IMPLEMENTATION AND TESTING *of the* OPT MODEL as a Teaching Strategy in an Undergraduate Psychiatric Nursing Course

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MOST NURSE EDUCATORS AGREE THAT THEIR GRADUATES NEED MORE THAN JUST BASIC NURSING SKILLS TO HANDLE DIVERSE CLIENTS AND SOLVE COMPLEX INDIVIDUAL CLIENT PROBLEMS (BRUNT, 2005). *To prepare nurses to use rapidly advancing technology, deal with complex change, and employ high-level thinking and sound reasoning skills in today's complex health care culture (Simpson & Courtney, 2002), critical thinking skills are needed. In fact, critical thinking is considered so important in psychiatric nursing that critical thinking skills are incorporated into each chapter of the major textbooks (Antai-Otong, 2008; Kneisl & Trigoboff, 2008).* • Critical thinking has been defined as the process of purposeful thinking and reflective clinical reasoning through which nurses examine ideas, assumptions, principles, conclusions, beliefs, and actions in the context of practice (Brunt, 2005). Pesut and Herman define clinical reasoning as "reflective, concurrent, creative, and critical thinking processes embedded in practice used to frame, juxtapose, and test the match between a patient's present state and desired outcome state" (1999, p. 237). The study described in this article was designed to evaluate the effectiveness of Pesut and Herman's Outcome-Present State-Test (OPT) Model as a teaching strategy for undergraduate psychiatric nursing students.

NURSING EDUCATION RESEARCH

ABSTRACT Teaching undergraduate nursing students to think critically and reason clinically is a challenge for nurse educators, yet these skills are essential for the professional nurse. The Outcome-Present State-Test (OPT) Model of Reflective Clinical Reasoning (Pesut & Herman, 1999) provides a framework for teaching clinical reasoning skills to nursing students. This article describes how the model can be used in clinical teaching of undergraduate students in psychiatric and mental health settings and presents some findings from an evaluation of the model. Strategies employed in the model implementation are described, along with the benefits and limitations of this teaching method in a psychiatric clinical setting.

Conceptual Model The OPT Model of Clinical Reasoning (Pesut & Herman, 1999) provides a structure for linking nursing diagnoses, interventions, and outcomes (Pesut, 2004) and promotes the organization of patient needs and nursing care around a keystone issue. It has 10 components: 1) client-in-context, 2) clinical reasoning web, 3) keystone issue, 4) cue logic, 5) present state, 6) framing, 7) outcome state, 8) testing, 9) decision making, and 10) judgments.

1. Client-in-context is the client's story, which includes the admitting problem and/or medical diagnoses, assessment/history, signs and symptoms or clinical manifestations, lab or other diagnostic data, and social/family history.

2. The clinical reasoning web is "a pictorial representation of the functional relationships among diagnostic hypotheses derived from synthetic thinking that results in a convergence in identification of central issues that require care" (Pesut & Herman, 1999, p. 77). The web promotes clinical reasoning by using the client's story to identify and represent the issues and needs the patient reveals. Continual clinical reasoning is used to see how these issues and needs are related to one another.

3. The keystone issue is defined as a "central supporting element of the client's story that guides reasoning and care planning based on an analysis and synthesis of diagnostic possibilities as represented in a clinical reasoning web" (Pesut & Herman, 1999, p. 238). Diagnostic possibilities are chosen from the North American Nursing Diagnosis Association International (NANDA-I) list of nursing diagnoses (NANDA-I, 2008). Thus, the keystone issue is the primary nursing diagnosis that organizes the focus of patient care. It is based on analysis and synthesis of diagnostic possibilities represented in the clinical reasoning web. Resolving the keystone issue is expected to assist in resolving all other related nursing diagnoses.

4. Cue logic is the use of clinical reasoning to deliberately structure client data to plan care by listing all of the nursing diagnoses from the clinical reasoning web (except for the keystone issue).

5. The present state refers to the patient's initial and current condition, derived from cue logic, which may change over time due to nursing decisions and actions.

