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Development of Nursing Clinical Judgment Using Lasater's Clinical Judgment Rubric

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DEVELOPMENT OF NURSING CLINICAL JUDGMENT USING LASATER'S CLINICAL JUDGMENT RUBRIC

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ABSTRACT

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Nursing clinical judgment is evident when multiple complex decisions are made quickly resulting in positive patient health outcomes (Lasater, 2007; Tanner, 2006). Patient safety is dependent on effective nursing clinical judgment but this skill has been declining among new graduate nurses, resulting in only 9% demonstrating entry-level competency in 2020 (Kavanagh & Sharpnack, 2021). To mitigate this decline, nurse educators need to develop methods to teach this skill with increased effectiveness.

Tanner's (2006) clinical judgment model described four cognitions of clinical judgment. Lasater's (2007) clinical judgment rubric (LCJR) was developed to build on this model and provide leveled language in 11 dimensions of clinical judgment. The rubric was designed to be used by clinical instructors to evaluate and provide feedback to their prelicensure nursing students about their clinical judgment during simulation (Lasater, 2007).

The nursing literature provided many examples of the use of the LCJR in various ways to evaluate and teach clinical judgment (e.g., Bussard, 2018; Fawaz & Hamdan-Mansour, 2016; Hines & Wood, 2016). Among specific pedagogies, the literature about how to teach and measure clinical judgment related to in-person clinical was limited. To address this gap, this study tested direct instruction about applying the LCJR's clinical judgment behaviors to in-person clinical experiences.

According to Barbash (2021), direct instruction was developed by Englemann and colleagues who emphasized well-designed curricula in which students were led in a stepwise fashion using clear, applicable examples and explanations to the goal of mastery (Stockard et al., 2018). The direct instruction designed for this study explained and illustrated the clinical judgment language in the LCJR. An example with a fictional nursing student was included with the direct instruction to complement the LCJR and facilitate students' demonstration of behaviors indicative of clinical judgment. The following research question guided this study:

Q1 Among prelicensure nursing students, how did direct instruction about how the Lasater's clinical judgment rubric (LCJR) could be applied to their in-person clinical experiences compared with no direct instruction affect their clinical judgment ratings from the end of first semester to the end of second semester?

A convenience sample of 68 prelicensure nursing students participated in a two-group, quasi-experimental study. The control group data were collected first from students who received the traditional program of study. The intervention group was recruited later to minimize a potential cross-over effect; this group received direct instruction during semester one and/or semester two. Ratings from observations of each participant during simulation at the end of semester one and semester two were analyzed using SPSS. The Wilcoxon paired signed rank test was used to compare the ratings within the control and intervention groups and the Mann-Whitney U test was used to compare the ratings between the control and intervention groups.

The final control group (n = 17) showed the expected increase in clinical judgment ratings from semester one to semester two (Manetti, 2018). In contrast, the intervention group (n = 10) did not show an increase in clinical judgment ratings from semester one to semester two. As a result, the hypothesis that there would be a greater increase in clinical judgment ratings for the intervention group than the control group was not supported.

This research contributed a clinical judgment direct instruction program that was aligned with assessment using the LCJR to the nursing literature. Further, processes for establishing interrater reliability with the LCJR supported the use of this as a valid assessment strategy. Direct instruction was easily integrated into clinical teaching practices. Lower than projected participant recruitment and high attrition limited the validity of the findings of this study. Further studies are needed on direct instruction and other teaching strategies that might help prelicensure nursing students develop their clinical judgment skills so their transition to practice after graduation could be facilitated and the quality of patient care could be maximized.

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CHAPTER I

INTRODUCTION

Registered nurses (RNs) make numerous decisions in every hour of patient care including weighing physiological responses to treatment, prioritizing care among multiple acute patient cases, and providing education to families to make informed decisions for their children or other dependent loved ones. Each of these decisions requires the nurse to consider various contextual factors to provide effective care. According to Tanner (2006), when a nurse is making multiple, complex decisions quickly while having to decide between competing priorities, it is a matter of clinical judgment.

Effective clinical judgment is a vital characteristic of nurses' thinking and actions while providing patient care (Betts et al., 2019; Dickison et al., 2019). Clinical judgment is a combination of critical thinking and decision-making that considers nursing knowledge and the context of the situation, leading to appropriate action and follow-up evaluation (Betts et al., 2019; Tanner, 2006). Effective clinical judgment has several components including recognizing important details, interpreting what is being observed, and responding appropriately (Tanner, 2006). Tanner's (2006) clinical judgment model has been used to illuminate the cognitions necessary to display clinical judgment including noticing, interpreting, responding, and reflecting (Bussard, 2015; Gubrud-Howe, 2008; Hines & Wood, 2016; Rose, 2012).

Lasater (2007) built upon Tanner's (2006) work by developing the Lasater's clinical judgment rubric (LCJR) to measure clinical judgment among prelicensure nursing students during simulation. The LCJR has been validated numerous times as a measure of clinical

judgment among nursing students and nurses in practice (Adamson et al., 2012; Call, 2017; Chmil, 2014; McCormick, 2014; Reid, 2016). The LCJR explicated Tanner's four cognitions by describing them in 11 dimensions of three to four expected behaviors for each cognition. These behaviors are described in rubric format and ordered as beginning, developing, accomplished, and exemplary (Lasater, 2007). The rubric can be used quantitatively by assigning values to each of the levels from one for beginning to four for exemplary. This results in the ability to provide a total numerical rating to the students' simulation performances that ranges from 11 to 44 (Bussard, 2018; Fawaz & Hamdan-Mansour, 2016; Hines & Wood, 2016).

Nurse educators have been conducting research to better understand how to help prelicensure students develop their clinical judgment including studies about how to measure clinical judgment and how to teach this skill in various ways. Amid this research, objective quantitative measures of clinical judgment connected to specific teaching strategies for the in-person clinical setting were limited. One teaching strategy that might be beneficial is direct instruction of the dimensions of clinical judgment by highlighting the range of behaviors that demonstrate clinical judgment development during in-person clinical.

Direct instruction as a pedagogical method has been used for several decades. Seminal work was done in the 1960s by Engelmann and colleagues (Barbash, 2021). The assumption underlying direct instruction is all people can learn when instruction is well-designed. This design is based on specific instruction students have already mastered. New material is taught in a clear, straightforward way including carefully chosen examples and sequenced to learn in a stepwise fashion (Stockard et al., 2018). Foo et al. (2017) found a significant increase in clinical judgment scores among 39 Malaysian registered nurses in two district hospitals after a direct instruction educational intervention from preintervention to postintervention (M = 24.15 [SD =

6.92], $M = 47.38$ [$SD = 7.20$], $p < .05$, respectively) compared to the control group of 41 nurses from pretest to posttest ($M = 23.80$ [$SD = 5.77$], $M = 26.50$ [$SD = 6.53$]).

The Tanner (2006) clinical judgment model, the theoretical framework on which this research was based, and the LCJR (Lasater, 2007), fit the description of the well-designed instruction underpinning the direct instruction method. Clinical judgment is best developed based on nurses' experiences and knowledge from previous instruction (Tanner, 2006). The LCJR, therefore, could be used to guide the prelicensure nursing student toward improved clinical judgment through clear, stepwise descriptions of the dimensions of clinical judgment (Lasater, 2011).

Theoretical Framework

Tanner's clinical judgment model (2006) was used in this study as the theoretical framework. Her framework describes four cognitions of clinical judgment including noticing, interpreting, responding, and reflecting. *Noticing* starts with what the nurse brings to the situation in expectations borne of theoretical knowledge and previous experiences such as the nurse's background with the current patient and similar patients. *Interpreting* is the next step and is approached in different ways depending on the nurse's noticing. If the nurse has recognized a pattern, the nurse would likely move directly into *responding* by taking action the nurse thinks is best. If the nurse does not recognize a pattern, the nurse would likely form a hypothesis and then respond with actions that would confirm or disconfirm the hypothesis. According to Tanner, after responding, the nurse would then move on to the *reflecting* step. Reflection happens at two levels. The first level is *reflection-in-action*, which might be largely subconscious as the nurse evaluates the patient to see that the action the nurse took was appropriate and effective. The other level of reflection, *reflection-on-action*, might also be subconscious if the nurse has taken

appropriate action and this experience has now been folded into the patterns of clinical situations in the nurse's mind. This second level of reflection would be more intentional if there has been a breakdown in clinical judgment and some sort of untoward result has occurred. Reflection-on-action also occurs as the nurse considers how the nurse's actions connect to the clinical outcomes, and whether the result was positive or negative. Clinical judgment is the result of this decision-making process and experience continues to develop the skill further.

Tanner's (2006) model has been used to illustrate the development of clinical judgment in various settings (Bussard, 2015; Gubrud-Howe, 2008; Hines & Wood, 2016; Rose, 2012). It is often used in tandem with the LCJR to measure the development of clinical judgment among nursing students (Adamson et al., 2012; Call, 2017; Chmil, 2014; McCormick, 2014; Reid, 2016). The synergy of this pairing is the theoretical framework is clearly explained in Tanner's work while the measurement of clinical judgment is clearly described by Lasater (2007).

The LCJR (Lasater, 2007) encompasses measures of effectiveness for each part of Tanner's (2006) model. For example, the LCJR begins with "Effective Noticing," which is divided into categories of "Focused observation," "Recognizing deviations from expected patterns" and "Information seeking" (Lasater, 2007, p. 500). Descriptions of beginner to exemplary are then listed. The LCJR continues with dimensions for "Interpreting," "Responding," and "Reflecting" containing corresponding leveled descriptions of effectiveness in each dimension (Lasater, 2007, p. 500).

Statement of the Problem

Nursing students are graduating from nursing school, taking the National Council Licensure Examination for Registered Nurses, and starting their first jobs without basic competency in clinical judgment. Kavanagh and Sharpnack (2021) reported that the percentage

of new hires demonstrating entry-level competence in patient safety has been declining. From 2016-2020, only 14% of new hires demonstrated this competency (n = 5,000) and in 2020, the percentage was only 9% (n = 1,222; sites = 200). Additionally, the National Council of State Boards of Nursing's (NCSBN, 2020) most recent practice analysis revealed that (a) 50% of new graduate nurses were involved in practice errors, (b) only 20% of employers rated their new graduate nurse hires as satisfactory or better in the provision of safe patient care, and (c) 65% of the errors were directly related to inadequate clinical judgment. Inadequate clinical judgment among new nurse graduates places patient safety at great risk.

Statement of the Purpose

The purpose of this study was to test whether direct instruction for prelicensure nursing students about behaviors that demonstrate clinical judgment and encouragement to intentionally practice these behaviors during in-person clinical promoted the development of clinical judgment. The LCJR (Lasater, 2007) scores measured during simulation were compared between prelicensure students who received direct instruction (n = 12) and the control group of those who did not (n = 18).

Research Question and Hypotheses

Research Question

Q1 Among prelicensure nursing students, how did direct instruction about how the Lasater's clinical judgment rubric (LCJR) could be applied to their in-person clinical experiences compared with no direct instruction affect their clinical judgment ratings from the end of first semester to the end of second semester?

Hypotheses

H_{01} There will be no significant difference in the clinical judgment ratings on the LCJR from one semester to the next for prelicensure students who have received direct instruction as compared to students who have not received direct instruction.

H_A There will be a significantly greater increase in clinical judgment ratings on the LCJR from one semester to the next for prelicensure students who have received direct instruction about how the LCJR can be applied to their in-person clinical experiences as compared to the ratings for those students who have not received direct instruction.

Significance of the Study

Clinical judgment is the first of the top 10 high priority skills required of a nurse by the NCSBN (2018). The NCSBN performs a practice analysis of registered nurses every three years to identify the knowledge, skills, and abilities needed for newly graduated registered nurses. In the most recent analysis, the NCSBN (2020) found that patients had more complex needs and tended to be of higher acuity than in the last analysis. They also found that nurses were being relied upon with greater frequency for more complex decision-making than before (NCSBN, 2020). Research indicated that students continue to emerge from nursing school without the level of clinical judgment necessary to begin safe practice as new graduate nurses (Billings, 2019; Dickison et al., 2019; Fitzpatrick, 2017).

Definition of Terms

Clinical Judgment. "An interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (Tanner, 2006, p. 204).

Direct Instruction. Instruction that is designed to be based on previously mastered material, laid out in a straightforward manner using carefully selected examples, and approached in a stepwise fashion (Stockard et al., 2018).

Summary

Clinical judgment development among prelicensure nursing students needs to be addressed intentionally because patient safety is at risk. Pedagogical methods that promote clinical judgment development were limited in the nursing literature. Tanner's (2006) clinical judgment model provided the theoretical framework and the LCJR (Lasater, 2007) provided straightforward, stepwise descriptions needed to guide direct instruction to prelicensure nursing students for this study. The research was hypothesized to result in evidence for the use of direct instruction using the LCJR for prelicensure nursing students' development of clinical judgment. This gap in the literature is made clear in the following literature review.

CHAPTER II

REVIEW OF THE LITERATURE

Chapter I presented an introduction and the background for this study. An overview of the theoretical perspective that served as the basis for the study was introduced, the research question and hypotheses were presented, and key terms were defined. The purpose of this study was to test whether direct instruction for prelicensure nursing students about behaviors that demonstrate clinical judgment and encouragement to intentionally practice these behaviors during in-person clinical promoted the development of clinical judgment. In this chapter, a detailed literature review is presented that supports the need for this study.

Literature Review

Registered nurses have the responsibility to strive for patient safety as they provide competent, compassionate care. Competency in patient safety is predicated upon nurses possessing clinical judgment. However, Kavanagh and Sharpnack (2021) reported that clinical judgment has been declining among new graduate nurses with the most recent report showing that in 2020, the percentage of hew hires demonstrating entry-level competence was only 9% (*n* = 1,222; sites = 200).

Nurse educators have been working to confront this problem with studies about how to measure clinical judgment and how to teach this skill in various ways. Amid this research, objective quantitative measures of clinical judgment connected to specific teaching strategies for the in-person clinical setting were limited. This research project sought to fill this gap in nursing knowledge by investigating the following research question:

Q1 Among prelicensure nursing students, how does direct instruction about how the Lasater's clinical judgment rubric (LCJR) can be applied to their in-person clinical experiences compared with no direct instruction affect their clinical judgment ratings from the end of first semester to the end of second semester?

This literature review was undertaken using the following MeSH subject headings used as search terms in PubMed: "students, nursing," "clinical," and "decision-making" since "clinical judgment" had no comparable subject headings in PubMed. After filtering for the last 10 years and English language, 728 articles were listed. Using CINAHL Plus with Full Text and ProQuest Dissertations & Theses Global, "nurs*," clinical judgment," and "student" were searched in combination. This search originally produced 268 articles when limited to English and the last 10 years. Articles were then vetted by title and abstract to include those addressing educational methods for clinical judgment development or clinical judgment measurement tools used among pre-licensure nursing students. From this process, 114 articles were accessed and reviewed. By excluding those not focused on clinical judgment or its development, a final sample of 67 articles was a basis for this literature review.

The final sample of articles included four seminal articles that described important definitions and model development from 2000 (Scheffer & Rubenfeld), 2006 (Tanner), 2007 (Lasater), and 2011 (Lasater). All remaining articles (n = 63) were published in the last decade. The sample included three systematic or integrative literature reviews (Cappelletti et al., 2014; Carvalhoa et al., 2017; Fisher & King, 2013), seven teaching strategy development and descriptions (Billings, 2019; Cason & Reibel, 2021; Gonzalez, 2018; Gonzalez et al., 2021; Jessee, 2018; Timbrell, 2017; Want, 2022), one analysis of multiple case studies (Nielsen, 2016), and five qualitative studies (Barner et al., 2023; Glynn, 2012; Hunter & Arthur, 2016; Pardue et al., 2023; Smith, 2021). The 46 remaining articles reported quantitative studies using descriptive and experimental designs. Most of the research was of high quality as evidenced by moderate to

large sample sizes, use of established models and instruments, and measurements by raters as more common than by self-assessment or reports.

Clinical Judgment Defined

Several related terms were often used interchangeably including critical thinking, clinical reasoning, and clinical judgment. When Tanner (2006) wrote her seminal synthesis from over 200 studies about clinical judgment that served as the foundation for her clinical judgment model, she differentiated these terms, making clear that critical thinking and clinical reasoning are the basis for clinical judgment. Critical thinking refers to the use of cognitive skills such as "analyzing, applying standards, discriminating, information seeking, logical reasoning, predicting, and transforming knowledge" (Scheffer & Rubenfeld, 2000, p. 352). Clinical reasoning is when a nurse applies critical thinking to clinical situations. When the nurse decides about the action to take or not take, the nurse has exercised clinical judgment (Tanner, 2006). Tanner defined clinical judgment as "an interpretation or conclusion about a patient's needs, concerns, or health problems, and/or the decision to take action (or not), use or modify standard approaches, or improvise new ones as deemed appropriate by the patient's response" (p. 204).

The field of clinical judgment has continued to develop since Tanner's (2006) work. For example, recently, the NCSBN (2019) weighed in concerning clinical judgment development and offered a definition:

> The observed outcome of critical thinking and decision making. It is an iterative process using nursing knowledge to observe and assess presenting situations, identify a prioritized client concern and generate the best possible evidence-based solutions in order to deliver safe client care. (p. 1)

The definitions for clinical judgment are similar in that clinical judgment is based on certain thinking processes that culminate in a decision and action followed by evaluation of outcomes and re-thinking if necessary. The current study was based on Tanner's (2006) clinical judgment model. Also, the instrument for measuring clinical judgment used in this study was based on the LCJR (Lasater, 2007). Therefore, for clarity and ease of use, Tanner's definition of clinical judgment was used.

Educational Methods to Help Students Develop Clinical Judgment

Tanner (2006) based her clinical judgment model on five conclusions she made from her review of the literature. First, clinical judgment is based more on the nurses' background and experience than on the objective data of a particular situation. Second, clinical judgments are partially based on the nurses' knowledge of their patients' trends of responses. Third, clinical judgments are influenced by the context of the situation including the nursing culture of the healthcare institution. Fourth, individual nurses use various patterns of reasoning to arrive at clinical judgments. And fifth, improvement in clinical judgment is affected by reflection, often resulting from incidences of ineffective clinical judgment.

