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Do Novice Nurses Utilize Reflection for Clinical Reasoning?

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Abstract

Statement of the Issue: Once practicing on their own, novice nurses experience a gap between practice and theory. These nurses are expected to care for increasingly sicker patients and must be able to bridge that gap in order to prevent failure to rescue. Clinical reasoning involves the art of noticing, interpreting, responding, and reflecting. According to the previous research, novice nurses are entering the profession without the ability of clinical reasoning and are at risk for missing crucial data.

Summary of the Literature: Previous research showed reflection in students in healthcare related fields as well as residency programs after graduation. Reflection is a metacognitive process that can increase knowledge in order to determine further actions. The literature showed those who adapted the process of reflection, whether written, self-reflection, or group reflections, developed increased professional competence, increased self-confidence, and an increase in the ability to view the *'big picture'* of the clinical setting. None of the literature addressed if novice nurses continued to use reflection in their practice without prompting during a residency program.

Objectives: This study aimed to answer the following questions.

1. If novice nurses, less than 18 months experience, utilize reflection without prompting in their practice?
2. If so, does using reflection foster clinical reasoning in novice nurses?

Thesis Statement: The use of reflection in novice nurses would foster their ability for clinical reasoning resulting in increased professional competence and self-confidence.

Methodology: This phenomenological qualitative study examined novice nurses' experiences with reflection by finding themes within semi-structured interviews. Giorgi's method was utilized to analyze the themes. Tanner's Clinical Judgement Model is the guiding theory.

Summary of Findings: The eight novice nurse participants of this study verbalized the use of reflection in their practice. Through their stories, they demonstrated fostering clinical reasoning skills. Keywords used to identify the themes showed reflection fostered pattern recognition, time management, and increased the self-confidence, as well as increased professional competence and the ability to see the *'big picture'* in the clinical setting.

Confirmation of Thesis: This study confirmed the use of reflection without prompting in the novice nurse participants. Their use of reflection fostered their clinical reasoning resulting in increased professional competence, increased self-confidence, and increased ability to see the *'big picture'* view of their patient.

Statement of Significance: This study filled a gap in previous research showing novice nurses, less than 18 months experience, are using reflection without prompting. The study also demonstrated that the use of reflection fosters their clinical reasoning.

Suggestions for Future Research: While this study demonstrated the use of reflection fostering clinical reasoning in the eight participants, future research with a larger sample size of different novice nurses could clarify if other novice nurses are also using reflection for clinical reasoning.

Chapter 1: Purpose & Significance

As the population is aging, patients are becoming sicker with more comorbidities, and potential complications. Novice nurses are defined for this study as newly graduated nurses who have completed orientation but have less than 18 months of experience. Although novice, they are expected to be able to quickly, and effectively provide necessary care to their patients. "Patient acuity is increasing, which demands complex skills and competent nurses to assume patient care" (Theisen & Sandau, 2013, p. 406). While their knowledge of theory may be high, there still exists a gap between theory and practice. Novice nurses are entering the profession unprepared for the challenging role, and are at risk for missing crucial data resulting in possible failure to rescue. Failure to rescue is an inability to prevent death after a patient develops complications, and is a safety and quality measure for hospitals. As nurses are at the bedside more than any other healthcare provider, it is our responsibility to be able to notice changes in patient status, and respond quickly. According to Sterner et al., (2019), novice nurses are more at risk for not noticing and responding to subtle changes in patient acuity. In their qualitative study, Sterner et al., (2018), defined novice nurses as having less than 12 months experience; the novice nurses expressed feeling inadequate, and unprepared for practice. The use of reflection in novice nurses would foster their ability for critical thinking, enhancing clinical reasoning resulting in increased professional competence, and self-confidence.

Clinical reasoning is a process in which nurses use knowledge, critical thinking, and experience to "notice, interpret, respond and reflect" regarding a patient's situation" (Tanner, 2006, p.208). Clinical judgment is the end result of the nurse's clinical reasoning. Multiple studies support that there is a lack of clinical reasoning skills in novice nurses (Goudreau et al., 2015; Monagle et al., 2018; Theisen & Sandau, 2013).

Huhn (2017, p. 59) defines clinical reasoning as a "highly complex cognitive process that involves several component skills including but not limited to critical thinking, hypothesis testing, synthesizing information, and critical reflection". The art of using these skills contributes to clinical reasoning, and requires development in the clinical setting. As clinicals have not adequately allowed for such development, nursing education programs have adopted the use of simulations. However, emphasis has been placed on the use of debriefing afterward as the driving force in fostering clinical reasoning (Lavoie et al., 2017; Sabei & Lasater, 2016). Sabei and Lasater (2016) using Tanner's Clinical Judgment Model, the Lasater Clinical Judgment Rubric, and Bloom's Taxonomy developed the following definition for debriefing for clinical judgment "…debriefing is a structured and guided reflection process through which students actively appraise their cognitive, affective, and psychomotor performance within the context of their clinical judgment skill." (p.43) By this definition, debriefing after simulation allows the students to think critically about events from the simulation, considering what worked well and what did not. It also allows for the consideration of other approaches for possible pattern emergence.

According to Murdoch-Eaton and Sandars (2014), the act of reflection heightens the knowledge gained from the experience. This allows the nurse's future actions to benefit from their reflections on prior experiences. Murdoch-Eaton and Sandars (2014) defined reflection as a metacognitive process done to increase self and situational knowledge for the purpose of identifying further action. John Dewey emphasized reflection as an active process in which one forms conclusions, and then tests those conclusions (Rolfe, 2014). In this manner, reflection in nursing practice can foster clinical reasoning as it encourages the nurse to actively use critical thinking.

Nielson et al., (2007) created a Guide for Reflection based upon Tanner's Clinical Judgment Model which allows students to actively reflect on experiences in the clinical setting. This guide provides a structure for the reflection, while an accompanying Lasater Clinical Judgment Rubric allows educators to evaluate, and provide formative feedback to the students. Both the guide and the rubric were used in most of the studies found in the literature. These and similar guides and rubrics are used in nursing education; novice nurses should be bringing this knowledge into their practice. This would result in an increase in reflection for clinical reasoning. However, Goudreau et al., (2014), discovered that in an effort to blend into their new position on the unit, novice nurses tend to stop developing this skill.

Voldbjerg et al., (2016) found that novice nurses are turning to more experienced coworkers for advice. Their research showed novice nurses are either not given the opportunity, or not taking the opportunity for reflection. Instead, they are relying on instruction from other more experienced nurses. By missing out on reflection, novice nurse's clinical reasoning skills may not develop. Other studies demonstrated the use of reflection for clinical reasoning in multiple healthcare roles. However, no studies identified if novice nurses used reflection as a tool to foster clinical reasoning. In order to fill the gap in nursing research, this study aimed to discover:

1: Do novice nurses, less than 18 months experience, utilize reflection without prompting in their practice?

2. If so, does the use of reflection foster clinical reasoning in novice nurses?

Definition of Terms

The following are definitions to be used for the purpose of this study:

Clinical Judgment: "A conclusion about a patient's needs, concerns, or health problems and/or the decision to take action or not." (Tanner, 2006, p.204)

Clinical Reasoning: The process of how nurses think such as "noticing, interpreting, responding and reflecting to make their judgment." (Tanner, 2006, p.208)

Novice Nurse: A newly graduated nurse with less than 18 months of experience that is no longer on orientation

Reflection: "A metacognitive process that creates greater understand of both self and the situation so that future actions can be informed by this understanding." (Murdoch-Eaton & Sandars, 2017, p.279)

Chapter 2: Literature Review

Safe and efficient patient care relies on accurate nursing actions. Clinical reasoning and critical thinking, while at times used interchangeably, are not the same. Clinical reasoning is a cognitive and metacognitive process in which nurses make clinical judgments using knowledge, critical thinking, and experiences. According to Benner et al., (2010), clinical reasoning involves noticing and knowing the significance of minor nuances and changes in the patient's situation, while recognizing the *"big patient picture"*. According to Tanner (2006), clinical reasoning is a process in which nurses use knowledge, critical thinking, and experience to "notice, interpret, and respond to a patient's situation" (p.208) as well as reflect. Clinical judgment is the end result of the nurse's clinical reasoning. Multiple studies are showing inadequate clinical reasoning skills in novice nurses (Goudreau et al., 2015; Monagle et al., 2018; Theisen & Sandau, 2013). Research has shown the use of reflection in students and novice nurses in residency programs. However, no studies have identified if novice nurses are using reflection as a tool to foster their clinical reasoning skills without prompting during a residency program.

