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Nursing Students' Clinical Judgment for a Patient in Respiratory Distress

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Abstract

Introduction/Background

Research on strategies to improve nurses' clinical reasoning to promote patient safety and minimize harm had become increasingly popular since the original "To Err is Human" IOM report (2000) identifying that almost 100,000 deaths per year occur due to medical errors including nursing errors (Institute of Medicine [IOM], 2000, 2004, 2011; James, 2013). Nurses provide surveillance and integral care to hospitalized patients 24 hours per day and know their patients well. Patient outcomes and safety depends on nurses' abilities to recognize and respond to changes in condition thereby preventing deteriorating situations that lead to poor outcomes (Massey, 2016).

Nurses' clinical reasoning is a complex process and each nurse brings unique experiences, skills, and thinking abilities to the clinical situation (Tanner, 2006; Benner, Hughes, & Sutphen, 2008; Lasater, Nielsen, Stock, Ostrogorsky, 2015; Codier & Codier, 2017). These processes are further complicated by the complexity of patient health problems and health systems. Nurses recognize patient problems through use of the clinical reasoning process that leads to analyzing data, considering alternative actions, making a clinical judgment by identifying the priority nursing diagnosis/patient problem(s), and finally determining appropriate actions to take (Herdman & Kamitsuru, 2014; Chiffi & Zonotti, 2015).

Schools of nursing must teach students to develop their clinical reasoning abilities to make accurate clinical judgments and deliver appropriate care that may include lifesaving escalation to the health care team or initiation of the rapid response team (AACN, 2011; Lasater, Nielsen, Stock, Ostrogorsky, 2015). The Developing Nurses Thinking (DNT) model is a cognitive model that guides students through clinical reasoning processes by focusing on required domain knowledge including the nursing process, purposeful use specific critical thinking skills, consideration of patient safety, and repeated practice in using this strategy (Tesoro, 2012). In this model, patient safety is assessed in all phases of the reasoning process by asking: What is my patient's safety risk: "no danger', "possible danger", or "imminent danger". This identification of "danger" provides the context for action that should be taken.

Aim

The aim of this study was to test the effect of teacher-neutral guided clinical reasoning prompts based on Developing Nurse's Thinking (DNT) in written case studies on clinical judgment of pre-licensure baccalaureate nursing students after completion of their first medical surgical course.

Methods

An experimental, randomized study was conducted with students in their second clinical semester in two baccalaureate schools of nursing, one private and one public with control and intervention groups using a pre-test and post-test design. Prior to implementation of this study's research, Institutional Review Board (IRB) approval was obtained from both sites. Pre and post test were parallel cases with exactly the same cues that supported the diagnosis/problem of Ineffective *Airway Clearance* secondary to retained secretions and bronchoconstriction (Herdman & Kamitsuru, 2014). Students in the intervention group received written prompts to guide them through the reasoning process when solving the post test case. Students in the control group did not receive any directions to help solve the case. Both groups identified the nursing diagnosis/problem, causes or etiologies of the problem, and cues that they felt were important and used to come to their conclusions in both pre and post tests.

The Lunney Scoring Method for Rating Accuracy of Nursing Diagnoses [LSM] (2001) was used to score accuracy of nursing diagnosis/ problems label (Lunney, 2001). This scoring system has seven levels that range from +5, most accurate, +4, consistent with cues but fails to reflect highly relevant cue(s) +3, consistent with many cues but lacks specificity, +2, indicated by some cues but low priority, +1, suggested by one or few cues, 0, not indicated by any cues, to -1, incorrect problem identified. The scoring method has been used in previous studies and found to be valid and reliable (Collins, 2013; Tesoro, 2012).

Non-parametric tests were used to test hypotheses, difference in accuracy of priority patient problem scores and cue recognition between control and intervention groups. Descriptive statistics were used to identify cue frequency, sample demographics, and survey responses. Post-test surveys were used to illicit student responses on the case study as a learning strategy, student confidence, prior experiences caring for patients with respiratory health problems, and perceptions related to use of the decision making prompts to guide thinking and implication of repeated practice instructions.

Results

Demographics

Descriptive statistics were used to describe demographic data by school and groups. Students' ages ranged from 18 to 54, N= 163, M = 26.8, SD = 6.74. Participants were women with 48% obtaining their 1st degree, 52% were enrolled as 2nd degree student and 69% spoke English as first language.

Hypotheses Testing

A related-samples Wilcoxon Signed Rank test showed there was no statistically significant differences between the pretest and the post-test for Nursing Diagnosis / Problem Label, Z = .671, p = .502, Etiologies, Z = .481, p = .630, and the Total Number of Cues correctly identified, Z = 1.940, p = .052. Because no significant differences were identified between groups, the researchers looked at the pretest control and pretest intervention groups to identify student clinical judgment for this case and related cue recognition.

