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THE CLINICAL JUDGMENT MEASUREMENT MODEL AND
IMPROVING STUDENT CLINICAL JUDGMENT

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Nurses are in great demand, and schools of nursing work to build nurses who are prepared to enter the nursing workforce as entry-level practitioners. One area in which nurses must have confidence is sound clinical judgment capabilities. Clients' needs in the healthcare arena are complex and multifaceted, and nurses must be able to make appropriate clinical judgment decisions based on a client’s presentation. Providing safe, adequate, effective care is the bottom line for nurses. Building clinical judgment skills in nursing education prepares nurses to make these critical decisions when they enter practice and continue to hone those skills as their practice progresses. Nursing education must provide opportunities throughout a nursing program that assist the student in strengthening clinical judgment capabilities. This paper explores how nursing programs support students' clinical judgment abilities.

Background

New graduate nurses (NGN) complete nursing education, take the National Council Licensure Examination (NCLEX), and then enter practice. Nursing education programs are designed to prepare NGNs to practice at an entry-level position. Dickison et al. (2019) recognize that NGNs do not make clinical judgments in the same manner as nurses who have been practicing for several years. Nurses develop clinical judgment skills over their years of practice. With this knowledge, nursing programs must incorporate learning activities that foster a student’s ability to improve clinical decision-making and clinical judgment skills. A student’s education provides the foundation for their nursing practice. Providing opportunities to build clinical judgment skills is essential in nursing education.

The National Council of State Boards of Nursing (NCSBN) developed the Clinical Judgment Measurement Model (CJMM) to capture entry-level practitioner's clinical judgment
abilities on the NCLEX (Nielsen et al., 2023; Poston et al., 2023). The CJMM is a five-layer model that considers “observation, cognitive processes, and environmental and individual contexts to address client needs and clinical decisions” (Calcagni et al., 2023, p. 176). The model provides a framework for constructing higher-order thinking (Dickison et al., 2019). The CJMM is now being incorporated into nursing programs to augment clinical judgment education for nursing students. Integrating the CJMM into nursing education heavily focuses on the third layer of the model. Layer three includes the cognitive operations of recognizing cues, analyzing cues, prioritizing hypotheses, generating solutions, taking actions, and evaluating outcomes (Dickison et al., 2019; NCSBN, 2019a).

**PICO Question**

A question that is brought forward in terms of improving nursing student clinical judgment and, therefore, nursing practice is as follows:

- Do structured clinical judgment activities based on the CJMM improve nursing students’ clinical judgment skills throughout a semester simulation and clinical rotation?

**Literature Search: Methods**

The Fogler Library online databases available through the University of Maine were utilized for this literature search. EBSCOhost was accessed, and CINAHL with full text was used in the search using clinical judgment, clinical judgment measurement model, CJMM, National Council of State Boards of Nursing, NCSBN, nursing student, nursing, and nursing education as keywords. Information was also sought from the NCSBN website, where the *Next Generation: NLEX News* is stored. Peer-reviewed, scholarly journals written in English in the United States were reviewed. The search included articles published in the last five years (2018-2023). Article reference lists were also reviewed, and additional articles were selected, read, and included.
Articles excluded from the search were not available in full-text online editions, discussed specific question item types, or other active learning activities. A review of 43 articles led to the inclusion of 13 articles that applied to the search terms and criteria.

**Critical Review of the Literature: Discussion**

**Clinical Judgment Measurement Model**

Clients present with the increasing complexity of the disease processes, and NGNs are hired into positions where caring for this type of patient is routine (Boev, 2023; Poston et al., 2023). Sound clinical judgment skills allow the nurse to notice subtle changes in a client’s situation, prevent complications, and quickly respond to troubling findings (Manetti, 2019). Foundational knowledge that fosters the development of clinical judgment leads to improved client care outcomes. Providing this underlying education in nursing education is of utmost importance. Preparing nursing students to practice safe and competent care is very important and starts with nursing programs (Harden & Prachnow, 2023). For example, if students do not have adequate knowledge to make sound clinical judgment decisions, there is the potential for errors, care delays, communication breakdown, and poor client outcomes (Calcagni et al., 2023). Nurse educators tasked with implementing clinical judgment exercises work to build students who can enter practice with abilities to provide safe care and prevent poor outcomes.