In reviewing the updated literature about clinical judgment from 2006 to 2014, Cappelletti et al. (2014) concluded there was a sixth influence on clinical judgment: educational strategies to which the nurse was exposed. Cappelletti and colleagues included 23 research studies about educational methods to increase clinical judgment development and found no conclusive evidence for a particular pedagogical strategy. The current literature review here gives evidence that Cappelletti et al.'s conclusion continues to be true.

It has become increasingly clear in the last several years, as evidenced by Kavanagh and Sharpnack (2021), that clinical judgment for patient safety competence is declining. Therefore,

the NCSBN (2019) developed a model in which new item types could be written designed to assess clinical judgment for inclusion in the National Council Licensure Examination, which began in 2023. In the arena of educational methods, Tanner's (2006) model and its elements of noticing, interpreting, responding, and reflecting have provided a framework for many studies of clinical judgment development among nursing students. These methods have guided classroom, clinical, and simulation experiences. Each of these types of educational experiences is reviewed in the following sections.

Classroom Experiences

Classroom-based methods for clinical judgment development provide opportunities for students to practice thinking habits before applying them to in-person clinical situations. Findings from a systematic review of the literature ($n = 6$) found that problem-based learning increased critical thinking scores (Carvalhoa et al., 2017). Although critical thinking is not synonymous with clinical judgment, it is foundational to effective clinical judgment (Tanner, 2006).

Further support for the notion that problem-based learning would strengthen clinical judgment was found in a study by Alfayoumi (2019) who implemented a concept-based curriculum and concept mapping activities for second year Iranian nursing students ($n = 40$). Clinical judgment significantly increased during in-person clinical as measured by self-ratings ($p = .005$) and by clinical instructors' observations ($p = .032$). Concept mapping activities were also added for two other groups of students, yielding positive results in clinical judgment (Kaddoura et al., 2016; Kinyon et al., 2021). In the research by Kaddoura et al. (2016), 106 junior prelicensure students prepared 12 concept maps during their medical-surgical course, receiving feedback from clinical instructors. At the end of the course, they self-evaluated using the clinical

judgement self-evaluation tool based on the LCJR (Lasater, 2007) and over 80% of students rated themselves at the excellent level in each of the four cognitions of clinical judgment. After Kinyon et al. (2021) re-focused the curriculum in a health assessment course and included regular concept mapping, the number of students to meet or exceed standards related to skills performance and application of clinical judgment after assessments increased from 67% to 100%.

Exploration for classroom-based clinical judgment development led one nursing faculty member to bring a recording of a high-fidelity simulation into her course (Klenke-Borgmann, 2020). Student volunteers were recorded performing the simulation and then the recording was viewed during the next class session. Students debriefed in small groups followed by a facilitated debrief with the faculty member as a whole group following the LCJR (Klenke-Borgmann, 2020).

Other methods being used in a classroom setting have included web-based situational learning, structured reflective writing, and instructional storytelling. The web-based situational learning was contrasted with traditional teaching strategies among nursing students ($n = 101$) and the traditionally taught had significantly higher internship scores and clinical evaluations based on the LCJR (Lasater, 2007) than their web-based counterparts ($p < .05$; H.-M. Chen et al., 2021). The authors suggested that although participants in the traditional teaching strategies group had greater increases in measures of clinical judgment, the teaching strategy only accounted for 28% of the variance. Therefore, the authors concluded that clinical judgment development was based on more factors than teaching strategy alone. In another study of 15 traditional Bachelor of Science in Nursing (BSN) students, structured reflective writing based on Tanner's clinical judgment model revealed students perceived their clinical judgment and clinical

confidence improved through the reflection activities (Glynn, 2012). Lastly, Timbrell (2017) developed a method of telling a short clinical story and then asking questions to students using the concepts from Tanner's (2006) clinical judgment model and found it yielded greater depth in clinical judgment discussions.

One important conclusion made by a few authors was that instruction in clinical judgment in nursing programs yielded the greatest improvement when a clinical judgment model was selected and followed throughout the program of study. This was important for consistency of language and instruction from course to course. When all faculty and clinical instructors were trained in use of the model, this consistency could be achieved (Jessee et al., 2023; Nielsen et al., 2023; Sommer et al., 2021).

Clinical Experiences

Nursing programs have a variety of options available for providing undergraduate students with face-to-face clinical experiences and simulated clinical experiences. Each of these clinical experiences requires a different skill set of teaching strategies; however, all are aimed at increasing clinical competence and facilitating the development of clinical judgment so graduates of nursing programs are ready to transition to practice. Evidence supporting the use of strategies to increase clinical judgement is detailed in the sections that follow as organized by the type of clinical experience.

Virtual Simulations

Screen-based individual virtual simulations (Vsims) have been used for teaching clinical judgment. Fogg et al. (2020) found clinical judgment increased as measured by the number of attempts that it took students to meet competency levels in Vsims ($p = .000$). Further, self-assessments with the LCJR showed significant improvement in scores ($p = .000$) among BSN senior level students ($n = 234$). In another study based on Vsims, the senior level BSN students

(n = 42) self-assessed their clinical judgment skills using the Skalsky Clinical Judgment Scale. Findings indicated a significant increase in clinical judgment from pre-intervention to post-intervention (M = 32.17 [SD = 4.178], M = 34.12 [SD = 4.992], $p < .007$, respectively) (Kool, 2022).

Pardue et al. (2023) performed a qualitative research study with 19 nursing students after a Vsim experience. Four open-ended questions were asked to the focus groups to illicit discussion about their thinking processes during the simulation. Researchers analyzed the responses and found evidence of the four cognitions of clinical judgment described within the LCJR for Vsim. They concluded that more research along these lines could provide further support for the use of Vsim for the development of clinical judgment in prelicensure nursing students.

A systematic review of 14 research studies comparing Vsim with high fidelity simulation (HFS) on clinical judgment yielded mixed results. This gives evidence that more research could be done to determine which simulation method is more efficient for clinical judgment development (Martin & Tyndall, 2022). As an aside, these simulation methods vary widely in their cost with Vsim generally being much lower. Therefore, it would be important to perform further research in this area from a cost-effectiveness standpoint also.

Gaming

Gaming is being explored as a possible medium for increasing clinical judgment among prelicensure nursing students. Five students were in an exploratory study in which they participated in an escape room program designed to guide them to problem solve their way from room to room to care for a case-based patient. Each was evaluated for clinical judgment by faculty observers using the LCJR. Their findings showed clinical judgment ratings from 18.33 to

32.33 out of 44 showing that clinical judgment behaviors could be assessed during this activity. The authors suggested that more quantitative research studies could provide additional evidence for clinical judgment development through this medium (Barner et al., 2023).

High Fidelity Simulation

High fidelity simulation (HFS) has been studied as a way to provide students with opportunities to practice clinical judgment skills in a safe environment. An integrative review by Fisher and King (2013) found 8 of 18 studies correlated HFS with increased critical thinking, clinical reasoning, and/or clinical judgment skills. Fawaz and Hamdan-Mansour (2016) corroborated this finding with their study of first-year nursing students (n = 56) in Lebanon. In this study, the intervention group (IG) experienced HFS of heart failure content while the control group (CG) experienced classroom content for heart failure. All the participants then attended an in-person clinical followed by an end-of-semester HFS during which they were evaluated with the LCJR. A significant increase in clinical judgment was found in the HFS group compared to the CG (t = 5.23, p < .001, M = 29.5 [SD = 5.4], M = 22.1 [SD = 5.7], respectively).

Klenke-Borgmann et al. (2021) studied the effect of multiple exposures to HFS for clinical judgment development. They found increased clinical judgment measured by the LCJR among third-year nursing students (n = 45) in their pathophysiology course after three simulations (p < .001). Coram (2016) reported on another opportunity to increase clinical judgment during HFS by introducing expert role modeling to the IG before they participated in the HFS. Among the junior level BSN students (n = 43), evaluations on the LCJR by faculty showed significantly greater scores in clinical judgment for the IG over their CG counterparts (t = -5.69, p = .000, M = 29.32 [SD = 3.65], M = 21.45 [SD = 5.31], respectively).

Ayed et al. (2022) found increased clinical judgment among baccalaureate nursing students (n = 150) in a pediatric nursing course at an Arab American University. Participants were randomly assigned to HFS followed by two days of pediatric inpatient care (n = 75) or traditional clinical groups for lecture and two days in pediatric inpatient care (n = 75). Both groups were rated using the LCJR and the HFS group score significantly higher (t = 7.20, p < .001, M = 31.37, [SD = 11.18], M = 18.03 [SD = 11.51], respectively).

The importance of structured pre-briefing was emphasized by two groups (Kim et al., 2019; Page-Cutrara & Turk, 2017). In each study, 76 senior nursing students participated in HFS learning experiences. The IGs (n = 40, n = 42, respectively) included standard pre-briefing as well as a specified structured pre-briefing inserted before they experienced the HFS scenario. The CGs (n = 36, n = 34, respectively) were guided through standard pre-briefing followed by the HFS scenario and debriefing facilitated by trained nursing faculty. Kim's study's structured pre-briefing included concept mapping and problem-solving exercises and Page-Cutrara and Turk's structured pre-briefing included a worksheet and facilitated reflection based on Tanner's clinical judgment model. The IGs in both studies demonstrated significantly greater increase in their clinical judgment scores. Kim measured via the LCJR Korean version (F = 123.781, p < 0.001, M = 39.5, M = 29.9). Page-Cutrara and Turk measured via the CCEI clinical judgment subscale (U = 128.5, Z = −6.2, p < 0.001).

Specific methods in debriefing following HFS have also been associated with increased clinical judgment (Høegh-Larsen et al., 2023; Want, 2022). Høegh-Larsen et al. (2023) found that using the Promoting Excellence and Reflective Learning in Simulation (PEARLS) model for debriefing yielded statistically significant increases in clinical judgment using the LCJR for self-evaluation compared to standard debriefing. And Want (2022) described the use of scripted

debriefing based on the NCSBN clinical judgment model as a method for increasing clinical judgment among prelicensure nursing students.

Standardized Patients

Standardized patient actors (SPs) have been used effectively for simulation with the aim of clinical judgment development. Hambach et al. (2023) demonstrated this among sophomore nursing students (n = 47) using a single group repeated measures study in which participants experienced three simulations with SPs and showed significantly increased clinical judgment scores ($F\ [2, 92]$ = 11.41, $p < .001$, n^2p = 0.20) using the LCJR. Andrea and Kotowski (2017) used SPs for learning health history communication skills among first semester BSN health assessment students (n = 80). Self-evaluation by these students with the LCJR showed significant increases in scores ($F\ [2, 76]$ = 19.15, $p < 0.01$, M = 35.01, M = 33.16) from baseline through two time points.

In-Person (Traditional) Clinical

Hines and Wood (2016) were interested in exploring whether debriefing could be used during clinical experiences to increase students' clinical judgment skills. They developed a scripted debrief based on Tanner's clinical judgment model and provided this after each of six in-person clinical days and two simulation experiences. There were three different evaluations performed. In the first, clinical instructors evaluated students (n = 53) in the LCJR's reflection section after each debrief and found a significant increase in clinical judgment (p = .002). For the second evaluation, students in this study used the LCJR after the second and fifth of the six clinical experiences and after each of the two simulations. Findings showed clinical judgment increased for three of the four categories of the LCJR (p = .000) and for reflecting (p = .003). Finally for the third evaluation, independent raters watched recordings of the two simulation

experiences. Dependent *t*-test analysis indicated that there were significant increases in three of the four categories of the LCJR: noticing ($t = 5.109$, $p = .000$), interpreting ($t = 5.463$, $p = .000$), and reflecting ($t = 6.058$, $p = .000$). In the category of responding there was a significant decrease ($t = 15.044$, $p = .000$). The authors suggested that this decrease could have been expected because the two scenarios for which the students were evaluated included elements for which the students did not have sufficient experience to be proficient. The authors further pointed out that the student learning occurred in the reflecting that happened during the debriefing. Therefore, three cognitions of clinical judgment were improved in these students and further research is needed to study whether increased experience in the content areas of these scenarios would increase the cognition of responding as well.

In related research, the time spent in a single clinical site was studied for nursing students ($n = 150$) at a university in China. One group attended clinical for three months in consistent specialized units and the other group attended only one month in a standard hospital unit. The consistent specialized unit group significantly improved in clinical decision making ($t = 7.677$, $p < .05$) and on 3 subscales of social problem solving: positive problem orientation ($t = - 0.709$, $p < .05$), negative problem orientation ($t = 0.439$, $p < .05$), and rational problem solving ($t = 0.299$, $p < .05$). These authors concluded that these areas of clinical judgment were more improved among students who attended a single clinical setting at higher specialization than those who attended their traditional clinical setting (L. Chen et al., 2021).

Authors have also described methods by which nursing students can be guided in their thinking during their in-person clinical experiences. Eisenmann (2021) reported about an innovative concept mapping technique students can be taught to use to organize and prioritize

clinical data. Her map leads the student to write their notes in blocks that graphically illustrate key connections between data with the goal that increased clinical judgment develops.

Measuring Clinical Judgment

An important consideration for studies of clinical judgment is the method used to measure the concept. Some authors have studied students' self-assessed or self-reported perceptions of clinical judgment (Byrne et al., 2023; Glynn, 2012; Lavoie et al., 2017). Other authors have included the clinical instructors' perceptions of the degree to which the students have demonstrated clinical judgment (Hunter & Arthur, 2016; Smith, 2021). Some researchers have used observations of clinical instructors, peers, or researchers with or without rating instruments (Cason & Reibel, 2021; Hines & Wood, 2016; Strickland et al., 2017).

For example, in the skills lab study (Andrea & Kotowski, 2017) and in the Vsim studies (Fogg et al., 2020; Kool, 2022), clinical judgment was measured by self-evaluation. This can be useful, but it is important to compare students' self-assessment with objective observations. Self-report bias is very common in research. Bauhoff (2011) explained that many times researchers will collect self-report data and objectively measured data to develop a model that describes the extent of the self-report bias in a particular factor. This model can then be used to adjust self-report data in subsequent collection to more closely match the objective data without the cost of only using objective measures. Strickland et al. (2017) performed this research when the principal investigator (PI) evaluated BSN students (n = 94) using the LCJR and the students also self-evaluated using the LCJR in an adult health course. The self-reported scores were higher than PI scores (M = 33.48 [SD = 3.719], M = 31.19 [SD = 3.220], p = .030, respectively). The authors concluded this likely correlated with increased clinical confidence among students. This

is a reassuring finding but needs to be tempered with clinical faculty wisdom to continue to protect patient safety (Kool, 2022; Strickland et al., 2017).

Further, the review of the literature showed that there are two primary rating scales used for this area of study. These are the Creighton competency evaluation instrument and the Lasater's clinical judgment rubric. Each of these measurement choices will be reviewed in detail.

Student Perceptions

Student perceptions of their own clinical judgment have been used as a measure of clinical judgment. Glynn (2012) developed a structured reflective writing assignment for the classroom setting for BSN students based on Tanner's clinical judgment model. Focused interviews conducted after the reflective writing indicated that students (n = 15) perceived their clinical judgment and clinical confidence as improved. Lavoie et al. (2017) developed a structured simulation debriefing model called the REsPoND tool for 19 BSN students in a critical care course. Focused interviews based on Tanner's clinical judgment model showed that students perceived an increase in clinical judgment.

Clinical Instructor Perceptions

The perceptions of clinical instructors have been used as an indicator for clinical judgment among nursing students, but results have been contradictory. In a study by Smith (2021), clinical instructors (n = 4) reported that having a framework was helpful when they needed to provide guidance to students about clinical judgment. In contrast, Hunter and Arthur (2016) reported clinical instructors' feedback of frustration with the clinical evaluation tool they were provided. Specifically, they communicated that there was not a clear way to measure or communicate students' clinical reasoning development. The difference in these outcomes had to do with having a clear clinical judgment framework from which to evaluate students.

Qualitative Measurement

Qualitative methods have provided guidance for researchers and educators who are interested in measuring clinical judgment among nursing students. In one study, researchers designed a guided reflective writing activity and rubric for junior and senior BSN students. The questions to guide the writing were designed to encourage thinking within the categories of Tanner's clinical judgment model and the rubric for grading was based on the LCJR. After completing the assignment, student participants (n = 47) completed a survey about their perceptions of the effect of the reflective writing on their clinical judgment. Focused interviews with the four clinical faculty who graded the writing assignments also yielded data. The clinical faculty answered questions about the value of the assignment for evaluating student clinical judgment development. The data from the student surveys and faculty interviews were analyzed using the Graneheim and Lundman content analysis method (Smith, 2021). The themes resulting from the student survey analysis included a subtheme for juniors that the reflective writing helped them organize their thinking to plan care and for the seniors that the reflective writing helped them gain a sense of wholeness in their care. The faculty interviews yielded themes about the value of the assignment for encouragement of deep thinking among students and as a tool to provide students with feedback to improve their clinical judgment (Smith, 2021).

Quantitative Measurement

Evaluation of clinical judgment by observation was performed in several studies. In a study by Bussard (2018), nursing clinical faculty evaluated diploma nursing students (n = 70) enrolled in a med-surg course after each of four simulations using the LCJR. Findings indicated a significantly increased mean from the first to the fourth simulation (M = 24.10 [SD = 2.59], M =40.17 [SD = 2.99], $p < .001$ respectively). In a study by Hines and Wood (2016), clinical

instructors providing scripted debriefing in clinical post-conferences, used the LCJR's reflection section to evaluate clinical judgment among senior level students (n = 53) following simulations and in-person clinicals. These ratings demonstrated improvement in clinical judgment (p = .002). Independent raters also evaluated these students using the LCJR during simulations and found significant increases in three of the four categories of clinical judgment in the LCJR (p = .000). Thus, there is strong evidence that clinical judgment can be effectively assessed by independent raters or clinical instructors when using the LCJR. Interestingly, there was a significant decrease in the fourth category, responding, (p = .000). These authors concluded, in consultation with other literature and in considering the simulation scenarios used in this study, that the decrease in responding would have been expected because the simulation required advanced communication skills and the students had limited experience in this area.

