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The Effects of a Clinical Coaching Education on Clinical Faculty's Coaching Behaviors

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Walden University
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Abstract

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AAS, Middlesex County College, 1988

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Nursing

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Abstract

New graduates' readiness to provide safe nursing care is a goal of nursing programs and employers. However, new graduate nurses do not always have the skills to make decisions in the clinical setting during a patient situation, which can result in poor patient outcomes. But clinical coaching is a faculty teaching framework that promotes the development of clinical reasoning through the deliberate practice of questioning and feedback after a patient situation. Thus, the purpose of this study was to determine whether participation in a clinical coaching education program improved the coaching behaviors of clinical nurse educators. Knowles' theory of adult learning was used to design the program. Pre-and post-data were collected using the Clinical Coaching Interactions Inventory: Educator Group Version. A match paired Wilcoxon test was used for analysis of responses of 36 clinical educators from 2 diploma programs. The educators reported a statistical increase in the use of 1 higher-order question—asking students to synthesize clinical knowledge and reasoning. Educators with more experience provided earlier feedback to the students after a patient experience (r_s = -.41, p <.01). Future research can repeat this education using a larger sample size and educators from associate and baccalaureate programs in broad geographic areas. Thus, the results of this study may encourage nursing programs to improve teaching preparation of clinical nurse educators in coaching clinical reasoning skills at the bedside, improving practice readiness and quality of nursing care.

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Dedication

I dedicate this dissertation to my mother. You went back to nursing school later in life, struggling with the challenges of raising a family while studying. Mom, you inspired me to become a nurse because I wanted to be like you. You showed me what being professional looks like and that education is important. I can still picture the day you told me that I should get my doctorate. I had just finished my master's degree and would not even consider going back at that time. Well, here I am, Mom. You believed in me then and knew I could accomplish anything, even when I doubted myself. Thank you for your love and support!

Acknowledgments

First and foremost, I must acknowledge the guidance and support of my family. Thank you for understanding when I needed to spend hours working on my computer. I want to personally thank my husband, Wade, whose quiet demeanor helped pull me away from the stress I was facing. To my children, Katherine and Thomas, I hope that I inspire you to continue to learn and explore what you believe in. You can do anything! To my father, who gave me a strong work ethic to never quit even when I wanted. To my sisters whom I share this dissertation with: to see your happiness for me in completing this dissertation makes me so proud to be your sister.

Finally, I want to take a moment to thank my committee members who shared in my goals and helped guide me on this most difficult and joyous journey. Dr. Cynthia Fletcher, I will miss hearing your voice during our phone conferences. You were the rock that kept me motivated even when I felt lost. I am forever grateful for your commitment and time to me. Dr. Garner, thank you for your encouragement, reassurance, and critical guidance throughout my dissertation process. Dr. Geri Schmotzer, thank you for your prompt feedback and hours you spent reviewing this document. For this, I am forever grateful!

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Chapter 1: Introduction to the Study

Clinical education is a cornerstone of nursing education and the optimum environment in which to develop clinical reasoning (Herron, Sudia, Kimble, & Davis, 2016). The central person who guides students in their development of clinical reasoning in clinical education is the clinical nurse educator (CNE). The CNE evaluates students and assures that they are delivering appropriate, safe, and quality nursing care that meets patient needs (Collier, 2017; Herron et al., 2016; Shellenbarger, 2019). However, new graduates report that clinical education did not prepare them to implement clinical reasoning (Hatzenbuhler & Klein, 2019; Herron, 2017). For example, only 23% of the 5,000 new graduates hired in a large Midwestern hospital were able to think at the entry-level requirement to provide safe nursing care (Kavanagh & Szweda, 2017). This inability to apply clinical reasoning and make quick and safe decisions in patient situations leads to negative patient outcomes and unintended harm (Flott & Linden, 2015; Hunter & Arthur, 2016). In addition, this lack of knowledge in effective decision-making may contribute to nurses' increase in psychological stress and workload fatigue, which has resulted in 17.5 % to 33.5% of nurses leaving the profession within 2 years and $6.4 million dollars spent to re-educate nurses and train new nurses (Fear, 2016; Liu et al., 2016).

According to the National League of Nursing, a role of the CNE is to create educational opportunities that facilitate learning in the clinical environment to prepare new graduates to provide high-quality care and make sound nursing decisions (Shellenbarger, 2019; Toto, 2018). One opportunity is to engage students in supportive

and meaningful feedback in the clinical setting (Miller, Sawatzky, & Chernomas, 2018). However, the nursing faculty shortage has led academic administrators to hire staff who are clinically experienced but may lack the knowledge to provide one-to-one feedback immediately after a patient situation to transform the thinking of the student and improve their decision-making for patients (Forneris & Fey, 2018; Miller et al., 2018). To improve this in students, academic administrators must ensure that CNEs are supported and prepared with evidence-based innovative learning opportunities to teach clinical reasoning to students (Benner et al., 2010; Caputi & Frank, 2019). Supporting faculty development for the CNE impacts students' practice competency and their work-readiness (Järvinen, Eklöf, & Salminen, 2018).

Clinical coaching is an innovative teaching pedagogy that connects theory to practice and supports student development of clinical reasoning (Benner et al., 2010; Shellenbarger, 2019). Clinical coaching is the discourse between the CNE and student that includes teaching, questioning, and feedback after a patient situation (Jessee & Tanner, 2016; Jessee, 2018). Thus, this study was focused on the effects of a clinical coaching education on clinical faculty's coaching. Establishing teaching strategies that are evidence-based can provide clinical faculty with clear and consistent behaviors that facilitate student learning and that may ultimately produce a safer and more competent nurse in practice (Carvalho, Oliveira-Kumakura, & Morais, 2017). Empowering CNEs to interact with students using innovative clinical coaching skills may increase students' clinical reasoning and improve the decisions they make to ensure positive patient

outcomes. The rest of Chapter 1 will discuss the background, problem statement, purpose, research questions, theoretical frameworks, and the nature of the study.

Background

Faculty development is significant to prepare students to become effective at clinical reasoning (Benner et al., 2010). Faculty can integrate both pedagogical evidence and clinical experience to facilitate learning in the clinical setting where clinical reasoning is learned best (Benner et al., 2010; Flott & Linden, 2015; Herron et al., 2016; Pitkänen et al., 2018). However, research has identified inconsistencies that remain in faculty evaluations of student nurses in clinical practice, which may contribute to a widening theory-to-practice gap of new graduates (Almalkawa, Jester, & Terry, 2018; Kavanagh & Szweda, 2017).

Discrepancy in the assessment of student learning can impede student learning and development of clinical reasoning skills (Mann & De Gagne, 2017). But the current shortage of nursing faculty has compelled programs to employ CNEs who are clinically experienced but who lack foundational understanding of educational theory to facilitate learning (American Association of Colleges of Nursing, 2017). Additionally, faculty with limited qualifications in teaching may receive inadequate orientation and support during their transition to this new clinical role, causing them to not be prepared to support student learning (Ferren, 2019; Miller, Sawatzky, & Chernomas, 2018). An element of clinical coaching that novice faculty may lack is the skill to provide meaningful feedback to help explore the students' thinking to address and reframe assumptions after a patient situation (Forneris & Fey, 2018; Miller et al., 2018). An inadequate faculty–student

relationship, including a lack of effective discourse between faculty and students, can lead to a gap between theory and practice (Saifan, AbuRuz, & Mas'deh, 2015).

Additionally, novice clinical educators report being unprepared for their new role, and both novice and experienced CNEs report difficulty appraising students' clinical reasoning in clinical settings (Hunter & Arthur, 2016; Mann & De Gagne, 2017). Rather than clinical expertise, students have identified a positive interpersonal relationship with mutual respect and constructive feedback with students as the most important characteristic of an effective instructor (Collier, 2017). Clinical faculty's physical presence together with their ability to connect with students leads to increased student confidence, creates a positive learning environment and facilitates student learning (Collier, 2017; Flott & Linden, 2015).

Clinical faculty have a responsibility to prepare students to utilize clinical reasoning in the clinical setting (Herron, 2017). But faculty have underutilized the clinical environment, missed learning opportunities to engage students in learning beyond knowledge, and focused primarily on task completion (McNelis et al., 2014). A CNE's focus on skills rather than thinking can contribute to the widening practice gap in new graduates, which can negatively affect the students' ability to practice safely (Kavanagh & Szweda, 2017).

To bridge the gap between practice and theory in students, coaching is an educational strategy that can be utilized by faculty in the clinical setting (Shellenbarger, 2019). Educational programs can train faculty with the knowledge for coaching students in clinical reasoning in the clinical setting (Benner et al., 2010). Application of clinical

coaching behaviors provides an educational opportunity to improve the decision-making and retention of new nurses as they transition to practice; teaching students clinical reasoning would therefore improve patient outcomes (Jessee, 2018).