Reflection is the intentional act of evaluating previous events or experiences, and fosters the development of clinical reasoning. Cappelletti et al., (2014) advanced the findings of Tanner to include a sixth conclusion involving educational strategies to foster clinical judgment. They found that no single strategy was considered more effective, whether that strategy was used alone, or in combination with other strategies (Cappelletti et al., 2014). In reviewing the current literature, none of the articles found reflection ineffective in fostering clinical reasoning. However, Trommelen et al., (2017) incorporated case-based learning alongside reflection which made it difficult to attribute the growth to just reflection. Noted benefits of reflection in the

literature review included: increased professional competence, heightened ability to view the big picture, and increased self-confidence.

Review of Literature

A literature review was conducted using the University of Central Oklahoma databases with the following search terms: clinical reasoning, clinical decision-making, novice nurse, newly graduated nurse, debriefing, and reflection. The time frame searched was 2013-2020. The search terms resulted in articles within nursing, physical therapy, and medicine including students in these disciplines. Non-English articles were excluded. A total of 16 articles were identified for this review. Five of the articles were quantitative, four were qualitative, one mixed-method, and five other types of articles.

Increase in Professional Competence

In a quantitative, longitudinal study of ethical reasoning in pediatrics residents, 26 residents were asked to write reflections on an ethics case from their personal experiences. This included identifying the ethical issues, describing the progression, resolution of the case, and reflecting on knowledge gained through the experience (Moon et. al, 2013). One year later, the same residents were given the same assignment, and an interview was conducted to follow up. The goal of the study was to determine if analyzing the reflective writing could identify changes in ethical sensitivity and reasoning (Moon et.al, 2013). The reflections were reviewed, and analyzed using an adapted ethical reasoning tool. There was no decline in ethical reasoning. Significant improvement was noted in two components: use of professional values and use of personal values. Additionally, there was little evidence of improved ethical reasoning, possibly due to differences in the curriculum vs. the components measured in the ethical reasoning tool (Moon et.al, 2013). While this study focused on ethical reasoning, clinical reasoning involves the

same process of using knowledge, critical thinking, and experience to form judgments. The act of reflection can be done in several ways: writing, reflecting aloud, and self-reflection. Here, reflection was used in the form of narratives intended to foster ethical reasoning and professional competence.

A quasi-experimental, quantitative study by Kim et al., (2018), at a hospital in South Korea, developed and implemented a critical reflection program for new graduate nurses after completing a two-month orientation. Participants included 44 novice nurses; 24 in the experimental group and 20 in the control group. The critical reflection program was developed based upon Kolb's learning cycle and Cox's model for clinical teaching. The experimental group was given 6 months of critical reflection training (Kim et al., 2018). The experimental group showed a significant increase in critical thinking skills, a component of clinical reasoning. However, both groups showed significant increase in job performance. There was an increase in critical thinking skills. However, there was no explanation if this was due to the 10 months of practice as opposed to the use of reflection.

Another systemic review by Theisen and Sandau (2013), identified weaknesses of new graduate nurses, and suggested strategies for change. Lack of clinical reasoning skills, and self-confidence was identified in newly graduated nurses. Suggested strategies included the creation of nurse residency programs as well as dedicated preceptors educated in the use of questioning for reflection to stimulate critical thinking.

The Guide for Reflection based on Tanner's Clinical Judgment Model was used in a quantitative study addressing the effects of reflection on clinical decision-making of intensive care nurses. The study was conducted at Amin Hospital in Iran and involved 60 nurses. None were identified as novice nurses (Razieh et al., 2018). All participants completed pre/post-tests

and weekly reflective journals for 1 month. The intervention for the experimental group was a one-time class on Tanner's Reflective Guide. The results showed a significant increase in clinical decision-making or clinical reasoning in both groups; although, the experimental group showed a greater increase. Reflection was found to foster critical thinking, a requirement for clinical reasoning.

***'Big Picture'* View**

One large, tertiary-level medical center hospital used case studies to evaluate the clinical judgment of newly hired nurses. The case studies were specific for each unit and created by the unit educators (Lasater et al., 2015). Nurses were asked to reflect on previous experiences either as nurses or students to answer the case studies. These were used to create orientation plans specific for the nurse. The Tanner Model of Clinical Judgment was used as well as a modified Lasater Clinical Judgment Rubric. Questions studied included: whether experience played a role in clinical judgment, or differences in the educational backgrounds of the nurses. In this study, novice was defined as less than one year of practice (Lasater et al., 2015). The results of the study showed increased pattern recognition in experienced nurses reflective of increased ability to form clinical judgments. Little reflection was acknowledged in this study. However, one wonders if the experienced nurses used reflection in forming their clinical judgments as other studies have shown the increased use of reflection in more experienced nurses as second nature. The end result revealed novice nurses need more time and experience to develop clinical judgment. This demonstrated that clinical reasoning happens over a course of time, and is most likely the result of reflection.

Russell et al., (2013) described a template used by faculty in a pediatric clinical course. The template, SAFETY, was introduced to give the students a framework for the clinical day.

Components of the SAFETY template are system-specific assessment, assignments, and accuracy of orders, first/priority, evaluate interventions, teach and test infection control, and cya-cover your assets (Russel et al., 2013). The component of evaluate interventions included an opportunity for reflection. Students were expected to use this opportunity to reflect on their day, evaluate their interventions, and their success or failure. This template was found to allow the students the ability for deeper thought, and increased learning through reflection on action.

A case report by Baker et al., (2017) showed use of a systematic clinical reasoning tool in physical therapy (SCRIPT) as a guide for clinical reasoning. The tool was developed by the Army-Baylor University Doctoral Fellowship Program in Orthopedic Manual Physical Therapy. The goal of SCRIPT was to provide the novice or student physical therapist with a guide to clinical reasoning for use in a patient encounter. The guide assisted with communication, assessment, interventions, and further patient encounters (Baker et al., 2017). The SCRIPT had at least two planned, with the possibility of a third, pauses to allow for reflection. These reflections took place away from the patient with the assistance of the preceptor. This allowed the preceptor to assess, and provide feedback for the novice nurse or student. The tool was beneficial in allowing the novice/student a consistent process to follow in order to avoid errors, and develop their clinical reasoning. Pausing for reflection allowed for increases in professional competency by developing the novice's metacognitive skills.

In a quantitative study, 27 second- year physical therapy students were studied to examine the development of clinical reasoning by combining reflection and case-based learning activities (Trommelen et al., 2017). The authors found an increase in self-reported clinical reasoning and reflection scores after the addition of reflection. However, as the use of case-based learning was also a recent curriculum change, it may have contributed to the increase in

clinical reasoning (Trommelen et al., 2017). Historically, reflective practices are not seen in students. Due to the addition of reflective practice, students were able to identify gaps in their knowledge and recognize patterns. The authors did note that previous research in students examining either reflection or case-based learning alone had mixed results. This could be due to a lack of knowledge as students are still learning, and have more gaps in their knowledge or even changes in the curriculum leading to increased use of reflection.

While investigating the types of knowledge sources used by newly graduated nurses at a university hospital in Denmark, Voldbjerg et al., (2016) found novice nurses primarily turn to their more experienced coworkers as a knowledge source. Nine nurses were interviewed. It was identified novice nurses were being told what needed to be done, and not being allowed or taking the opportunity to reflect. Reflecting with a preceptor or mentor would allow novice nurses the ability to talk through the situation, acknowledge gaps, view patterns, and be involved in the decision making. Allocating the opportunity to reflect while on orientation allows the new nurse to build reflection into their practice in order to see the *'big picture'* and gain clinical reasoning skills.

Self-Confidence

In a longitudinal, qualitative study of a continuing education program at two teaching hospitals, Goudreau et al., (2015) found 30-minute group reflective sessions facilitated the ability of newly graduated nurses to acquire and interpret data in order to decide on interventions. Sessions were offered over 20 weeks and novice nurses were asked to attend at least 10 sessions. Nurses reported increases in self-confidence, clinical reasoning, and competency.