Quantitative measurement was also used by clinical instructors in a study by Manetti (2018) using the LCJR with students in the in-person clinical setting. This study compared clinical judgment ratings for junior (n = 75) and senior level students (n = 61). The seniors scored significantly higher (p < .001). The juniors scored at the accomplishing level (M = 29.77 [SD = 4.7]) and the seniors at the exemplary level (M = 36.10 [SD = 5.4]). The authors of this study established evidence of the construct validity of the LCJR as senior students are expected to have higher clinical judgment ratings than that of their junior peers.

Lastly, Call (2017) was interested in evaluating whether the type of learning experience provided to students would result in different LCJR scores. To study this, Call measured the opportunities provided to perform clinical judgment behaviors comparing two HFS experiences and 12 objective structured clinical exam (OSCE) stations. Findings indicated that there were significantly more LCJR indicators in the OSCE stations (p < .05) as compared to the HFS

experiences. Call concluded that students might need to be evaluated in more than two simulations using the LCJR before arriving at a final clinical judgment score.

Measurement Instruments

Creighton Competency Evaluation Instrument

The Creighton Competency Evaluation Instrument (CCEI) is a 23-item tool used for measuring clinical competency including subscales for assessment, communication, clinical judgment, and patient safety (Hayden et al., 2014). This tool has been used by researchers to report both the total clinical competency score and the subscale scores. Hansen and Bratt (2017) used the CCEI and found no significant difference in clinical competence by comparing the sequencing of simulation and in-person clinical among nursing students (n = 48) in their first clinical course. Raman et al. (2019) evaluated fourth semester BSN students (n = 74) using the CCEI at the end of their maternity nursing course during an objective structured clinical exam (OSCE) in the skills lab at their university in Oman. These authors found no significant differences in clinical competency among students who experienced 100% traditional clinical experiences and those who experienced 75% traditional experiences plus 25% high fidelity simulation experiences. Lastly, Kidd (2017) used the CCEI to measure clinical competency during synthesis simulation observations among fourth semester BSN students (n = 108) and reported the clinical judgment subscale demonstrated significantly higher scores among male participants.

Lasater's Clinical Judgment Rubric

The Lasater's clinical judgment rubric (LCJR) is the instrument selected for this proposed research because of its sole focus on clinical judgment. It offers detailed dimensions on which to base a clinical judgment score (Lasater, 2007). The LCJR was first developed for use in HFS.

Since its development, the LCJR has also been applied to virtual simulations (Vsims), reflective writing, and in-person clinical.

The studies by Bussard (2018) and Hines and Wood (2016) focused on different educational methods for clinical judgment development using the LCJR as their evaluative measurement tool. An advantage of selecting the LCJR is that individuals in different roles, including clinical instructors, peers, and researchers, have used the LCJR suggesting it is a feasible tool to implement (Cason & Reibel, 2021; Strickland et al., 2017). In a correlational study by Stuedemann Fedko and Thomas Dreifuerst (2017), the LCJR was used during HFS and compared to observation for 11 specific nursing actions. Among senior traditional BSN students (n = 22) they found a significant relationship (p = .04) between clinical judgment in simulation and practical action.

The LCJR has been used as the basis for measuring clinical judgment aside from the original use in simulation. For example, Georg et al. (2019) based their ratings of clinical judgment from student free text responses in Vsim on the dimensions of the LCJR. Bussard (2015) inspected reflective writing after simulation for the dimensions of clinical judgment from the descriptions in the LCJR. And Kubin and Wilson (2017) evaluated students using the LCJR while observing inpatient pediatric assessments. These examples show the versatility of the LCJR.

Evidence for Direct Instruction for Clinical Judgment Development

Direct instruction as a method for clinical judgment development among nursing students is supported by this literature review. Jessee (2018) developed the integrated clinical education theory by synthesizing principles from four educational frameworks in the literature including situational learning theory, deliberate practice, expert practice, and Tanner's clinical judgment

model. This author found clinical reasoning is developed from several angles during clinical. These included a supportive, authentic clinical context; multiple experiences over time; integration of cognitive, psychosocial, and affective situational factors; and one-to-one clinical instruction. This one-to-one instruction needs to include discussion and meaningful feedback that is specific, close in time to the reference clinical situation, with suggestions for how to improve, and encouragement for reflection.

Although clinical reasoning is not synonymous with clinical judgment, it is a building block of clinical judgment (Tanner, 2006). In a teaching tip, Billings (2019) corroborated that clinical judgment can be taught by coaching students with specific prompts to identify and practice clinical judgment behaviors. One study investigated methods clinical instructors intentionally use to help students develop clinical reasoning (Hunter & Arthur, 2016). Their study revealed that clinical instructors asked probing questions, seized opportune moments during the clinical day to discuss decision-making, modeled clinical judgment components such as how to collect pertinent data and prioritize it, and led discussions in post-conference about the meaning of clinical reasoning and how it applied to making clinical judgments in patient situations. Gonzalez (2018) also encouraged taking a direct instruction approach in that she developed lessons and activities based on the LCJR for use with her students in the clinical setting. Nielsen (2016) advocated for concept-based coaching during the clinical day and investigated its effects on LCJR indicators for prelicensure ADN and BSN students (n = 39). Gonzalez et al. (2021) emphasized that it is important to be intentional about teaching clinical judgment and suggested an appropriate method is using open-ended Socratic questioning at higher levels of Bloom's taxonomy based on the LCJR. Similarly, Fontenot (2021) developed a framework of specific Socratic question topics to ask students during clinical "touchpoints." The

questions guide the student through their clinical reasoning leading to improvement in clinical judgment. Each of the methods these authors used provided direct instruction about some aspect of clinical judgment. And in each case, there was improvement in the aspect studied and/or in clinical judgment overall.

Gap in the Literature

There is a gap in the literature around quantitative clinical judgment measurement after application of an educational intervention related to in-person clinical. The closest match found is research by Hines and Wood (2016). These authors applied scripted debriefing for both in-person and simulation experiences. They then had independent raters evaluate students during the last two simulation experiences of the course. The students were encouraged to practice clinical reasoning by the scripted reflection questions in the debriefing sessions. In contrast, the education intervention applied in the current study was direct instruction about clinical judgment behaviors as described in the LCJR. Direct instruction was provided via webinar. Participants were expected to apply the information from the webinar to their in-person clinical experiences to help them develop their clinical judgment skills.

Summary

In this literature review, the definition of clinical judgment was discussed and clarified. This review also demonstrated that several educational methods have been investigated to help students to develop clinical judgment. Additionally, two main instruments have been used to measure clinical judgment among nursing students, One, the Creighton competency evaluation instrument, is focused on overall clinical competency with a subscale dedicated to clinical judgment. The other, the Lasater's clinical judgment rubric, is entirely dedicated to clinical judgment. Further, direct instruction as a clinical judgment development method is supported in

the literature though it has not been consistently applied. The current study addressed the gap in the literature to understand whether direct instruction about the dimensions of clinical judgment provided to prelicensure nursing students resulted in an increase in their clinical judgment ratings. In the following chapter, the methods used for this research are described.

CHAPTER III

METHODS

Prior chapters provided a review of the literature and identified gaps that this study addressed in its use of the Lasater's clinical judgment rubric. This chapter describes the methods used including the research design that guided the study. The study setting, sample, and sample size are described. The measurement instrument for the study variables is reviewed including the psychometrics supporting its use. Analyses that were used to answer the research questions are identified.

Research Design

This study used a two-group, quasi-experimental design to measure the clinical judgment of nursing students using Lasater's (2007) clinical judgment rubric (LCJR). The intervention group (IG) received direct instruction about how to demonstrate clinical judgment based on the LCJR and the control group (CG) did not. Participants' LCJR ratings were assessed during simulation labs that were required as a part of their program of study. The LCJR ratings of the groups were compared using the Wilcoxon signed rank test and independent samples Mann-Whitney U Test to answer this research question:

Q1 Among prelicensure nursing students, how does direct instruction about how the Lasater's clinical judgment rubric (LCJR) can be applied to their in-person clinical experiences compared with no direct instruction affect their clinical judgment ratings from the end of first semester to the end of second semester?

The independent variable was direct instruction provided to the IG participants. This instruction provided teaching about the meaning of each of the rubric dimensions in the LCJR as

well as to how to practice each behavior during traditional face-to-face clinical experiences (see Appendix A for the direct instruction scripts). The dependent variables were the LCJR ratings of the participants during their final simulations at two time points: at the end of their first semester and at the end of their second semester of the nursing program.

This research design was appropriate for this study because it provided the opportunity to observe changes in clinical judgment over time both with direct instruction for the IG and without direct instruction for the CG. A strength of this design was in its longitudinal aspect. It was expected that prelicensure students would increase in their clinical judgment from one semester to the next (Manetti, 2018). By having provided direct instruction to the IG, it was expected that the increase in clinical judgment would be even greater over the same time period (Foo et al., 2017). This strategy addressed the internal validity threat of maturation. Another strength of this design was the comparison between similar groups in similar settings.

There were limitations to the quasi-experimental design. An internal validity threat was that the study used a convenience sample of those already enrolled in a particular course. Randomization of participants did not occur in this study design for feasibility reasons. The sampling strategy was also a threat to external validity as all the participants were enrolled in the same nursing program at the same university. As a result, generalization to other nursing programs would not be expected to be as robust as might occur with other designs such as a multi-site study.

Setting

Concordia University St. Paul (CSP, 2021) was the setting of this study. It is a midsize university with approximately 5,000 students in undergraduate, graduate, and online programs. Approximately 500 students are enrolled each year in CSP's bachelor's level nursing programs

that include a campus-based option in St. Paul, Minnesota and accelerated (ABSN) hybrid options based in St. Paul, Minnesota and Portland, Oregon. All the students invited to participate were enrolled in the ABSN option based in Portland, Oregon. The Portland-based ABSN program enrolls nursing students three times a year. Each cohort is comprised of 70-100 students for up to 300 students admitted annually.

The ABSN program is completed in four semesters lasting 16 months. This program covers 61 credits including 720 hours of clinical education which is a combination of skills labs, simulation labs with manikins, simulation labs with volunteer patients, virtual clinicals, and in-person clinicals spread throughout the four semesters (CSP, 2021). However, for the purpose of this study, the focus was solely on the first two semesters of the four-semester program. In semester one for both the CG and IG, students were scheduled for 30 hours of skills lab, 36 hours of high-fidelity simulation, and 54 hours of traditional face-to-face clinical. In semester two due to shortage of in-person clinical sites during the CG session, students were scheduled for 54 hours of virtual simulation, 30 hours of skills lab, and 36 hours of high-fidelity simulation. During the IG semester two session, the students were scheduled for 30 hours of skills lab, 36 hours of high-fidelity simulation, and 54 hours of traditional face-to-face clinical.

The university has two skills and simulation laboratories in the Portland area for nursing students. The simulation laboratories are set up to replicate private hospital rooms with one high-fidelity human simulator, the Laerdal Sim Man Essential, as the patient in each. Students participating in a simulation also have access to the simulated patient medical record, a phone to simulate calls to other healthcare staff members, and practice doses of medications. The adjacent control room houses the computer equipment for the operation of the Sim Man, a one-way mirror for observation of the simulation room, and the connecting phone to allow for responding to

students' phone calls. A camera and microphones are set up in the simulation room to provide live feed of video and audio to the observation conference room.

The CSP program of study requires approximately three simulation lab experiences in the first semester and another three in the second semester. These might be scheduled at any time in the semester but usually one occurred within the first five weeks, one within the last three weeks, and one sometime in between these two. Each simulation experience requires the students to complete preparation work by studying the possible medical conditions, medications, and nursing implications of the upcoming scenario. During a simulation lab, two student nurses participate in the simulation room while the other six of their clinical group are in the observation room. Simulation faculty lead the students in interactive pre-brief and debrief discussions preparing for, and then reflecting on, the simulation scenario.

Sample

The target sample for this study was CSP ABSN students in the first semester of their nursing program of study. Inclusion criteria included enrollment in the semester one cohort in the fundamentals nursing course, willingness to participate through the first two semesters of the nursing program, and signing of the informed consent form. All students were over the age of 18 upon admission to the program. There were no exclusion criteria.

Sample Size

An *a priori* power analysis using G*Power 3.1.9.4 revealed that with a significance level set at $p < 0.05$, an effect size of 0.3, and a power of 0.80, 90 students needed to participate in each study group to capture the within-group effect using two-tailed tests (Apponic, 2021). A two-tailed test is recommended for health-related research even in conjunction with a directional alternative hypothesis (Keller & Kelvin, 2013). An *a priori* power analysis revealed that with a

significance level set at $p < .05$, an effect size of 0.5, and a power of 0.80, 64 students were needed in each study group to capture the between-group effect using a two-tailed test (see Appendix B for G*Power analyses). According to these analyses, the target sample size was 180 with 90 in the IG and 90 in the CG.

Recruitment

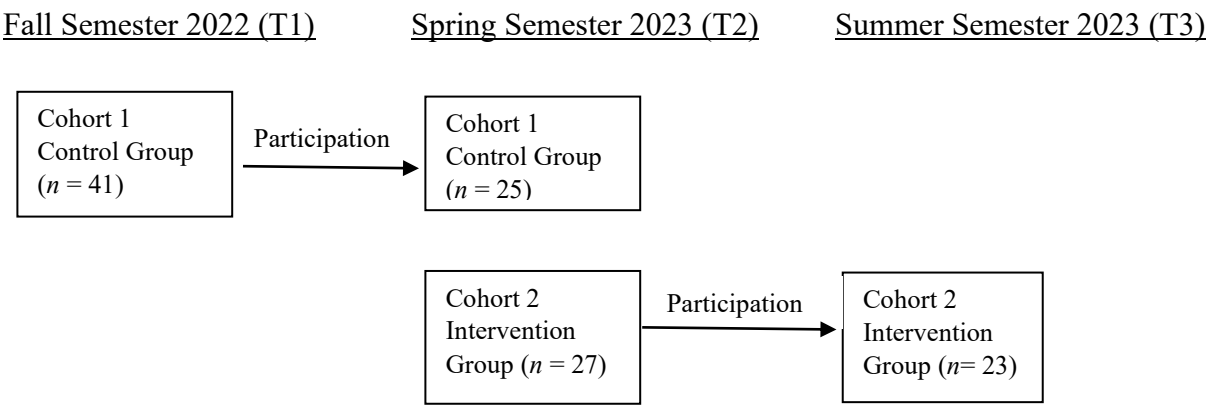
As the primary investigator (PI), I attended the orientation meeting via Zoom for the semester one cohorts in the fall semester of 2022 and the spring semester of 2023. The research was explained, informed consent forms were provided, and questions were answered (see Appendix C for the orientation agenda). Participants signed the informed consent forms at the meeting and returned them to my research assistant who attended the orientation on site. The informed consent form for the CG was provided to the fall 2022 cohort and the informed consent form for the IG was provided to the spring 2023 cohort (see Appendix D for the informed consent forms).

Procedures

Each cohort participated through the first two semesters of the nursing program following the timeline shown in Figure 1. The CG was recruited first to lessen the likelihood of crossover effect between CG and IG participants in the same semester. The ABSN program enrolled 74 students in the fall 2022 and 72 in the spring 2023 semesters. Since the enrollment was less than 90 each semester, the desired sample size was not reached. Measurements using the LCJR were obtained during the final set of simulations each semester for the CG and the IG (T1, T2, and/or T3).

Figure 1

Recruitment and Participation of Cohorts



Note. Clinical judgment was measured for each participant at the end of T1, T2, and T3.

All eligible students who returned the informed consent form were emailed the demographic questionnaire with confirmation of their participation along with a copy of the LCJR. A minority of participants completed the demographic questionnaire and returned it via email. The demographic questionnaire was resent via email after two weeks' time. A few more were received as a result. The rest of the demographic forms were distributed during the simulation observations and collected by my research assistant or me (see Appendix E for the demographic questionnaire).

Instrumentation

Kathie Lasater (2007) developed her Lasater's clinical judgment rubric (LCJR) based on Tanner's clinical judgment model. The LCJR was developed to be used by clinical instructors to evaluate students' clinical judgment during simulation. The LCJR provides clear language to describe behaviors in line with the cognitions of clinical judgment described by Tanner's (2006) model, namely noticing, interpreting, responding, and reflecting. Each of the four cognitions is broken down further in the LCJR into two to four specific dimensions and then rubric

descriptions are given to level each dimension from beginning, to developing, to accomplished, to exemplary (Lasater, 2007). The LCJR was used quantitatively by assigning values to each of the four levels from "1" for beginning to "4" for exemplary. This provides a total score ranging from 11 to 44 with higher scores indicating a greater level of clinical judgment (see Appendix F for the LCJR and Appendix G for permission to use the LCJR).

Adamson et al. (2012) performed reliability and validity studies of the LCJR for use in simulations with nursing students. The intraclass correlation coefficient was found to be 0.899. Interrater reliability of two raters using the LCJR simultaneously was found to be 96% consistently after 72 simulation observations. These authors also confirmed the construct validity of the LCJR by blinding raters to the level of nursing education of students observed. Their ratings in all four areas of cognition separated the junior level from the senior level students with higher ratings for clinical judgment obtained for the senior level students, as would be expected. Manetti's (2018) findings replicated this finding.

Reliability and validity estimates obtained from studies of the LCJR have been strong. Authors of four studies reported Cronbach alpha ratings of .886 to .910 (Chmil, 2014; Gubrud-Howe, 2008; Manetti, 2015; Shin et al., 2014). An alpha estimate of .70 is generally considered minimally acceptable for a new scale while .80 is the baseline acceptability level for an established scale (Remler & Van Ryzin, 2015). These findings suggested the LCJR had sufficient internal consistency reliability. Confirmatory factor analysis was also performed for the dimensions of each of the four cognitions. In this statistical method, the researcher could determine if each part of the model fits together with the whole as written (Remler & Van Ryzin, 2015). The LCJR was deemed valid by this method (Shin et al., 2014; Yang et al., 2019).

