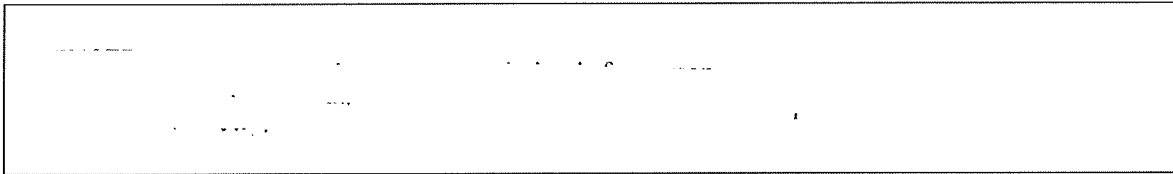
Melanie McEwen

Jerry Thompson is nearing completion of his master's degree in nursing. He is currently a case manager for a home health agency, and his goal is to become an agency director after he completes his degree. For his research application project, Jerry wants to compare the effectiveness of health teaching in the hospital setting with the effectiveness of health teaching in the home setting. He has identified several areas to examine. These include the quality and type of health information provided, professional competencies of the nurses providing the information, the client's support system, and environmental resources. Outcome variables he will measure focus on utilization of health care (e.g., length of time on home health service, hospital readmissions, development of complications).

As his research project began to take shape, Jerry realized he needed a conceptual framework to help him set it up and organize it. His advisor suggested Pender's Health Promotion Model. To determine if the model would be appropriate for his study, Jerry obtained the latest edition of Pender's book (Pender, Murdaugh, & Parsons, 2010), which described the model in depth. He then read commentaries in nursing theory books that analyzed her work and completed a literature search to find examples of research studies using the Health Promotion Model as a conceptual framework. After he had compiled the information, Jerry summarized his findings by using Whall's (2005) criteria for analysis and evaluation of middle range theories.

This exercise helped Jerry gain insight into the major concepts of the model and let him examine its important assumptions and linkages. From the evaluation, he determined that the model would be appropriate for use as the conceptual framework for his research study.

As nurses began to participate in the processes of theory development in the 1960s, they realized that there was a corresponding need to identify criteria or develop mechanisms to determine if those theories served their intended purpose. As a result, the first method to describe, analyze, and critique theory was published in 1968. Over the following decades, a number of methods or techniques for theory evaluation were proposed. A general understanding of these methods will help nurses select an



evaluation method for theory, which is appropriate to the stage of theory development and for the intended application of the theory (research, practice, administration, or education). This will, in turn, help ensure that the theory is valid and is being used correctly. It will also provide information for developing and testing new theories by identifying gaps and inconsistencies.

Definition and Purpose of Theory Evaluation

Theory evaluation has been defined as the process of systematically examining a theory. Criteria for this process are variable, but they generally include examination of the theory's origins, meaning, logical adequacy, usefulness, generalizability, and testability. Theory evaluation does not generate new information outside the confines of the theory, but it often leads to new insights about the theory being examined.

In short, theory evaluation identifies a theory's degree of usefulness to guide practice, research, education, and administration. Such evaluation gives insight into relationships among concepts and their linkages to each other and allows the reviewer to determine the strengths and weaknesses of a theory. It also assists in identifying the need for additional theory development or refinement. Finally, theory evaluation provides a systematic, objective way of examining a theory that may lead to new insights and new formulations that will add to the body of knowledge and thereby affects practice or research (Walker & Avant, 2011). The ultimate goal of theory evaluation is to determine the potential contribution of the theory to scientific knowledge.

In nursing practice, theory evaluation may provide a clinician with additional knowledge about the soundness of the theory. It also helps identify which theoretical relationships are supported by research, provides guidelines for the choice of appropriate interventions, and gives some indication of their efficacy. In research, theory evaluation helps clarify the form and structure of a theory being tested or will allow the researcher to determine the relevance of the content of a theory for use as a conceptual framework, as described in the case study. Evaluation will also identify inconsistencies and gaps in the theory when used in

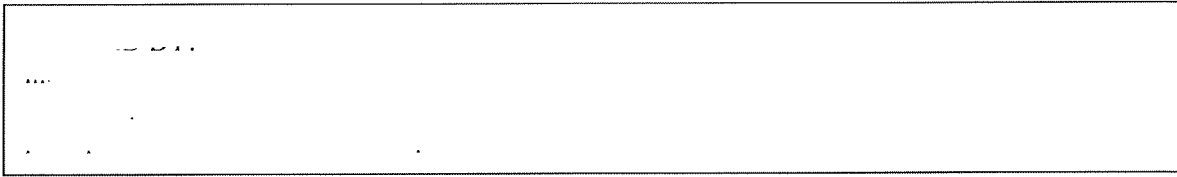
practice or research (Walker & Avant, 2011). See [Link to Practice 5-1](#) for another example.