The CJMM contains five layers that provide a structure used to determine a nurse’s clinical judgment ability to continuously make client decisions (Dickison et al., 2019). Each layer can be reviewed individually and then as a whole. The layers build on a nurse’s skill to recognize and analyze cues and, therefore, be able to make decisions for client care. The multi-layer CJMM is complex (see Appendix). Layer 0 leads to the nurse observing client needs, and layer 1 (clinical judgment) falls between what can be observed in layer 0 and what is not
observed in layers 2 and 3. Layer 2 looks at cognitive operations of forming, refining, and evaluating hypotheses. Layer 3 further divides the cognitive processes in layer 2 into “independent, recursive operations necessary for the completion of each layer 2 operation (Dickison et al., 2019, p. 73). Layer 3 is helpful to educators when designing learning activities in a nursing program and includes the cognitive operations of recognizing cues, analyzing cues, prioritizing hypotheses, generating solutions, taking action, and evaluating outcomes. Students work through layer three to develop the clinical judgment skills needed in client care situations (Boev, 2023; Dickison et al., 2019; NCSBN et al., 2019a; Poston et al., 2023). Layer 4 helps to provide context to the client's situation and considers individual and environmental factors that may have an impact.

The six steps of layer three are where a great deal of work is done with students to build their clinical judgment skills. In step one, recognizing cues, nursing students gather relevant information from all possible sources (NCSBN, 2019b). In the second step, analyzing cues, the information gathered is linked to the client’s presentation. Step three, prioritizing hypotheses, gives the student the ability and time to decide on the priority problem and additional issues that need to be addressed. In step four, generating solutions, decisions are made on the desired outcome for the priority problem and choosing what interventions are appropriate to reach the desired outcome. Step five, take action, is when the student implements the interventions to address the priority problem. In step six, evaluate outcomes, students compare the actual outcome to what was expected. This evaluation includes deciding if a client's condition is improving or deteriorating, if an intervention was effective, if other interventions should be considered, or if additional information needs to be gathered (NCSBN, 2019b).
Using a framework such as the CJMM can give structure to nursing programs working to encompass clinical judgment learning activities (Harden & Prochnow, 2023). A framework can effectively prepare students with clinical judgment skills (Hensel & Billings, 2020). The CJMM tool can be incorporated into nursing education and was designed to measure students’ clinical judgment ability specific to the Next Generation NCLEX (Delle et al., 2023). When implementing the CJMM in the nursing curriculum, it is essential to note that students should be given enough time to complete the entire process in layer three; this becomes most effective when assisting students in learning clinical judgment (Boev, 2023; Hensel & Billings, 2020).

New Graduate Nurses (NGN)

The literature indicates that NGNs lack confidence in clinical judgment when they begin practice (Delle et al., 2023; Nielsen et al., 2023). There needs to be a greater connection between nursing education and nurse practice. The presence of a knowledge gap and a nurse’s ability and confidence have been identified as struggles when nurses enter the workforce (Nielsen et al., 2023). Because of this knowledge gap, nursing students do not possess the skills necessary to provide safe client care, and their poor decision-making leads to many errors seen in nursing practice (Hensel & Billings, 2020). Dickison et al. (2019) recognize that NGNs, early in their practice, do not make clinical judgment decisions in the same manner as their more experienced colleagues. With this understanding, evidence can be found that supports how nursing programs can incorporate clinical judgment exercises into the curriculum and across a nursing program.

By introducing learning activities across a nursing program designed to improve clinical judgment, NGNs would improve the skills brought to a client situation and positively impact client outcomes (Hensel & Billings, 2020). Activities that nurse educators can incorporate into their teaching strategies include case studies, simulation, concept mapping, active learning
activities, feedback, and reflection (Nielsen et al., 2023). Opportunities for this type of learning can be done in didactic, skills lab, simulation, and clinical settings. Active learning activities throughout a nursing program help apply concepts learned to real-life situations (Pence, 2023). This type of learning can help close the gap between nursing education and entry-level practice because these learned skills will be carried over into practice (Harden & Prochnow, 2023).

A study conducted by Robinson et al. (2023) worked with nursing students in their first nursing course. These researchers developed three case studies incorporating five steps of layer three of the CJMM; generating solutions was not introduced to this group of students because students needed to gain the knowledge to generate these solutions and interventions. The case studies involved vital signs, respiratory, and cardiovascular systems. Each case worked through the CJMM equally and was labeled to reflect the model. After each case was completed, students answered reflection questions. What researchers found were two main themes. The first theme was that case studies were helpful for success in nursing school. The second theme was that students perceived the case studies as helpful when considering future practice. Case studies improved the student's mastery of content, ability to connect the information with the client’s presentation, and feelings of preparation for clinical settings and practice. Within the CJMM confines, students could recognize and analyze data and make client decisions. The study found that first-semester students have foundational knowledge to base their clinical reasoning and judgment. Students felt that the use of case studies assisted them in gaining self-confidence. As noted by the emerging themes, this study also supported case study activities to prepare students to enter the workforce as entry-level nurses. Robinson et al. (2023) suggest that the CJMM needs continued investigation into how it can enhance students’ clinical reasoning and judgment abilities through case studies.
Impact of Simulation on Clinical Judgment