In this study, my research assistant and I evaluated all participants by using the LCJR and took steps to estimate its reliability. First, IRR was obtained as described in the following section. Next, Cronbach's alpha was analyzed for the ratings for the 11 items of the LCJR using IBM SPSS 29.0.1.0 and found to be 0.93. This gave evidence of internal consistency for the use of this instrument in this study.

Data Collection

Data collected for this research included several items. First, the CG and IG participants provided demographic data via the questionnaire. Then, my research assistant and I evaluated the clinical judgment demonstrated by each participant using the LCJR. I made note of attendance records for the required webinars for the IG. Finally, I collected the clinical attendance records for the CG and IG from CSP.

Demographic information collected included age, gender, number of years of college education, and number of years of healthcare experience through employment or volunteer activities (see Appendix E). The participants returned the demographic questionnaire to me via email or in hard copy to my research assistant or me onsite.

The LCJR was used to evaluate each participant twice during the final simulations of their first and second semesters in the ABSN program. The LCJR scores were recorded on the data spreadsheet according to participant identification number.

Clinical attendance records were requested from the CSP clinical coordinators. This information was used to confirm the exact clinical education schedule followed for the cohorts of students from which participants were recruited and to identify if any of the participants had deviations from the nursing program's clinical education schedule. Any deviations were listed by participant identification number in the data spreadsheet.

In addition, the IG participants were required to attend a webinar for direct instruction on the LCJR. This was scheduled to coincide with the first week of in-person clinical of each semester of participation. If they could not attend the webinar directly, their review of the recording of the webinar was counted for attendance. This was recorded in the data spreadsheet according to their identification number. At this webinar, I provided the meaning of each of the LCJR's dimensions applied to how to practice each behavior during traditional face-to-face clinical experiences. See Appendix A for the direct instruction scripts.

Interrater Reliability

Reliability refers to how consistently a measure represents what is said to represent. Foundational to reliability is interrater reliability (IRR) that refers to how congruent the scores are between two or more raters who are using the same instrument. If the raters are not in agreement on how they rate the subjects or if they are inconsistent with how they rate individually, then the precision of the measures will be in question and the findings of a study may be erroneous. Percent agreement is a method by which quantitative data assessed by two or more raters can be compared to evaluate consistency. The higher the percentage of like scores, the more consistent, and reliable, the ratings (Alavi et al., 2022; Burns, 2014).

For the current study, IRR was calculated by taking the number of the ratings for the dimensions of clinical judgment on the LCJR for which the two raters (research assistant and PI) agreed, divided by the total number of dimensions rated for a particular participant. The goal was that we would agree on at least 90% of the dimensions. The LCJR lists 11 dimensions. If the participant was rated on all 11 dimensions, the goal was that we would agree on at least 10 dimensions, yielding a 91% agreement.

We, my research assistant and myself as PI, prepared for agreement between our ratings with practice ratings (Kardong-Edgren et al., 2017). We met via Zoom several times in advance of the first round of data collection. During the first meeting, we discussed the LCJR at length, drawing from our experiences as clinical instructors and as supervisors of clinical instructors, to come to a common understanding of the descriptions of clinical judgment in each of the rubric cells.

The next step in our assessment of clinical judgment was to find online recordings of student nurses in clinical simulations that we could use for practice ratings. We independently rated two recordings. We found this exercise useful for discussion but realized the purpose of most recordings of simulations online was for training. Because of this, the online recordings illustrated expert modeling rather than variable examples of student nurses' experiences.

To better assess the IRR prior to actual data collection, I arranged with the undergraduate nursing program at University of Northern Colorado (UNC) to solicit student volunteers to allow viewings of their recorded clinical simulation experiences. Institutional Review Board approval was granted by UNC and informed consents were signed by 93% ($N = 64$) of the students in two courses. A UNC nursing faculty member recorded the simulations and made these available through a secure link. As the simulation videos often involved six to eight students, I identified which student in each recording we would rate using the LCJR.

My research assistant and I then viewed eight of these recordings, rating the identified students independently using the LCJR. (The rest of the recordings were reserved for later use.) We recorded our ratings independently on a shared Google Sheet. I calculated our percent agreement by comparing whether we marked the same rating for each of the 11 dimensions of clinical judgment in the LCJR for each participating student. Before discussing our results, I

found 18% agreement in our ratings. We then met via Zoom to discuss each of the recordings and shared the rationale for our ratings.

There were a few key differences in our rationales. The first difference was in timing of the rating for a few of the dimensions of clinical judgment. For example, regarding focused observations, one of us was only rating this dimension based on the student's initial assessment during the simulation, whereas the other rater was continuing to include how the student performed re-assessment later in the simulation within this dimension. When we realized this, we made notes to only score the initial assessment within this dimension. The second difference was in discriminating between the Beginning and Developing levels of a few of the dimensions. For example, within the dimensions of the rubric that measure reflection, we needed to clarify the meaning of how students self-evaluated during debriefing to differentiate these levels. After discussion, we independently re-rated two of the recordings and found 82% agreement and decided to proceed in the following way.

Data Collection Began

The first round of data collection, time T1, occurred one week after we completed our practice ratings in November of 2022. There were two simulation laboratory sites where simulations were occurring simultaneously according to the regular nursing program schedule. As a result, my research assistant made observations at one site and I made observations at the other, both rating the participants using the LCJR as practiced. At both sites, we observed the participants from the adjacent control room through the one-way mirror, listening to the streaming audio from the simulation lab. After approximately half of the participants had been rated, I commuted to her site and my research assistant and I rated one participant simultaneously and independently. Our ratings without discussion had 82% agreement. After discussion, we had

100% agreement for a total IRR = 91%. This was above the intended goal of 90% IRR so we proceeded to complete the first round of data collection with each of us having our distinct set of students to rate. The ratings from these LCJR evaluations were the first set of clinical judgment data for the CG.

At the beginning of T2, I sent an email message to the CG participants as they were starting semester two of the ABSN program. This message reminded the participants of the research study and that they would be evaluated one more time during their final simulation that semester. Participants were requested to ask questions in reply to this email as needed. No participants responded to this email.

Also, at the beginning of T2, I recruited participants for the IG. I attended the orientation meeting for this new cohort via Zoom and my research assistant attended onsite. The students were introduced to the study and their participation was requested. Informed consent forms were available in hard copy for students in attendance (see Appendix D for the informed consent form). Students were instructed to sign the informed consent form and hand it to my research assistant. All eligible students who returned the informed consent form were emailed the LCJR and demographic questionnaire with confirmation of their participation. A few participants returned the demographic questionnaire via email. For those who did not return the demographic questionnaire via email, hard copies were distributed at the time of the simulations and all missing questionnaires were collected.

During T2, I scheduled the educational intervention, the direct instruction synchronous webinar, to coincide with the first week of in-person clinical for the participants. To determine the right timing for the webinar, I first requested a schedule of the in-personal clinical start dates from the clinical coordinator for the CSP ABSN program. The participants had two different start

times scheduled to begin in-person clinical. Half of the cohort started in week two of the semester while the other half began in week nine. I then sent out an email Doodle Poll to all participants to solicit input about when students would be available to attend the webinar. The response rate was about 50%. I used this information to schedule six webinars from which the participants could choose to attend. During this webinar, I instructed the participants about the LCJR and how they could use it to intentionally practice behaviors that demonstrate clinical judgment. Eight participants attended the webinar in person and three additional participants watched the recording of the webinar after it occurred. Their attendance was recorded on the data spreadsheet by identification number of each participant. See Appendix A for the direct instruction script that was presented during the webinars.

In preparation for the second round of data collection scheduled for March 2023, at the end of T2, my research assistant and I met via Zoom in February to practice using the LCJR as a refresher. We viewed one recording from UNC that we had not yet seen and independently rated it. Our percent agreement was 80% before discussion and 90% after discussion. The result was below the intended average goal of 90% for interrater reliability. We then independently rated two more students from previously unviewed recordings. Our percent agreement before discussion was 80% and after discussion was 100% which met the expected average IRR goal of 90%.

At the end of T2, data collection for the second round proceeded two and a half weeks after these refresher practice sessions in March 2023. There were no opportunities for simultaneous rating during the second round of data collection. My research assistant and I attended the final simulation labs of the semester for the IG at the two simulation lab sites as before. We evaluated the participants with the LCJR at our particular sites, from the adjacent

control room through the one-way mirror, listening to the streaming audio from the simulation lab. The ratings from these LCJR evaluations were the first set of clinical judgment data for the IG.

Lastly, at the end of T2, my research assistant and I attended the final simulation labs of the semester for the CG, now in their second semester. We evaluated the participants using the LCJR in the same manner as before. This was the second set of clinical judgment data for the CG.

At the beginning of T3, I sent an email to the IG to remind them of the research, that there would be a webinar to coincide with the first week of their in-person clinical, and that my research assistant or I would be evaluating them with the LCJR during the final simulation of the semester. During the webinar for the IG participants in the second semester of their participation, I instructed them about the LCJR again, this time encouraging personal reflection about how they could practice the behaviors that demonstrate clinical judgment during in-person clinical experiences this semester. Eight participants attended the webinar and this was recorded on the data spreadsheet by the identification number of each participant. See Appendix A for the direct instruction scripts presented during the webinars.

In preparation for the third round of data collection scheduled for June and July 2023, my research assistant and I met again for LCJR practice rating sessions in June 2023. We rated one simulation recording independently and our percent agreement was 73% before discussion and 100% after discussion. We then scheduled another meeting and rated an additional recording independently in which we reached 90% agreement before discussion and 100% after discussion.

As a result of meeting the 90% threshold, we proceeded to perform the final data collection observations at the end of T3, beginning two weeks after this practice. We attended the

final simulation labs of the semester for the IG, now in their second semester. We evaluated the participants using the LCJR in the same manner as before. This was the second set of clinical judgment data for the IG.

Data Collection Alternative

The simulation sessions occurring at any one time did sometimes include more than one participant simultaneously. If the evaluation of both participants simultaneously was not possible, there needed to be an alternative. Therefore, I arranged in advance to have each simulation session recorded so that the recording could be observed later in the day to complete the evaluation of the second participant. Participants were informed about being recorded both in the informed consents and then were reminded again in person before each simulation scenario. Relying on the recordings to evaluate participants occurred more frequently in the CG than the IG due to greater numbers of participants in the CG.

Data Analysis

First, the data were examined for completeness. The data for any CG participant were considered complete if there was a signed informed consent form, a finished demographic questionnaire, two LCJR evaluation ratings, and full attendance in all clinical education experiences according to the nursing program schedule or a make-up session per ABSN program guidelines if there was an absence. The data for any IG participant were considered complete with the same criteria as the CG with one addition: attendance at the direct instruction webinars in both semesters. Participants were included in the analysis according to the completeness of their data sets.

Second, descriptive statistical analysis was applied to the demographic data using SPSS version 27 to identify any significant differences between the CG and IG or within either group.

This included statistical differences in percentage of male to female participants, age ranges, number of years of education, and number of years in healthcare employment or volunteering. Each of these factors of the participants was listed in tables showing measures of central tendency.

Third, there was statistical analysis of the LCJR ratings for the CG using SPSS version 28.0.1.1(15) and the IG using SPSS version 29.0.1.0. The means, standard deviations, and ranges for the LCJR ratings for each set of data were calculated. From this information, it was clear the data were not normally distributed. Because the data were not found to be normally distributed, the Wilcoxon paired signed rank test was performed to determine statistical significance as applied to the CG and the IG data separately. This test was appropriate related to the dependent pairs of data, namely the repeated measures of clinical judgment from semester one to semester two for each group (Remler & Van Ryzin, 2015).

Fourth, there was statistical analysis of the LCJR for between groups using SPSS version 28.0.1.1(15). Since the data were not normally distributed the independent samples Mann-Whitney U-Test was applied to the data to compare the differences between the IG and CG.

Data Security

I oversaw data security and made every effort to keep participant identity and collected data confidential. Participant identity was listed on a code spreadsheet with the participants' names, email addresses, and identification numbers. This code spreadsheet was saved in its own folder in a password protected computer accessible only to me. A data spreadsheet listed data by participant identification number only. This data included demographics, LCJR ratings, aberrations from clinical education attendance records, and attendance at the webinars for IG participants. The data spreadsheet was saved in its own folder in the password protected

computer. Any informed consent forms or demographic forms received by electronic means were saved in separate folders in a password protected computer.

All hard copy informed consent forms or demographic questionnaires received by the research assistant were kept locked securely and then locked securely by me for the duration of the study. These hard copies, along with hard copies of LCJR evaluation forms filled in by me and my research assistant, were kept under lock in my private office file cabinet. Signed informed consent forms were transferred to the research advisor to be secured by her per University of Northern Colorado protocol. All records from this research will be secured for three years.

Ethical Considerations

This study protocol was submitted to the Institutional Review Board of the University of Northern Colorado and received exempt status (see Appendix H). Exempt status was sought because there were no foreseeable risks to participants beyond what would normally be experienced in their educational program. Attendance records are not considered protected information requiring special disclosure according to Family Educational Rights and Privacy Act guidelines (U.S. Department of Education, 2021). Therefore, these were requested from the clinical coordinator and kept on the data spreadsheet in a password protected computer along with other study-acquired data. As with all data and participant identifiers, every effort was made to keep information confidential.

Summary

This quasi-experimental study investigated whether students' clinical judgment ratings on the LCJR yielded statistically significant differences between participants who experienced direct instruction about clinical judgment behaviors and those who did not receive direct

instruction. The CSP ABSN students were recruited in their first and second semesters of their four-semester program of study. The CG was evaluated according to the LCJR by me or my research assistant two times: at the final simulation lab of each semester of participation. The IG followed the same schedule for evaluation as the CG with one addition. The IG was encouraged to participate in a direct instruction webinar teaching the meanings of how clinical judgment is demonstrated according to the LCJR. The LCJR ratings of all participants were used for data analysis. Statistical analysis of results was performed using Wilcoxon paired signed rank tests and independent samples Mann-Whitney U Tests and are described in the following chapter.

CHAPTER IV

RESULTS

The purpose of this study was to test whether direct instruction for prelicensure nursing students about behaviors that demonstrate clinical judgment and encouragement to intentionally practice these behaviors during in-person clinical promoted the development of clinical judgment. The LCJR ratings were measured from semester one to semester two for all participants. In this chapter, the participants' demographics and the clinical judgment ratings are described for within and between groups as calculated using IBM SPSS versions 28.0.1.1 and 29.0.1.0.

Participants

Demographic data were analyzed for the control group (CG; see Table 1) and the intervention group (IG; see Table 2). Participant groups in this study were compared demographically for age, gender, years of college completed, years of employment in health care, and years of volunteering in healthcare. The typical participant was 30 years old, female, had completed more than four years of college, and had two to three years of experience in a healthcare environment. All were enrolled in the Concordia University St. Paul ABSN nursing program performing their in-person clinical experiences in Portland, Oregon.

Table 1

Demographic Descriptors for the Control Group

Variable	%	*n*	*M*	Range
Age (years)			29	20 - 42
Gender				
Male	18	3		
Female	82	14		
Years of College Completed			3.9	0 - >7*
Years of Work in Healthcare			2.2	0 - >4+
Years of Volunteering in Healthcare			1.7	0 - >4**

Note. *N* = 17. *Assumption for mean that >7 years of college = 10yrs; +Assumption for mean that >4years of work in healthcare=5years; **Assumption for mean that >4years of volunteering in healthcare=5years.

Table 2

Demographic Descriptors for the Intervention Group

Variable	%	*n*	*M*	Range
Age (years)			31.2	21 - 51
Gender				
Male	0	0		
Female	100	10		
Years of College Completed			4.1	0 - >7*
Years of Work in Healthcare			1.45	0 - >4
Years of Volunteering in Healthcare			1.25	0 - >4**

Note. N = 10. *Assumption for mean that >7years of college=10yrs; +Assumption for mean that >4years of work in healthcare=5yrs; **Assumption for mean that >4years of volunteering in healthcare=5yrs.

The results of the comparative analysis of the demographic data are shown in Table 3. The CG and IG were found to be statistically similar using the independent samples Mann-

Whitney U Test at $p = .050$ as calculated except for gender. For gender, the groups significantly differed. The control group included 18% male and 82% female compared to the intervention group that was 100% female. The nonparametric test of independent samples Mann-Whitney U was used because the sample was not of sufficient size to yield normal distributions. The null hypothesis that the variables were the same across the CG and IG was retained at the significance level $p = .050$ for all variables except gender.

Table 3

Comparisons of Demographics Across Control and Intervention Groups

Comparisons using Independent Samples Mann-Whitney U Test	Asymptotic Significance (2-sided test)	Conclusion
Age (years)	.513	Retain null hypothesis.
Years of College Completed	.749	Retain null hypothesis.
Years of Work in Healthcare	.481	Retain null hypothesis.
Years of Volunteering in Healthcare	.471	Retain null hypothesis.

Attrition

Attrition occurred at a high rate during this study. Among control group participants, the attrition rate was 39%. The intervention group experienced an attrition rate of 73%. No participants directly withdrew from the study. Attrition took several forms; the major causes of attrition are noted in Table 4.

Table 4

Causes of Attrition

Cause	Study Attrition *(n)*	Sample Size Before Loss	Remaining Sample After Loss
Not present at simulation	3	68	65
Role of family member	9	65	56
Withdrew from CSP	5	56	51
Failed a CSP course	11	51	40
Incomplete rating form	1	40	39
Missing direct instruction (IG)	12	39	27

Demographic data from those who contributed to attrition by withdrawal for any reason can be seen in Table 5. The typical participant who withdrew from the study was similar to the participants in the total sample. The final sample with complete data was $n = 27$.

Table 5

Demographic Descriptors of Participants of Attrition

Variables	%	*n*	Mean	Range
Age (years)			29	21-46
Gender				
Male	22	8		
Female	78	28		
College Completed (years)			4.9	0->7*
Healthcare Work (years)			2.4	0->4+
Healthcare Volunteer (years)			1.0	0->4**
Missing Demographic Form		5		

Note. $N = 41$. *Assumption for mean that >7years of college=10yrs; +Assumption for mean that >4years of work in healthcare=5yrs; **Assumption for mean that >4years of volunteering in healthcare=5yrs.