Link to Practice 5-1: The Synergy Model for Patient Care

The Synergy Model for Patient Care was developed by the American Association of Critical Care Nurses (AACN) to be used as the basis for the AACN's certification examination (Curley, 1998). Although the model was explicitly designed to be used to direct nursing care for critically ill patients in the acute care settings (practice), it has also been used in numerous research studies, as well as in many different types of settings and for varying types of patients.

When considering its original intended purpose, what processes or methods might a nurse use to determine the Synergy Model's suitability for:

- Directing nursing practice in a high school or occupational health setting?
- Working with elders in a long-term care facility?
- Planning care for a home-based hospice patient?
- Guiding a research study in a pediatric hospital?



Various methods have been outlined to assist with this process. The methods are described by several overlapping terms or terms that are used in different ways by different authors. For example, theory analysis, theory description, theory evaluation, and theory critique all describe the process of critically reviewing a theory to assess its relevance and applicability to nursing practice, research, education, and administration. In this chapter, “theory evaluation” is used as a global term to discuss the process of reviewing theory.

Theory evaluation has been described as a single-phase process (theory analysis) by Alligood (2010) as well as Hardy (1974) (theory evaluation), a two-phase process (theory analysis and theory critique/evaluation) by Fawcett and DeSanto-Madeya (2013) and Duffey and Muhlenkamp (1974), or a three-phase process (theory description, theory analysis, and theory critique/evaluation) by scholars including Meleis (2012) and Moody (1990). It should be noted that the methods are similar whether they describe one, two, or three phases. A three-phase process is outlined briefly in the following section. Later sections provide more detailed discussions of each phase.

Theory Description

Theory description is the initial step in the evaluation process. In theory description, the works of a theorist are reviewed with a focus on the historical context of the theory (Hickman, 2011). In addition, related works by others are examined to gain a clear understanding of the structural and functional components of the theory. The structural components include assumptions, concepts, and propositions. The functional components consist of the concepts of the theory and how they are used to describe, explain, predict, or control (Meleis, 2012; Moody, 1990).

Theory Analysis

Theory analysis is the second phase of the evaluation process. It refers to a systematic process of objectively examining the content, structure, and function of

a theory. Theory analysis is conducted if the theory or framework has potential for being useful in practice, research, administration, or education. Theory analysis is a nonjudgmental, detailed examination of a theory, the main aim of which is to understand the theory (Fawcett & DeSanto-Madeya, 2013; Meleis, 2012).

Theory Evaluation

Theory evaluation, or theory critique, is the final step of the process. Evaluation follows analysis and assesses the theory's potential contribution to the discipline's knowledge base (Fawcett & DeSanto-Madeya, 2013; Walker & Avant, 2011). In theory evaluation, critical reflection involves ascertaining how well a theory serves its purpose, with the process of evaluation resulting in a decision or action about use of the theory (Chinn & Kramer, 2011). This includes consideration of how the theory is used to direct nursing practice and interventions and whether or not it contributes to favorable outcomes (Hickman, 2011).

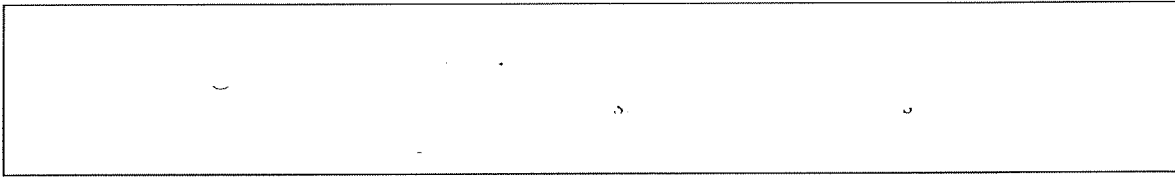
Historical Overview of Theory Analysis and Evaluation

Since the late 1960s, a number of nursing scholars have published systems or methods for theory analysis/evaluation. Table 5-1 provides a list of these works. Basic components of the processes described by each are presented in the following sections.