6. Framing is the process of deriving the theme or meaning of a patient or client-in-context story and is the major difference between the OPT model and previous models, such as nursing process.

7. Outcome state is the desired condition of the client derived from framing, present-state data, and criteria that define the desired outcome condition.

8. Testing is the process of side-by-side comparison and evaluation of present state and outcome state via the defined criteria for the outcome state.

9. Decision making involves the process of selecting nursing interventions and actions to assist the patient in attaining the desired outcome state.

10. Judgments are conclusions drawn from comparing the present state to the desired outcome state. These judgments result in clinical decisions, reflection, reframing, or exit from a reasoning task.

ASSESSING patient needs by ANALYZING DATA to identify and frame problems within the CLINICAL ENVIRONMENT reflects students' CLINICAL REASONING ABILITY. Between the beginning and the end of this PSYCHIATRIC NURSING COURSE in which the OPT model was used AS A STRATEGY for teaching clinical reasoning, there were SIGNIFICANT IMPROVEMENTS in students' ability to frame the patient's story and identify the CORRECT KEYSTONE ISSUE.

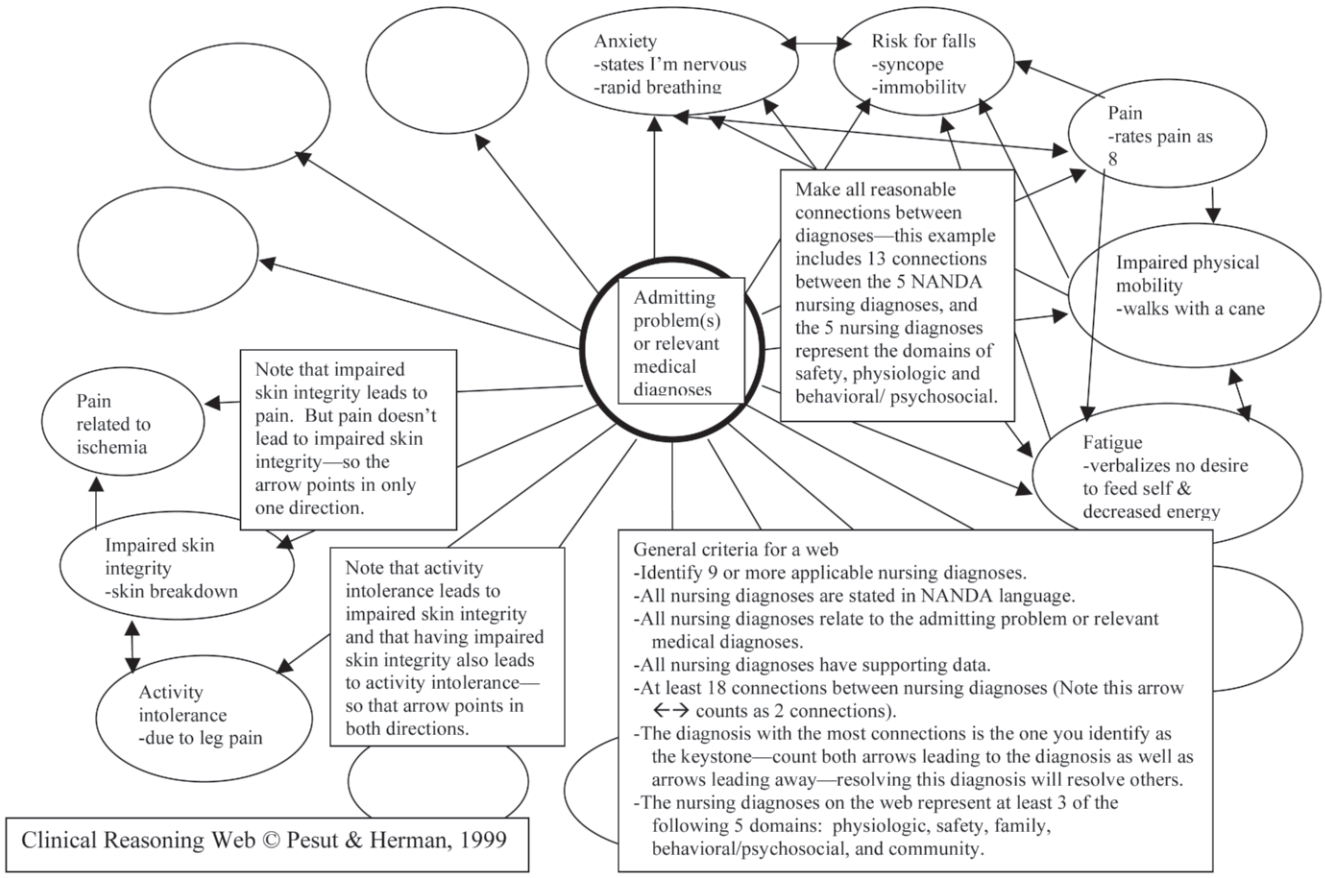
The primary focus of this study was on teaching students how to use the OPT model to identify the keystone issue and frame the patient's story through the development of clinical reasoning. The keystone is an essential component, since other nursing diagnoses are expected to be resolved when nursing care is focused on resolving the patient's primary problem. Likewise, the frame is essential, as it provides the focus, or big picture, of the patient's primary or keystone issue.