Lasater's Clinical Judgment Rubric Ratings

Control Group

The final CG included 17 participants. The LCJR ratings showed a statistically significant increase from first semester (T1; $M = 20.58$ [$SD = 4.25$]) to second semester (T2; $M = 26.37$ [$SD = 5.56$]) according to Wilcoxon paired signed rank test ($z = 3.392$, $p < .001$), with large effect size ($r = .86$) according to Cohen 1988 criteria. This showed that the second measures were an average of 79% greater than the first measures (Sullivan & Feinn, 2012; see Table 6).

Table 6

Clinical Judgment Ratings for the Control Group

Participant	T1	T2
4	19	27
5	26	25
8	21	34
9	22	23
11	23	37
14	17	33
15	16	25
16	27	30
17	25	33
18	25	33
19	18	21
20	15	20
24	16	22
29	20	21
30	17	24
31	23	22
41	28	30

Note. $n = 17$.

Intervention Group

The IG included 10 participants. The LCJR ratings did not show a statistically significant increase from semester one, T2, (M = 29.40 [SD = 4.17]) to semester two, T3, (M = 28.80 [SD = 6.61]) according to Wilcoxon paired signed rank test (z = -.357, p = .721). Table 7 provides the clinical judgment ratings for the intervention group.

Table 7

Clinical Judgment Ratings for the Intervention Group

Participant	T2	T3
43	30	22
46	34	27
47	22	29
48	33	30
51	33	37
53	29	37
59	25	23
65	34	33
67	26	17
68	28	33

Note. $n = 10$.

Comparison Data

The independent samples Mann-Whitney U test was conducted to compare the CG and IG ratings. The result showed that the mean rankings of the ratings of the CG ($M = 16.82$) were significantly higher than those of the IG ($M = 9.20$; $U = 37.000$; $p = .015$).

Summary

The results of the analysis of the demographics of the CG and IG showed they did not significantly differ statistically. The CG showed a statistically significant increase in clinical judgment as demonstrated by the Wilcoxon paired signed rank test while the IG did not show a statistically significant increase. Comparing the two groups, the CG demonstrated a greater increase in clinical judgment than the IG according to the independent samples Mann-Whitney U Test. In the next chapter, these results are discussed.

CHAPTER V

DISCUSSION

In previous chapters, the background, literature review, methods, and results were described. This chapter discusses this study's findings in view of the literature and prior evidence. Limitations of the study and their implications for future research and nursing education are also explained.

Discussion of the Study's Findings

The purpose of this study was to test whether direct instruction for prelicensure nursing students about behaviors that demonstrate clinical judgment and encouragement to intentionally practice these behaviors during in-person clinical promoted the development of clinical judgment. The following research question guided this study:

Q1 Among prelicensure nursing students, how did direct instruction about how the Lasater's clinical judgment rubric (LCJR) could be applied to their in-person clinical experiences compared with no direct instruction affect their clinical judgment ratings from the end of first semester to the end of second semester?

Answering this question came in three steps. First, the clinical judgment ratings were compared within the control group (CG) from semester one to semester two. Next, the same comparison was made for the intervention group (IG). Lastly, between groups comparisons were analyzed to describe whether the IG mean clinical judgment rating had a greater increase from semester one to semester two than that of the CG.

The expectation was that each group would show increased clinical judgment ratings from semester one to semester two. As prelicensure nursing students progress through each

course in the program, they have the opportunity to practice and apply the behaviors and thinking processes of clinical judgment and typically show increases in their clinical judgment scores. The findings from this study were mixed compared to those of Manetti (2018). In her study, raters were blinded to the academic level of prelicensure nursing students (n = 136) and the raters assigned higher clinical judgment ratings on the LCJR for senior students than junior students as would be expected. In the current study, the CG clinical judgment ratings increased while the IG clinical judgment ratings did not. The CG's clinical judgment ratings increased an average of 79% from the first to the second measure (Sullivan & Feinn, 2012). Unfortunately, the IG clinical judgment ratings decreased slightly, though not statistically, leading to the conclusion that this study did not provide evidence that direct instruction about the dimensions of clinical judgment would have a positive effect on clinical judgment development among prelicensure nursing students.

The unexpected result from the IG led to considerations about influencing factors. The very prominent attrition rates and the subsequent small sample size certainly had an impact. Methodology and procedures might also have contributed.

Small differences among participants in a small sample size can be magnified in the associated results. For example, in this study, differences might have existed among the participants in ways that affected their abilities to perform during the simulation. The first three dimensions of clinical judgment on the LCJR had to do with effective noticing. According to Tanner (2006), effective noticing has to do with the nurse more than the patient. For example, the nurse's previous experience with the patient and others like the patient would influence what the nurse noticed. In the case of a simulation, knowing the patient would have to do with the effort and thinking the student had invested in preparation for the simulation scenario. This could

include preparatory assignments and studying the patient chart of the simulated patient prior to entering the scenario. If a few students were unable to put in significant time and energy into completing their preparation assignment, their diminished ability to effectively notice in the simulation could have influenced their clinical judgment ratings enough to skew the IG's overall rankings in the statistical analysis. Other internal validity threats such as tiredness or external stressors could have affected IG participants' abilities to effectively notice. However, these same factors likely could have been experienced by the CG. Without data about these factors among the participants, it was difficult to understand whether these played a role in the results.

Direct Instruction as an Intervention

Because the IG did not increase their clinical judgment scores, there was no support for direct instruction as a method to increase clinical judgment in prelicensure students in this study. This finding conflicted with the literature of direct instruction that supported the notion of providing teaching in a clear and stepwise fashion to garner greater increases in learning (Barbash, 2021). In examining the failure of any intervention to perform as expected, the dose, duration, and strength of the intervention should be considered. In this study, the dose of the intervention differed with some participants attending one direct instruction offering while others attended two. This change was initiated to help maximize the sample size, but it may have contributed to the lack of significant results.

In reviewing the literature for other ways to handle direct instruction and a booster session during an intervention, two studies provided strategies that might have been more successful. According to Cesta et al. (2016), continued engagement with the participants is important to prevent attrition. In the current study, participants provided input about the webinar dates and times and received a copy of the webinar schedule. Reminder emails were sent to

participants prior to the webinars. Only one reply was received from the reminder emails which said the participant was planning to attend. Subsequently, that participant did not attend the scheduled webinar. Thus, engagement strategies were employed; however, it is not known if the chosen strategies were meaningful to participants or if there was something else that could have been planned.

Abshire et al. (2017) studied retention methods for longitudinal studies (n = 19) in which attrition rates were less than 20%. According to focused interviews by Abshire et al. with the researchers who conducted the longitudinal studies, several themes emerged. First, community involvement in study design, recruitment, and retention was important for retention. This criterion was met in the current study by soliciting study design ideas from others who had done research with nursing students. The initial idea for direct instruction as an intervention came from these discussions, particularly highlighting the specific behaviors that demonstrated clinical judgment from the LCJR. Another theme was to be careful to explain all the details of the study to those being recruited for the study; this criterion was met during an orientation session at the beginning of the semester. Students were also given the opportunity to ask questions onsite with the research assistant. A third theme was to have a clear method for communication and to provide reminders. Criteria for this theme were met by using the same email address for all communications and reminders. The fourth applicable theme was to make the benefits of the study clear to participants. The participants were informed that their participation in the direct instruction webinar could help them more effectively develop their clinical judgment. The last theme that emerged was to offer incentives. While incentives might encourage some participants to remain in a study, these could be seen as coercive. In the current study, the primary

investigator was an adjunct nursing faculty member in the course in which the participants were enrolled. To avoid the potential for coercion, incentives were not offered.

While the state of the science for direct instruction did not offer evidence for the best timing or length of the provided instruction, these recommendations from intervention research might help to move the science forward. Further, exploring the limitations of the study might provide other guidance.

Limitations

There were several methods challenges during the study. Despite efforts to promote recruitment and retention, recruitment lagged behind predicted rates and high attrition among participants greatly impacted the final sample size. Approximately 38% of the participants who enrolled in the study completed the study activities. While most longitudinal studies have some attrition, one of the challenges to complete data sets might have been mitigated by changing some of the study procedures.

Data Collection Procedures

Full data sets for all participants (n = 68) included signed informed consent, completed demographic questionnaire, LCJR ratings from semester one and semester two, and completion of the standard in-person and simulation clinical schedule for CSP. In addition, the intervention group participants needed to attend the direct instruction webinar in semester one and/or semester two.

Part of the plan for collecting full data sets was successful. There was no attrition related to signing the informed consent or filling in the demographic form. All participants signed the informed consent (n = 68) and the completed demographic form was collected from all participants of the final sample (n = 27).

Other study procedures such as the process for collecting LCJR ratings for participants met with a few challenges. Students who did not attend their scheduled simulation session (n = 3) could not be included because it was not feasible for the researchers to attend make-up sessions. A second challenge was some students were assigned the role of the family member during the scenario (n = 9). In this case, they were not demonstrating the nursing role and, as a result, their simulation performance could not receive an LCJR rating. In another case, measurement error occurred when one dimension of clinical judgment on the LCJR form for one participant (n = 1) was missed, yielding an incomplete rating.

Another factor affecting the collection of full datasets was beyond the control of the researchers. Some students withdrew from the CSP nursing program for reasons such as an intended withdrawal (n = 5) or failure of a nursing course (n = 11). More participants withdrew by these means from the CG (intended withdrawal n = 3; failure of a course n = 8) than from the IG (intended withdrawal n = 2; failure of a course n = 3). In either case, the participant did not attend their simulation sessions, which led to missing data.

The final factor affecting the acquisition of full data sets and attrition was when participants in the IG did not attend the direct instruction webinar in at least one semester (n = 12). While the plan to have two direct instruction webinars was based on educational evidence and scientific rationale, in retrospect, this might have led to an increase in participant burden during a challenging semester.

Additional Ways to Increase Retention and Minimize Attrition

Other strategies might have increased recruitment, retention, and, ultimately, the final sample size. For example, communication with the participants could have been done differently.

It is common nowadays to receive appointment reminders via text. This could have been more effective than email. Participants could have been asked during the orientation what method of communication they would have preferred. This might have increased the likelihood of attendance at the direct instruction webinars.

Group Differences

Although the groups did not differ demographically other than gender, as a result of limited clinical sites, the groups were treated differently within the nursing program. When the CG participants were in their second semester, no in-person clinical sites were available for their cohort. As a result, the ABSN nursing faculty provided virtual simulation as a substitution for the usual 54 hours of traditional in-person clinical. In contrast, when the IG participants were in their second semester, in-person clinical sites had been obtained and these students attended in-person clinical for the 54 hours and did not participate in any virtual simulation.

The nursing literature about virtual simulation has been increasing in recent years. Two studies stood out that might give insight into the effect this substitution might have had on the CG. Fogg et al. (2020) studied clinical judgment using virtual simulation with senior students (n = 234). Their findings included increased student perception of clinical judgment after virtual simulation (p = .000) and fewer attempts to achieve minimal scores of clinical judgment as their experience with the medium increased (p = .000). Rim and Shin (2022) developed a multi-user virtual simulation for pediatric scenarios for prelicensure nursing students (n = 45). Six scenarios were used and, in all cases, the students' clinical judgment scores on the LCJR increased from pre-test to post-test (p = .000).

Even though these studies did not directly compare students experiencing virtual simulation versus traditional in-person clinical, it is possible the clinical judgment of the CG was

increased by participating in the virtual simulation. Since the IG did not experience the virtual simulation, they would not have had this extra increase if it was actually from the virtual simulation itself. More research ought to be done to directly compare groups in this way. It would shed light on potential options to specifically increase clinical judgment among prelicensure nursing students.

Site-Related Factors

Finally, this study was subject to site-related limitations that affected the sample size and generalizability of the findings. First, the participants were all from one nursing program at one university. Even though they were scheduled to perform their simulation experiences at two different physical locations, they were all students in the same curriculum. It is not known if direct instruction improvements would be obtained in other semesters or in other nursing programs. Second, the sample sizes were small. Concordia University Saint Paul (2021) enrolls 70-100 students per semester in the Portland ABSN cohort but during the recruitment period, the actual enrollment was less than 75 in each cohort. Therefore, the statistical goal of 90 participants per group was ambitious.

Implications for Future Research

Implications for further research are many. First, a multi-site study recruiting participants from several universities and from various geographic locations would provide more robust and generalizable results. This would provide the opportunity for enrolling a much larger sample size. Additionally, attrition would be easier to absorb.

Second, designing the procedures to include the direct instruction webinar in conjunction with a previously scheduled participant commitment would have greatly reduced attrition for attendance. The design for future studies of this kind might include more active networking with

nursing faculty at the study site to encourage greater collaboration. For example, the clinical instructors might offer the direct instruction in person with their clinical groups during post-conference. This would allow the instructor to provide examples from the clinical experiences of that day, which might heighten participants' interest and knowledge. Active debriefing following simulation has been shown to increase clinical knowledge and judgment (Lee et al., 2020). A similar finding might be likely when applied to post-conferences for in-person clinical experiences.

Implications for Nursing Education

This study provided impetus for further research regarding how to help prelicensure nursing students develop their clinical judgment skills. The direct instruction provided for this research included several components. Some components worked well while others had limited benefit. Components deemed positive were planning the webinar for small groups, direct use of the LCJR, and application as demonstrated through a relevant clinical example. The group setting was a benefit and the poll questions embedded in the presentation added interest as students participated more readily. Providing the LCJR for participants to read during the direct instruction helped make the examples clear. Lastly, the provision of a fictional nursing student vignette and poll questions helped student participants apply clinical judgment examples to a representative person and situation.

While there were positive outcomes from the direct instruction design, there were also strategies that could be improved. The direct instruction might have been more engaging if the fictional nursing student vignette was provided as a video rather than just audio. Computer captioning for the audio vignette was used but this was not always completely accurate. Therefore, a video might have made the clinical situation even more clear and engaging.

In the second semester, the direct instruction webinar focused more on how the students could apply the sections of the LCJR to their own in-person clinical experiences rather than focusing on the fictional nursing student. The participants' responses included that they thought the ideas presented in the webinar were practical and helped them understand more clearly how to practice clinical judgment. These comments suggested that aligning direct instruction with individual coaching of nursing students might be helpful. Individual booster sessions provided as a follow-up in clinical one-on-one by clinical instructors might help connect clinical judgment more firmly to actual clinical situations. Further research of how to mentor clinical faculty to provide direct feedback from the LCJR might result in even greater increases in clinical judgment ratings.

Another important design choice would be to provide the direct instruction in a way or at a time that allowed more participants to fulfill the attendance requirement. For example, offering direct instruction during the scheduled clinical post conferences might be beneficial. Clinical instructors might need help in revising agendas that are already fairly packed for clinical conferences. Support from administration to allow time for clinical instructors to develop and employ direct instruction might be needed. Direct instruction might be more acceptable if presented from a champion in each semester who already had personal relationships with the clinical instructors.

Along this same vein, the amount of direct instruction needed to make a significant difference would be important to explore. When simulation was starting to become more readily used in nursing programs, the amount of simulation that was best needed to be understood. Hayden et al. (2014) conducted a landmark study replacing <10%, 25%, or 50% of traditional in-person clinical with high-quality high-fidelity simulation. They found that nursing knowledge,

evaluation by clinical instructors, NCLEX pass rates, nor evaluations within the first six months of new graduate nursing practice differed statistically significantly among the three groups. This work has led many administrators of nursing programs to begin to use this option for clinical experiences, especially when clinical sites were sparse. This kind of study could also be conducted to compare the use of varying amounts of virtual simulation for the outcome of clinical judgment ratings.

Summary

While the study results partially supported the notion that clinical judgment increased from one semester to the next, there was no support for direct instruction about the LCJR to enhance students' clinical judgment ratings. High attrition and a small sample size limited the validity of the findings related to direct instruction. Repetition of this study using larger sample sizes from multiple universities and various locations might provide more robust evidence. Minimizing attrition would also have increased the generalizability of the study results. The potential to increase clinical judgment via virtual simulation ought to be further explored to compare traditional in-person clinical experiences without virtual simulation. Nurse educators could learn from this study's limitations as they continue to test methods to increase clinical judgment among prelicensure students. Continued growth in this area would result in nursing students developing their clinical judgment more effectively. In this way, new graduate nurses will be better prepared to demonstrate entry-level competence in patient safety.

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APPENDIX A

DIRECT INSTRUCTION SCRIPTS

Direct Instruction Script for First Webinar Sessions

- Thank you for coming to this short webinar. It is my hope that you will find it engaging as well as helpful for you in your endeavors to develop your nursing clinical judgment.
- I am Holly Springer, RN and I am the primary investigator for this study.
- I have a few housekeeping items before I begin:
    - I'm recording the Webinar for myself to review later to be sure that I am consistent from one Webinar to the next.
    - In the Zoom recording, your video/audio/chat may appear on the recording if you choose to interact verbally/by chat. If you would like to be anonymous, please change your screen name now and keep your video off.
    - In order to keep this Webinar consistent for all participants this semester, as you can see, I will be reading from a script and I have recordings for the vignettes of my fictional nursing student.
    - CC ing is available to you for this webinar by hovering your cursor near the top or bottom of your screen to view the Zoom settings and selecting Show Captions. This may be especially useful for the vignettes since they are audio. Realize these are computer captions, so there will be errors.
- Thank you for responding to my chat. I will begin the recording now.
- Thank you for coming to this short webinar. It is my hope that you will find it engaging as well as helpful for you in your endeavors to develop your nursing clinical judgment.
- As I mentioned, I am Holly Springer, RN and am the primary investigator for this study.
- Additionally, remember that your decision to participate in this study, or not, will have no impact on your clinical evaluations in any of your courses with CSP or affect any of your

course grades. And you can choose to discontinue at any time. Email me your decision to discontinue and I will remove your data from the study.