Clinical coaching strategies are effective teaching strategies that support students' clinical reasoning in the clinical setting (Jessee & Tanner, 2016). An important component of clinical coaching is providing feedback to students—that is, giving feedback to students immediately or soon after a patient situation (Benner et al., 2010; Jessee & Tanner, 2016). Students report that they are more receptive to learning when CNEs provide clear feedback and relevant examples for students to improve their practice (Nolan & Loubier, 2018). Meaningful dialogue, together with coaching conversations that include deliberate and higher-level questioning, supports and encourages students in thinking rather than doing (Jessee & Tanner, 2016). Currently, CNEs primarily use low-level questioning such as knowledge and comprehension questions to dialogue with students, but this lower order strategy does not reframe student thinking (Forneris & Fey, 2018; Jessee & Tanner, 2016). In addition, with the inclusion of reflective discourse the CNE and the student together address concerns and identify areas for improvement, thus improving student thinking and decision-making in the clinical setting (Forneris & Fey, 2018).

Although there is research supporting discrete components of coaching, no research has been conducted to quantify the effectiveness in teaching clinical coaching in the clinical setting. The literature indicates that faculty do not have significant knowledge in understanding and applying clinical coaching strategies to improve students' decisions

based on the number of interactions and the quality of feedback used by CNEs (Jessee, 2016). The recommendation, therefore, is to support faculty development of evidence-based teaching pedagogies that engage students more in higher order thinking, which will impact students' clinical reasoning (Benner et al, 2010; Phillips, Duke, & Weerasuriya, 2017). This study fills that gap.

Problem Statement

A primary goal of the CNE in the clinical environment is to bridge the theory-practice gap and to teach and evaluate students' ability to make safe and timely decisions using clinical reasoning (Collier, 2017; Shellenbarger, 2019). However, there is variability in how faculty develop, recognize, and evaluate students' clinical reasoning (Hunter & Arthur, 2016). Research has shown that inconsistent measures of clinical progress and missed clinical opportunities by CNEs to facilitate learning may contribute to students' failure to meet clinical outcomes (McNelis et al., 2014). New graduates report that the CNEs' focus on task completion in the clinical environment contributed to their lack of confidence when making decisions in practice and contributed to their lack of preparation to safely practice at the bedside (Flott & Linden, 2015; Herron, 2017; Kavanagh & Szweda, 2017). This lack of practice in clinical reasoning and underdeveloped decision-making skills for providing safe care can result in poor patient outcomes (Hunter & Arthur, 2016; Liou et al., 2016). Therefore, it is important for CNEs to identify clinical experiences that challenge students to think beyond task completion toward clinical reasoning and decision-making (McNelis et al., 2014).

Coaching is recognized as an innovative educational strategy to guide students to improved clinical reasoning in the clinical setting (Benner et al., 2010; Herron et al., 2016). It is an effective teaching strategy to bridge the gap between theory and clinical practice (Shellenbarger, 2019). Clinical coaching supports the development of clinical reasoning through individual teaching, questioning, feedback, and reflection in one-to-one interactions after a patient situation (Herron et al., 2016; Jessee, 2016; Jessee & Tanner, 2016). The clinical coaching conversations between the CNE and student in clinical settings include guided thinking and dialogue that support the coaching process through frame-oriented discourse (Eppich, Mullan, Brett-Fleegler, & Cheng, 2016; Forneris & Fey, 2018). The meaningful feedback provided through coaching improves student reasoning skills by using higher-order thinking questions. It challenges students to reflect on their performance, address concerns, and identify areas that need improvement (Flott & Linden, 2015; Forneris & Fey, 2018; Jessee, 2018; Jessee & Tanner, 2016; Leibold & Schwarz, 2015). However, regardless of length of experience, CNEs have consistently asked low-level, closed-ended questions that do not stimulate thinking (Merisier, Larue, & Boyer, 2018; Phillips et al., 2017).

In addition to addressing issues with CNEs' coaching strategies, there is a gap in the literature on the clinical coaching behaviors of faculty in the clinical setting. Though research has indicated that faculty engaged in higher-quality questioning than nurse preceptors, the identification of the context of the clinical coaching was not identified or measured (Jessee & Tanner, 2016). Based in the literature review, there are no studies evaluating CNEs' utilization of clinical coaching behaviors after receiving an education

program. This secondary data analysis addresses that gap and contributes to a clinical coaching education program for faculty to facilitate student learning in the clinical setting.

Purpose of the Study

The purpose of this quantitative secondary data analysis was to determine whether CNEs' clinical coaching behaviors increased after participating in a clinical coaching education program. Increasing the clinical coaching behavior may increase CNE engagement during one-to-one interactions with students using high-level questioning and improved feedback (Jessee & Tanner, 2016). This specific discourse between CNEs and students has been shown to impact clinical reasoning competence in students (Jessee & Tanner, 2016).

Clinical coaching, as defined by Jessee and Tanner (2016) includes teaching, questioning, and feedback, which was guided within the clinical coaching program that was utilized in the study. The content of the program was developed in 2012 by Catherine Garner. The education program included six modules developed from Knowles's theory of adult learning (2005), Bloom's taxonomy (Anderson et al., 2001), core elements of clinical coaching, and two clinical scenarios (Jessee & Tanner, 2016; Rubenfeld & Scheffer, 2015; Whitmore, 2017). A secondary data analysis to identify differences in clinical coaching behaviors (the dependent variable) before and after receiving the clinical coaching program (the independent variable) was identified and and analyzed.

Research Questions and Hypotheses

The following questions and hypotheses led the secondary data analysis:

Research Question 1: Are there differences in the clinical nurse educators' utilization of clinical coaching teaching strategies after participating in a clinical coaching education program? (Kirkpatrick Level 3)

$H_0$1: There is no difference in the clinical nurse educators' utilization of clinical coaching teaching strategies after participating in a clinical coaching education program.

H_a1: There is an increase in the clinical nurse educators' utilization of clinical coaching teaching strategies after participating in a clinical coaching education program.

Research Question 2: How influential was participation in the clinical coaching strategies education program in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice? (Kirkpatrick Level 2)

$H_0$2: Participating in the clinical coaching education program was not influential in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice.

H_a2: Participating in the clinical coaching education program was influential in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice.

Research Question 3: Is there a relationship between the clinical nurse educators' length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program? (Kirkpatrick Level 3)

$H_0$3: There is no relationship between the clinical nurse educators' length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program.

H_a3: There is a relationship between the clinical nurse educators' length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program.

The clinical coaching education measured the independent variable. The dependent variable was the clinical coaching behaviors of the CNEs. The Clinical Coaching Interactions Inventory: Educator Group Version (CCII: EGV) was the operational definition of the dependent variable. A demographic questionnaire was used to collect data such as educational level and the number of years of clinical teaching reported by the CNEs. The demographic questionnaire and a question added in the posttest were used in the analysis for Research Questions 2 and 3. The CNE's clinical coaching behaviors were measured using the CCII: EGV to answer Research Question 1. The data were analyzed with the use of Statistical Package for the Social Sciences (SPSS) 25.

Theoretical Frameworks

The theoretical frameworks for this study are the integrated clinical education theory (ICET; Jessee, 2018), Kirkpatrick's training evaluation model (Kirkpatrick & Kirkpatrick, 2006), and Knowles's theory of adult learning (Knowles et al., 2005). Nursing faculty use a variety of methods to teach clinical reasoning supported by theoretical frameworks that, though relevant, may not take into account the unique education opportunities in a real-life patient situation in the clinical learning environment (Jessee, 2018).

The ICET is currently the only framework that supports the development of clinical reasoning during clinical education. The ICET includes concepts of the context of practice, experience over time, reflective practice, multiple practice experiences, discourse, and meaningful feedback with three tenets: centrality of context, multiple practice opportunities, and discourse with meaningful feedback. Discourse with meaningful feedback implies that when faculty communicate with questions using application, analysis, and reflection that is purposeful and provided soon after a clinical experience using reflection, students' clinical reasoning is impacted. It is through ongoing and purposeful faculty-student interactions, an essential element in clinical coaching, that the development of clinical reasoning is promoted (Jessee, 2018).

Kirkpatrick's (2006) training evaluation model was used to determine the effectiveness of the clinical coaching program. The model provides a systematic framework to evaluate training. Its use originated in the evaluation of business programs and has been extended to evaluate programs in nursing education (Aryadoust, 2017). The four evaluations that comprise the model are reaction, learning, behavior, and results. Two levels, learning and behavior, were used in the study. The second level, studied in Research Question 1, addressed the faculty's intent to use the clinical coaching teaching strategies in their practice. The third level, studied in Research Questions 2 and 3, measured faculty's application of behaviors after receiving the clinical coaching program.

Knowles's adult learning principles were used to design learning objectives and resources geared toward adult learners. The clinical coaching program and teaching strategies reflected these principles in that participants are most motivated by education

on subjects relevant to their employment, that builds on their experience, and that can be immediately applied to their practice (Knowles et al., 2005). The learning activities for the program were designed to encourage active learner participation through lecture, collaborative group discussions, and role-playing.