The frame is unique to the OPT model and is another key step in the student's clinical reasoning process. The nursing faculty chose to evaluate the effectiveness of the OPT model by analyzing the students' choice of keystone issue and how students framed the client's situation using a standardized case study.

Methods DESIGN/SAMPLE The study used a one-group pretest, posttest design. A convenience sample of baccalaureate nursing students was recruited during their psychiatric nursing course. Although all 45 students agreed to participate, two students were absent and unable to complete the measures.

The conduct of the study did not influence how the course was

Figure 1. Clinical Reasoning Web Instructions and Rating Criteria



taught or how students were evaluated. Although institutional review board approval was obtained prior to data collection, students were not told about the study until the end of the semester. At that time, a nurse faculty member, who did not teach the course, described the study and collected voluntary informed consent and demographic data. No psychiatric course faculty members were present.

The sample consisted of 43 Caucasian women with a mean age of 24.95 years. The students worked a mean of 10.75 hours per week while taking 12 or more credit hours of course work that included six hours of psychiatric clinical. The mean self-reported student grade point average was 3.69.

TEACHING TOOLS Three teaching tools were used in the study. The OPT Model Clinical Reasoning Web (Pesut & Herman, 1999) was used to teach clinical reasoning using the OPT model. In addition, two new tools were developed. 1) The Clinical Reasoning Web Instructions and Rating Criteria portrays Pesut and Herman's Clinical Reasoning Web (Figure 1). 2) The OPT Model of Clinical Reasoning Instructions and Rating Criteria portrays Pesut and Herman's OPT Model Worksheet (Figure 2). These instructions and rating criteria are works in progress, and the authors recommend that faculty adapt them as needed. The instructions have been published by the authors (Bartlett et al., 2008). A tool to rate the students' work has also been published (Bartlett et al.; Kautz et al., 2009; Kuiper, Heinrich, Matthias, Graham, & Bell-Kotwall, 2008).

The interventions for the decision-making area of the model are identified in Figure 3 (an extension of the OPT Model from Figure 2) (DeLaune, 2004). This extension is where students document their choice of interventions to resolve the keystone issue identified on the Clinical Reasoning Web. Two case studies (see Sidebar) were developed to help students practice and test their use of the OPT model. The first case, adapted from a textbook case study (Noud & Lee, 2005), was used to illustrate how to use the tools.