Caldwell and Grobbel (2013) wrote a systematic review in which the importance of reflective practice in nursing was examined. Their literature review found that reflective practice

assists with professional development, assists the nurse in finding gaps in their knowledge, builds self-confidence, and empowers nurses. They emphasized the always- present ability to grow professionally, and the ongoing need for reflective practice throughout a nurse's career.

Murdoch-Eaton and Sandars (2014) defined reflection as a metacognitive process done to increase self and situational knowledge for the purpose of identifying further action. The review emphasized a lack of convincing evidence of increased competence or improvement in patient care due to reflection. However, it did show reflection associated with an increase in knowledge and self-confidence. Dewey argued that "knowledge is an action." (Rolfe, 2014, p.1181) Reflection, alone, cannot improve competence, instead it is how the learner uses that knowledge that increases competence.

A longitudinal, qualitative, phenomenography study of four different educational programs studied the first two years of practice of novice physical therapists (Hayward et al., 2013). The study consisted of semi-structured interviews, reflective journals, and observation (Hayward et al., 2013). The novice physical therapists all showed growth over the two years of the study. The physical therapists went from the '*novice looking towards the expert for advice'* to an '*expert who reflected on previous experiences'* and used multiple sources of knowledge. The study demonstrated that reflecting on the experience was more beneficial for clinical reasoning than the actual experience. Participation in the study with multiple opportunities for self-reflection and group reflections contributed to the development of metacognitive skills due to study design (Hayward et al., 2013). This study demonstrates the importance of reflection in development of metacognitive skills as well as increased self-confidence which could lead to increased clinical reasoning.

A case report by Huhn (2017), illustrated efforts in a Doctor of Physical Therapy program to improve students' clinical reasoning skills. A course was added to the curriculum to develop clinical reasoning skills. The six-week course was intended to facilitate discussion and included reflective journals. The course included pre/post testing to measure outcomes, and was completed by 60 students. Outcomes were measured using the California Critical Thinking Disposition Inventory (CCTDI) and the Self Reflection and Insight Scale (SRIS). The former measured willingness and ability to critically think. The SRIS measured readiness for purposeful change in behaviors (Huhn, 2017). There was significant increase in the scores between the pre/posttest, as well as an increase in the self- confidence and the metacognitive skills of students. These scores did not necessarily reflect an increase in clinical reasoning skills. They were reflective of a willingness to think critically, a component to clinical reasoning. Reflection was emphasized in the course with the use of reflective journal as well as a group reflection session during class.

In a qualitative study, Sedgwick et al., (2014) conducted semi-structed interviews to assess the quality of clinical reasoning in rural nurses. Their findings indicated "it is more about how nurses think, than what they think" (Sedgwick et al., 2014, p. 1). One novice nurse noted an incident in which reflection led to self-correction for error prevention. The study concluded that nurses need to practice their clinical reasoning skills, and that the use of reflection can enhance not only those metacognitive skills, but self- confidence.

In a mixed methods study of 74 newly graduated nurses during their first year of practice, Monagle et al., (2018), examined the use of structured reflection to foster development of clinical judgment. This study took place at four different acute care hospitals with participants employed for less than 3 months prior to start of the study. The study's theoretical framework

was Tanner's Model of Clinical Judgment, which has four elements: "noticing, interpreting, responding, and reflecting." (Tanner, 2006, p. 208) Clinical judgment is the end result of clinical reasoning. Clinical judgement was the intervention studied.

This study had an experimental group, who attended three learning sessions, and a control group who did not attend the sessions. Both groups participated in two structured reflection sessions (Monagle et al., 2018). Results from the study showed no difference in clinical reasoning between the two groups. Researchers attributed these results to an inappropriate tool used to measure clinical reasoning, as the tool actually measured critical thinking, one component of clinical reasoning (Monagle et al., 2018). Other reasons for these results were attributed to the possibility that a structured reflection session was ineffective for novices who were unaccustomed to the art of reflection, and changes in participants of the sessions due to scheduling conflicts (Monagle et al., 2018). However, the study resulted in reflective sessions assisting in the development of clinical reasoning, not the learning sessions. This supports the idea that reflection fosters clinical reasoning. Other results included: increased work satisfaction, increased self-confidence, and competency.

Theory

Several of the studies used for the literature review incorporated Tanner's Clinical Judgment Model and a Guide for Reflection also based upon Tanner as the theoretical backdrop. This model involves "noticing, interpreting, responding and reflecting." (Tanner, 2006, p. 208) Tanner found that nurses form clinical judgments based upon what information they bring to an event or experience, recognizing patterns in the patient based upon knowledge of the patient, influence of the unit culture, multiple reasoning processes, and reflection to evaluate previous experiences and knowledge (Tanner, 2006). Reflection plays a noteworthy role in this model.

Tanner utilizes "reflection-on-action" and "reflection-in-action" (Tanner, 2006, p.209). Reflection-on-action is reflecting on prior actions while reflection-in-action is reflecting during action. The Guide for Reflection is based upon Tanner's theory, and provides a means of organizing thoughts and a set of questions beneficial in guiding reflection (Nielsen et al., 2007).

Tanner's theory draws on works by Dewey. Dewey emphasized reflection as an active process in which one forms conclusions and then tests those conclusions (Rolfe, 2014). His thoughts on reflection involve noticing an issue, analyzing the issue for understanding, developing the question, thinking through the question, and finally, testing the question. According to Dewey's work, by reflecting on experiences, novice nurses could better recognize and internally problem -solve to arrive at an appropriate intervention. According to Tanner, this is "thinking like a nurse" (Tanner, 2006, p.209).

Another potential theory of importance found in the literature review was Benner's Novice to Expert theory. This theory demonstrates the career progression of the nurse and is based upon work by Dreyfus and his model of skill acquisition (Benner, 1982). Benner establishes "five levels of proficiency: novice, advanced beginner, competent, proficient, and expert" (Benner, 1982, p.402). Novice refers to the beginner with this theory showing the progression towards expert. The expert nurse has experience; however, Benner warns that longevity is not the sole factor for experience rather the ability of the nurse to see the *'big picture'* (Benner, 1982). The expert nurse has a reflective practice and uses this ability towards clinical reasoning.

While both theories can contribute to the research questions, Tanner's model utilizes a process easier to adopt by novice nurses. Tanner's model would also be more beneficial to novice nurses' adoption of reflection for clinical reasoning, as it emphasizes the use reflection to

form clinical judgments. The use of reflection to foster clinical reasoning is essential to this study.

Multiple studies utilized training in reflection and sometimes group reflection alongside individual reflections (Goudreau et al., 2015; Huhn, 2017; Kim et al., 2018).
These studies focused on healthcare practitioners using reflection as part of a course or residency program. None identified if novice nurses used reflection as a tool to foster clinical reasoning. This study examined experiences of the novice nurses after orientation to discover if reflection was utilized without prompting. Many nursing programs currently include reflection as part of their curriculum. But are novice nurses continuing to use reflection after graduation and acceptance into practice? If so, are the novice nurses benefiting from reflection with respect to fostering clinical reasoning?
. In order to fill the gap in nursing research, this study aimed to discover:

1: Do novice nurses, less than 18 months experience, utilize reflection without prompting in their practice?

2. If so, does the use of reflection foster clinical reasoning in novice nurses?

Chapter 3: Methods

Research Design

In order to determine if novice nurses utilize reflection and also explore the role of reflection in fostering their clinical reasoning, a qualitative study was conducted. Qualitative research aims to discover meaning through the view of the study subject (Bonnel & Smith, 2018). In order to find their meaning, data is collected from the words of the subjects.

Descriptive phenomenology was the research methodology used for this qualitative study. Due to its nature of being "person -centered" (Offred & Vickers, 2010, p.101), phenomenology allows for exploration of the novice nurse's perceptions regarding reflective practice. Phenomenology as a methodology studies the experiences and perceptions of the individual examining "the essence of the phenomenon" (Polit & Beck, 2017, pg.54). Ethnography was considered due to acknowledging nursing as a culture. However, goals of this study included examining if the individual novice nurse used reflection, which would require study of the nurse as an individual. This research studied whether novice nurses are using reflection without prompting, whereas previous research focused on the use of reflection after training in how to reflect. To see if novice nurses were using reflection for clinical reasoning without prompting, descriptive phenomenology was the chosen methodology to describe the experiences and perceptions of novice nurses in using reflection.