Nature of the Study

This study involved a quantitative design. A secondary data analysis was conducted using data of CNEs at two academic settings in the Northeastern United States in the Fall 2019 semester. This study was an investigation into the effect of a clinical coaching education program on CNE clinical coaching behaviors. The study involved a pretest/posttest design to evaluate CNEs' clinical coaching behaviors following an education program. Furthermore, the relationship between CNEs' years of experience and intended use of the clinical coaching behaviors was examined. Statistical analysis methods were applied to identify relationships among the variables. The quantitative research design was appropriate to utilize in this study because it provides a statistical representation and analysis of the relationship between the key variables (Rudestam & Newton, 2015).

Definitions

Operational definitions for terms used in this study include:

Clinical coaching: Clinical coaching is defined as the one-to-one discourse of teaching, using verbal questioning, and feedback behaviors between the CNE and a prelicensure nursing student in a clinical learning environment (Jessee & Tanner, 2016).

Clinical learning environment: A physical place where clinical instruction and teaching occurs with a patient, CNE, and a prelicensure nursing student (Flott & Linden, 2015). The clinical learning environment can include acute-care and specialty hospitals, long-term care facilities, ambulatory care centers, physician offices, community, and home health care (National Collaborative for Improving the Clinical Learning Environment, 2019).

Clinical nurse educator: An individual who has attained a graduate degree in nursing and who teaches and facilitates learning and clinical instruction to nursing students (American Association of Colleges of Nursing, 2017; Shellenbarger, 2019). The term could be applied to adjunct clinical educators, part-time clinical educators, temporary faculty, and sessional faculty.

Clinical reasoning: This is a multifactorial cognitive process that uses a variety of thinking and decision-making strategies to gather, analyze, and evaluate relevant patient information. In a patient context, the CNE guides the nursing student to weigh the patient information, make a safe decision, and determine the effectiveness of the decision before weighing alternatives (Simmons, 2010).

Coaching: As defined by the International Coaching Federation, coaching is an interactive relationship that helps people discover and acquire learning in order to broaden their professional performance (Whitmore, 2017).

Feedback behaviors: Feedback behaviors of the CNEs are defined as supportive one-to-one interaction with prelicensure nursing students that are given soon after or

immediately after a patient situation that identifies a student's specific areas of strength and areas that need growth (Jessee & Tanner, 2016; Whitmore, 2017).

High-level questioning: High-level questions include application, analysis, synthesis, evaluation, and reflection (Phillips et al., 2017).

Low-level questioning: Low-level questions include task-focused instructions, knowledge, understanding, and demonstration of tasks (Phillips, Duke, & Weerasuriya, 2017).

Prelicensure nursing student: The prelicensure nursing student is defined as an individual who has not obtained any form of nursing licensure by the State Board of Nursing (National Council of State Boards of Nursing, 2005).

Assumptions

Three assumptions are identified: (a) CNEs accept their responsibility to utilize teaching strategies that will increase clinical reasoning in their students; (b) CNEs strive to engage students in effective teaching and questioning strategies to clarify the learner's thinking and improve their decision-making; and (c) CNEs will uphold professional conduct and interest in learning to participate in the education program and answer the demographic questions and instrument questions honestly. These assumptions were derived from the literature as it relates to CNEs and their relationship with students in the clinical setting. In addition, these assumptions are necessary as critical competencies of a CNE in ensuring that nursing students deliver appropriate, safe, and quality nursing care that meets patient needs (Herron et al., 2016; Shellenbarger, 2019).

Scope and Delimitations

The scope of the study was limited to quantitative data. The participant group were CNEs located in the Northeastern United States who were assigned to lead a clinical cohort during the semester in which the clinical coaching program was conducted. The CCII: EGV was used to collect data on CNEs' clinical coaching behaviors before and after they received a clinical coaching education program. The delimitations for this study were that data collection was conducted on CNEs from two prelicensure nursing programs. The data collection is unique to the clinical learning environment in that it measures coaching behaviors occurring in the clinical learning environment. The belief is that clinical coaching is an effective and evidence-based teaching method that when used in the clinical learning environment supports students to bridge the theory-practice gap and improves students' clinical reasoning (Benner et al., 2010; Shellenbarger, 2019). Data were collected from participants from two prelicensure nursing programs in the Northeastern United States; therefore, generalizability is limited to CNEs teaching in similar nursing programs.

Limitations

The study findings were limited to include only data collected from CNEs who participated in a clinical coaching education program. Another limitation to the study was the time constraints of completing the data collection over a semester. Pretests were completed before CNEs received the clinical coaching education. A period of at least 2 weeks is recommended between pretest and posttest (Facione & Facione, 2006). CNEs had the opportunity to utilize the clinical coaching behaviors within the clinical

component of the nursing course, and 8 weeks after participating in the clinical coaching education, they completed a posttest. Because the CCII: EGV measures CNEs' interactions with the same student group using clinical coaching behaviors, the data collection had to occur within the time frame of the clinical course within one semester.

Another limitation was the sample method. A convenience sample of CNEs from two nursing programs in the Northeast United States was accessed. Two prelicensure programs were sufficient to reach the sample size in the time frame of a semester. The prelicensure nursing programs' clinical sizes are variable from semester to semester, thus the omission of other programs was due to an uncertain number of CNEs employed by the academic program each semester.

Significance

This study fills the gap to employ teaching strategies that allow for the transformation of clinical reasoning in the clinical environment (Forneris & Fey, 2018; Paul, 2014). The study contributed to positive social change by showing the importance of supporting CNEs through a professional development program. Establishing evidence-based teaching strategies can provide CNEs the standards on how students are taught and on expected performance in the clinical setting (Paul, 2014). The use of an innovative clinical coaching teaching program may improve the clinical teaching skills and feedback of the CNE, which can transform student learning with clinical reasoning. Students who utilize clinical reasoning improve their decision-making in patient situations, resulting in positive patient outcomes (Jessee & Tanner, 2016).

Current research has identified that CNEs continue to miss opportunities to advance student understanding of a patient situation by incorporating low-level questioning when feedback is provided (McNelis et al., 2014). Moreover, evaluating students using vague language can lead to unclear expectations and a lack of confidence by the nurse at a decision-making moment, resulting in poor quality patient care (Herron, 2017). In contrast, feedback to students using coaching components that occur in a positive learning environment are more likely to impact students' skills, perspectives, and attitudes (Nolan & Loubier, 2018). Students who are able to learn to think (i.e., use clinical reason) are more successful in their transition to professional practice compared to students who do not have sufficient clinical reasoning (Paul, 2014).

Improving the quality of patient care has additional implications at the state and federal levels. State and federal agencies mandate organizations to integrate initiatives into nursing programs to educate nursing students in providing high quality of care (Beischel & Davis, 2014). Increasing positive outcomes for patients will meet quality guidelines and prevent the potential for sanctions imposed by state and federal agencies, such as financial penalties and potential loss of operating licenses (Agency for Healthcare Research and Quality, 2017).

At the local level, the value of the clinical coaching program can be demonstrated to the faculty and leadership teams by sharing the data obtained by the study. The findings can contribute to positive social change by influencing pedagogy in faculty and how they teach through questioning and feedback in the clinical learning environment, resulting in nurses making safer decisions for patient care.

Summary

CNEs support student learning by creating opportunities for students to engage in clinical reasoning in the clinical setting (Benner et al., 2010). However, inconsistent evaluation of clinical reasoning in students by CNEs and a focus on skills completion result in failure to engage students beyond knowledge and comprehension questioning in the clinical setting, which contributes to students' lack of opportunities to practice effective decision-making (Forneris & Fey, 2018: Kavanagh & Szweda, 2017; McNelis et al., 2014). Clinical coaching is an innovative teaching pedagogy that supports student development of clinical reasoning through a meaningful discourse with students (Benner et al., 2010; Jessee & Tanner, 2016). Because few studies conducted have determined the effectiveness of clinical coaching behaviors on student development of clinical reasoning in the clinical setting, this quasi-experimental design study was conducted to determine the effect of a clinical coaching education program on CNEs' utilization of clinical coaching behaviors in the clinical setting. The study findings may contribute to improved CNE utilization of clinical coaching behaviors that improve students' clinical reasoning and decision-making in the clinical setting.

Chapter 2 will present the literature search strategy, the theoretical framework, and an in-depth literature review of the teaching strategies of CNEs and clinical coaching behaviors.