- The purpose of this webinar is to help you understand clinical judgment – which is an essential skill to your success in this program and as a practicing nurse. I will give you some instruction about how you can use the Lasater's Clinical Judgment Rubric, the LCJR, to intentionally practice the behaviors of clinical judgment. I will be referring to the LCJR throughout this short webinar. So have it in front of you to follow along.
- The LCJR was developed by Kathie Lasater in 2007. She observed nursing students during simulation and watched for the behaviors that demonstrated clinical judgment according to Tanner's Clinical Judgment Model.
- The main purpose of the rubric is for nursing faculty to evaluate students for these behaviors in order to give them feedback about their clinical judgment.
- The LCJR has 11 dimensions of clinical judgment shown as the rows. These are divided into 4 main sections in the rubric, each referring to one of the main cognitions of clinical judgment: Noticing, Interpreting, Responding, and Reflecting.
- And each of the 11 dimensions has 4 levels: Beginning, Developing, Accomplished, and Exemplary. These are the columns.
- Noticing is the first one including the first three rows. As you can see, Effective Noticing involves three dimensions: Focused observation, Recognizing deviations from expected patterns, and Information seeking.
- We are going to delve into Effective Noticing more than the rest of the LCJR so that you can get a feel for how it works.

- Please notice the first row, the CJ Dimension of Focused Observation. [Read the cell for the Exemplary level of Focused observation.] As you seek to become Exemplary in the area of Noticing, you can see that the LCJR lists some specific ways you will demonstrate this cognition. Many nursing students begin at the Beginning level and this is OK. You are just starting out. [Read the cell for Beginning.]
- In order to pursue an Exemplary level of Focused observation, you can see that being prepared will be a great help. When a student has studied well, the student will be able to see more clearly what the focus of observations should be. When a student has not prepared well, the data becomes overwhelming easily because so many of the pieces of information are unfamiliar.

Now I'm going to introduce you to our fictional nursing student. Please listen for how she is approaching her clinical situation: confusion or giving an attempt to monitor the data in an organized way.

Salina Introduced

The fictional nursing student that I will be referring to for our webinar is named Salina. Salina is in her first clinical rotation at a long term care facility. She does her best to prepare for clinical by practicing her head-to-toe physical assessment several times in skills lab. When she finds out that the residents of her long term care facility include many with type 2 diabetes, she reads that part of her patho textbook again and refreshes her memory about possible medications that might be prescribed.

Salina's Experience Part I

When Salina attends clinical, she is assigned a resident, Mr. O, with type 2 diabetes who also has chronic obstructive pulmonary disease, COPD. After reviewing her resident's medical record, she looks up COPD briefly and tries to remember the important points of a focused respiratory assessment.

Salina enters Mr. O's room and introduces herself. As she approaches Mr. O's bed, she sees that his head of bed is up at about 60 degrees and he has a nasal cannula connected to oxygen. She asks if she can perform a head-to-toe assessment and he nods.

As Salina works through her head-to-toe assessment, she is realizing that Mr. O only uses one word answers to her questions. She becomes concerned when she counts his respirations and at the same time tries to remember what to assess for his type two diabetes, forgetting some of the questions that she wanted to ask.

Salina completes her head-to-toe assessment, exits the room, and asks her clinical instructor if she has any suggestions for her. Her clinical instructor asks Salina what she thought about Mr. O's work of breathing. Salina realizes that she didn't complete all of the focused respiratory assessment.

Focused Observation

Let's look at the row that describes the CJ dimension of Focused Observation. You can see that I have highlighted the last two cells in the row that describe the beginning and developing levels of Focused Observation. Let's break these down. Please participate in the following polls:

1. How did Salina Approach the clinical situation?

    Confused by the clinical situation or Attempting to monitor a variety of data?

2. How did Salina perform her observations?

    Observations were not organized or focuses on the most obvious data

3. How would you rate Salina's level of Focused Observations?

    Beginning or Developed

I would suggest that Salina would be rated as Developing in this dimension of clinical judgment because she did complete the head-to-toe assessment even though she was somewhat overwhelmed by all the data she was trying to collect. She did focus on the most important data even though her clinical instructor had to point out some important data she should have collected, the WOB.

Recognizing deviations from expected patterns

The next dimension of clinical judgment in Effective Noticing is Recognizing Deviations from Expected Patterns. I've highlighted the important differences between the beginning and developing levels. [Read cells.]

What do you think?

1. How would your rate Salina's level of Recognizing deviations from expected patterns?

    I would suggest that she may be rated at the beginning level because she didn't recognize the s/s of breathing difficulty Mr. O was demonstrating in a way that led her to miss the opportunities to refine her assessment to include further assessment of WOB.

- Becoming more adept at Recognizing deviations will be achieved more readily by the prepared student as they will know what to look for as normal vs. abnormal in the type of patient at hand.
- The last section of Effective Noticing is Information seeking. This is an area that you will need to actively pursue in your clinical setting. Find out who to talk to for particular questions, find out where the policies and procedures can be accessed, find available reference materials that may be in print, come with questions for your clinical instructor, , etc. Knowing your resources and accessing them is key to this dimension of clinical judgment.

Effective Interpreting

As we get ready to listen to the next part of Salina's experience, let's look at the next two dimensions of the LCJR within the cognition of Interpreting.

The first is Prioritizing Data. I've highlighted here a few important phrases that help to differentiate between the beginning and developing levels. Notice that this dimension of clinical judgment describes whether the student understands what is most important.

The second dimension of Interpreting is Making Sense of Data. This dimension describes whether the student is connecting data appropriately to be able to plan effective interventions.

Salina's Experience Part II

Back at the nurses' station, Salina begins to read through her notes from her head-to-toe assessment with Mr. O. She remembers his one word answers to questions, his oxygen equipment working well, his lungs were clear, his fasting blood glucose was 102, he didn't complain of a headache, she didn't see any skin problems, and the list seemed to go on. There seemed to be so many details to keep track of.

Salina decides to consult with her clinical instructor about what her next steps ought to be. What to do about his breathing? Should she go back to his room and perform any more assessments first?

Let's listen for Salina's experience some more with this section of the LCJR in mind.

1. How would you rate Salina's level of Prioritizing Data?
2. How would you rate Salina's level of Making Sense of Data?

You can see that Salina has difficulty with the areas of Effective Interpreting and would be rated at a beginning level in each. This is very common among new nursing students because you have little experience thinking like a registered nurse.

- As a student nurse, you can start moving beyond the beginning level by thinking ahead as you study, trying to anticipate the next part of your reading in your textbook, and trying to come up with your own examples for concepts you are reading about.
- In the Making sense of data dimension, when you have a question or problem to solve, practice reasoning it through from your study materials and come to your clinical instructor or staff nurse with your best guess analysis, rather than coming to them with a question that you haven't tried to answer yourself first.

Effective Responding:

The third cognition of clinical judgment development is Effective Responding. In this section there are four dimensions: Calm, confident manner; Clear communication; Well-planned intervention/flexibility; and Being skillful.
We are going to rate Salina in the dimensions of responding shortly, so look at the rubric for these.

Salina's Experience Part III

Salina consults with her clinical instructor and so decides to try to help Mr. O to a position where he will breathe more easily. Salina locates the CNA, Sam, who is assigned to Mr. O's room and asks him if he can help her assist Mr. O to his chair. They arrive at Mr. O's room and Sam kindly tells Mr. O that they are there to help him move to his chair. Salina smiles and lets Sam lead the process. Mr. O becomes anxious part way through the move and Salina puts a reassuring hand on his shoulder and directs him verbally to reach further back. Sam has to intervene to make sure Mr. O arrives safely in the chair. Sam cheerfully moves on to help other patients.

Salina is shaky from nervousness. Mr. O seems to be a little out of breath and she hopes his breathing settles down because she isn't sure what else to do if he doesn't breathe more easily soon.

On this slide I have marked my ratings for Salina. You can see that in this area she scored developing in ¾ dimensions. This is often the case for beginning nursing students because the first two skills can be learned in many areas of life and the last two dimensions are related to interventions and skills which seem to make more sense to students, likely because they are more hands-on.

[Read slide highlights.]

- Having a Calm, confident manner starts with being prepared. Again, study carefully the areas that you anticipate you may encounter. And then trust in your preparation. Volunteer to participate at clinical as often as possible. Ask your clinical instructor to help you practice before going in the patient room and then follow their feedback and advice.
- Clear communication is very important. Practice your SBAR. Organize your thoughts on paper and then practice out loud. Volunteer to make the necessary phone calls to other healthcare team members and then go over your SBAR with the staff nurse, have the staff nurse sit with you as you make the call, and then debrief with the staff nurse about their thoughts about how to improve.
- Well-planned interventions are just that. Think through and write a clear SMART goal and then individualize the interventions for your patient. Talk it over with a fellow student, your clinical instructor, and/or the staff nurse to see if they understand what you have planned. Ask for feedback.
- Being skillful is about practice. When you are in skills lab, practice the skills as many times as you can in your time frame. When there is open lab time, plan to attend and practice some more. If the skill can be practiced at home, set aside time to do so. Always follow your checklists to make sure you are doing the skill carefully and not forgetting anything because practice makes permanent, not necessarily perfect.
- All of these areas have to do with practice. Volunteer at every opportunity. Always ask your instructor and others to give you feedback and continually hone your skills.

Effective Reflecting

The last cognition of clinical judgment is Effective reflection. This is a step that you may be tempted to skip for lack of time, but you will be able to make greater strides in your clinical judgment if you spend time here.

Let's check in with Salina one more time.

Salina's Experience Part IV

Salina is glad to see that Mr. O is settling in with his breathing now that he is in the chair. She makes sure he has his call light, water, and other items in reach and steps out to finish her charting.

In clinical post-conference, each student is asked to identify a nursing intervention they performed and give possible alternatives for future similar situations. Salina describes her decision to move Mr. O to the chair to help with his breathing and states that she is glad that it worked well for him. When asked to identify potential alternatives, Salina appreciates that her fellow nursing students give some ideas because she wasn't sure what she would have done differently. She writes down their ideas to try to remember for future situations.

I've highlighted my ratings again on this last slide. [Read highlights.]

- Let's look at the Exemplary level for the first dimension here: Evaluation/self-analysis. This is a great place to look for a list of areas on which to intentionally consider: clinical performance, decision-making, consideration of alternatives including elaboration, evaluation, and determination of appropriateness. Take time to write out your thoughts regarding each of these factors about specific clinical situations whether they turned out well for the patient or not.
- Lastly, have a Commitment to self-improvement. Take time regularly to consider your strengths and your weaknesses and make goals for yourself to address your weaknesses. Don't wait for your official evaluation by your clinical instructor. Be proactive.

Direct Instruction Script for Refresher Webinar

- Thank you for coming to this refresher webinar. It is my hope that you will be reminded of some actions you can take to work to develop your nursing clinical judgment.

- As you know, I am Holly Springer, RN and I am the primary investigator for this study.
- I have a few housekeeping items before I begin:
    - As before I'm recording the Webinar for myself to review later.
    - In the Zoom recording, your video/audio/chat may appear on the recording if you choose to interact verbally/by chat. If you would like to be anonymous, please change your screen name now and keep your video off.
    - Also as before, in order to keep this Webinar consistent for all participants this semester, I am reading from a script and I have recordings for the vignettes of my fictional nursing student.
    - CC ing is available to you for this webinar by hovering your cursor near the top or bottom of your screen to view the Zoom settings and selecting Show Captions. This may be especially useful for the vignettes since they are audio. Remember that these are computer captions, so there will be errors.
- I will begin the recording now.
- Thank you again for coming to this refresher webinar about how to apply the Lasater's Clinical Judgment Rubric to your clinical experiences.
- For the sake of the recording, I am Holly Springer, RN and am the primary investigator for this study.
- Additionally, remember that your decision to participate in this study, or not, will have no impact on your clinical evaluations in any of your courses with CSP or affect any of your course grades. And you can choose to discontinue at any time. Email me your decision to discontinue and I will remove your data from the study.
- The purposes of this webinar are
    - To refresh and excite you in how to apply the Lasater's Clinical Judgment Rubric, the LCJR, to clinical practice
    - To encourage you to intentionally use this information to practice the behaviors that demonstrate clinical judgment
    - To evaluate your understanding of the dimensions of the LCJR
    - To answer all questions

We are going to start with a vignette of Salina now that she is attending her second semester clinical site. When we finish listening, we are going to evaluate her clinical judgment abilities regarding focused observations and recognizing deviations from expected patterns.

Let's refresh our memories about the dimension of clinical judgment of Focused Observation. [Read slide].

Now listen to Salina's Experience:

Salina Semester 2

Salina is at her acute care clinical site and is headed into her patient's room at 4pm. She already reviewed his chart finding that Mr. H is a 78 yo man who has a medical diagnosis of pneumonia admitted this morning for shortness of breath. He is on 2L O2 via nasal cannula. During her physical assessment, Salina notes that the oxygen equipment is working and his oxygen saturation is 95%. His skin is warm and dry and his lips and mucus membranes are pink and moist. His vital signs are pulse 97, blood pressure 155/112, temperature 101.0 F, respiratory rate 22. She notes that his work of breathing is moderate—he is sitting up straight in bed and asks if he can move to the chair because he thinks he will breathe better there. Salina lets him know that she would like to finish the assessment first. Mr. H says this will be ok. Salina tries to hurry, feeling stressed by Mr. H's comment. She auscultates his lungs and hears crackles at the bases. She asks Mr. H to lie back so she can continue her assessment working through her mental checklist for review of systems. As she exits his room, she mentally summarizes her respiratory findings, wondering if there was anything she was forgetting to assess.

Poll

How would you rate Salina's Focused Observation? Developing or Accomplished?

I would rate her as Developing because she stayed focused on her mental checklist for her physical assessment following the details for the respiratory system and yet glossed an important piece of abnormal data, the blood pressure at 155/122.

Let's think about Salina's clinical judgment in the area of Recognizing Deviations from Expected Patterns.

It's important to understand what data comes up that is abnormal and to follow up with focused assessments. Did you hear that she did this? Did she follow up with further focused assessments at the right times?

Poll

How would you rate Salina's Recognizing Deviations? Developing or Accomplished?

Let's look at Information Seeking. How did Salina do about asking the patient for information about himself, his signs/symptoms, etc.? Didn't it seem like she was very focused on objective information and not really even listening to her patient, let alone asking him clarifying questions. For this reason, I would rate her at Beginning for this dimension.

Personal Take-Aways for Effective Noticing

- When performing your physical assessment keep your eyes open for any potential abnormalities. Don't solely focus on the medical diagnosis.
- Whenever an abnormality is recognized, take a moment for new focused assessment.
- Always ask the patient questions. Don't rely only on technology.

Poll

How do you do with your Effective Noticing? In which of these areas do you plan to improve this semester?

Not focusing solely on medical diagnosis.

Planning to perform new focused assessments.

Asking the patient more questions.

Let's consider the next dimensions of clinical judgment involved in Effective Interpreting: Prioritizing Data and Making Sense of Data. These dimensions of clinical judgment have to do with whether you can identify what is most important and develop an appropriate intervention.

Let's listen to Salina's experience.

Salina considers the data she gathered during her physical assessment to develop her plan of care. She decides that the respiratory system is going to be her focus and that increased work of breathing is her primary patient problem. As she is looking at Mr. H's medication record, she is alerted by the CNA that Mr. H's VS monitor is beeping. When she enters Mr. H's room, she sees that he is sitting in the chair watching TV. She checks his oxygen equipment and finds it working properly. His nasal cannula is in place and his oxygen saturation is 96%. The VS monitor is alarming for his blood pressure at 160/110. She asks Mr. H how he is doing and he says he feels OK. She exits his room and finds the staff nurse to ask her advice about the BP.

If I were observing her for clinical judgment behaviors, I would have noted that she looked at Mr. H's breathing and oxygen equipment first. This would give evidence that she is making an effort to prioritize the data according to her plan to monitor the respiratory system, but in this case it is less relevant because she needs to attend to the BP. For this reason, I would rate her at the Developing level.

In the dimension of Making Sense of Data, Salina had been forming her care plan based on her respiratory priority and now she realizes that the BP may be something to consider. Yet, she seems unable to form an appropriate intervention. She didn't re-check the BP, she didn't look at Mr. H's BP trends, she didn't check his med list for anything that may be influencing his BP. Thankfully, she asks the staff nurse for help. In this case, I'm going to rate Salina as Beginning because she didn't show any evidence that she had any idea what to do about the BP.

As a nurse, you need to be ready to develop an intervention about the actual priority. How will you know what the priority should be? As you start out, you need to have your eyes open to any abnormalities. Study your didactic materials carefully for normal expectations in vital signs and physical assessments for body systems and highlighted conditions. Think through which focused assessments will be appropriate when these abnormalities are found. This is building your red flags and responses.

Also remember to discuss clinical situations with your staff nurses and clinical instructors. Speak up with your analyses and listen carefully to hone your perspectives.

How are you doing in these areas?

Poll

Which area do you plan to work on this semester?

Paying careful attention to redirect assessments when necessary.

Discussing a specific clinical finding with my clinical instructor at least once a shift.

Committing to follow up on each abnormality I observe.

Effective Responding has to do with experience.

The first dimension is keeping your calm. Remember to prepare as best you can, trust in your preparation, and get help when you need it.

The second dimension is clear communication. This includes answering questions clearly and truthfully, giving directions in a helpful way, and clearly communicating with team members. Remember that if you don't know the answer, be sure to say this and get back to the patient with the correct answer as soon as you find it.

The third dimension is about planning your intervention well and being flexible in adapting the plan as you go along as necessary. This includes anticipating potential complications so you are ready to respond.

The fourth dimension is Being Skillful. In order to be skillful you need to practice. Use your skills lab time well, attend open lap to practice as many times as possible, ask for feedback from others who observe you, volunteer to use the skills you have in clinical, etc.

All of these dimensions of clinical judgment have to do with practice. Take every opportunity while you are a student.

How do you do in the area of Effective Responding?

Poll

1. Rate yourself on staying calm with your patients and team members. 0=Always stressed and it shows 5=Always calm in behavior/words and able to calm others.

2. How do you respond when a patient asks you a question that you don't know how to answer?

I confidently give my best guess answer.