Descriptive phenomenology involves four important steps:

1. Bracketing is the process of "identifying and putting on hold preconceived beliefs or opinions" (Offredy & Vickers, 2010, p. 101).
2. Intuiting refers to "the researcher remaining open to the meanings attributed to the phenomenon by those who have experienced it" (Offredy & Vickers, 2010, p. 102).

3. Analyzing is the "coding, categorizing and making sense of the essential meanings of the phenomenon" (Offredy & Vickers, 2010, p. 102).
4. Describing is the act of "the researcher comes to understand and define the phenomenon" (Offredy & Vickers, 2010, p. 102).

The plan of study involved one semi-structured interview per novice nurse using open-ended questions. The researcher asked questions regarding the novice nurse's use of reflection in their clinical practice. This study aimed to fill a gap in previous research and discover:

1: Do novice nurses, less than 18 months experience, utilize reflection without prompting in their practice?

2. If so, does the use of reflection foster clinical reasoning in novice nurses?

Sample

A criterion sample of eight novice nurses were interviewed for this study. All participants were novice nurses with less than 18 months of experience, no longer on orientation, and employed at a metro area hospital. To increase likelihood of similar experiences, all novice nurses needed to have completed the hospital orientation program prior to participation in the study, making this a convenience sample. This sample was convenient due to location and participants meeting the criteria for the study. According to Polit and Beck (2017), study participants should have similarities within the phenomenon such as lived experiences yet for the purpose of studying individual experiences, some diversity is expected. This is a strength of this study.

Informed consent was received and signed prior to participation. Participants were informed of rights and informed there was no reward for participation. Additionally, participants were informed that they had the ability to leave the study at any time without repercussions. To

assure participant's confidentiality, numbers were assigned for reference to individual participants.

Instruments/Interventions

As this was a qualitative study, the tool used was semi-structured interviews. Participants were asked the following questions as they considered their experience with patient care and reflection. The questions were piloted with other nurses prior to start of study.

Interview Questions:

1. What did you initially notice about the patient/situation?
2. Did what you noticed change as time passed?
3. What were your initial thoughts (assessment) about the patient/ situation?
4. Have you had any prior experience with a similar situation? If so, did it have any impact?
5. How did your assessment/ retrieved data lead you to respond?
6. What interventions/ nursing actions did you do?
7. How did the patient respond to those interventions?
8. Looking back upon the patient/situation, is there anything you would have done differently?
9. Were there any gaps in your skills/ knowledge at the time?
10. Do you feel that has changed and how?
11. Do you ever reflect on previous patient experiences/ situations?
12. Are there any differences in how you reflect?
13. Has reflecting changed how you would/ have respond(ed) to another similar situation?

Implementation

This study was conducted at a large metropolitan acute care hospital. Participants were novice nurses with less than 18 months of experience who had completed the orientation process. After Institutional Review Board (IRB) approval, managers were questioned to determine the amount of novice nurses potentially available for the study. This was to allow for recruitment by email. Eight participants were interviewed (while not working) in order to avoid interruptions to patient care and the study. The interviews lasted no more than 30 minutes. All interviews were conducted over a 3-month timeframe in quiet locations within the hospital to avoid interruptions.

Data Analysis

As interviews were completed, the researcher reviewed the interviews looking for themes to allow for data saturation. Giorgi's phenomenological analytic method was used in agreement that the participants should not bear the burden of validating the findings. Giorgi's analytic method involves four steps.

1. "Read the entire set of protocols to get a sense of the whole." (Polit & Beck, 2017, p. 540)

Prior to starting the research, the researcher identified and set aside any and all preconceived notions in an attempt to see the experience through the eyes of the subject. In this study, this allowed the researcher to understand what reflection and clinical reasoning meant to the study participants.

2. "Discriminate units from participants' descriptions of phenomenon being studied." (Polit & Beck, 2017, p.540)

This step involved reading and rereading to identify the themes but not necessarily to apply meaning to the themes.

3. "Articulate the psychological insight in each of the meaning units." (Polit & Beck, 2017, p. 540)

This step involved determining the meaning of the previously identified themes.

4. "Synthesize all of the transformed meaning units into a consistent statement regarding participants' experiences." (Polit & Beck, 2017, p. 540)

This final step involved translating the themes into the identified research questions in order to answer the questions.

Interviews were transcribed and read in their entirety in order "to get a sense of the whole" (Polit & Beck, 2017, p.540). All preconceived biases were set aside in order to see through the eyes of the participants. Next, the interviews were read multiple times to get a sense of the participant's words. Themes were identified during the readings and after the identification, meaning was assigned to the themes. Lastly, the themes were incorporated into the research questions. Data saturation was reached with eight participant interviews as at that time, the themes became repetitive.

Strengths and Weaknesses

In reviewing potential strengths and weakness for this study, the need for a small sample size was a strength. Data saturation was a potential if too many participants were interviewed. This would have potentially wasted the participants' time as well as that of the researcher. Data saturation was reached at the point when results become repetitive. Care, in the form of setting aside any preconceived opinions and assumptions, was taken to avoid potential bias and the attempt to lead participants toward perceived results. The ability to adjust as data was received was a strength of this study. Another strength for this study was the fact that all the novice nurse participants had attended the same residency program.

A potential weakness might have been that reflection was not being used (or identified as being used) by any of the participating novice nurses. Another weakness of qualitative research is in reliability. This researcher had a small sample in which themes were identified. Furthermore, other researchers with a different sample or sample size may not provide the same themes due to the individuality of each novice nurse participant. However, if the study results can be replicated, transferability would occur. A third weakness might be that participants were not asked to review the transcribed interviews due the participant's unavailability during the Covid-19 pandemic.

Chapter 4: Results

This study aimed to discover if novice nurses, without prompting, reflect on their practice. Secondly, does reflection foster the development of clinical reasoning in novice nurses. Our aging population results in sicker patients with more comorbidities. This increases the possibility of complications while hospitalized, and opportunities for failure to rescue. Novice nurses are expected to utilize clinical reasoning to care for these patients. Clinical reasoning is a process in which nurses use knowledge, critical thinking, and experience to "notice, interpret, respond and reflect to a patient's situation" (Tanner, 2006, p.208). Novice nurses lack extensive experience; therefore, they must utilize another method to prevent a situation of failure to rescue. The use of reflection will allow the novice nurse to utilize their limited experiences to influence future experiences and prevent failure to rescue.

Murdoch-Eaton and Sandars (2014) defined reflection as a metacognitive process done to increase self and situational knowledge for the purpose of identifying further action. By the use of reflection, novice nurses can add to their knowledge by utilizing previous experiences with patient care. The literature review showed reflection as contributing to increased professional competence, allowing for a big picture view of the situation, and increasing self-confidence. Two research questions provided the foundation for this study:

1. Do novice nurses, less than 18 months of experience, utilize reflection without prompting in their practice?
2. If so, does the use of reflection foster clinical reasoning in novice nurses?

In order to answer these questions, the novice nurses were interviewed using guided reflection. Next, they were asked if they use reflection in their practice, how they reflect, and what changes this has made in their practice.

Participants Description

The criterion and convenience sample consisted of eight novice nurses with less than 18 months of experience. All worked at a large metro area hospital on surgical, oncology and renal units. While gender is not a factor in the sample selection for this study, all the novice nurses were female. While it was not considered in the criteria, five of the novice nurses held bachelor's degrees. Three held an associate's degree, with two of those working towards a bachelor's degree. All of the eight novice nurses had completed their orientation process. They were practicing on their own prior to inclusion in this study which fulfilled the criteria.

Findings

All of the interviewed participants verbalized using reflection in some form. While most did not follow the format of the guided reflection, they verbalized taking time to critically consider their daily practice. The terms decompress, debrief, reflection, and venting were used to describe various methods of reflection utilized by the participants (Table 1). Analysis of the transcribed interviews revealed the use of reflection by the participants, which led to pattern recognition, better time management, and increased self-confidence.