Chapter 2: Literature Review

Introduction

Nursing programs and employers both have the goal of new graduates' readiness to provide high quality and safe nursing care (Rusch, Manz, Hercinger, Oertwich, & McCafferty, 2019). Preventing adverse patient outcomes is the result of sound clinical reasoning (Herron et al., 2016). However, CNEs spend more time in clinical contexts teaching skill competency rather than focusing on knowledge inquiry (McNelis et al., 2014). Focusing on tasks and framing feedback with lower level questioning limits student thinking like their clinical reasoning inquiry. Not having the skills needed to make decisions in the clinical setting during a patient situation can result in poor patient outcomes (Hunter & Arthur, 2016; Jessee, 2018). For example, only 23% of the 5,000 new graduates hired in a large Midwestern hospital were able to think at the entry-level requirement to provide safe nursing care (Kavanagh & Szweda, 2017). Conversely, supporting changes in nursing education that promote one-to-one discourse with students through teaching and questioning transforms students' decision-making in the clinical environment (Benner et al., 2010; Jessee & Tanner, 2016). Coaching students in the clinical setting improves reasoning in students and can contribute to decreasing the theory-to-practice gap (Benner et al., 2010; Shellenbarger, 2019).

The purpose of this quantitative study was to determine whether CNEs' clinical coaching behaviors increased after participating in a clinical coaching education program. Clinical coaching behaviors of faculty improve students' clinical reasoning through the teaching learning strategy, questioning, and feedback that CNE faculty provide after a

patient situation (Jessee & Tanner, 2016). However, there is a lack of evidence measuring CNEs' use of clinical coaching behaviors after participating in an education program. This study addressed this gap.

Chapter 2 includes the literature search strategy, a review of literature related to the topic of this study, and the theoretical and conceptual frameworks. The review of the literature includes evidence-based research describing elements of clinical coaching behaviors, utilization of clinical coaching behaviors in clinical faculty, and the effectiveness of clinical coaching behaviors on students' clinical reasoning in clinical settings. A summary concludes this chapter.

Literature Search Strategy

The literature review explores the relationship between the study topic and the previous literature conducted on the topic (Rudestam & Newton, 2015). The review of the literature was conducted mainly through the Walden University Library. The following databases were searched: CINAHL PLUS, CINAHL & MEDLINE combined search, EBSCO, ProQuest Central. A Thoreau Multi-Database search was also conducted for locating published research studies about clinical coaching application. The search was limited to English-language articles published between 2014-2019. The following key search terms were used: *clinical faculty and clinical coaching, clinical faculty and critical conversations, clinical coaching and clinical reasoning, coaching and clinical reasoning, nursing student and questioning and feedback,* and *clinical reasoning and nursing students.*

The total number of articles obtained from the databases using the search terms were as follows: CINAHL PLUS = 188, CINAHL & MEDLINE = 236, EBSCO = 15, ProQuest Central = 412, and Thoreau = 755. Each article was reviewed, and inclusion and exclusion criteria were applied. Inclusion criteria for this review were peer-reviewed research articles and relevant studies focusing on the clinical education environment of students participating in healthcare education. Excluded were dissertations, articles irrelevant to the topic, and articles not written in English. Duplicate articles were removed. Overall, 42 articles informed this study.

Theoretical Foundations

Integrated Clinical Education Theory

The ICET is one of the theoretical frameworks for this study. The ICET is a constructivist theory that integrates four theories: situated learning, expert practice, deliberate practice, and the Tanner clinical judgment model. The author of the ICET identified the four theories as relevant but incomplete in supporting clinical education practices and key elements that develop students' clinical reasoning. The three critical elements of the ICET interconnect with six concepts to support faculty specific teaching strategies that, when utilized, support clinical education and students' promotion of clinical reasoning:

1. Context of practice requires that learning occur in a supportive clinical environment where students consider themselves part of the healthcare team. Student experience, knowledge, understanding, and assumptions frame their thinking.

2. Students learn over time and each experience builds on knowledge from previous patient situations.
3. Thinking occurs through reflective discussion between the clinical faculty and the students.
4. Clinical faculty purposely engage students in multiple practice opportunities to promote clinical reasoning in students.
5. Clinical faculty use clinical coaching to support student learning during a patient situation.
6. Feedback provided by faculty should be given immediately or soon after a student action in order to provide specific direction on how to improve. (Jessee, 2018)

Additionally, essential to the design and implementation of clinical education that promotes students' clinical reasoning are three central beliefs: centrality of context, multiple practice opportunities, and faculty and student discourse with meaningful feedback. The first and third tenets, centrality of context and faculty–student discourse with meaningful feedback, are appropriate for the study. In the centrality of context, the CNE has to consider that students come to the clinical environment with certain assumptions and beliefs that shape their professional interactions (Miller, Sawatzky, & Chernomas, 2018). These experiences have practice implications that contribute to a student's learning. A supportive relationship between the CNE and student within the clinical learning environment prepares the student to practice and is an important element of the ICET.

Discourse with meaningful feedback, the third tenet of the theory, involves specific elements of clinical coaching that build student understanding of effective decision-making (Jessee, 2018). Coaching occurs with a student soon after a patient interaction, and it includes one-to-one, supportive, and collaborative feedback. The faculty feedback guides the student through questioning and reflection and shapes the student's learning. Because of the variability of student reflective ability, developing the skills to question and provide feedback for CNEs is key guiding the coaching relationship. Meaningful feedback provided by clinical faculty transforms the student's thinking and promotes continuous improvement of clinical reasoning (Jessee, 2018).

Clinical coaching is a teaching strategy that promotes students' clinical reasoning and is an intervention provided to clinical faculty (Benner et al., 2010); thus, the development of a clinical coaching education program for clinical faculty was supported by the ICET theoretical framework. A literature-based analysis of the theory showed that the theory has not been applied in previous studies. Incorporating the ICET in theoretical supported pedagogy using quantitative methods that measure faculty's integration of one or more of the tenets is recommended (Jessee, 2018). The ICET was also appropriate to answer the research question: Are there differences in the CNEs' utilization of clinical coaching teaching strategies after participating in a clinical coaching education program?

Knowles's Theory of Adult Learning

A second theoretical framework for this study is Knowles's theory of andragogy (Knowles et al., 2015). This theory uses criteria to explain the learning motivation of

adults (Knowles, Holton, & Swanson, 2005), and it identifies six assumptions about the characteristics of adult learning:

1. Before they learn, adults need to know why they need to learn something.
2. When adults are comfortable in their decisions to learn they are self-directed learners.
3. Adults have a vast array of personal and professional experiences that serve as a rich resource for learning.
4. Adults are ready to learn when learning occurs to cope with or improve their real-life situations.
5. Adults' motivation to learn is based on changes in their professional situation that improve their life circumstances.
6. Adults are motivated by internal rather than external benefits.

Knowles recommended these as categories for designing adult education courses so it would be natural to develop a clinical coaching program for adult clinical faculty using the framework of this theory (Merriam et al., 2007). The use of Knowles's learning theory on program planning supports adults in self-directed learning and active participation, which in turn promotes the transformation of knowledge (Aliakbari, Parvin, Heider, & Haghani, 2015).

Strategies for program development. Knowles developed eight process steps for creating effective learning environments (Knowles et al., 2015). The facilitator for adult learning prepares in advance a set of procedures and skills for the learner. The teacher must create a climate that is conducive to learning, involve students in mutual

planning, identify the student's need for learning, formulate program objectives, design learning experiences to address the objectives, then conduct the learning experiences, and evaluate the learning program (Knowles et al., 2015). Because adult learners may not have prior experience with clinical coaching behaviors that can support nursing students in the clinical setting, the program facilitator must guide the participants in understanding the benefits to faculty of clinical coaching.

One of the assumptions of Knowles's theory of andragogy is that adults must be cognizant of their need to learn something new. Adult learners want to be actively involved in the learning process, in contrast to younger learners, and they want to understand why they are learning something (Walker & Stevenson, 2016). When participants are motivated to connect information that was previously unrelated to their needs, the learner gains new skills and knowledge (Knowles et al., 2015; Walker & Stevenson, 2016). Moreover, when adults are motivated to learn, they want to apply the new skills and knowledge as soon as possible in their practice in order to assimilate the learning.

Another assumption of Knowles's theory is that adults have an array of experiences to draw from and that play a vital role in their acquisition of new skills and knowledge. Presumably, CNEs have varied experiences with students. As faculty gain more experience with students, they may be able to reflect and transform their faculty practice. The motivation behind adult learning is based on the adult's assumed motivation to continue to grow through lifelong learning. In other words, adults who are motivated to improve their professional situation, an internal benefit, will seek out education for help.

Designing courses that support the adult learner will ensure that both the class and student are successful (Knowles et al., 2005). Adult learners are motivated to learn when they have opportunities to link what they learn to how that learning will benefit them at work. Learning is most effective and better retained if the education is supported by their experiences and can be applied to real-world situations (Knowles et al., 2015). Facilitators of adult learners should engage students, both dependent and independent learners, using different strategies to garner growth and to collaborate and share experiences. Collaboration assists the adult learner in reflecting on new material and expanding previous understanding of the topic. Effective collaborative teaching activities include group-solving assignments and case studies where peers help peers (Caruth, 2014). It is important for program development to include opportunities for adults to reflect on their learning, so they can engage in new ideas and listen to others' experiences (Malik, 2016).