I change the subject.

I tell them to ask their doctor.

I admit I don't know and I get the answer for them.

3. In order to become more skillful, I plan to

Practice each skill at least twice more after I feel confident.

Have a colleague watch me and give me detailed feedback and then practice again.

Volunteer to use my new skills in clinical whenever possible.

Remember that Effective Reflecting is the place where you can bring together your clinical judgment skills. There are two parts: Self-Evaluation and Commitment to Improvement.

Poll

Which area will you commit to reflecting on after every clinical shift this semester?

Personal clinical performance

Clinical decision points

Listing of alternatives

Comparing potential alternatives against one another

How will you commit to improvement this semester?

Identify specific strengths and weaknesses

Identify role models for mitigating weaknesses

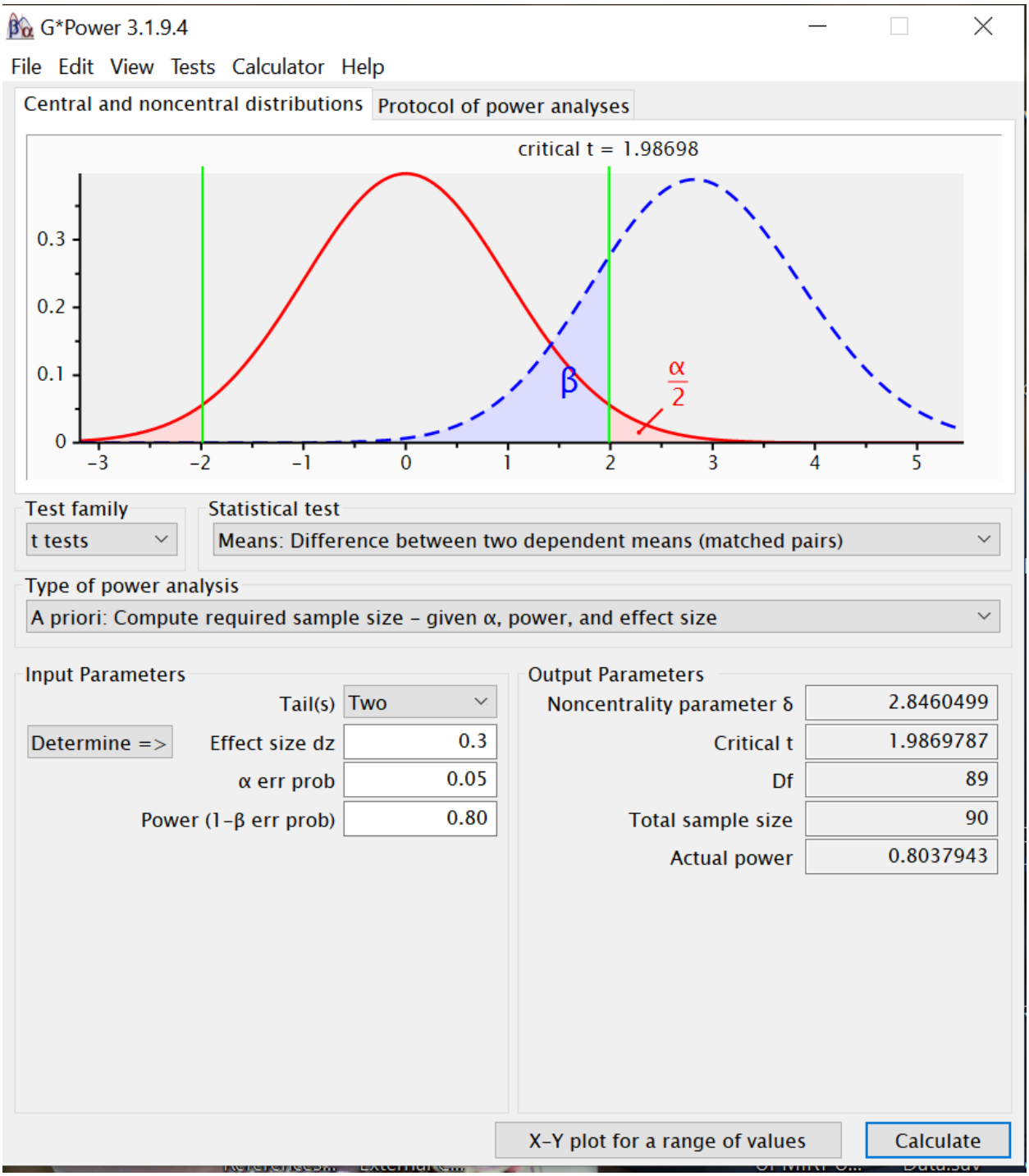
List personal goals for improvement from one clinical shift to the next.

Telling a colleague your personal goals.

I hope this webinar has helped you think through how to intentionally work toward more effective clinical judgment. Thank you again for your participation in my study.

APPENDIX B

POWER ANALYSIS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2
3
4
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β
α/2
Test family
t tests
Statistical test
Means: Difference between two dependent means (matched pairs)
Type of power analysis
A priori: Compute required sample size – given α, power, and effect size
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Tail(s) Two
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Effect size dz 0.3
α err prob 0.05
Power (1−β err prob) 0.80
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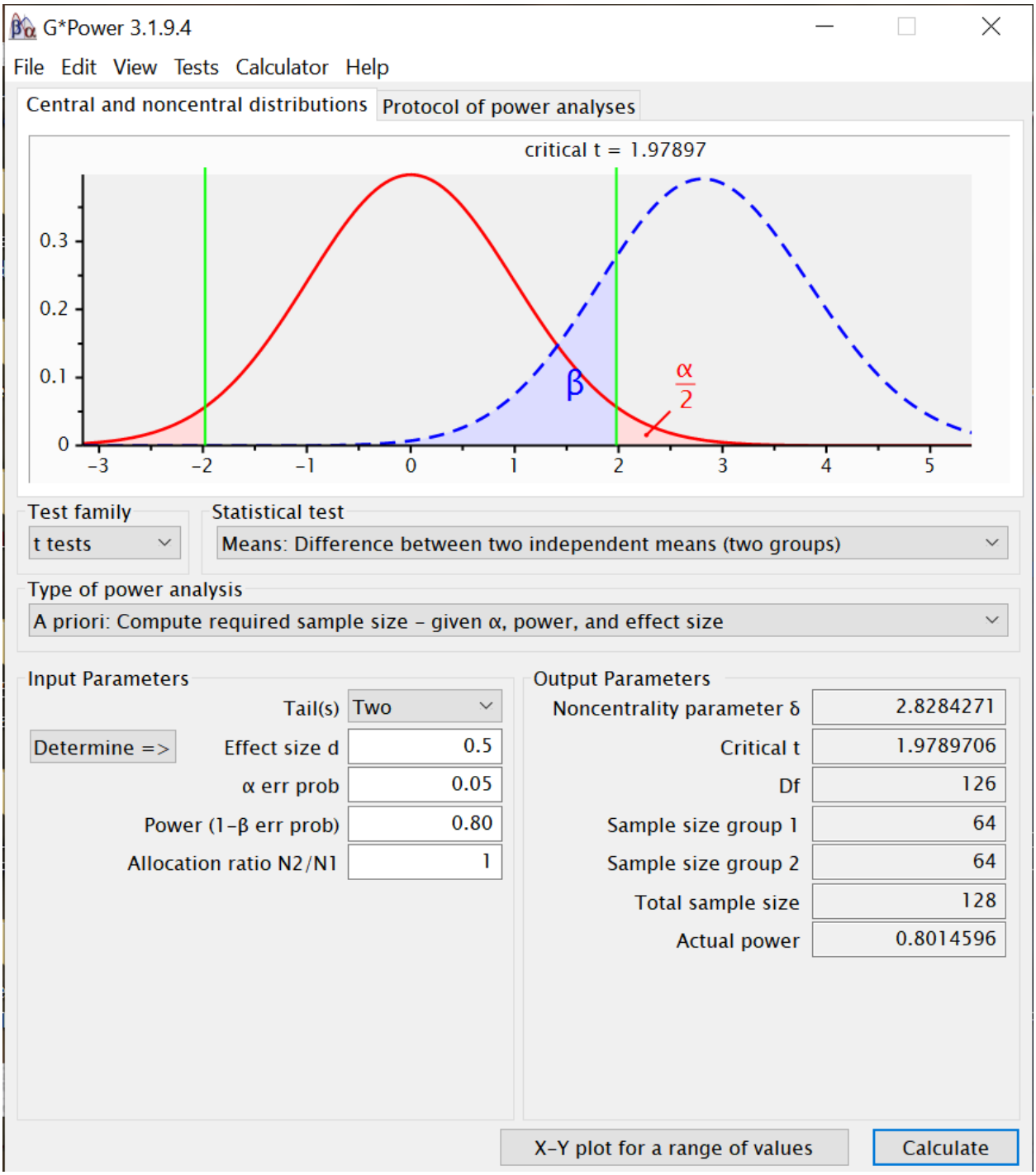
Calculate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File Edit View Tests Calculator Help
Central and noncentral distributions
Protocol of power analyses
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0.2
0.1
0
−3
−2
−1
0
1
2
3
4
5
β
α/2
Test family
t tests
Statistical test
Means: Difference between two independent means (two groups)
Type of power analysis
A priori: Compute required sample size – given α, power, and effect size
Input Parameters
Tail(s) Two
Determine =>
Effect size d 0.5
α err prob 0.05
Power (1−β err prob) 0.80
Allocation ratio N2/N1 1
Output Parameters
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Critical t 1.9789706
Df 126
Sample size group 1 64
Sample size group 2 64
Total sample size 128
Actual power 0.8014596
X-Y plot for a range of values
Calculate

APPENDIX C

ORIENTATION AGENDAS

Orientation Agenda for the Control Group

I. Background—Need for Clinical Judgment

a. Billings (2019) found that even with continuing efforts on the part of nursing programs to help students to prepare for their first nursing jobs, employers have been finding new grads unable to perform safe clinical judgments consistently.

b. Tanner (2006) developed a clinical judgment model that has been used in many ways to guide student nurses and nurses to understand how clinical judgment can be developed according to four cognitions: noticing, interpreting, responding, and reflecting

c. Lasater (2007) built upon Tanner's model by developing the Lasater's Clinical Judgment Rubric in which she broke down each of these cognitions into 2-4 dimensions and then leveled each of these into descriptions of behaviors that demonstrate these dimensions from beginning to exemplary.

II. Research Summary

a. I want to study the effect of Lasater's Clinical Judgment Rubric on clinical judgment ratings over the course of the first two semesters of nursing school.

b. Commitments from Participants

i. Review and sign the Informed Consent form

ii. Fill in the basic demographic questionnaire including your age, gender, number of years of education, and number of years of experience in healthcare whether as employed or as volunteer

iii. Be willing to be evaluated according to the LCJR by the researcher during the final simulation of your first and second semesters during this nursing program

c. Exclusion-In order to decrease the likelihood that students feel pressured to participate in this research, I have committed to exclude those assigned to my section of NUR 380.

d. Commitments from the Researcher

i. Provide a copy of the LCJR to each participant

ii. Evaluate each participant during their final simulation of semesters 1 & 2 of this nursing program

III. Next steps

a. Your decision to participate in this study, or not, will have no impact on evaluation in this class or affect your course grade.

b. Please review the Informed Consent information provided.

c. Sign and return to the researcher if you would like to participate or hand in to the designee here on campus.

d. An email will be sent with the Informed Consent and another invitation to participate.

e. Informed Consents can be signed, scanned, and emailed back to the researcher as well.

IV. References

Billings, D. M. (2019). Teaching nurses to make clinical judgments that ensure patient safety. *The Journal of Continuing Education in Nursing, 50*(7), 300-302. http://doi.org/10.3928/00220124-20190612-04

Lasater, K. (2007). Clinical judgment development: Using simulation to create an assessment rubric. *Journal of Nursing Education, 46*(11), 496-503.

Tanner, C. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. *Journal of Nursing Education, 45*(6), 204-211.

Orientation Agenda for the Intervention Group

I. Background—Need for Clinical Judgment

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   c. Lasater (2007) built upon Tanner's model by developing the Lasater's Clinical Judgment Rubric in which she broke down each of these cognitions into 2-4 dimensions and then leveled each of these into descriptions of behaviors that demonstrate these dimensions from beginning to exemplary.

II. Research Summary

   a. I want to study the effect of direct instruction in how to use Lasater's Clinical Judgment Rubric on clinical judgment ratings over the course of the first two semesters of nursing school.

   b. Commitments from Participants

      i. Review and sign the Informed Consent form

ii. Fill in the basic demographic questionnaire including your age, gender, number of years of education, and number of years of experience in healthcare whether as employed or as volunteer

iii. Attendance for a 15-minute webinar after your first clinical experience of the semester to receive instruction about the LCJR in both your first and second semester of the nursing program.

iv. Be evaluated according to the LCJR by the researcher during the final simulation of your first and second semesters during this nursing program

c. Exclusion-In order to decrease the likelihood that students feel pressured to participate in this research, I have committed to exclude those assigned to my section of NUR 380.

d. Commitments from the Researcher

i. Provide a copy of the LCJR to each participant

ii. Evaluate each participant during their final simulation of semesters 1 & 2 of this nursing program

iii. Provide direct instruction about the LCJR once each semester.

III. Next steps

a. Your decision to participate in this study, or not, will have no impact on evaluation in this class or affect your course grade.

b. Please review the Informed Consent information provided.

c. Sign and return to the researcher if you would like to participate or hand in to the designee here on campus

d. An email will be sent with the Informed Consent and another invitation to participate.

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APPENDIX D

INFORMED CONSENTS

Informed Consent for the Control Group

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Development of Nursing Clinical Judgment Using Lasater's Clinical Judgment Rubric

Lead Investigator: Holly Springer, MN, RN
PhD in Nursing Education Student at University of Northern Colorado
Email: heat8018@bears.unco.edu

Research Advisor: Kathie Records, PhD, RN, FAAN
School of Nursing
College of Natural and Health Sciences
University of Northern Colorado
3140 Gunter Hall
Greeley, Colorado 80639
Office: 970-251-2137
kathryn.records@unco.edu

My name is Holly Springer. I am a nurse, a nursing instructor, and am working on my dissertation research for a PhD in Nursing Education. I am asking you to consider being in this dissertation study that will focus on clinical judgment among 1st and 2nd semester ABSN students.

Clinical judgment is important for the nurse to provide safe and effective patient care. Past research has been done to show that clinical judgment development can be demonstrated by certain behaviors during high fidelity simulation experiences. Your participation in this research will add to this area of nursing knowledge and help provide important guidance for nursing educators.

How you will participate in this research:

1) Sign the paper copy of this Informed Consent Form and hand it to me, or my designee. Or download this Informed Consent Form from the email you will receive. Sign it and scan it before emailing it back to the researcher, Holly Springer, at heat8018@bears.unco.edu
2) Fill in a basic demographics form and return it as noted above.

3) By signing this Informed Consent, you are agreeing to be observed and evaluated by me or my research assistant for the clinical judgment you demonstrate during the last simulation experience of this semester and once during the last simulation experience of next semester. These simulation experiences are a standard part of your program of study. The only difference will be that I will be observing your performance to obtain ratings of clinical judgment. These ratings will not be shared with your clinical instructors nor have any affect on your grade(s).
4) By signing this Informed Consent, you are agreeing to be video/audio recorded for the me or my research assistant's evaluation. Recordings will be deleted within one week.
5) Your decision to participate in this study, or not, will have no impact on evaluation in this class or affect your course grade.

Data to be Collected:

1) Demographic information including: age, gender, number of years of college education, and number of years of healthcare experience through employment or volunteering.
2) Rubric ratings from the LCJR for each participant from the final simulation experiences of the two semesters of participation.
3) Attendance records at clinical education experiences.

Confidentiality

All submissions to me will be kept confidential. I will have a code spreadsheet that lists each participant by an identification number. I will have a separate data spreadsheet for demographic information, rubric ratings, and attendance records listed by identification number only. The data spreadsheet will be used to perform statistical analysis. Results will be reported without reference to any individual names. Every effort will be made to protect the confidentiality of all data collected. Electronic records will be kept in a password protected computer. Paper records will be kept in a locked filing cabinet.

Risks to Participants

There are no foreseeable risks to you beyond those you may experience with usual clinical and classwork. Deciding to not participate or withdraw from the study at any time will not affect your grades, clinical evaluation, or class standing.

Cost to Participants

There is no anticipated monetary cost to you. The evaluation of the simulations will coincide with your standard simulation experiences.

Benefits

While there is no direct benefit for participating in this research, you may find that personal review of the LCJR, supplied for your reference is useful to better understand specific behaviors known to demonstrate clinical judgment.

Participation is voluntary. You may decide not to participate in this study and if you begin participation, you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Research, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

_____	_____
Signature or Typed Name of Participant	Date
___Holly Springer, MN, RN_____	_____
Signature or Typed Name of Researcher	Date

Informed Consent for the Intervention Group

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Development of Nursing Clinical Judgment Using Lasater's Clinical Judgment Rubric

Lead Investigator: Holly Springer, MN, RN
PhD in Nursing Education Student at University of Northern Colorado
Email: heat8018@bears.unco.edu

Research Advisor: Kathie Records, PhD, RN, FAAN
School of Nursing
College of Natural and Health Sciences
University of Northern Colorado
3140 Gunter Hall
Greeley, Colorado 80639
Office: 970-251-2137
kathryn.records@unco.edu

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4) By signing this Informed Consent, you are agreeing to be video/audio recorded for me or my research assistant's evaluation. Recordings will be deleted within one week.
5) By signing the Informed Consent, you are also agreeing to attend a 15-minute webinar near the time of your first clinical post-conference of each of these two semesters to receive direct instruction about the LCJR.
6) Your decision to participate in this study, or not, will have no impact on evaluation in this class or affect your course grade.

Data to be Collected:

1) Demographic information including: age, gender, number of years of college education, and number of years of healthcare experience through employment or volunteering.
2) Rubric ratings from the LCJR for each participant from the final simulation experiences of the two semesters of participation.
3) Attendance records at clinical education experiences.
4) Attendance at the two direct instruction webinars.