Pattern Recognition

The most obvious theme noted in the interviews was pattern recognition. Noticing changes or differences, '*if I did this, then the outcome would be'*, learning and identifying cues, and watching trends were among the key terms (Table 1). While describing a rapid response with a patient, Nurse #1 noted: "Okay. You're different" as a cue that the patient's condition had changed. Nurse #2 stated: "… by noticing the pattern of including positive feedback, I was able to improve a high anxiety patient's independence. She [the patient] was less needy, more independent and less anxious."

> So just encouraging [my patient]to keep on doing it [the positive behavior]. Positive feedback. Like, you're doing it, you're doing awesome. You don't even need me here. Look, you're doing so well. That made her [the patient] feel like, 'Okay, I do have this' and led to a bigger improvement (Nurse #2).

In discussing pattern recognition, Nurse #4 verbalized: "It's important to know your patient so you can anticipate any future problems and get ahead of them." She elaborated knowing the patient's current condition and "watching the trends" allows for noticing changes in patient acuity. Nurse #5 stated: "I look back on that situation [referring to a patient who had coded] and the little cues here and there, I'm going to pick up on them better now." Nurse #6 and Nurse #8 both discussed reflecting helped them to recognize patterns while Nurse #7 relayed: "…reflection helps her recognize things that could have been done easier."

Nurse #6 elaborated: "I just kept giving boluses and then calling the doctor and then giving boluses and then calling the doctor." By reflecting the second time she encountered a patient with dropping blood pressures, she verbalized: "I just turned the fluids up until I can get ahold of the doctor." In this example, she stated reflection helped her time management. However, while not noted per the participant, this action was probably based more on increased pattern recognition.

Time Management

Time management was another theme that emerged from the transcripts. Key terms to address time management included: respond earlier, discover helpful if (*interventions done a certain way*), make things easier, using time wisely, and setting expectations (Table 1). In addressing time management, Nurse #2 noted asking: "Did I really use my time wisely?" as part of her daily reflection as her way of determining her efficiency. After reflecting, Nurse #1 spoke

of improving how she educated her patients thereby saving her time in the long run. She discussed: “I’m able to talk to them more. I’m able to educate them. When they know what we’re doing, they’re more compliant which makes it easier to get everything done.” (Nurse #1)

Nurse #4 comes in early to look through the chart for information as a way to get ahead. Nurse #7 said:

> I feel like in the beginning of the day, before every day, I organize everything. And I look through charts and I’m like, Okay, well if I do this and this, then I can do this at the same time or I’ve done this previously, and this worked better. Or when I had to give blood and I thought okay, previously, I’ve waited until the end, but it’s only 8:00 and I only have 3 patients. If I get it started now, I know that I only have to be in there for 15 minutes and then I can let the blood run and finish with the rest of my patients. (Nurse #7)

Nurse #7 also discussed: “Setting expectations with her patients assisted in her time management by allowing her to care for all her patients with minimal interruptions [from other patients]. By setting the expectation, her patients knew when she would be back and what to expect.”

Increased Self-Confidence

Another theme to emerge from the transcribed interviews was increased self-confidence. Gut feeling, sixth sense, more assertive, trusting self, more confident, self-improvement, and trusting gut were key terms (Table 1). Nurse #1 stated: “I should have gone with my gut feeling” regarding a change in her patient’s condition that she felt she should have acted upon quicker after reflecting. She also described being more assertive with her patients when she felt more confident in herself as did Nurse #7 in describing that reflecting made her realize: “she should have been more assertive.” Nurse #4 verbalized: “I do reflect on my patients and different ways

to improve" as she felt it made her a better nurse. Nurse #5 said: "A big thing I've learned is just trusting my gut." Nurse #6 described: "a sixth sense you almost have." Nurse #8 related: "she has learned to trust herself more" due to reflecting on her days and "incorporating changes she should make."

Table 1.

Themes	Codes: Key Terms
Reflection	1. Decompress 2. Debrief 3. Venting
Pattern Recognition	1. Notice changes/ differences 2. *If I did this, then the outcome would be* 3. Learning and identifying cues 4. Watching trends
Time Management	1. Respond earlier 2. Discover helpful if (*interventions done a certain way*) 3. Make things easier 4. Using time wisely 5. Setting expectations
Increased Self-Confidence	1. Gut feeling 2. Sixth sense 3. More assertive 4. Trusting self 5. More confident 6. Self-improvement 7. Trusting gut

The novice nurses who participated in this research all verbalized utilizing reflection without prompting as part of their daily practice. Each novice nurse was able to articulate changes they have made to their practice as a result of their reflections. While these nurses are still working on their clinical reasoning skills, their use of reflection is fostering clinical reasoning. The next chapter will discuss these findings.

Chapter 5: Discussion

An aging population is resulting in sicker patients. While novice nurses are encouraged to use clinical reasoning, they are not bringing extensive experience to their practice, and must learn how to utilize their limited experience to improve their patient care. The use of reflection allows the novice nurse to critically consider their practice, and make changes to improve their patient care. Previous research has shown a gap between practice and theory, and inadequate clinical reasoning skills in novice nurses. This chapter will discuss the research findings of this study in relation to the literature review and attempt to correlate existing research. Implications and limitations of the research will also be considered. Lastly, any recommendations for further study will be discussed.

The interviews consisted of guiding the novice nurse through a reflection on a patient situation from their practice. The participating novice nurse was allowed to choose any patient care situation to use for the interview. The questions guided the novice nurse through Tanner's Clinical Judgment Model. The model is a continual process of "noticing, interpreting, responding, and reflecting on a patient's situation" (Tanner, p.208). The study aimed to fill a gap and discover:

1. Do novice nurses, less than 18 months experience, utilize reflection without prompting in their practice?
2. If so, does the use of reflection foster clinical reasoning in novice nurses?

Research Question 1- Do Novice Nurses Reflect?

All eight of the research participants used reflection on their own in their practice. The novice nurses used different key terms to describe their reflections such as decompress, debrief, reflect, and vent (Table 1). Four of the novice nurses expressed that prior to the interview, they

thought they were just overthinking, but this process helped them truly realize the value of their reflections. Nurse #8 verbalized it best: "I knew reflecting back on my day helped me but I thought it was me overthinking. Now it makes sense."

Nurse #3 initially did not think she reflected, but instead used the term venting. When asked what venting looked like to her, she responded: "Kind of telling them [my family] how my day went. Pretty much if my days had been busy. How it ended up working out and what I should have done differently." (Nurse #3)

Nurse #1 responded:

> On my drive home, which is not a very long drive home, I do reflect how my day went and try to decompress already. If it's been a tough day, I'm just like, 'Oh my goodness'. I just go through some of the things [from my day]. I do overthink a little bit, and I don't necessarily harp on it, but there are a few things that stand out. When I've taken care of a patient and I'm just like 'Okay, how should I have handled this?' Especially patient interactions. Did I say that appropriately? What could I have expanded on? What could I have done differently? (Nurse #1)

Nurse #2 verbalized continuously asking herself: "Okay, what can I do in there [patient's room] during the shift? How can I improve? Did I chart enough?" Nurse #4 stated:

> I do reflect on my patients and different ways to improve their situation like how to get them to eat, how to control their pain better, and how to improve their situation. Reflection is key to me in learning from patients and [identifying] any future situations that come. (Nurse #4)

Nurse #5 said: "I've just always reflected on things [so] I can learn and get better. What question to ask? What's a priority? How could I have handled a situation differently." Nurse #6 spoke of

debriefing with a non-medical family member about her day and: “reflecting on her day and how it went and did I do the right thing? I’m just one of those people that like to go over how my day was.” Nurse #7 said on reflection: “Every day. I’m like, ‘If I had done this different, or this differently.” She elaborated with:

> If I have a situation that I feel like could have gone better, I will usually say, ‘Hey, this is what happened. Is this what’s supposed to happen? Should I do it differently next time? So, it’s kind of in my own mind, I decide if it’s something that needs to be changed, or if it was like, ‘Oh, I think that was the right thing to do’. Or if I’m like, ‘Let me ask so-and-so how they do it, to see if there’s a better way I can do it next time.” (Nurse #7)

Nurse #8 said: “Reflection is a time to debrief for me. I think of the day and what I liked about my actions and what I should change and how to change it or who to ask if I don’t know.”