Previous application of Knowles's theory. Knowles's theory has provided a framework for creating many education programs for adult learners. For example, a dementia education program used the six assumptions of the theory with nurses working in a long-term care facility (Cooke, Moyle, Venturato, Walter, & Kinnane, 2014). The first assumption was met by the facilitators providing face-to-face instruction on dementia using a variety of learning modalities. Reflective journaling with facilitator guidance was used for learners to take responsibility by gauging and evaluating their own learning. Participants' motivation and immediate application of the learning was measured through case studies from real-life experiences and scenarios. Most participants

reported that using a variety of group and individual teaching strategies and one-to-one individual teaching strategies were most effective in gaining knowledge. In addition, onsite staff education and guidance provided a pedagogy that was interactive in nature, which supported feedback and sharing of ideas with other participants. Feedback that was immediate was the highest rated and provided a positive impact on knowledge (Cooke et al., 2014).

Further, the six assumptions were applied in an education program about facilitating learning, where librarians evaluated their roles in guiding adult learners who are also undergraduate students. The six assumptions of Knowles's theory provided a consistent framework to guide the education content and resources for the program, and two workshops supplied the theoretical content (Malik, 2016). Post reflective essays summarized learning through the retelling of the narrative. The participants reported that reading, reflection, and discourse with other participants in the education program reinforced their experience. This study indicates that creating a community of learning is conducive to supporting the learning process, adult learners should feel respected, valued, and supported, and facilitators and students should have equal roles (Malik, 2016).

Knowles's theory of adult learning has also been applied to professional development programs for online learning (Sato & Haegele, 2017). Adult physical education teachers participated in creating peer evaluating blogs, discussion posts, and lesson planning while receiving an online education program. The variety of online teaching modalities provided the learners opportunities to share ideas and experiences to enrich their learning. Real-world experiences were threaded through the program,

allowing for the development of a collaborative learning environment to help understanding. The participants collaborated by engaging in a positive learning experience that supported a deeper understanding of the topic (Sato & Haegele, 2017). This study underscores what is in the research that a positive learning environment brings about a positive change in an adult learner's attitude to learning (Mehmood, 2018).

In developing the clinical coaching education program for this study, program objectives, teaching strategies, and resources must align with adult learning principles. The clinical coaching education program included two clinical scenarios with faculty practicing clinical coaching behaviors. A group discussion after each clinical scenario to review what faculty did well and clarify assumptions in a supportive learning environment was provided. This experiential technique is aligned with two assumptions from Knowles: adults have a vast array of professional experiences that when cultivated in real-world scenarios provides for a transformative learning experience, and adults' motivation to learn is based on changes in their professional situation that improve their life circumstances. Knowles's theory of adult learning was therefore appropriate in guiding the clinical coaching education program that supported clinical faculty in developing behaviors associated with clinical coaching.

Kirkpatrick's Training Evaluation Model

The Kirkpatrick training evaluation model provides a framework to evaluate the effectiveness of a training program, and it is the most widely used evaluation model for training and development (Reio, Rocco, Smith, & Change, 2017). The model has been updated since its first iteration, and the latest update in 2016, called the new world

Kirkpatrick model, has additional concepts for each level. The model incorporates four levels of evaluation: Level 1 Reaction, Level 2 Learning, Level 3 Behavior, and Level 4 Results. It provides a suitable framework that provides a step-wise approach on how programs should be organized to promote learning and change behavior (Vizeshfar, Momennasab, Yektatalab, & Iman, 2018).

The goal of Level 1 evaluations is to measure the participant's reaction to the learning experience, including the participant's satisfaction and engagement with the training, and the training's relevance to the participant's needs. The Level 1 evaluation usually occurs right after the education. For Level 1, reaction sheets are used to measure participant satisfaction with the program with a list of questions that address the course, content, facilitator, and strengths or weaknesses. Evaluating Level 1 is important for understanding how the participants feel about the program and show that as facilitators the participants' input is important.

At Level 2, the facilitator seeks to measure a gap between prior and post training knowledge, attitudes, behaviors, confidence, and commitment. In other words, at this level evaluation assesses whether and how much participants have learned from the training. Kirkpatrick recommends measuring learning at Level 2 by administering a standardized tool to participants using a pretest and posttest design. For Level 3, it is important to determine how participants have transferred knowledge from learning to an observed behavior change; therefore, the Level 3 evaluation considers behavior changes of the participants as well as the organization's support in encouraging this change. Lastly, Level 4 of the Kirkpatrick model addresses the return on investment and short-

term observations of the behavior changes (Kirkpatrick, 2007; Kirkpatrick & Kirkpatrick, 2016).

Previous Application of the Kirkpatrick Theory

The Kirkpatrick model has been used extensively in evaluating corporate training programs and clinical education (Avraham, Shor, Hurvitz, Shvartsur, & Kimhi, 2018). The model provides a systematic approach to measure learning (Dorri, Akbari, & Sedeh, 2017). In one study using the Kirkpatrick model for a nursing education train the trainer simulation program, Levels 1 and 2 were tested. A descriptive questionnaire post training gauged the participants' reaction for Level 1. The second level was measured using a pretest and posttest to measure knowledge and skills before and after training. The results indicated that participants reacted to the program positively, and, in particular, the teaching staff's knowledge and skills were strengthened. The use of the Kirkpatrick model to evaluate the effectiveness of this program was appropriate (Zhao, Hu, Liang, & Qian, 2019).

In a quasi-experimental study conducted to evaluate a health care training program, the four levels of the Kirkpatrick model were utilized. In Level 1, content, trainers and facility were evaluated using a descriptive questionnaire. At Level 2, a pretest posttest psychometric tool was used to evaluate learning. To measure Level 3, the facilitator of the program observed participant behavior two months after they received education to measure performance. Finally, to measure Level 4, participants completed a questionnaire to gauge how the behavior impacted a return on investment. The results

indicated that the participants were satisfied with the training and that it led to increased knowledge and improved performance (Vizeshfar et al., 2018).

For another program, an in-service training program for nurses, the four levels of the Kirkpatrick evaluation model were used to determine its effectiveness. Prior to the training, the participants completed a pretest to understand their learning before receiving the education. After the training, participants completed a questionnaire to compare their learning to learning indicated in the pretest. After three months, participants were observed to determine application of learning to their jobs and whether the training had impacted the organization's strategic goal. The results showed that all four levels of evaluation were statistically significant and that the Kirkpatrick model was an effective framework to guide the study (Dorri, Akbar, & Sedeh, 2017).

In another example, an undergraduate writing program was evaluated for its effectiveness in improving student performance using Kirkpatrick Levels 1 and 2 (Aryadoust, 2017). Students participated in a short-term writing session and then completed a pre- and post-course writing test. Level 1 was gauged by a student-completed descriptive questionnaire that measured reaction, perception, attitude, and knowledge. Level 2 was evaluated with a pre- and post-course assessment *t* test to estimate magnitude of learning. Although the author reported that the participants' learning and knowledge improved, their attitudes after participation in the program did not (Aryadoust, 2017).

The first three levels of the Kirkpatrick model were used in a quasi-experimental design to measure the difference in participant learning before and after a short course on

agricultural leadership. The authors of the program developed a satisfaction survey to measure learner reaction to the program and concluded with participants evaluating their own behavior change. In the end, they found that the Kirkpatrick framework contributed to high participation satisfaction and improvement of knowledge and skills after receiving the education (Sowcik, Benge, & Niewoehner-Green, 2018).

The Kirkpatrick model was used to evaluate nursing students' performance in a medication administration simulation. This was a quasi-experimental study conducted during a six-week clinical rotation. To measure Level 2, the medication administration prepared questionnaire was used for both pretest and posttest with the medication administration scale to measure students' observed change in learning. The results indicated that the use of the Kirkpatrick model provided a uniform evaluation of the student education, and that student preparedness was improved following integration of the model (Avraham et al., 2019).

The results of the above programs employing the Kirkpatrick training evaluation model support its use for this clinical coaching education study. Specifically, Levels 2 and 3 of the Kirkpatrick model will be used to determine the effectiveness of the clinical coaching education program. The study will address the three research questions: Are there differences in the CNE's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program (Kirkpatrick Level 3)? Does participating in a clinical coaching strategies education program increase the CNE's intended use of the coaching teaching strategies in their practice (Kirkpatrick Level 2)? Is there a relationship between the CNE's length of clinical experience and their utilization

of clinical coaching after participating in a clinical coaching education program (Kirkpatrick Level 3)?