The second case study was developed by expert psychiatric nurse faculty in consultation with an OPT model expert to use as a

Figure 2. OPT Model of Clinical Reasoning Instructions and Rating Criteria

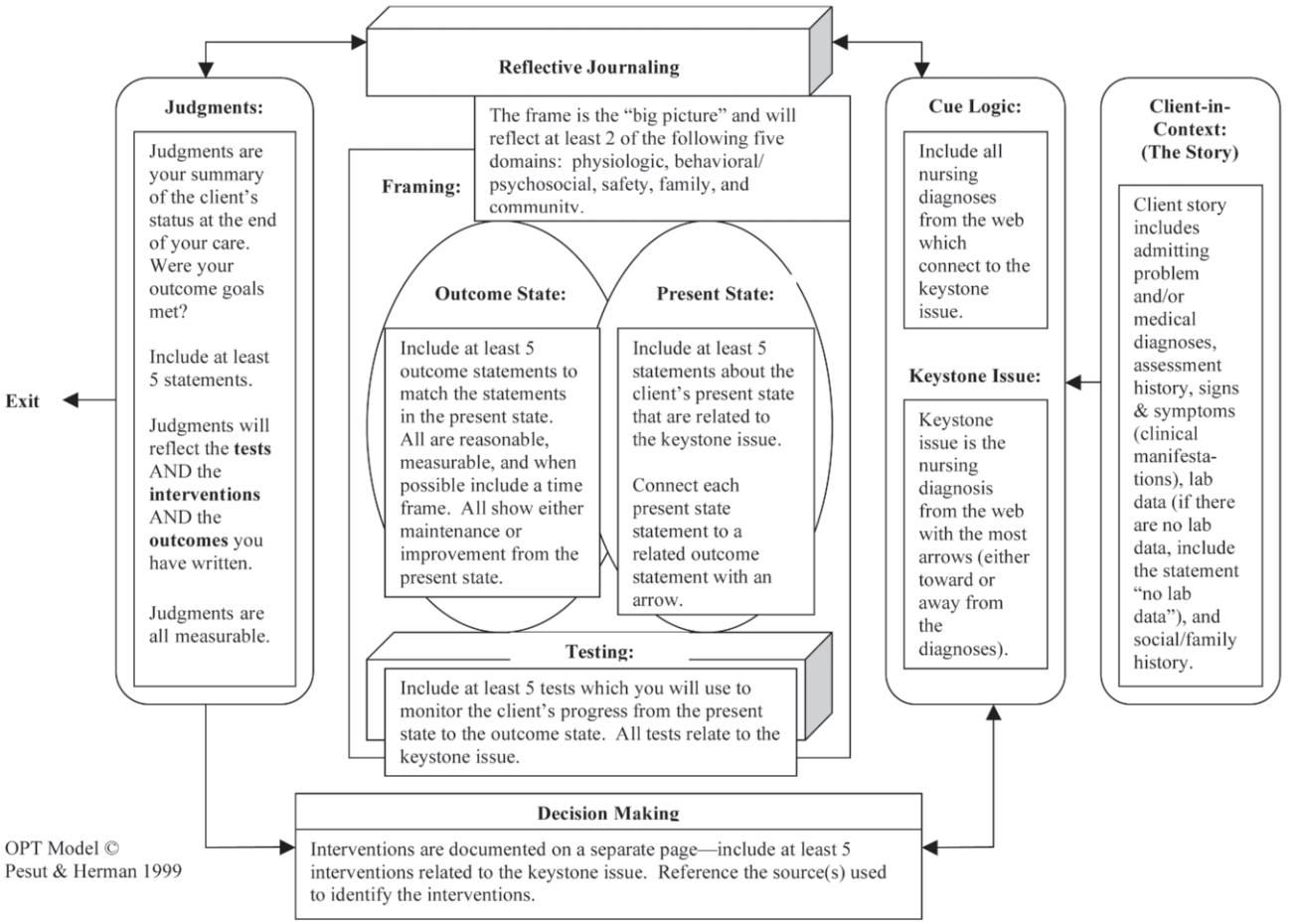
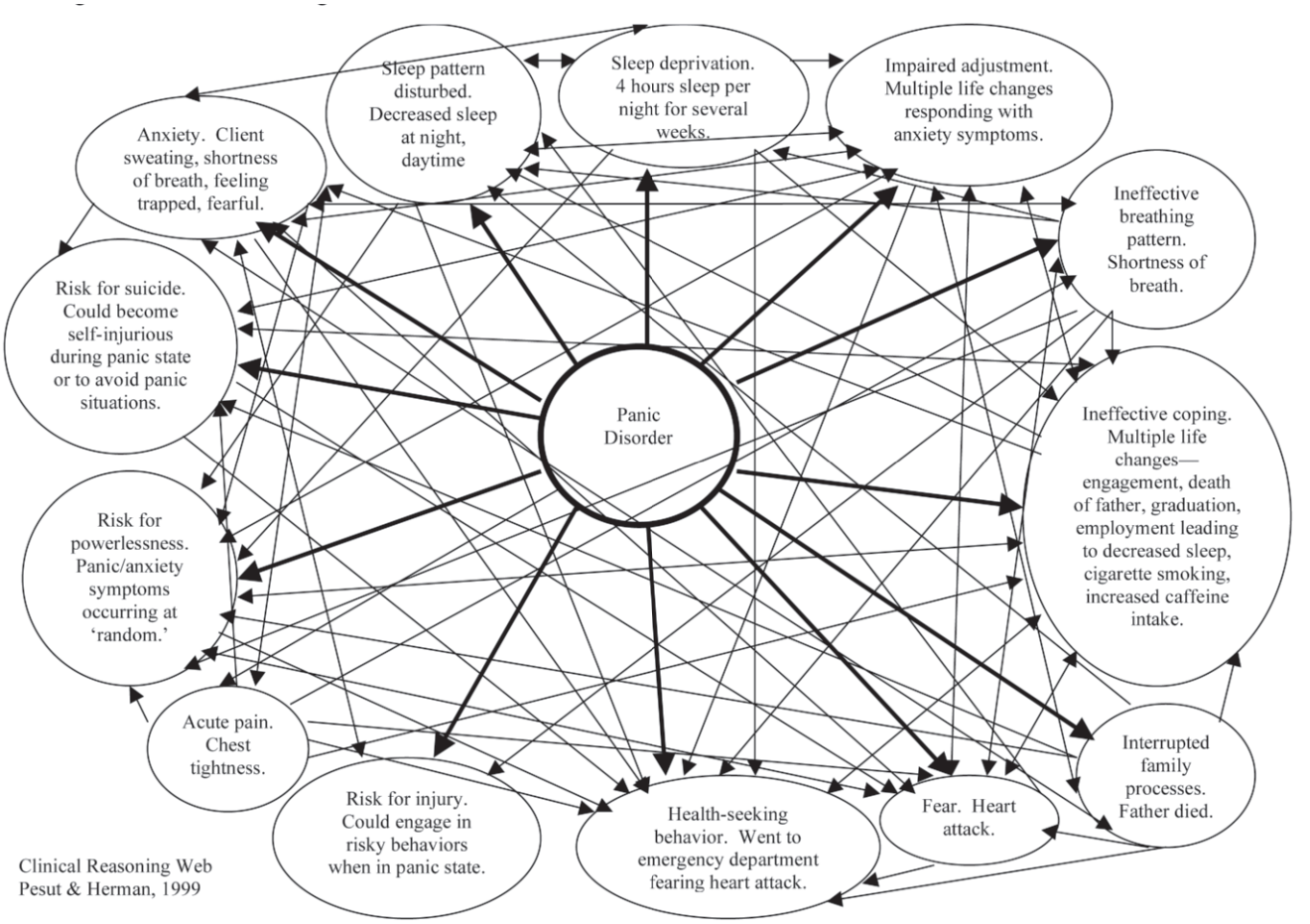