Table 5-1: Publications of Methods for Nursing Theory Analysis and Evaluation

Nursing Scholar	Dates of Publications	Techniques Described (Most Recent Publication)
Rosemary Ellis	1968	Characteristics of significant theories
Margaret Hardy	1974, 1978	Theory evaluation

Nursing Scholar	Dates of Publications	Techniques Described (Most Recent Publication)
Mary Duffey and Ann Muhlenkamp		Theory analysis and theory evaluation
Barbara Barnum (Stevens)	1979, 1984, 1990, 1994, 1998	Theory evaluation—internal criticism, external criticism
Lorraine Walker and Kay Avant	1983, 1988, 1995, 2005, 2011	Theory analysis
Jacqueline Fawcett	1980, 1993, 1995, 2000, 2005, 2013	Theory (conceptual framework) analysis and theory (conceptual framework) evaluation
Peggy Chinn and Maeona Kramer (Jacobs)	1983, 1987, 1991, 1995, 1999, 2004, 2008, 2011	Theory description and critical reflection
Afaf Meleis	1985, 1991, 1997, 2007, 2012	Theory description, theory analysis, theory critique
Joyce Fitzpatrick and Ann Whall	1989, 1996, 2005	Analysis and evaluation of practice theory, middle range theory, and nursing models
Sharon Dudley-Brown	1997	Theory evaluation



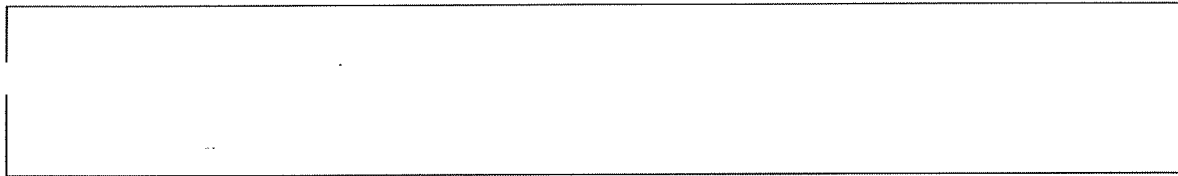
It should be noted that most of the processes/methods for theory analysis and theory evaluation were implicitly or explicitly developed to review grand nursing theories and conceptual frameworks. Only in recent years have the processes and methods been applied to middle range theories and, rarely, practice theories. This observation, however, does not negate the need for analysis and evaluation (whether formal or informal) of middle range and practice theories. Furthermore, the processes should be applicable to all levels of theory.

Characteristics of Significant Theories: Ellis

Probably the first nursing scholar to document criteria for analyzing theories for use by nurses was Rosemary Ellis. Although not specifically describing a process or method of theory analysis or evaluation, Ellis (1968) identified characteristics of significant theories. The characteristics she specified were scope, complexity, testability, usefulness, implicit values of the theorist, information generation, and meaningful terminology. Her discussion of these characteristics produced the foundation on which later writers developed their criteria.

Theory Evaluation: Hardy

A few years after Ellis, Margaret Hardy (1974) wrote that theory should be evaluated according to certain universal standards. In her writings, Hardy provided a more detailed description of criteria for theory evaluation and presented personal insight on



the processes needed. Criteria or standards she suggested for theory evaluation were as follows:

- Meaning and logical adequacy
- Operational and empirical adequacy
- Testability
- Generality
- Contribution to understanding
- Predictability
- Pragmatic adequacy

In a later work (1978), Hardy discussed logical adequacy (diagramming) and stated that because a theory is a set of interrelated concepts and statements, its structure can be analyzed for internal consistency by examining the syntax of the theory as well as its content. Diagramming involves identifying all major theoretical terms (concepts, constructs, operational definitions, and referents). Once identified, each component can be represented by a symbol, and a model may be drawn illustrating relationships or linkages between or among the terms. These linkages should specify the direction, the type of relationship (whether positive or negative), and the form of the relationship.

According to Hardy (1974), empirical adequacy is the single most important criterion for evaluating a theory applied in practice. Assessing empirical adequacy requires reviewing literature and critically reading relevant research; it is necessary to determine if hypotheses testing the theory are clearly deduced from the theory. The entire body of relevant studies should be evaluated in terms of the extent to which it supports the theory or a part of the theory. Finally, the criteria of usefulness and significance refer to the theory's use in controlling, altering, or manipulating major variables and conditions specified by the theory to realize a desired outcome.

Theory Analysis and Theory Evaluation: Duffey and Muhlenkamp

Writing at approximately the same time as Hardy, Duffey, and Muhlenkamp (1974) published a two-phase approach to critically examining nursing theory. Theory analysis was the first phase, for which they posited four questions for examination. For theory evaluation, they suggested six additional questions (Box 5-1).

Box 5-1: Questions for Theory Analysis and Theory Evaluation: Duffey and Muhlenkamp

Theory Analysis

1. What is the origin of the problem(s) with which the theory is concerned?
2. What methods were used in theory development (induction, deduction, synthesis)?
3. What is the character of the subject matter dealt with by the theory?
4. What kind of outcomes of testing propositions are generated by the theory?

Theory Evaluation

1. Does the theory generate testable hypotheses?
2. Does the theory guide practice or can it be used as a body of knowledge?
3. Is the theory complete in terms of subject matter and perspective?
4. Are the biases or values underlying the theory made explicit?
5. Are the relationships among the propositions made explicit?
6. Is the theory parsimonious?