Simulation is a great setting to introduce ways to build clinical judgment. Presenting clinical judgment exercises in simulation early in a nursing program benefits because clinical judgment is a concept built over time (Boev, 2023). As students progress through a program, simulation scenarios can become more complex and provide additional clinical judgment skill improvement. An introduction to clinical judgment concepts early in a program offers opportunities to practice a skill. It can lead to the increasing complexity of a situation where students must respond and provide additional supportive care. Robinson et al. (2024) describe the necessity of introducing clinical reasoning and clinical judgment early in nursing programs to provide students with as many opportunities as possible to practice the skill. It is also noted that working with peers to discuss client scenarios, potential interventions, and outcomes fosters teamwork and the building of clinical judgment abilities (Pence, 2023).

An article by Boev (2023) examines how to incorporate the CJMM into a simulation in a meaningful way. Boev suggests that all students starting with the first-semester course should be allowed to practice clinical judgment skills. It is known that clinical judgment skills develop over time and with practice. Simulation labs offer a safe place for students to work on these skills. An example from this article describes identifying anatomical landmarks on a mannikin (low-fidelity simulation), then moving to insert an intravenous (IV) catheter based on anatomical landmarks (medium-fidelity simulation), to a high-fidelity simulation scenario in which the student administers IV medication (Boev, 2023). In addition to this example, descriptions of how to implement each step of layer three of the CJMM are explained through a case or clinical scenario in which students have to identify relevant information, interpret that information and how it applies to the case presentation, develop the priority problem, decide what is expected and what
interventions to implement, implementing those interventions to address the priority problem, complete reassessments and evaluate the client’s condition. Completing a debrief is also necessary because it allows students to reflect on their decisions and receive feedback from faculty so clinical judgment skills can be nurtured. During this debrief a guided session that works through the steps of layer three of the CJMM should be completed. Boev (2023) proposes that nursing programs must ensure that clinical judgment is taught and reinforced throughout a program to produce nurses who can practice safe and competent care. Simulation is a way that can be done.

A study done by Delle et al. (2023) looked at how collective and individual competence and individual perceptions affected clinical judgment abilities in senior baccalaureate-level nursing students. The team utilized the six steps of layer three of the CJMM and level four's individual and environmental factors to assess this question. This study was a cross-sectional design. A survey was conducted to determine individual confidence and perceptions related to clinical judgment. To gather information related to collective competence, researchers reviewed recorded simulation experiences of teams of students for elements that impacted team dynamics and what behaviors were expected based on the simulation. Students were prepared in a 20-minute session before the simulation experience and then given one hour to complete the simulation. Afterward, students participated in a one-hour debriefing session and completed an online survey. Faculty were also trained in the project's objectives to facilitate student evaluation. The simulation used closed-loop communication and role identification to assist in student recognition of client presentation declining, discussion of concerns, and ways to improve safe client care. Lack of evidence-based resource use was noted as a barrier that led to inaccuracy or inefficient action taken by the groups of students. Students' lack of recognition of verbal and
nonverbal subtleties that led to client deterioration reinforced the idea that a lack of knowledge and experience profoundly impacts team or individual performance. Opportunities to practice and further develop these skills are necessary for students to recognize subtle changes. A lack of confidence or knowledge leads to missed opportunities for competence and may result in the student’s failure to rescue. Students reported that working as part of a team improved their learning, and working in simulation settings improved their confidence. Delle et al. (2023) concluded that nursing program curricula should be thoughtfully and purposefully designed to teach and assess clinical judgment related to practice. Delle et al. (2023) also suggested that further research should be conducted on how teamwork fosters collective competence and nursing students' clinical judgment.

**Implications for Nurse Educators**

**Education**

Nurses prepared in nursing education can assist nursing students in developing the skills and knowledge needed to enter practice as NGNs. One way to tackle this is by working with students to improve their clinical judgment skills using the CJMM. Improvements to nursing programs that involve activities designed to build on student performance in clinical judgment are necessary (Hensel & Billings, 2020). Supporting student clinical judgment using the CJMM will benefit the students’ ability to practice safe and effective nursing care and positively impact client outcomes. It will also benefit program outcomes by demonstrating that students are prepared for entry-level practice. The CJMM can be incorporated into didactic learning, lab and simulation scenarios, and clinical environments. Utilizing this model in all aspects of nursing education will allow faculty to develop robust courses to meet the learning needs of students.
In didactic teaching and learning, theory information is often presented to nursing students through lecture-type classes. Presenting information through lectures provides the information to the students but does not involve active learning. Information is given to students through verbal communication on the faculty member's part. Students may be encouraged to ask questions but are expected to absorb the information. In an active learning environment, students may have some information presented in a lecture format but are asked to work with the information differently. Active learning involves student engagement with the material and allows students to develop “foundational knowledge, cognitive processes, and reflection to promote clinical judgment” (Delle et al., 2023, p. 78). Engaging in learning allows students to deepen their understanding of the concept and build different skills that lead to clinical judgment.