Figure 3. Decision-Making (Nursing Interventions)

DECISION MAKING (INTERVENTIONS)	RATIONALE
1. Observe for clinical manifestations of increased psychomotor activity and point these out to client.	1. Help client recognize and name symptoms as anxiety.
2. Help client connect anxious feelings to relief behaviors.	2. Help client learn to self-manage anxiety.
3. Help client identify and analyze connections between anxiety and consequences.	3. Help client understand genesis of anxiety.
4. Help client verbalize "causes" of anxiety.	4. Through clear recognition of causes, may be able to alter patterns of handling anxiety.
5. If client is in panic state, stay with client and be calm.	5. Being alone can increase anxiety. If nurse is calm and in control, this may be calming to client.
6. If client is in panic state, speak in short, simple sentences.	6. Clients experiencing panic have difficulty focusing.
7. Move client to place with decreased stimulation if in panic state. Give benzodiazepine (Xanax) as ordered for anxiety (panic) symptoms.	7. Prevents future disruption of perceptual field due to increased stimuli. Benzodiazepines are useful to decrease anxiety in clients experiencing panic.
8. Encourage client to engage in quiet activity like reading prior to bedtime. Encourage client to limit caffeine and smoking.	8. Preparing for sleep with relaxing activity helps client better achieve sleep state. Caffeine and nicotine are stimulants that can inhibit sleep.

Figure 4. Clinical Reasoning Web



pretest and posttest. It was developed specifically to evaluate students' clinical reasoning ability to determine that "risk for suicide" was the correct keystone issue. The four expert faculty agreed that risk for suicide was the correct keystone issue for this patient, thus providing one measure of content validity for the case study. This keystone was chosen as faculty determined that students would be able to correctly identify risk for suicide as the priority issue only after completing both the theory and didactic portions of the course. This case was also designed to evaluate the students' ability to frame the situation, identifying that the patient's life stressors were great enough to require acute hospitalization (the client was no longer safe at home).

TEACHING STRATEGIES To create enthusiasm for developing clinical reasoning, the students were given a brief explanation of why the OPT model was being used, the anticipated benefits, and an introduction to the teaching tools. The first case study was then used as a faculty/student exercise to complete the Clinical Reasoning Web and the OPT model worksheet, including the interventions in Figure 3. Blank OPT model worksheet forms (Figures 2, 3, and 4) were displayed via overhead projector. The forms were completed during an interactive student/faculty exchange. Questions were encouraged throughout this process, which took approximately 30 to 45 minutes.

Following guided discussion and completion of the forms in class, the forms were copied and given to students to reinforce the clinical reasoning process. In addition, students were given the Clinical Reasoning Web and the OPT Model Worksheet, which included instructions for completion and the criteria faculty would be using to rate their work. Students were then given, prior to any psychiatric and mental health nursing clinical experiences in the course, the pretest case study #2 upon which to complete a model and web. No feedback was given on the pretest work.

Throughout the course, during weekly clinical experiences, faculty members reviewed the teaching tools and discussed clinical reasoning with their students to reinforce the clinical reasoning process. In addition, each week in clinical, students completed

Sidebar. Case Studies

Case Study #1

A 25-year-old man has experienced several life changes including a recent engagement to his long-term girlfriend, loss of his father to cancer, graduation from technical school, and entrance to the workforce as a computer programmer in a small, privately owned company. Because of his active lifestyle, his sleep patterns have been disrupted and he has only been getting about four hours of sleep per night for the last several weeks. He frequently uses sleep aids at night and then drinks a full pot of caffeinated coffee to start each day due to drowsiness. He has also recently started smoking cigarettes to relieve his stress, and now smokes about two packs of cigarettes per day. While sitting in heavy traffic on the way to work yesterday, he suddenly experienced chest tightness, sweating, shortness of breath, feelings of being "trapped," and foreboding that he was going to die. Fearing a heart attack, he went to the emergency department of your hospital. He was admitted to a medical-psychiatric unit for further observation. Once on the unit he had another episode of becoming short of breath and feeling very fearful. The admitting nurse escorted the client to his room, away from other clients. After administering his prescribed Xanax, the nurse stayed with him, speaking slowly and deliberately, until his breathing returned to normal and he reported feeling a bit better. His initial medical admitting diagnosis was panic disorder with a secondary diagnosis to rule out cardiac involvement. Adapted from Noud & Lee, 2005 (p. 378).