Confidentiality

All submissions will be kept confidential. I will have a code spreadsheet that lists each participant by an identification number. I will have a separate data spreadsheet for demographic information, rubric ratings, and attendance records listed by identification number only. The data spreadsheet will be used to perform statistical analysis. Results will be reported without reference to any individual names. Every effort will

be made to protect the confidentiality of all data collected. Electronic records will be kept in a password protected computer. Paper records will be kept in a locked filing cabinet.

Risks to Participants

There are no foreseeable risks to you beyond those you may experience with usual clinical and classwork. Non-participation or withdrawal from the study at any time will not affect your grades, clinical evaluation, or class standing.

Cost to Participants

There is no anticipated monetary cost to you. The evaluation of the simulations will coincide with your standard simulation experiences. You will have the additional time commitment of the 15-minute webinars that will take place once in each semester.

Benefits

While there is no direct benefit for participating in this research, you may find that personal review of the LCJR, supplied for your reference, and the direct instruction provided in the webinar are useful to better understand specific behaviors known to demonstrate clinical judgment.

Participation is voluntary. You may decide not to participate in this study and if you begin participation, you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please sign below if you would like to participate in this research. A copy of this form will be given to you to retain for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Research, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-1910.

_____	_____
Signature or Typed Name of Participant	Date
___Holly Springer, MN, RN_____	_____
Signature or Typed Name of Researcher	Date

APPENDIX E

DEMOGRAPHIC QUESTIONNAIRE

Demographic Questionnaire

The answers to these questions will help me to understand who is participating in the study and how these factors relate to clinical judgment. This information will be kept confidential and will only be reported as group data in research reports.

Please fill in your answers and email this information back to heat8018@bears.unco.edu Thank you!

1. Age _____
2. Gender _____
3. Years of college completed
    a. 2-3 years
    b. 4-5 years
    c. 6-7 years
    d. >7 years
4. Previous experience in healthcare
    a. Employment
        i. 0 years
        ii. <1 year
        iii. 1-2 years
        iv. 3-4 years
        v. >4 years
    b. Volunteering
        i. 0 years
        ii. <1 year
        iii. 1-2 years
        iv. 3-4 years
        v. >4 years

APPENDIX F

LASATER CLINICAL JUDGMENT RUBRIC

	Dimension	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
	Effective Noticing:				
C	Focused Observation	Focuses observation appropriately; regularly observes and monitors a wide variety of objective and subjective data to uncover any useful information	Regularly observes and monitors a variety of data, including both subjective and objective; most useful information is noticed; may miss the most subtle signs	Attempts to monitor a variety of subjective and objective data but is overwhelmed by the array of data; focuses on the most obvious data, missing some important information	Confused by the clinical situation and the amount and kind of data; observation is not organized and important data are missed, and/or assessment errors are made
D	Recognizing deviations from expected patterns	Recognizes subtle patterns and deviations from expected patterns in data and uses these to guide the assessment	Recognizes most obvious patterns and deviations in data and uses these to continually assess	Identifies obvious patterns and deviations, missing some important information; unsure how to continue the assessment	Focuses on one thing at a time and misses most patterns and deviations from expectations; misses opportunities to refine the assessment
E	Information Seeking	Assertively seeks information to plan intervention: carefully collects useful subjective data from observing and interacting with the patient and family	Actively seeks subjective information about the patient's situation from the patient and family to support planning interventions; occasionally does not pursue important leads	Makes limited efforts to seek additional information from the patient and family; often seems not to know what information to seek and/or pursues unrelated information	Is ineffective in seeking information; relies mostly on objective data; has difficulty interacting with the patient and family and fails to collect important subjective data
Effective Interpreting Involves:					
F	Prioritizing data	Focuses on the most relevant and important data useful for explaining the patient's condition	Generally focuses on the most important data and seeks further relevant information but also may try to attend to less pertinent data	Makes an effort to prioritize data and focus on the most important, but also attends to less relevant or useful data	Has difficulty focusing and appears not to know which data are most important to the diagnosis; attempts to attend to all available data
G	Making sense of data	Even when facing complex, conflicting, or confusing data, is able to (a) note and make sense of patterns in the patient's data, (b) compare these with known patterns (from the nursing knowledge base, research, personal experience, and intuition), and (c) develop plans for interventions that can be justified in terms of their likelihood of success	In most situations, interprets the patient's data patterns and compares with known patterns to develop an intervention plan and accompanying rationale; the exceptions are rare or in complicated cases where it is appropriate to seek the guidance of a specialist or a more experienced nurse	In simple, common, or familiar situations, is able to compare the patient's data patterns with those known and to develop or explain intervention plans; has difficulty, however, with even moderately difficult data or situations that are within the expectations of students; inappropriately requires advice or assistance	Even in simple, common, or familiar situations, has difficulty interpreting or making sense of data; has trouble distinguishing among competing explanations and appropriate interventions, requiring assistance both in diagnosing the problem and developing an intervention

	Dimension	Exemplary 4	Accomplished 3	Developing 2	Beginning 1
Effective responding involves:					
H	Calm, confident manner	Assumes responsibility; delegates team assignments; assesses patients and reassures them and their families	Generally displays leadership and confidence and is able to control or calm most situations: may show stress in particularly difficult or complex situations	Is tentative in the leader role; reassures patients and families in routine and relatively simple situations, but becomes stressed and disorganized easily	Except in simple and routine situations, is stressed and disorganized, lacks control, makes patients and families anxious or less able to cooperate
I	Clear communication	Communicates effectively; explains interventions; calms and reassures patients and families; directs and involves team members, explaining and giving directions; checks for understanding	Generally communicates well; explains carefully to patients; gives clear directions to team; could be more effective in establishing rapport	Shows some communication ability (e.g., giving directions); communication with patients, families, and team members is only partly successful; displays caring but not competence	Has difficulty communicating; explanations are confusing; directions are unclear or contradictory; patients and families are made confused or anxious and are not reassured
J	Well-planned intervention / flexibility	Interventions are tailored for the individual patient; monitors patient progress closely and is able to adjust treatment as indicated by patient response	Develops interventions on the basis of relevant patient data; monitors progress regularly but does not expect to have to change treatments	Develops interventions on the basis of the most obvious data; monitors progress but is unable to make adjustments as indicated by the patient's response	Focuses on developing a single intervention, addressing a likely solution, but it may be vague, confusing, and/or incomplete; some monitoring may occur
K	Being skillful	Shows mastery of necessary nursing skills	Displays proficiency in the use of most nursing skills; could improve speed or accuracy	Is hesitant or ineffective in using nursing skills	Is unable to select and/or perform nursing skills
Effective reflecting involves:					
L	Evaluation/ self-analysis	Independently evaluates and analyzes personal clinical performance, noting decision points, elaborating alternatives, and accurately evaluating choices against alternatives	Evaluates and analyzes personal clinical performance with minimal prompting, primarily about major events or decisions; key decision points are identified, and alternatives are considered	Even when prompted, briefly verbalizes the most obvious evaluations; has difficulty imagining alternative choices; is self-protective in evaluating personal choices	Even prompted evaluations are brief, cursory, and not used to improve performance; justifies personal decisions and choices without evaluating them
M	Commitment to improvement	Demonstrates commitment to ongoing improvement; reflects on and critically evaluates nursing experiences; accurately identifies strengths and weaknesses and develops specific plans to eliminate weaknesses	Demonstrates a desire to improve nursing performance; reflects on and evaluates experiences; identifies strengths and weaknesses; could be more systematic in evaluating weaknesses	Demonstrates awareness of the need for ongoing improvement and makes some effort to learn from experience and improve performance but tends to state the obvious and needs external evaluation	Appears uninterested in improving performance or is unable to do so; rarely reflects; is uncritical of himself or herself or overly critical (given level of development); is unable to see flaws or need for improvement

Used by permission of the author, Kathie Lasater, EdD, RN.

APPENDIX G

PERMISSION TO USE LASATER CLINICAL JUDGMENT RUBRIC

Re: Interest in your clinical judgment rubric

Kathie Lasater <lasaterk@ohsu.edu>
Thu 3/10/2022 2:41 PM
To:Springer, HollyAnne <heat8018@bears.unco.edu>

Hi HollyAnne,

Congrats on making it this far in your doctoral journey. Here is the permission and (hopefully) some helpful information as you formulate your research:

Thank you for your interest in the Lasater Clinical Judgment Rubric (LCJR). You have my permission to use the tool for your project. I ask that you (1) cite it correctly, and (2) send me a paragraph or two to let me know a bit about your project when you've completed it, including how you used the LCJR. In this way, I can help guide others who may wish to use it. Please let me know if it would be helpful to have an electronic copy.

You should also be aware that the LCJR describes four aspects of the Tanner Model of Clinical Judgment —Noticing, Interpreting, Responding, and Reflecting—and as such, does not measure clinical judgment because clinical judgment involves much of what the individual student/nurse brings to the unique patient situation (see Tanner, 2006 article). We know there are many other factors that impact clinical judgment in the moment, many of which are impacted by the context of care and the needs of the particular patient.

The LCJR was designed as an instrument to describe the trajectory of students' clinical judgment development over the length of their program. The purposes were to offer a common language between learners, faculty, and preceptors in order to talk about learners' thinking and to serve as a help for offering formative guidance and feedback (See Lasater, 2007, 2011). For measurement purposes, the rubric appears to be most useful with multiple opportunities for clinical judgment vs. one point/patient in time.

Please let me know if I can be of help,

Kathie

Kathie Lasater, EdD, RN, ANEF, FAAN
Professor Emerita, OHSU School of Nursing
Visiting Professor, Edinburgh Napier University

Kathie Lasater is also Assistant Editor of Nurse Education Today
http://www.nurseeducationtoday.com

From: Springer, HollyAnne <heat8018@bears.unco.edu>
Sent: Thursday, March 10, 2022 12:56:01 PM
To: Kathie Lasater
Subject: [EXTERNAL] Re: Interest in your clinical judgment rubric

Hi Dr. Lasater,
I have now passed my written comprehensive exam and am preparing for my oral comprehensive at the end of this month. I am more and more excited to use your LCJR in my doctoral research. I am touching base again to ask for permission to use the LCJR. My plan is to measure clinical judgment with the LCJR during prelicensure nursing students' simulation experiences and then comparing the results between a

group for whom I will provide direct instruction in how to apply the LCJR for self-reflection on their in-person clinical experiences to a group for which I will not provide direct instruction during the study period.
Thank you for letting me know if this is still acceptable.
Have a great day,
Holly Springer
University of Northern Colorado

From: Kathie Lasater <lasaterk@ohsu.edu>
Sent: Wednesday, October 28, 2020 10:35 AM
To: Springer, HollyAnne <heat8018@bears.unco.edu>
Subject: Re: Interest in your clinical judgment rubric

Hi HollyAnne,

Thanks for reaching out; I'm excited to hear about your interest in clinical judgment and students' development. The closure of the Concordia Portland campus was a shock and sadness, but I'm glad you were able to help the nursing students complete their education.

Re: the LCJR: For 13 years now, I have made it available to researchers, students, curriculum developers, etc. at no charge. When you're ready, just jet me an email to let me know generally how you'd like to use it. The only thing I ask is for an appropriate attribution of my work and a few sentences when you're done about how you used the LCJR. I've found I can help others when I know a bit about previous users' experiences.

No need to send your IRB proposal. As for point values, you will see from a number of research studies in which I've been involved that we used a 4 for Exemplary, 3 for Accomplished, etc. I don't use the numbers when students are using the LCJR because they automatically go to A, B, C, etc. This is a developmental rubric which spans students' time in program. For example, I wouldn't expect a 2nd semester student to get a 4 in Making Sense of the Data or almost any other LCJR dimension! Here are a few articles where the numbers were used for research purposes:

Johnson, E., Lasater, K., Hodson Carlton, K., Sideras, S., Siktberg, L., & Dillard, N. (2012). Geriatrics in simulation: Role modeling and clinical judgment effect. *Nursing Education Perspectives, 33*(3), 176-180.
Lasater, K., & Nielsen, A. (2009). The influence of concept-based learning activities on students' clinical judgment development. *Journal of Nursing Education, 48*(8), 441-446.
Lasater, K. (2007). Clinical judgment development: Using simulation to create an assessment rubric. *Journal of Nursing Education*, *46*, 496-503.

Please let me know if you have questions, HollyAnne, and good luck as you sift through the possibilities for your research!

Best,
Kathie

Kathie Lasater, EdD, RN, ANEF, FAAN
Professor Emerita, OHSU School of Nursing
Visiting Professor, Edinburgh Napier University

Kathie Lasater is also Assistant Editor of Nurse Education Today
http://www.nurseeducationtoday.com

From: Springer, HollyAnne <heat8018@bears.unco.edu>
Sent: Wednesday, October 28, 2020 9:53 AM
To: Kathie Lasater
Subject: Interest in your clinical judgment rubric

Hi Dr. Lasater,

My professor, Dr. Kathryn Records, reached out to you on my behalf and she sent me your email address. I really appreciate your willingness to connect with me via email.

I've invested my six years of experience as a nursing faculty member with Concordia University Portland's nursing program, including transferring my employment to Concordia University St. Paul to continue with these nursing students after our Portland university closed this year. The course I have been involved with is our nursing care of the adult with clinical placements in long term care. Currently, I work part time as an adjunct in this course in the online option.

I'm also in my third year of coursework for my PhD in Nursing Education through University of Northern Colorado and I have been researching clinical judgment development among baccalaureate nursing students in preparation to use this as the topic of my dissertation. This has led to my discovery of your clinical judgment rubric. I have been reading about its development as well as reading other studies in which it has been used. I am becoming very interested that I may want to use your rubric as the instrument for my dissertation. I am planning to this end as I continue in each of my courses.

In my current course with Dr. Records, I am completing an assignment in which I am analyzing your clinical judgment rubric as my focus. If I were to want to continue with the plan of using your instrument in my dissertation, what is the method for asking your permission? Would you like for me to email you a copy of my Institutional Review Board proposal when I have it complete? What is the fee to use the rubric with my participants? If I were to attach point values to the rubric anchors, what is the process for requesting to modify the rubric?

Thank you very much in advance for your responses.

Sincerely,
Holly Springer
PhD in Nursing Education Student
University of Northern Colorado

APPENDIX H

INSTITUTIONAL REVIEW BOARD APPROVALS

UNIVERSITY OF
NORTHERN COLORADO

Institutional Review Board

Date: 05/26/2022

Principal Investigator: Hollyanne Springer

Committee Action: **IRB EXEMPT DETERMINATION – New Protocol**

Action Date: 05/26/2022

Protocol Number: 2205038749

Protocol Title: Development of Nursing Clinical Judgment Using Lasater's Clinical Judgment Rubric

Expiration Date:

The University of Northern Colorado Institutional Review Board has reviewed your protocol and determined your project to be exempt under 45 CFR 46.104(d)(701) for research involving

Category 1 (2018): RESEARCH CONDUCTED IN EDUCATIONAL SETTINGS. Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational
practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special education instructional strategies, and research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

You may begin conducting your research as outlined in your protocol. Your study does not require further review from the IRB, unless changes need to be made to your approved protocol.

As the Principal Investigator (PI), you are still responsible for contacting the UNC IRB office if and when:

- You wish to deviate from the described protocol and would like to formally submit a modification

request. Prior IRB approval must be obtained before any changes can be implemented (except to eliminate an immediate hazard to research participants).

- You make changes to the research personnel working on this study (add or drop research staff on this protocol).
- At the end of the study or before you leave The University of Northern Colorado and are no longer a student or employee, to request your protocol be closed. *You cannot continue to reference UNC on any documents (including the informed consent form) or conduct the study under the auspices of UNC if you are no longer a student/employee of this university.
- You have received or have been made aware of any complaints, problems, or adverse events that are related or possibly related to participation in the research.

If you have any questions, please contact the Research Compliance Manager, Nicole Morse, at 970-351-1910 or via e-mail at nicole.morse@unco.edu. Additional information concerning the requirements for the protection of human subjects may be found at the Office of Human Research Protection website - http://hhs.gov/ohrp/ and https://www.unco.edu/research/research-integrity-and- compliance/institutional-review-board/.

Sincerely,

Nicole Morse
Research Compliance Manager

University of Northern Colorado: FWA00000784

Concordia
UNIVERSITY·SAINT PAUL

TO: hspringer@csp.edu

CC: Humans Subjects Review Committee File

The IRB Human Subjects Committee reviewed the referenced study under the exempt procedures according to federal guidelines 45 CFR Part 46.104d (1): RESEARCH, CONDUCTED IN ESTABLISHED OR COMMONLY ACCEPTED EDUCATIONAL SETTINGS, THAT SPECIFICALLY INVOLVES NORMAL EDUCATIONAL PRACTICES THAT ARE NOT LIKELY TO ADVERSELY IMPACT STUDENTS' OPPORTUNITY TO LEARN REQUIRED EDUCATIONAL CONTENT OR THE ASSESSMENT OF EDUCATORS WHO PROVIDE INSTRUCTION. THIS INCLUDES MOST RESEARCH ON REGULAR AND SPECIAL EDUCATION INSTRUCTIONAL STRATEGIES, AND RESEARCH ON THE EFFECTIVENESS OF OR THE COMPARISON AMONG INSTRUCTIONAL TECHNIQUES, CURRICULA, OR CLASSROOM MANAGEMENT METHODS.

Study Number: 2022_054

Principal Investigator: Holly Springer

Title: Development of Nursing Clinical Judgment Using Lasater's Clinical Judgment Rubric
Classification: **X** Exempt _____Expedited _____Full Review

Approved **X**

Approved with modifications: _____ [See attached] Declined ____ [See attached]

Upon receipt of this letter, you may begin your research. Please remember that any changes in your protocol need to be approved through the IRB Committee. When projects are terminated or completed, the IRB Committee should be informed in order to comply with Department of Health and Human Services (HHS) Regulations, Title 45 Code of Federal Regulations Part 46 (45 CFR 46). If you have questions, please call the IRB Chair at (651) 641-8723.

May 27, 2022

Date