The CJMM is based on this type of learning and offers faculty instructors a framework for designing classroom activities to meet these learning needs.

Skills labs and simulation scenarios are other places where clinical judgment skills can be applied. This environment offers a safe space for students to practice skills that may still be unfamiliar. Having a safe practice environment fosters student understanding and growth of the skills necessary to carry with them into clinical settings. Moving skills beyond active learning activities in the classroom to a space where students can utilize the skills with client scenarios builds upon the student's knowledge and offers opportunities to question and refine their clinical judgment (Pence, 2023). Making clinical judgment decisions for a client based on the data that is presented and collected assists the student in determining what the following action should be. Having sound clinical judgment gives the student the ability to practice safe care. Building this skill in lab and simulation sets the student up for success when they arrive in the clinical setting.
Clinical environments offer yet another opportunity for students to practice their clinical reasoning and judgment skills. In the clinical environment, students work directly with clients and meet their needs. This space allows for real-life scenarios that students must recognize, make a plan, and implement that plan (Pence, 2023). Students exposed to clinical judgment situations should be equipped to address the needs of their clients when they arise. Clinical instructors are also available to help students through this process.

Supporting students' learning is an involved process for the nurse educator. Building clinical judgment is not a practice that just happens; it is a skill that needs to be taught. However, with proper education and guidance, students should be able to build the foundation for their clinical judgment skills throughout their nursing program and carry those experiences with them when they enter practice. The nurse educator begins this process as they work with the nursing student population. Nurses are known as lifelong learners. Nurses in education should have an open view of the information presented and want to update their practice throughout their teaching journey to prepare students to be NGNs in the best way possible.

Practice

Another area in which nurse educators or nurses in advanced roles can make an impact related to NGN clinical judgment is in practice. Nurses build clinical judgment through experiential learning. The foundation for a nurse’s clinical judgment begins in nursing school and then is carried through their nursing practice. When the NGN begins practicing, they look to more experienced nurses for guidance (Dickison, 2019; Manetti, 2019). The nurse in advanced roles is in a position of more experience and should be available to support NGNs when decisions are made or when reflection surrounding a decision is needed. Nurses in advanced roles can offer their knowledge and skills to support the NGN. Building those relationships in the
practice arena helps the NGN become comfortable over time and recognize nurses who have their best interests in mind. Knowing who to turn to for support can make the transition from education to practice easier. In addition to working directly with NGNs, nurses in advanced roles can develop employer programs to aid NGNs in transitioning to the workforce (Calcagni et al., 2023).

**Research**

Another area of interest for a nurse educator or nurse in advanced roles, as it relates to improving a nurse’s clinical judgment skill, is research. Research in this area is ongoing. Research is necessary to develop best practices. The CJMM is a relatively new model and is the basis for the change of question types on the NCLEX. Continued research into designing and the efficacy of curriculum activities based on the CJMM and ways to improve the clinical judgment of entry-level nurses is a must (Calcagni et al., 2023; Nielsen et al., 2023). Continued research may point to gaps in literature and gaps in nursing curriculums. Identifying where the literature is heading is vital to ensure nursing schools stay current and relevant with their teaching information. Nursing programs are strapped for time and cover many nursing topic concepts, but due to time constraints, some curriculum areas are covered more in-depth than others. With this information, it will be necessary to tease out what the NGN must know to practice safely and effectively (Manetti, 2019). As a generalist nurse entering practice, the wealth of knowledge is profound. How do nurse educators assist students and NGNs in establishing routines, activities, and practices that foster clinical judgment? The short answer is that nurse educators never stop learning and investigating new information.
Summary

Clinical judgment is essential for entry-level nurses to possess when entering the workforce. Nurse educators are in a position to foster nursing students' abilities to build clinical judgment skills and offer opportunities for students to develop clinical judgment over time. Designing curriculum activities focused on clinical judgment should be incorporated into nursing programs. Nurses entering practice must have a solid foundation to make clinical judgment decisions when caring for clients. The decisions a nurse makes regarding the care of a client can have positive or negative impacts. Nursing programs aim to educate nursing students to have sound clinical judgment. Incorporating the CJMM into a nursing program is one way for nurse educators to develop activities surrounding nursing students' clinical judgment skills. The CJMM can be utilized in all areas of nursing education, with the goal being to build practice-ready nurses.
References


https://www.nclex.com/clinical-judgment-measurement-model.page


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Appendix

Clinical Judgment Measurement Model