Problem Label & Cues

Eighty-two percent of students identified that the patient was in respiratory distress (+3, +4, +5) with 28% of students identifying the most accurate problem (+5) and 22% of student either identified an incorrect problem or a non-priority problem (-1 or 0). The proportion of cues identified by pretest participants related to correct problem identified

included wheezing (85%), dyspnea (82%), rhonchi (73%), and non-productive cough (66%). Orthopnea was not recognized, only approximately 50% of students identified the abnormal respiratory rate of 26 as an important cue. This is consistent with findings in the literature that abnormal vital signs (VS) are not always assigned specific weighted response in relation to deterioration (Massey, 2016; Yang & Thompson, 2016).

Survey Responses

Post test surveys found that 86% of students in the intervention group felt that continued use of guided decision making prompts would improve their decision making.

Discussion

While there was no significant difference in clinical judgment in students who used Guided Decision Making Prompts, further research is needed to determine appropriate "dose" of repeated practice in use of this or similar interventions. Students liked having instructions to guide them to interpret the case study suggesting that models that guide decision making are desirable learning strategy.

Eighty two percent of students identified that the priority problem was respiratory in nature with 28% of them identifying the most accurate problem that would likely lead to the most appropriate intervention of administration of an ordered bronchodilator and assistance to expectorate retained secretions. These findings suggest that instruction on specificity of patient problem identification is needed.

Considering that patient safety hinges on nurses being able to recognize and respond to abnormal assessment finding and changes in condition, the finding that 28% of students did not identify a respiratory problem as a priority is alarming. These results suggest an opportunity for nursing education to provide students opportunities to identify these types of problems in the classroom and clinical rotations to further development of clinical reasoning skills.

Key words: clinical reasoning, DNT model, problem identification, cues

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Title:

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Keywords:

Clinical Reasoning, Nursing Education and Use of Case Study as Learning Strategy

References:

American Association of Colleges of Nursing. (2011). *The Essentials of Baccalaureate Education for Professional Nursing Practice*. Washington, DC: Author.

Benner, P., Hughes, R.G., & Sutphen, M. (2008). Clinical Reasoning, Decision making, and Action: Thinking Critically and Clinically. In: Hughes RG, editor. Patient Safety and Quality: An Evidence-Based Handbook for Nurses. Rockville (MD): Agency for Healthcare Research and Quality (US). Chapter 6. Available from: http://www.ncbi.nlm.nih.gov/books/NBK2643/

Chiffi, D. & Zanotti, R. (2015). Medical and nursing diagnoses: A critical comparison. *Journal of Evaluation in Clinical Practice, 21*, 1-6.

Codier, E. & Codier, D.D. (2017). Could emotional intelligence make patients safer? *American Journal of Nursing, 1117*(7), 58-62.

Collins, A. (2013). Effect of continuing nursing education on nurses' attitude toward and accuracy of nursing diagnosis. *International Journal of Nursing Knowledge*. *24*(3), 122-128.
Herdman, T. H., Kamitsuru, S., & North American Nursing Diagnosis Association. (2014). *NANDA International, Inc. Nursing diagnoses: Definitions and classification: 2015-2017*. Chichester UK: Wiley-Blackwell.
Institute of Medicine. (2000). *To Err Is Human: Building a Safer Health System.* Washington, D.C.: National Academy Press.
Institute of Medicine. (2011). The future of nursing: Leading change, advancing health. Washington, D.C.: National Academies Press.
James, J.T. (2013). A New, Evidence-based Estimate of Patient Harms Associated with Hospital Care. *Journal of Patient Safety,* 9, (3). 122-128.doi: 10.1097/PTS.0b013e3182948a69
Lasater, K., Nielsen, A. E., Stock, M. & Ostrogorosky, T.L. (2015). Evaluating the clinical judgement of newly hired staff nurses. *Journal of Continuing Education in Nursing, 46(12), 563-571.*
Lunney, M. (2001). *Critical Thinking & Nursing Diagnoses: Case Study and Analysis,* Philadelphia, PA: NANDA
Lunney, M. (2010). Use of critical thinking in the diagnostic process. *International Journal of Nursing Terminology and Classification, 21*(2), 82-88.
Massey, D., Chaboyer, W. & Anderson, V. (2016). What factors influence ward nurses' recognition of and response to patient deterioration? An integrative review of the literature. *Nursing Open,* doi: 10.1002/nop2.53. John Wiley & Sons.
Tanner, C. A. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. *Journal of Nursing Education, 45*(6), 204-211.
Tesoro, M.G. (2012). Effects of using developing nurses' thinking model on nursing students' diagnostic accuracy. *Journal of Nursing Education, 51*(8), 436-443.
Yang, H. & Thompson, C. A. (2016). Capturing judgement strategies in risk assessments with improved quality of clinical information: How nurses' strategies differ from the ecological model. *BMC medical informatics and decision making*, 1*6*(7). doi: 10.1186/s12911-016-0243-1

Abstract Summary:
A discussion of experimental, randomized study conducted with students in their second clinical semester in two (private & public) baccalaureate schools of nursing, using a pretest and posttest design to test the effect of teacher-neutral guided clinical reasoning prompts based on Developing Nurse's Thinking in written case studies.

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1. Learning strategy - Guided decision making instructions.
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