The Outcome-Present State-Test (OPT) Model of Clinical Reasoning:
A Framework for Advanced Practice Nursing

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Abstract

The purpose of this article is to introduce the Outcome Present State Test (OPT) Model of Reflective Clinical Reasoning and discuss the value and importance of nursing knowledge work to support the clinical reasoning skill set of advanced practice nurses. Knowledge representation and levels of practice data are critical to methods advanced practice nurses use to filter, frame, and focus nursing care associated with individual, family, community, and health system care challenges. Nursing process is the foundation for patient problem management. The OPT model is an innovation in clinical reasoning that enhances advanced practice nursing education, practice, competencies, and research efforts. Changes to the nursing process through time are described and discussed. The Outcome Present State Test (OPT) Model of Reflective Clinical Reasoning is explained. The cognitive and metacognitive thinking strategies that support use of the OPT model are identified and defined. Strategies to support the complexity of thinking involved in clinical reasoning are outlined. The process has evolved through time with attention to the ontology, epistemology, and evolving nature of professional nursing and developments in knowledge representation. These developments have influenced clinical reasoning perspectives and the critical, creative, systems, and complex thinking skills that support clinical reasoning.

Keywords: OPT Model, clinical reasoning, advanced practice nursing, nursing process, Clinical Reasoning Webs, outcome specification, NANDA-I, NIC, NOC, metacognition, complexity thinking, knowledge representation, clinical judgment

Introduction

This article introduces the Outcome-Present State-Test (OPT) Model of Reflective Clinical Reasoning to support advanced practice nursing. The model provides structure, process, and elements for illustrating complex dynamics between and among patient care problems, nursing care interventions, outcomes, and judgments. Understanding knowledge representation and levels of practice data enables advanced practice nurses to filter, frame, and focus clinical reasoning effectively. Cognitive, metacognitive, and self-regulatory thinking processes support application, use, and evaluation of the OPT model in practice. The model addresses complexities of care coordination and care planning essential to advanced practice nursing.

Evolution of Nursing Process: From First to Third Generation

First Generation (1950-1970): Problem-Solving

Prior to the 1950s scholars paid little attention to the thinking skills nurses needed to practice. Once nursing education moved from hospitals into university settings, the need developed for an academic discipline to discern the unique thinking strategies and skills nurses used to reason about patient care challenges. The first generation (1950-1970) nursing process was based on a problem-solving model and consisted of the following steps: Assess, Plan, Implement, and Evaluate (APIE). This structured stepwise logic model was taught as a linear process that focused on problems and pieces of a patient story, medical conditions, and associated nursing care responses. Evaluation was linked with problem identification and goal achievement. Over time, nurses realized that the problem-solutions they identified in practice were redundant, could be classified, and categorized according to the evolving nature and scope of nursing practice.

Second Generation (1970-1990): Diagnostic Reasoning

Nursing informatics as a specialty influenced the development of and quest for ways to represent nursing knowledge. Nursing diagnoses were developed and assimilated into the traditional assess, plan, implement and evaluate nursing (APIE) process model. Nursing process evolved from a four-step process (APIE) to a five-step model: Assess, Diagnosis, Plan, Implement and Evaluate (ADPIE). This development had profound implications in how nurses began to teach, learn, think, and reason about nursing care situations. With the advent of standardized nursing languages, it was clear that nursing knowledge could be collected, analyzed, evaluated and yield insights into nursing patterns of care. Second generation nursing process (1970-1990) focused on developing insights and understanding the nature of diagnosis and reasoning in nursing. Research in diagnostic reasoning led to discoveries and insights about the advantages and disadvantages of the nursing process as model and method.

Third Generation (1990-2020): Outcome Specification and Testing

The third generation of nursing process emerged (1990-2020) and highlighted a nursing process model that emphasized reflection, outcome specification, and testing given a patient's story. The Outcome-Present State-Test (OPT) clinical reasoning model was built on the heritage of the nursing process and was more relevant to contemporary nursing practice needs. In this model, clinical reasoning is defined as the critical, reflective, concurrent, creative, thinking embedded in nursing practice that results in the juxtaposition of problems and outcomes that are subject to interventions and clinical judgments. The OPT clinical reasoning model provides a structure, process, and strategies for thinking about multiple competing patient care needs in the context of a patient's story.