Literature Review Related to Key Variables and/or Concepts

Clinical Reasoning

In the 2008 *Essentials of Baccalaureate Education*, the American Association of Colleges of Nursing has identified clinical reasoning as a core competency that can directly affect safe patient outcomes (American Association of Colleges of Nursing, 2008). Clinical reasoning is an essential component of a nurse's assessment and decision-making ability in a patient situation (Durning, Artino, Schuwirth, & van der Vleuten, 2013; Kiesewetter et al., 2016). Clinical reasoning includes the deliberate process of a nurse's reflection and intuition to determine appropriate patient management (Tanner, 2006). The process of clinical reasoning additionally includes the ability to analyze data and use metacognition, heuristics, inference, deliberation, logic, cognition, information processing, and intuition (Simmons, 2010). Nurses with these effective clinical reasoning skills have a positive impact on the clinical outcomes of patients (Koharchik, 2015).

Effective reasoning depends on the nurse's ability to gather the appropriate cue at the right time, resulting in the development and implementation of a safe plan of care (Simmons, 2010). When an actual or potential patient situation requires decision-making, the nurse critically analyzes pertinent patient data and reflects on previous patient conditions that had both positive or negative outcomes to guide actions. Thus, knowledge and experience influence clinical reasoning (Herron, Sudia, Kimble, & Davis, 2016).

The ability to diagnose and treat using precise patient information that directs the practitioner is based on experiential learning (Durning et al., 2013; Menon & Mohideen, 2016). The experiential opportunities provided in clinical settings, wherein the student provides direct care to a patient and the CNEs guide the students, help a student make sense of the situation by framing thinking (Forneris & Fey, 2018; Herron & Sudia, 2016). Once the student understands the reason for effective action, the faculty and student explore assumptions and connect similar patient experiences to change thinking and improve clinical reasoning (Forneris & Fey, 2018). However, clinical reasoning develops over time from a variety of experiences that require students to engage in decision-making and reflect on decisions that support knowledge acquisition (Benner et al., 2010; Jessee, 2018). Therefore, nursing education must develop and teach effective strategies to CNE faculty to support student development of clinical reasoning that will result in better patient outcomes.

The literature has identified the impact of the theory to practice gap in new graduates. For nursing students, clinical experiences currently provide limited opportunities to engage them in thinking and understanding of clinical reasoning, thereby contributing to their lack of confidence (Herron, 2017). Instead, students have indicated that to learn in the most efficient way, they must have the opportunity to experience a situation and receive guidance on making sound clinical decisions. However, the results of a performance-based development assessment of the ability of new graduates and newly hired nurses to make decisions showed that in 2017, 28% of new graduates scored in the acceptable safe range to practice independently compared to 35% in 2005

(Kavanagh & Szweda, 2017). The results of the study also found that regardless of education level the newly hired nurses had no differences in their ability to practice safely (Kavanagh & Szweda, 2017).

Educating students in clinical reasoning must be supported at the bedside, yet clinical practice experience, and therefore opportunities to develop clinical reasoning, may be limited by the lack of clinical learning sites. While high-fidelity simulation has been utilized in clinical education to expose students to situations and decision-making, there is a lack of research measuring its effectiveness in promoting clinical reasoning (Mok, So, & Chung, 2016). The results of a systematic review of high-fidelity patient simulation and clinical reasoning in pre-licensure nursing students indicated that although high-fidelity patient simulation did not positively correlate with improved clinical reasoning, knowledge acquisition, skill performance, and critical thinking increased (Mok et al., 2016). In addition, the researchers found that although simulation alone did not have an impact on a student's clinical reasoning skills, debriefing post simulation, a type of reflective activity, was essential to building this skill. Other studies also support the finding that debriefing methods that utilize reflection, as well as Socratic questioning and faculty-student interactions, improved student reasoning (Forneris et al., 2015).

Evaluation of the literature has determined that the measurement of clinical reasoning in the nursing profession is insufficient. It is also challenging. Evaluating the skill of clinical reasoning in students is complex and multi-factorial, according to one study (Forneris et al., 2015). Faculty's previous professional experience is reflected in their engagement with students and may also be a factor in evaluating whether students

improved in their clinical reasoning skills (Hunter et al., 2016). In addition, faculty have reported that clinical reasoning is determined by a student's clinical experience, the length of time between clinical opportunities, and a staff nurse's acceptance of students on the unit (Hunter et al., 2016). The authors of this research concluded that student development of clinical reasoning was inadequate in the clinical settings particularly with CNEs not finding opportunities to engage students in order to cultivate this decision-making process.

Clinical Environment

The sociocultural aspects of the clinical learning environment are essential for acquiring the knowledge that allows students to meet their learning outcomes (Flott & Linden, 2015). Students spend two-thirds of their education immersed in clinical learning; therefore, it is essential that faculty develop meaningful learning opportunities that facilitate learning. These opportunities include exposure to patient situations that support student development of clinical reasoning (Jessee & Tanner, 2016; Sandridge, 2018). Ensuring that nursing students engage in varied patient experiences that improve their ability to make safe patient decisions increases learning and confidence in their skills. Opportunities should be utilized to focus on clinical reasoning during each clinical day and would require a change in how clinical experiences are conducted to adequately prepare students for future practice (Gonzalez, 2018). However, a recent evaluation of faculty's utilization of the clinical environment identified missed learning opportunities in the clinical learning environment with the focus more on task acquisition rather than development of clinical reasoning (Flott & Linden, 2015; McNelis et al., 2014).

Clinical education exposes the student to real life nursing experiences, therefore allowing the student to apply theoretical learning to the clinical setting (O'Brien et al., 2017). The clinical learning environment comprises the physical space, psychosocial elements, interaction factors, organizational culture, and teaching and learning components. When these factors are conducive to supporting a positive learning environment and when students observe positive role modeling behavior between staff nurses and clinical educators, their professional development will be positively impacted (Jessee, 2016).

The opposite is also true. Clinical environments that are unsupportive of clinical learning can negatively affect students' confidence and learning. Such an environment includes CNEs who have inadequate experience and knowledge, negative staff attitudes, intradepartmental discord, and shortage of clinical facilities (Shadadi, Sheyback, Balouchi, & Shoorvazi, 2018). Environments wherein students feel welcome, that support open communication and that provide a variety of experiences with clinical guidance and feedback produce students with a higher level of confidence (Sandridge, 2018). Too often, however, the student objectives and the CNE focus on task completion rather than on engagement in opportunities to support clinical reasoning (McNelis et al., 2014). Therefore, because the barriers of a clinical learning environment are varied, the role of the CNE is essential in creating a positive learning environment. One way to ensure a positive learning context is to provide appropriate professional development for CNEs. Professional development programs on effective communication strategies for CNEs may

eliminate, for example, ineffective communication as an obstacle to learning in the clinical environment (Shadadi, Sheyback, Balouchi, & Shoorazi, 2018).

Clinical Nurse Educators

The role of the CNE is challenging and complex. An effective CNE must be able to balance the demands of the clinical learning environment while meeting the objectives of student learning (Shellenbarger, 2019). The role is critical in transforming student learning from the classroom to application of clinical reasoning; however, a lack of consistent role competencies along with CNEs who may be inexperienced in teaching nursing students have been identified for this position (Shellenbarger, 2019). Therefore, nursing programs must either hire qualified CNEs or provide orientation to CNEs to facilitate learning and focus more on opportunities that allow students to practice safe decision-making (Phillips & Bassell, & Fillmore, 2019).

The American Association of Colleges of Nursing (2017) has pointed to the nursing shortage, particularly the shortage of nursing faculty, as a factor negatively affecting the ability of prospective students to enroll in nursing programs. To address the shortage of faculty, nursing programs continue to hire part-time or adjunct faculty members with advanced degrees to fill teaching positions primarily for the clinical setting (Koharchik, 2017). These nurses, though clinically competent, may not transition successfully to their new role of teaching students because they may lack the pedagogical understanding and experience needed to educate students (Grassley & Lambe, 2015; Koharchik, 2017). As research has shown, a CNE’s education, experience, and

orientation to the clinical learning environment impact their competency to teach, supervise, and evaluate students (Flott & Linden, 2015; Pitkänen et al., 2018).

A systematic review of the barriers in clinical education found that the primary obstacles were two-fold: inadequate knowledge in assessing students' progress in clinical settings and moving them from dependent to independent decision makers; and ineffective feedback (Shadadi, Sheyback, Balouchi, & Shoorvazi, 2018). The authors recommended adding clinical education to the nursing curriculum in an effort to eliminate these barriers. To support nurses in their new role, academic organizations should provide orientation programs that support learning.

Current orientation processes for novice CNEs and continued professional development programs for experienced educators are limited to preparing students for the challenges of the complex healthcare environment (Phillips, Bassell, & Fillmore, 2019). They focus more on assigned paperwork and weekly assignments than on facilitating teaching strategies to build students' clinical reasoning skills in the clinical context, even though facilitating teaching and creating opportunities for students to develop clinical reasoning skills is a core competency of the CNE's role (Shellenbarger, 2019). Clinical faculty who have not been provided with a foundation in their academic role will begin to model previously held teaching beliefs and understandings, which may not be effective for students (Collier, 2017). Moreover, the lack of an organized orientation that does not acclimate faculty to their academic role may result in clinical faculty who do not effectively communicate with students and do not provide clear direction on how to improve practice (Miller, Sawatzky, & Chernomas, 2018).