Reflection in the Literature Review

The literature review showed reflection as an active process of consideration of a situation. Murdoch-Eaton and Sandars (2014) defined reflection as a metacognitive process done to increase self and situational knowledge for the purpose of identifying further action. By this definition, the style of reflections described by the research participants correlates with reflection in the literature review. Both are done in order to increase self and situational knowledge, and lead to the possibility of further action. Murdoch-Eaton and Sandars (2014) also showed that reflection, alone, cannot improve competence. Instead, it is how the learner uses that knowledge that can increase competence or knowledge. By reflecting on their practice and using that knowledge to improve their patient care, the participating novice nurses were actively working to increase their competence. Nurse #4 summed it up by stating: “Every day is a learning experience.” Hayward et. al., (2013) had a study of novice physical therapists that demonstrated

the importance of reflection in the development of metacognitive skills. These same metacognitive skills assist with clinical reasoning.

Research Question 2- Does Reflection Foster Clinical Reasoning?

Clinical reasoning is the cognitive and metacognitive process in which nurses make clinical decisions. According to Tanner (2006, p. 208), clinical reasoning is a process in which nurses use knowledge, critical thinking, and experience to "notice, interpret, respond, and reflect on a patient's situation". Previous studies have shown ineffective clinical reasoning in novice nurses. However, none have identified if novice nurses are using reflection without prompting during a residency program. These nurses are not bringing extensive experience to their practice. The use of reflection adds to their ability of clinical reasoning by using their current experiences as learning experiences.

Nurse #6 described how reflecting on a previous similar situation led to her increasing fluids in another patient with low blood pressure while waiting to hear from the doctor. Nurse #2 reported on being able to increase her patient's independence by her response to positive feedback and relayed including more positive feedback [in future interactions] with that patient. Nurse #7 described reflecting on how her day went to make better use of her time. Nurse #1 discussed that after reflecting on it, her time management improved when she started educating her patients more thoroughly. She elaborated that she realized the patients were more likely to get up and walk when she gave a reason which saved her time.

> I'm able to talk to them more [ERAS patients]. I'm able to educate them. When they know the why, they're more likely to respond. [She said] when speaking of getting ERAS patients up walking after surgery. In comparison to before reflecting where it was more 'Let's get you up. The doctor says you got to get up' (Nurse #1).

Literature Review Findings

Benefits from the literature review of reflection included increased professional competence, the ability to view the '*big picture'*, and increased self-confidence. These benefits were found in residency programs for nurses, doctors, and physical therapists. The novice nurses who participated in this study saw these same benefits in their practice. They verbalized using self- reflection in their practice without prompting. The novice nurses used key terms of decompress, debrief, and venting when discussing reflection (Table 1).

Increased Professional Competence

The literature review found that the use of reflection can increase professional competence. The studies from the review of the literature found that reflection fostered critical thinking, which is a component of clinical reasoning. Many of the nurses in this study gave examples of improvements in their patient care based upon their reflections. Nurse #1 and Nurse #3 verbalized feeling more capable of providing patient education while improving their time management after reflecting and changing their practice. Nurse #3 voiced advocating for a patient in pain based on realizing she should have done more for a previous patient. Nurse #2 related the ability to increase her patient's independence after reflecting on the patient's response to positive feedback. Nurse #4 communicated learning to watch for trends after a patient's transfer to a higher level of care shortly after change of shift. Nurse #6 shared her reflection of chasing a patient's blood pressure all day with boluses. In her next similar experience, she verbalized increasing the patient's fluids due to low blood pressure immediately rather than waiting for the doctor. Nurse #7 revealed that reflection assisted her time management skills in speaking of not waiting to start blood, and grouping tasks together instead of multiple trips into the room. Nurse #8 relayed:

> I've learned to advocate more for my patients such as making sure they are taking home blood pressure medications if not ordered when their blood pressure starts to rise because before I had a patient and I chased that pressure all day but when reflecting at home, I wondered if they were normally on blood pressure medication. (Nurse #8)

'Big Picture' View

Reflection allows for critical thinking in your practice. The novice nurses in this study showed that they are reflecting on their practice. By utilizing reflection, they are attempting to increase their competence and seeing the *'big picture'* of their patient. Seeing the '*big picture*' refers to seeing the care of the patient as a whole instead of broken up into tasks that must be completed. The keywords for pattern recognition showed the novice nurses were attempting to see the *'big picture'* of their patients (Table 1). By watching trends, Nurse #4 is seeing beyond just the latest labs and vital signs and seeing her patient's *'big picture'*. By identifying changes/ differences and cues, Nurses #1, 2, 5, 6 and 8 are also watching trends of their patients. Nurse #5 also stated: she was constantly asking herself, "What's a priority?" Nurse #8 elaborated: "about learning what is normal for her patients so the abnormal sticks out." Nurse #6 said: "I'm trying to look at the patient as a whole and see everything."

Increased Self-Confidence

Increased self-confidence was a theme found in the transcribed interviews of the novice nurses as well as a major theme of the literature review. According to Sterner et al., (2019, p.138), "being self-confident means trusting one's own ability to provide appropriate care in acute situations, giving a feeling of security". Nurse #1 related how she should have "trusted her gut feeling" in remembering a patient who had coded and she thought she saw a change but was not sure of herself. While Nurse # 5 spoke of reflection helping her in "learning to trust her gut."

Nurse #8 also described having learned to "…trust herself in a variety of situations." All of these novice nurses are becoming more confident in their decisions based upon utilizing reflection in a nontraditional way. Nurse #2, #3 and #7 relayed being more assertive nurses due to the increase in self-confidence. Nurse #4 utilized watching trends to be more confident in her care.

Relevance to Theory

Tanner's Clinical Judgment Model was the guiding theory and foundation for this research. This theory was chosen in part due to the relevance of reflection to both this theory and the research. Tanner's model involves "noticing, interpreting, responding, and reflecting" (Tanner, 2006, p. 208). These are the processes by which nurses notice changes, interpret those changes, and apply corresponding data to respond to a patient's needs. For Tanner, this is considered "thinking like a nurse" (Tanner, 2006, p.209). Clinical reasoning is the active process in which nurses reach a clinical judgment. This section will correlate the research findings to Tanner's Clinical Judgment Model.

Information Brought to the Event

Tanner found that a nurse's clinical judgment is based upon the information the nurse brings to the situation more so than the objective data supplied by the situation. The novice nurses in this research brought limited experience to the situations; yet, they were able to use that experience in their patient care by their use of reflection. Nurse #6 shared: "I just kept giving boluses and then calling the doctor and then giving boluses and then calling the doctor" all day to chase a low blood pressure. In her next experience with a similar situation, she stated: "I just turned the fluids up until I can get ahold of the doctor." Nurse #4 expressed: "… unfamiliarity with a patient during a rapid response shortly after change of shift", and now she comes in earlier to look through the chart to get ahead each shift. Patient acuity can fluctuate rapidly. Subtle

changes in vital signs or lab values can indicate changes in the acuity which need to be acted upon. As Nurse #4 discussed: "Each patient is individual, but changes in vital signs, labs and [knowing] patient history all play a part in their progressing state."

Knowing the Patient

Tanner's research found that sound clinical judgments requires, to some degree, the nurse knowing her patient. As referenced earlier, Nurse #4 now attempts to learn as much as she can about her patients. Pattern recognition seemed valuable to these novice nurses as it was a major theme noticed throughout the transcripts. Although only Nurse #4 specifically mentioned knowing her patient, the others had examples in which they recognized patterns and used them to the patient's benefit. Nurse #1 discussed a situation in which a rapid response was called on her patient because she was familiar with the patient and able to recognize the patient changes early on.

Situational Context

Tanner found that unit culture and situational context factor into nursing judgments. Nurse #3 spoke of advocating for a patient needing higher doses of pain medication even though the patient's home dose was high and related the fact the patient had recently undergone surgery. Since she frequently worked with surgical patients, she knew this situation required more medication. Nurse #2 reported using positive feedback to help a surgical patient be more independent.

Reasoning Processes

Tanner's work found that nurses used a variety of reasoning processes to form a clinical judgment. Intuition was one of the processes found in the research. Most of the novice nurses in this study discussed improving themselves but there were also several references to trusting their

gut or sixth sense. Nurse #5 felt she had learned to trust her gut, while Nurse #1 spoke of needing to trust her gut. Nurse #6 reported a sixth sense in her practice.