Nursing Knowledge: Filters, Frames, and Focus

Understanding how knowledge is represented and the evolution and development of knowledge classification systems supports insight into the world of knowledge management and health care informatics. The Center for Clinical Effectiveness at the University of Iowa College of Nursing uses the OPT Model structure to support linkages between and among NANDA Diagnoses, NOC Outcomes and NIC interventions. Knowledge is represented in standardized nomenclatures and in resources like the International Classification of Diseases and the Unified Medical Language Systems of the National Library of Medicine. Representation and reasoning are inextricably, and usefully, intertwined: a knowledge representation is a theory of intelligent reasoning.

[TABLE 1: Standardized Nursing Languages]

Framing and Focus in Clinical Reasoning

Nurses constantly frame situations. Frames are mental models or perceptual positions about issues, events, and meanings. Framing is a way to manage meaning. It involves the selection and highlighting of one or more aspects of a subject while excluding others. A patient's story provides valuable information about the context and key issues for clinical reasoning. Listening to patients, connecting with them in meaningful ways, attributing meaning to their story, and getting the facts of their situation is the art of nursing. How one frames a situation determines the focus of the problem, intervention, outcome, and level of intervention.

The OPT Model of Clinical Reasoning

The OPT model is a meta model that provides a structure, process and method that supports patient centered clinical reasoning. The major difference between the OPT clinical reasoning model and other models is the emphasis on standardized knowledge classification to filter, frame and focus a situation to discern gaps between present and desired states of patient outcomes. The OPT clinical reasoning model underscores the fact that reasoning is concurrent and iterative as side-by-side comparisons of outcomes with present state information from the patient story create gaps that can be analyzed and evaluated as test conditions about which judgments and conclusions are made.

Creating a Clinical Reasoning Web

Patient stories are complex but with a little analysis and synthesis, complex stories can be simplified into key issues. An OPT clinical reasoning web is a useful teaching-learning-thinking tool to support understanding of the reasoning associated with implementation and use of the OPT Model. A clinical reasoning web is a diagram that helps illustrate the functional relationships between and among diagnoses, conditions, and diagnostic hypotheses derived from assessments. Spinning and weaving a web is the process of using critical, creative, systems, and complex thinking strategies to analyze and synthesize functional relationships between and among diagnostic hypotheses associated with a patient's health status.

The OPT Clinical Reasoning Model Worksheet

After considering the whole picture using the clinical reasoning web worksheet, the next step is to use the OPT Clinical Reasoning Model worksheet to structure the provider's reasoning about relationships between and among problems, outcomes, interventions, decision making and judgments. The OPT clinical reasoning model worksheet is a map of the structure designed to provide a representation and guide thinking about relationships between and among competing issues, problems, outcomes, interventions, and judgments. By writing each element on the worksheet, it is easy to see how parts of the model relate to each other.

Reflection and Thinking Strategies to Support Clinical Reasoning

When using the OPT clinical reasoning model worksheets, the provider engages in reflection as a component of executive thinking processes and consists of critical, creative, and concurrent thinking. Reflection is the process of observing one's thinking while simultaneously thinking about patient situations. The goal of reflection is to achieve the best possible thought processes. Working with the OPT clinical reasoning model worksheets involves critical, creative, complex and systems thinking as one considers multiple interactions of various elements in a situation.

[TABLE 3: Questions that Guide the Use of the OPT Model]

[TABLE 4: Reflection Prompts to Support Self-Regulated Clinical Reasoning]

[TABLE 5: Thinking Strategies and Definitions]

[TABLE 6: Comparison of Thinking Strategies, Critical Thinking Skills, and Reflective Clinical Reasoning]

There are specific thinking strategies that support the development of clinical reasoning skills. Each strategy is metacognitive in nature and includes: knowledge work, self-talk, schema search, prototype identification, hypothesizing, if-then thinking, comparative analysis, juxtaposing, reflexive comparison, reframing, and reflection check. These strategies come together during case analysis to make clinical decisions and judgments about the degree to which outcomes are achieved.

Conclusion

The OPT Model of Clinical Reasoning provides advanced practice nurses with a systematic, teachable framework for managing clinical complexity. By making reasoning processes explicit through Clinical Reasoning Webs, emphasizing outcome specification over problem focus, supporting systems thinking about relationships among diagnoses, identifying keystone issues through complexity thinking, and integrating standardized nursing terminologies as knowledge representation infrastructure, the OPT Model addresses limitations of traditional linear nursing process. The model supports both individual expertise development through metacognitive awareness and collective knowledge building through standardized data capture. As healthcare continues to evolve toward greater complexity, the OPT Model offers advanced practice nurses essential tools for clinical reasoning excellence.

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