Communication, attitudes, and behaviors of clinical educators have an impact on student learning (Bisholt et al., 2014; Flott & Linden, 2015). Lack of communication and feedback impedes the development of interpersonal relationships with students, a key component for promoting a positive learning experience (Miller, Sawatzky, & Chernomas, 2018; Saifan, AbuRuz, & Mas'deh, 2015). Poor feedback and communication also thus contribute to healthcare errors, and the quality and number of interactions often determine whether the student is anxious or stressed (Chen, Watson, & Hilton, 2018).

One strategy to assist in the formation of clinical reasoning is verbal questioning soon after a patient situation. Unfortunately, instead of engaging students in synthesizing and reflecting after a patient experience, CNEs often rely on students' memorization of material (Forneris & Fey, 2018). When faculty engage students in higher-level questioning, on the other hand, they stimulate student thinking and lead students to a deeper understanding of learning and the development of clinical reasoning (Forneris & Fey; Merisier, Larue, & Boyer, 2018). This is one important aspect of the faculty's role in the student's development of clinical reasoning, but the faculty-student relationship is multi-dimensional.

The relationship between faculty and student is critical to the student's successful completion and application of the theoretical learning in the classroom (Papastavrou et al., 2016). The teaching techniques of the CNE include developing a positive and trusting relationship, in addition to promoting clinical reasoning and facilitating the accumulation of knowledge (Collier; 2017; Koharchik, 2017). One study identified the ability to

develop interpersonal learning experiences as the most important characteristic of an effective CNE (Collier, 2017). Clinical nurse faculty who promote a positive learning environment are approachable, have good communication skills, and promote students' independence and confidence (Collier, 2017).

Feedback also plays a critical role in the faculty-student relationship. When clinical faculty support student learning with clear expectations through feedback, they provide opportunities for students to engage in salient learning (Koharchik, 2017; Nolan & Loubier, 2018). Students who experienced one-to-one reflective feedback three or more times in a clinical setting evaluated their interpersonal relationship with clinical faculty as positive (Jessee, 2016; Papastavrou, Dimitriado, Tsangari, & Andreou, 2016; Pitkänen et al., 2018). In contrast, clinical faculty who did not provide effective feedback or provided feedback infrequently in the clinical setting, negatively affected students' professional and personal acclimation (Arkan, Ordin, & Yimaz, 2018). Therefore, clinical faculty should engage in education that promotes the delivery of effective feedback. Coaching, an element of feedback, when provided one-to-one and when it considers the performance of the student, provides deeper meaning to the learning experience (Nolan & Loubier, 2018).

Clinical Coaching

A core competency of the CNE is to utilize teaching strategies that bridge the gap between classroom theory and clinical experiences, thus providing opportunities for students to develop clinical reasoning skills and coaching to foster professional growth (Shellenbarger, 2019). Clinical coaching, a pedagogical, supportive teaching strategy,

focuses on one-to-one feedback from faculty to student after a patient situation; it is provided in a supportive manner and prioritizes strategies to support student learning for future application (Jessee & Tanner, 2016). Clinical coaching has also been referred to as micro debriefings, coaching, or critical conversations (Eppich et al., 2016).

The process of clinical coaching begins with students analyzing their own performance, and with the CNE framing their thinking and closing knowledge gaps via feedback using the questioning technique within a coaching conversation (Eppich et al., 2016; Jessee & Tanner, 2016). In the coaching relationship, the CNE meaningfully observes and assesses the learner's performance in a patient situation and provides direction and feedback using reflective teaching strategies. Clinical coaching that occurs within a patient context immediately after or soon after the patient situation promotes clinical reasoning (Benner et al., 2010; Jessee & Tanner, 2016; Shellenbarger, 2019). Feedback provided long after the patient situation does not provide students with the urgency to change practice (McNelis et al., 2014). Moreover, feedback quality is essential in promoting a positive learning environment and translating faculty's discussion with the student, and it is defined by teaching and questioning that promotes student identification of key aspects of their nursing practice.

Critical conversations with open questions and techniques that synthesize and reflect the process of thinking promote thoughtful inquiry from the student (Merisier et al., 2018; Forneris & Fey, 2018; Whitmore, 2017). However, studies that measure the effectiveness of faculty's clinical coaching behaviors on the clinical reasoning of students are lacking. One quantitative study asked 136 clinical facilitators, including CNEs and

preceptors responsible for teaching and evaluating student learning in the clinical learning environment, to evaluate three clinical medical surgical scenarios for third year nursing students and to describe their level of questions to facilitate learning (Phillips et al., 2017). Of a total of 1,384 questions asked in the three scenarios, 72% of the questions were low-level questioning. Only 4% of the questions asked were higher level questioning (Phillips et al., 2017). Conversely, a study of clinical coaching behaviors of CNEs and staff nurse preceptors as evaluated by senior nursing students found that CNEs utilized more synthesis level questions compared to staff nurse preceptors who used lower level questioning. The conflicting results of the study indicate a need for future research addressing clinical coaching behaviors of CNEs.

Summary

Clinical education in nursing education is challenging and complex. The quality of the clinical learning environment and the strategies and experience of the CNE impact student development of clinical reasoning (Flott & Linden, 2015; Heron et al., 2016), a required competency in nursing education. Effective application of all components of the clinical reasoning process within a patient context results in nurses making safe and high quality decisions (Jessee & Tanner, 2016).

The faculty shortage and difficulty in hiring experienced, effective CNEs has impacted the quality of teaching in the clinical environment. To fill faculty vacancies, nursing programs have hired nurses with clinical expertise but no foundation in education theory (Collier, 2017). Nursing programs also provide inconsistent orientations. The novice nurse educator who has had no foundation in educational theory, limited

orientation and limited teaching experience with students will revert to previous learned teaching strategies that may not be effective for engaging student learning and promoting a positive learning environment.

The ability of the clinical faculty to develop a relationship with the student with mutual respect and professionalism that supports the student's acclimation to the nursing role is a key characteristic of the clinical educator (Collier, 2017). Faculty who support students in the clinical setting by frequent, one-to-one discussion after a patient situation allow the student to reflect on the reasons for their decisions and identify areas for improvement (Jessee, 2016; Papastavrou, Dimitriado, Tsangari, & Andreou, 2016; Pitkänen et al., 2018). Faculty dialogue with students in the clinical setting is often focused on skills acquisition and rote questioning, and it often occurs long after the patient situation or after clinical ends (Jessee & Tanner, 2016; McNelis et al., 2014). Faculty feedback, however, is critical for students' understanding and knowledge acquisition after a patient situation. The use of questioning that engages the student in broader thinking, such as analyzing, synthesizing, and reflecting after a patient situation, improves student thinking and achieves understanding of safe decision-making (Forneris & Fey, 2018). Missed opportunities in the clinical setting stem from ineffective utilization of clinical education and ineffective teaching strategies.

A critical requirement of nursing education is to engage students in making safe and high-quality decisions for patients. Making safe decisions in the context of a patient situation is learned best in the clinical context; therefore, ineffective and missed opportunities to teach this critical skill in the clinical environment may produce students

with poor clinical reasoning skills (Jessee & Tanner, 2016). Most importantly, poor clinical reasoning skills result in poor patient outcomes (Simmons, 2010).

Clinical faculty should be provided with effective education to support their understanding of how clinical reasoning is developed in the clinical setting. Inconsistent teaching strategies, underutilization of the clinical learning environment, and the lack of interaction with students all lead to a decrease in student confidence and an increase in stress and anxiety (Nolan & Loubier, 2018). Increased anxiety in the clinical setting can result in a negative learning experience, in turn resulting in inadequate education and learning for students that may lead to poor practice behaviors in clinical.

Clinical coaching is one strategy that pedagogically promotes clinical reasoning in students (Benner et al., 2010). It is the one-to-one interaction that occurs between faculty and student soon after or immediately after a patient situation, and their engagement is comprised of a meaningful discourse using teaching and high-level questioning (Jessee & Tanner, 2018; Jessee, 2018). One study quantified the clinical coaching behaviors of CNEs as evaluated by nursing students (Jessee & Tanner, 2016). However, no research has measured clinical faculty's application of clinical coaching behaviors after receiving an education program.

The goal of this study is to determine if clinical faculty utilize clinical coaching behaviors after receiving a clinical coaching education program. The results of the study may encourage the development of clinical coaching education programs to improve clinical faculty's application of the behaviors that may result in improved clinical reasoning in students. Providing a consistent clinical coaching program will also support

inexperienced CNEs in understanding how to engage students in feedback to facilitate learning in clinical environments. This may improve communication between faculty and student, resulting in better quality of care to patients. Chapter 3 will address the research design, rationale, and methodology of the study.