Reflection on Practice

Tanner found that reflection on practice was frequently triggered by a perceived break in clinical judgment. This finding is reflected in the research, in that the novice nurses all mentioned reflecting on their day and trying to either decide what should have been done or what they missed. All of the novice nurse participants verbalized the use of reflection in their practice. All had a story in which being reflective had changed how they practice. Not only does this have importance in avoiding failure to rescue, but this reflective practice is also critical for developing clinical reasoning, and thus, clinical judgments.

Limitations of the Research

The findings of this research study are limited to nurses at one metropolitan hospital. While the findings show these novice nurses at this particular hospital are using reflection for clinical reasoning, are novice nurse at other facilities or even other novice nurses at this facility utilizing reflection for clinical reasoning? Also, while typical of qualitative research, the sample size was small. This research involved novice nurses who replied to the invitation to participate.

Implications of the Research

This research study shows reflection is used by novice nurses and it does foster their clinical reasoning. Clinical reasoning can assist the novice nurse in patient care by allowing them to “notice, interpret, respond, and reflect” (Tanner, 2006, p. 208) upon patient’s clues.

Most of the nurses in this study spoke of recognizing patterns, cues, or trends, which is reflective of their developing clinical reasoning skills. These novice nurses are using reflection as a means to improve their practice. They are reflecting on their daily interactions and

interventions with their patients. The participants are using the knowledge gained from the reflections to improve the care provided to the next patient and as such are improving their patient care. By actively considering previous actions or reflecting, the novice nurse participants are using their experiences for clinical reasoning.

While it may not be well developed at the time the phenomenon was studied, with encouragement, clinical reasoning in novice nurses can continue to develop. Nursing programs can assist by encouraging assignments that contribute to critical thinking and eventually clinical reasoning. The National Council Licensure Examination (NCLEX) is already planning to assess clinical judgement, the end result of clinical reasoning, in the Next Generation testing. Preceptor classes can teach the use of the Guide for Reflection using Tanner's Clinical Judgment Model. Preceptors can be taught to set aside some time at the end of the shift to assist the novice nurse in reflecting. As a result, the preceptors will be fostering the use of reflection as well as clinical reasoning in novice nurses.

Recommendations

With the small size of this study, future research can expand. With a larger sample size and possible expansion to more than one facility, more research could provide more insight into whether novice nurses utilize reflection for clinical reasoning without prompting. Research can also be done at the orientation level to see if preceptors are fostering reflection and by extension, clinical reasoning. Another focus could be done with a control and experimental group to see if further teaching on reflection and clinical reasoning could better assist novice nurses.

Conclusion

While novice nurses are expected to care for increasingly ill patients, prior research has shown that novice nurses are not fully prepared for practice and their clinical reasoning skills are

not fully developed. The novice nurses in this study are utilizing reflection in their practice while the previous studies did not show if novice nurses were using reflection without prompting. Few studies addressed clinical reasoning and reflection in novice nurses, and those that did included training on the use of reflection. Furthermore, none identified if novice nurses were using reflection as a tool to foster clinical reasoning without prompting from a residency program.

Although the clinical reasoning skills of these novice nurses are not fully developed, the nurses in this study are attempting to increase their clinical reasoning by the use of reflection. Reflection is aiding the novice nurses by increasing their professional competence, their ability to see the '*big picture'* view of their patients, and increasing their self-confidence. The use of reflection is also assisting the novice nurses with time management skills, and pattern recognition. Reflection needs to be supported in the traditional sense and reiterated to novice nurses in the non-traditional ways discussed in this research project.

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Appendix A

MERCY
INSTITUTIONAL REVIEW BOARD
14528 South Outer 40, Suite 100
St. Louis, MO 63017
phone 417-520-4647

DATE:	October 25, 2019
TO:	Jennifer Slate, BSN, RN
FROM:	Mercy Institutional Review Board
Project Title:	[1513726-1] 20-11 Do Novice Nurses Utilize Reflection for Clinical Reasoning?
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPTION
DECISION DATE:	October 25, 2019

Thank you for your submission of New Project materials for this project. The Mercy Institutional Review Board has determined this project does not meet the requirement for IRB oversight under the purview of the IRB according to federal regulations.

This study has been reviewed by MIRB and determined to be exempt under exemption category 2 [45 CFR 46.104(d)(2)].

We will retain a copy of this correspondence within our records.

If you have any questions, please contact MIRB at 417-520-4647 or MercyIRB@mercy.net. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within Mercy Institutional Review Board's records.

4 November 2018

STUDY TITLE: Do Novice Nurses Utilize Reflection for Clinical Reasoning?

Jennifer Slate

Dear Ms. Slate:

The University of Central Oklahoma Institutional Review Board has reviewed your submission materials and accepts the decision made by the Institutional Review Board at Mercy in regards to IRB Application titled above numbered 1513726-1. This approval for recruitment or the carrying out of research related activities at UCO is granted with the understanding that the research will be conducted in a manner consistent with the regulatory requirements in section 45 CFR 46, and under the policies and procedures as outlined in the Standard Operating Procedures of the Mercy Institutional Review Board, as they are the board of record.

If there are any modifications to the application, adverse events or allegations of non-compliance, the UCO IRB must be notified.

If you have any questions please do not hesitate to contact us. We wish you all the best with your research.

Sincerely,

Melissa Powers, Ph.D.
Chair, Institutional Review Board
University of Central Oklahoma
100 N. University Dr.
Edmond, OK 73034
405-974-5497
irb@uco.edu

Appendix B

INFORMED CONSENT FORM

STUDY TITLE: Do Novice Nurses Utilize Reflection for Clinical Reasoning?

PROTOCOL NO.: 20-011

SPONSOR: None

FUNDING AGENCY: None

INSTITUTION: Mercy Research

INVESTIGATOR: Jennifer Slate, BSN, RN
Mercy Hospital Oklahoma City
4300 W. Memorial Rd.
Oklahoma City, OK 73120

STUDY-RELATED PHONE NUMBER(S): [redacted]

ABOUT THIS FORM

You are invited to participate in a research study Please take time to read and review this information carefully. A study team member will discuss with you detailed information about this research study. If this form contains words or information that you do not understand, please ask the study team to explain.
If you have any questions regarding this research study or your rights as a research subject, please ask the study team to answer them. If you decide to take part in this study, you will be asked to sign this form. You will be given a signed copy to keep as a record. This process is known as “informed consent”.

In this consent form, “you” always refers to the subject.

PURPOSE OF THIS STUDY

The purpose of the study is to determine if reflection is used by novice nurses and if by utilizing reflection, novice nurses foster their clinical reasoning.

WHO MAY PARTICIPATE IN THE STUDY

Why are you being asked to take part in this study?
. You are being asked to take part in this study because you are a nurse with less than 18 months of experience.

How many people are expected to take part in this research study?
Approximately 10 nurses will participate in this study.

INFORMATION ABOUT STUDY PARTICIPATION

What will happen if you take part in this study?
Your participation in this study will consist of a one-on-one interview that will take approximately 40 minutes. The one-time interview will ask you to recall a recent patient care experience, what happened and how you responded, your thoughts and observations, prior similar experiences and questions about whether you use reflection in your daily work. However, you will be instructed not to provide any identifying information about yourself or the patient.

In order to avoid providing any identifying information regarding your patient experience, you should review the list of 18 protected health information (PHI) identifiers below:

- Names
- Dates, except year (including ages over 89 years old)
- Telephone numbers
- Geographic data (in area smaller than a state)
- FAX numbers
- Social Security numbers
- Email addresses
- Medical record numbers
- Account numbers
- Health plan beneficiary numbers
- Certificate/license numbers
- Vehicle identifiers and serial numbers including license plates
- Web URLs
- Device identifiers and serial numbers
- Internet protocol addresses
- Full face photos and comparable images
- Biometric identifiers (i.e. retinal scan, fingerprints)
- Any unique identifying number or code

Please refrain from using these identifying details in your interview responses.

The interview will be audio-recorded to help the investigator accurately capture your insights in your own words.

What other choices do you have if you do not participate in this study?
You do not have to participate in this study. Taking part in this research project is voluntary.