Case Study #2, Pretest and Posttest

INSTRUCTIONS Apply the OPT model of clinical reasoning to this case study. Using the facts below, use cue logic, framing, testing, decision making, and judgment to determine nursing care in this situation. Use your Clinical Reasoning Web and OPT Model Worksheet to organize your reasoning.

A 45-year-old female, Jeanne, is hospitalized on an acute psychiatric unit after spending three days in intensive care following a drug overdose. Her primary medical diagnosis is major depression. Her vital signs are BP – 128/70, P – 82, R – 16, oral T – 98.6 degrees Fahrenheit. She is disheveled, tearful, moving slowly, and rarely speaks unless spoken to by others. She has a long history of failed relationships with men, and recently lost her job of 15 years due to downsizing. She has few friends and lives alone in a small apartment in the city. She occasionally interacts socially outside of work with a couple of her co-workers, but spends most of her time in her apartment watching television and crocheting. She knows none of her neighbors, stating that she does not feel safe opening up to strangers. Her family lives in another state, and she rarely sees them due to limited monies for traveling. Her relationship with her family is strained.

On arrival to the unit, Jeanne denies a plan for self-harm but indicates she still feels very bad and would be glad if she had just died in her sleep. She reports that for the last three months she has had an inability to sleep at night, feelings of fatigue, and a 20-pound weight loss. Her medical record indicates that she has had two prior hospitalizations. She is placed on 15-minute observational checks and encouraged to participate in the therapeutic milieu. She is given a tour of the unit by the admitting nurse and introduced to her roommate and several other clients sitting in the dayroom.

clinical reasoning webs and OPT model worksheets for each of their assigned clients; faculty gave their individual students written feedback on this work. At the end of the semester students were asked to complete a web and model on the same case study used as the pretest. The posttest web and model were rated to evaluate the students' clinical reasoning at the end of the course.

Copies of all pretests and posttests were given to the non-psychiatric course nurse faculty member, who also maintained the consent forms and data until grades for the course were submitted. All worksheets of the two students who did not complete the study were shredded. A master code list that matched subject names to numbers assigned to data was maintained in a separate locked file cabinet. Any clearly identifiable individual information based on demographic data was collapsed into groups or categories, and identifying information from the OPT model worksheets was removed to protect confidentiality.

ANALYSES Keystone issues on the pretest and posttest were scored as either correctly or incorrectly identified. The McNemar test was the statistical test used to examine for a significant difference in the students' ability to identify the correct keystone issue between the two time points. Descriptive statistics were used to analyze the demographic data. Assessing the students' ability to identify elements of the correct frame was accomplished using content analysis.

Results The pretest and posttest data were analyzed to determine if the keystone issue "risk for suicide" was correctly identified each time. The students' framing ability was evaluated by examining whether they identified that the patient needed acute hospitalization and was at suicide risk due to major depression and having overdosed. Fifty-six percent (n = 23) of the 43 participating students correctly identified the keystone issue at both pretest and posttest. Thirty-seven percent (n = 16) showed improvement over the two time points, and 9 percent (n = 4) showed a decline in performance.

Using the McNemar test, a significant difference was found between pretest and posttest ability of students to identify the correct keystone nursing diagnosis ($p < .05$). More students were able to accurately identify the keystone issue at the time of the posttest; thus, it appears that the OPT model was useful in helping the students organize and evaluate the data they collected to identify the critical problem or need of the patient.

An analysis of the differences in the frames also showed students' growth from the beginning to the end of the course. Seven

students who did not even identify a frame at the beginning of the course all wrote frames at the end of the course. Those who did develop a frame on the pretest focused on the stressors and isolation of the individual; they did not identify that the stress and isolation led to serious psychiatric symptoms necessitating an inpatient hospitalization.

Significant growth can be seen by completion of the posttest at the end of the semester. Students now identified how seriously ill the client was, an essential step for implementing the appropriate interventions, such as hospitalization and suicide prevention. An example of one student's pretest and posttest frames illustrates how the student grew over the semester:

- Pretest frame: Introverted adult female, little social interaction, isolated from family and society.
- Posttest frame: Client a 45-year-old female in a depressed, acutely anxious state due to social isolation and numerous life stressors.