INFORMATION ABOUT STUDY RISKS

There are some risks you might experience from being in this study.
There is a risk of breach of confidentiality. The interview will be audio-recorded, and recordings transcribed by the investigator. You will not be asked to provide any identifying information about yourself or the patient. The study team will take measures to protect the privacy and confidentiality of interview information.
The study will ask you to reflect on a patient situation of your choice. It is possible that answering questions about the patient experience may cause you to be upset or distressed. You do not have to answer any question that you do not want to answer.
. At any time, you can ask the investigator to stop the interview. If you seem distressed or upset, the investigator will provide you with contact information for the Mercy Employee Assistance Program which is available 24 hours a day and 7 days a week: 855-MERCYEAP (855-637-2932) and www.mbh-eap.com/members

As with any research study, there may be additional risks that are unknown or unexpected.

INFORMATION ABOUT STUDY BENEFITS

You may or may not benefit from taking part in this study. You might benefit from being in this study due to either starting or continuing to use reflection in your practice.

NEW INFORMATION

You will be told about any new information that might change your decision to stay in this study. If new information is provided to you after you have joined the research study, you may be asked to review and sign a new consent form that includes the new information.

FUTURE RESEARCH

Your research data will be kept to use for possible future research. Your name and other information that can directly identify you will be kept secure and stored separately from the research data collected as part of the project.

Your research data may be shared with other investigators without asking for your consent again, but it will not contain information that could directly identify you.

CONFIDENTIALITY AND AUTHORIZATION TO USE AND DISCLOSE INTERVIEW RESPONSES

Interviews will be audio-recorded, and the responses transcribed. You will be assigned a subject identification number.

How will your privacy and confidentiality be protected?

By signing this consent form, you are giving your authorization for the study team to obtain, use and share your interview responses for this research study. Please note that you do not have to sign this authorization, but if you do not, you may not be able to take part in this research study.

The confidentiality of your research records will be protected by assigning numbers to participants for the purpose of identification. Your name or other identifying information will not be collected on the recordings or transcription. Your name and any other information that can directly identify you will be stored separately from the data collected as part of the project**.** Reports of this research will not include your name or any other identifying information.

It is possible that other people may need to see the information we collect about you. These people work for the University of Central Oklahoma, Mercy Hospital and government offices that are responsible for making sure the research is done safely and properly.

What information may be collected, used or shared as part of this research study?
Interviews will be audio-recorded, but you will not be asked to provide any personally identifying information or health-related information as part of the study. Your medical records will not be accessed or reviewed as part of this research.

Who will have access to use your interview responses for research purposes?

The information listed above will not be used by and/or shared with:

- Researchers, their staff and their collaborators on this research project
- The Mercy Institutional Review Board (a group of people who review the research to protect the rights of study subjects) and Mercy staff with oversight or quality improvement responsibilities
- Federal and state agencies that have authority over research, Mercy, or patients
- This hospital or other accrediting agencies
- University of Central Oklahoma

Your interview responses will be used or disclosed when required by law. Some of the authorized users of your health data may not be held to the same Federal privacy law

requirements as Mercy Health System and may not keep all of your information confidential.

Why is it necessary to collect, use and share your information?

- The investigators may need the information to make sure you can take part in the study.
- The information is needed to be able to conduct the research, to assure the quality of the research study data, or to analyze the data.
- Information is shared to ensure that the research study is done safely and properly and meets legal, institutional and accreditation standards.
- Information may also be shared to report adverse events or situations that may help prevent placing other people at risk.
- Federal or State law may require the study team to give information to government agencies.

The results of this study could be published in a journal or presented at a scientific meeting. Your identity will be kept private in any publication or presentation.

How long will your interview responses be used or shared?
This information will no longer be used once the study has ended and all data analysis is complete. This could be many years after you complete your portion of the study. For that reason, this authorization does not have an expiration date.

Can you change your mind about the use and disclosure of your study data?
You may change your mind and withdraw your authorization to use and disclose your interview responses at any time.

If you withdraw your authorization, you will not be able to continue to take part in this research study.

When you withdraw your authorization, no new information will be collected about you. Information that has already been collected may still be used and shared with others.

To withdraw your authorization to use and disclose your interview responses, please send a notice in writing to the study team.

Jennifer Slate BSN, RN
Mercy Hospital Oklahoma City
[redacted]

STUDY COSTS AND PAYMENT

Will there be any additional costs to taking part in the study?
You will not have any additional costs for being in this research study.

Will you receive payment for taking part in the study?
You will not be compensated for your participation in this study.

STUDY REMOVAL OR DISCONTINUATION

Your participation in this study is voluntary. Even if you decide to be part of the study now, you may change your mind and stop at any time. Your decision will not result in any penalty or loss of benefits to which you are entitled.

If you decide to leave the study before it is finished, please contact the study team.

CONTACT INFORMATION FOR RESEARCH-RELATED INJURY OR QUESTIONS ABOUT THE RESEARCH

If you have any questions about this study, you may contact the principal investigator listed on the first page of this document.

If you feel you have been harmed by this research study, you should immediately contact the investigator at:

Jennifer Slate
[redacted]

If you would like to talk with someone other than the researchers to discuss problems or concerns, to discuss situations in the event that a member of the research team is not available, ask questions about your privacy rights, or to discuss your rights as a research participant, you may contact the Mercy Institutional Review Board at 417-520-4647.

The Mercy IRB is a group of people in charge of protecting the rights of people participating in research studies. Do not sign this consent form unless you have had a chance to ask questions and have received satisfactory answers to all of your questions.

AGREEMENT TO PARTICIPATE

I have read the above information and the research study has been explained to me verbally. I have had the opportunity to have any questions about this study answered and voluntarily choose to take part in this study.

_____ _____

Participant Signature Date

_____

Participant Printed Name

Principal Investigator or Designee: I have provided this participant and/or his/her legally authorized representative(s) with information about this study that I believe to be accurate and complete. The participant and/or his/her legally authorized representative(s) indicated that he or she understands the nature of the study, including the risks and benefits of participating.

_____ _____

Signature of Person Obtaining Consent Date

_____

Printed Name and Title

Appendix C

Interview Questions Guide

Answer these questions based on a recent situation/issue with a patient.

Noticing

1. What did you initially notice about the patient/situation?
2. Did what you noticed change as time passed?

Interpreting

3. What were your initial thoughts about the patient/ situation?
4. Have you had any prior experience with a similar situation? If so, did it have any impact?
5. How did your assessment/ retrieved data lead you to respond?

Responding

6. What interventions/ nursing actions did you do?

Reflection-in-Action

7. How did the patient respond to those interventions?

Reflection-on-Action

8. Looking back upon the situation, is there anything you would have done differently?
    - Elaborate.
9. Were there any gaps in your skills/ knowledge at that time?
    - Elaborate.
10. Do you feel that has changed and how?
11. Do you ever reflect on previous patient experiences/ situations?
    a. Elaborate.
12. Are there any differences in how you reflect?
    a. Elaborate.
13. Has reflecting changed how you would/ have respond(ed) to another similar situation?
    a. Elaborate.

Appendix D

University of Central Oklahoma

Mercy Hospital

Recruitment Email for Research Participation

Hello,

Jennifer Slate, RN BSN, a master's nursing student at the University of Central Oklahoma and coworker at Mercy Hospital Oklahoma, invites you to participate in this research study.

The title of this study is "Do Novice Nurse's Utilize Reflection for Clinical Reasoning". The purpose of this study is to identify if novice nurses use reflection in their practice on their own and if reflection fosters their clinical reasoning.

Your participation in this study will involve taking part in a one-time interview that will take place at Mercy Hospital outside of your normal working hours.

The risks to you as a participant are minimal. These include possible distress due to discussion of experiences in patient care without using any patient identifiers. Study participants will not be identified in the study and interview data will be kept private and confidential.

You may or may not benefit from taking part in the study. Participation in this study will possibly benefit you by exposure to reflective practices to add to your practice.

Your participation in this study is voluntary. You can choose not to participate. Your decision will not adversely affect your employment status or relationship with anyone at Mercy. You may withdraw from this study at any time.

If you have questions about this research study or are interested in participating, you can call Jennifer Slate at [redacted] or respond to this email. If you have questions about your rights as a research participant, you can call the Mercy Institutional Review Board at 417-520-4647.

Thank you for your time,
Jennifer Slate BSN, RN