The pretest and posttest framing data were analyzed to determine if students identified at least one of the following key factors in their frame: the patient had major depression, was unable to cope with his/her stressors, was suicidal, had overdosed. At the time of the pretest, 16 percent ($n = 7$) of the students did not complete the frame, and 25 percent ($n = 11$) of the students were able to identify at least one of the key factors in their frame. At the posttest, only two students (5 percent) did not complete the frame. Forty-one students (95 percent) included one of the key factors in their frame. By the end of the course students showed improvement in their ability to frame the patient's story, a key step in clinical reasoning.

The authors RECOMMEND that faculty teaching in ALL NURSING COURSES compare the OPT MODEL with a standard care plan USED IN THE CLINICAL COMPONENT of nursing education, allowing FURTHER INSIGHT into a student's thought processes and the ability to TAILOR EXPERIENCES to meet individual LEARNING NEEDS.

Discussion Assessing patient problems or needs by analyzing data to identify and frame problems within the clinical environment reflects students' clinical reasoning ability (Murphy, 2004). Between the beginning and the end of this psychiatric nursing course in which the OPT model was used as a strategy for teaching clinical reasoning, there were significant improvements in students' ability to frame the patient's story and identify the correct keystone issue. The model was used by students to reflect on their experiences and put their thoughts into words. New knowledge and deeper learning were gained from this experience.

The case studies were both designed to portray patients who needed hospitalization as they were unsafe to remain at home. However, it is apparent in retrospect that these clients may not have needed to remain hospitalized. It would have been better to imply that both of them were dangers to themselves or others and needed hospitalization. If this had been clearer to the students, more of them might have framed the situation in that way.

Since students improved in their ability to identify the keystone issue at the time of the posttest and were better able to frame the situation, the authors believe that the OPT model can be useful to students in organizing, assessing, and evaluating patient data to provide essential patient care. The model incorporates concurrent, iterative characteristics of clinical reasoning and helps students identify the keystone issue.

The authors recommend that faculty teaching in all nursing courses compare the OPT model with a standard care plan used in the clinical component of nursing education, allowing further insight into a student's thought processes and the ability to tailor experiences to meet individual student learning needs. The use of the OPT model as a teaching strategy has been studied with students in medical-surgical settings (Kautz et al., 2005, 2009; Kautz, Kuiper, Pesut, & Williams, 2006; Kuiper et al., 2008), but needs to be studied with other student groups as well.

When faculty initially see the clinical reasoning webs and OPT model worksheets, they often state that the model is too complex for junior-level students. Yet, the authors' use of the model reveals that students master the ability to complete the forms within just a few weeks.

Being able to frame a clinical situation is a high-level cognitive activity and is an excellent indicator of students' ability to

sort through data and make decisions about the needs of clients. When a novice nurse frames a situation, he or she is likely to focus on those activities that require the most work by the nurse, which may or may not be the priority needs of the patient. An experienced nurse has the ability to pay attention to clinical manifestations that indicate a crisis. In the medical-surgical literature, an inability to see the priority may be what precipitates a failure to rescue. Thus, a nursing student in the ICU might note that a patient has an increasing pulse, and decreasing blood pressure, but not see that the client is in the early stages of shock.

Further research needs to be conducted to specifically address how students frame situations over time as their clinical reasoning abilities develop, and whether they are able to correctly interpret a client's overall picture as one that is improving and responding to treatment, or one that requires immediate intervention. Future research should include comparison of the OPT model with other teaching strategies to enhance the clinical reasoning of students. It is important to note that the new teaching tools used in this study need further refinement and testing to substantiate their usefulness in teaching clinical reasoning. NLN

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Key Words OPT Model – Clinical Reasoning – Keystone Issue – Nursing Students – Psychiatric Nursing Education – Teaching Strategy

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