Chapter 3: Research Method

Introduction

The purpose of this study was to determine whether CNEs' coaching behaviors increased after participating in a clinical coaching education program. Clinical coaching is used to teach faculty on helping nurses develop clinical reasoning through question and feedback related to patient situations (Jessee & Tanner, 2016). Chapter 3 describes the research design, research variables, and rationale. The chapter also includes the study methodology including the target population, sampling and sampling procedures, data collection, and data analysis plan. In addition, the threats to validity are discussed.

Research Design and Rationale

A quantitative, one-group pretest and posttest, quasi-experimental study was conducted in two academic settings in the Northeast to answer the following research questions:

Research Question 1: Are there differences in the clinical nurse educators' utilization of clinical coaching teaching strategies after participating in a clinical coaching education program?

Research Question 2: How influential was participation in the clinical coaching strategies education program in increasing your intended use of the clinical coaching strategies in your practice?

Research Question 3: Is there a relationship between the clinical nurse educators' length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program?

A quasi-experimental design is appropriate when site limitations, availability of participants, and time limits may occur (Gray, Grove, & Sutherland, 2017). The study was also conducted in a natural setting with nursing educators, which this study design supported (Frankfort-Nachmias, Nachmias, & DeWaard, 2015). In addition, many studies rely on nonprobability sampling due to the availability of the population of nurse educators during a course semester (Polit & Beck, 2012). Therefore, a quasi-experimental pretest posttest design was selected to measure differences between clinical coaching behaviors of CNEs after participating in the clinical coaching education program using a convenience sample of CNEs from two academic settings.

Design-Related Constraints

There are some limitations to a quasi-experimental design. First, participants are not randomly selected. A lack of random selection may lead to limited generalizability in the larger population (Gray et al., 2017). To increase generalizability, the study was conducted in a natural education setting, which can create an environment where the participants may be genuine in their responses (Polit & Beck, 2019).

A second design related constraint is the availability of the CNEs over the course of a semester. The variability of CNE schedules during certain weeks of the academic semester had to be considered. Despite this limitation, the quasi-experimental design reduces the time and resources that may constrain an experimental study, making this design appropriate for the study (Polit & Beck, 2012).

A third constraint is the time and availability of the participants to complete the pretest, posttest, and clinical coaching education program. The program required at least

2 hours to fully complete the education. To make it easier for faculty to participate and to find the required time for participation, the leadership of both academic settings provided time during a staff meeting to conduct the study. Therefore, the education was conducted within a 2-hour period at one time, rather than 1 hour a day for 2 days.

A fourth constraint is testing familiarity. There should be a minimum of a 2-week waiting period after participants complete a pretest before researchers administer a posttest (Facione & Facione, 2006). After participants receive the education program, new behaviors should be evaluated after 2 months (Kirkpatrick & Kirkpatrick, 2007). Because CNEs need opportunities to utilize the clinical coaching behaviors in clinical, 8 weeks after a posttest was administered. Additionally, the schedule variability of each CNE's time was a concern in obtaining posttest results, so the posttest was completed after a monthly staff meeting.

Research Design Choice

Despite the constraints, a quantitative one-group, pretest-posttest interventional research design was the most appropriate design for the study because participants were not randomly assigned and there was no control group. The pretest serves as their own control (Frankfort-Nachmias et al., 2015). In addition, a clinical coaching education program intervention was included in the study to understand the relationship among variables and to determine the differences in participants' knowledge (Frankfort-Nachmias et al., 2015). Therefore, a descriptive study was not appropriate (Grove et al., 2017).

Additionally, studies that quantify the clinical coaching behaviors of CNEs are lacking. No studies were found that measure CNEs' improved utilization of clinical coaching behaviors after receiving an education intervention. Developing, understanding, and utilizing clinical coaching behaviors in CNEs may support students' clinical reasoning. Therefore, this quasi experimental study may empower change in the teaching strategies of CNEs after participating in a clinical coaching education program. A clinical coaching education program on CNE behaviors may support the need for continued education in this group. As change agents, CNEs have a unique opportunity to apply evidence-based teaching strategies that prepare nursing students to provide safer care to patients. CNE utilization of the clinical coaching behaviors may result in improved clinical reasoning skills of nursing students (Hunter & Arthur, 2016; Jessee & Tanner, 2016).

Variables

The independent variable was the clinical coaching education program. The clinical coaching education program provided specific questions and feedback strategies for CNEs to utilize that are supportive and challenge the student to reframe their thinking, thus improving their decision making. The clinical coaching program was developed by Dr. Garner, one of my committee members, and was previously used to educate nurse preceptors in a hospital system. Principles on giving feedback to students soon after a clinical situation with questions using application and analysis to promote thinking were included in the education (Rubenfeld & Sheffer, 2012). When CNEs engage students in higher-level questioning, student thinking is stimulated, which can lead to a deeper

understanding of learning and the development of clinical reasoning (Forneris & Fey; Merisier, Larue, & Boyer, 2018).

The dependent variable was clinical coaching behaviors. Independent variables influence the outcomes related to the dependent variable (Creswell, 2014). Clinical coaching behaviors were measured using the CCII: EGV developed by Jessee (Jessee & Tanner, 2016). The items on the tool describe and measure specific clinical coaching behaviors of CNEs and the quality and type of feedback used after student interactions in a clinical setting (Jessee & Tanner, 2016).

Methodology

Population

The target population included CNEs working in an academic setting. The number of CNEs in academic settings are based on student enrollments, which can vary from semester to semester within an organization; therefore, an exact size of the target population of CNEs could not be determined. In addition, there are no national or state organizations that report a number of CNEs working in academia.

The sample for this study included CNEs who work in two diploma degree programs in the Northeast United States. The number of CNEs in each program is dependent on the number of students enrolled for each semester. Although a total of 89 CNEs were currently employed by both programs, 47 in one and 42 in the other, a total of 54 CNEs participated in the clinical coaching education program.

Sampling and Sampling Procedures

A convenience sample was used to recruit CNEs working at two diploma degree programs located in the Northeastern United States. Convenience sampling, a nonprobability sampling method, allows researchers to select participants who are convenient to reach (Frankfort-Nachmias et al., 2015; Polit & Beck, 2012). The inclusion criteria were the following:

- CNEs actively working in the clinical setting during the study time-frame and are employed by the academic institution.
- CNEs providing one-to-one teaching and feedback to students.

CNEs who were not available during all or part of the sampling time-frame were excluded from the study.

Sample size. G*Power software was used to calculate a sample size of 34 for this study (see Paul, Erdfelder, Buchner, & Lang, 2009). Using the G*Power software, a dependent two-tailed *t* test was used. It is also important to analyze previous studies to determine appropriate effect size (Gray et al., 2017). In nursing, interventions have medium effect size; therefore, a medium effect size was chosen (Polit & Beck, 2012). A medium effect size for a *t* test is 0.5 (Cohen, 1992). The conventional alpha for the study is .05 as most nursing studies include this level of significance (Gray et al., 2017). The minimum power recommended is .80; less than .80 may increase the risk for a Type II error (Cohen, 1992; Gray et al., 2017). Therefore, the power was set at .80. A predicted sample size with alpha at .05, a power of .80, and a medium effect size of .5 was 34.

Procedures for Recruitment, Participation, and Data Collection: Primary Study

The following recruitment and data collection procedures were implemented by the deans of the two nursing programs after they received institutional review board (IRB) approval from their respective institutions. The study flyers were posted in the CNEs' mailboxes and e-mailed to their primary e-mail. The flyer was also posted in the faculty lounge. The purpose of the study, eligibility for participation, and contact information were included in the flyer. The deans also met with the faculty members and introduced the study's purpose, eligibility to participate in the study, and expectations of the faculty.

Informed consent was obtained by CNEs who agreed to participate in the study. The educational program was presented to the CNEs during working hours by a faculty member. The education program was developed by one of my committee members. No financial incentive was provided to the CNEs; however, a light snack was provided to participants. The program lasted 90 minutes.

The data collection for this study was a pretest and posttest as well as one demographic tool. The participants first completed a demographic survey (Appendix C) and pretest (Appendix A) prior to participating in the educational program. The demographic information that was collected included gender, education level, length of teaching in clinical education, and status as full- or part-time CNE. Both academic settings collected the surveys and provided the deidentified data. Eight weeks after participating in the education program, the participants completed a posttest (Appendix

A). The posttests were scheduled to be completed after a faculty meeting; however, the program deans decided to electronically send the posttests to the faculty.

Instrumentation and Operationalization of Constructs

Clinical Coaching Education Program

The clinical coaching education program used as the intervention for the study was developed and piloted by one of my committee members gave consent to utilize these materials. The education program is located in Appendix C. The first two modules provided education on Knowles's adult learning theory, Bloom's taxonomy, and the three domains of learning that support teaching and questioning. Modules three to five provided the elements of the clinical coaching relationship between the CNE and the student that included coaching to promote thinking and feedback principles. Thinking-promoting teaching strategies were also incorporated in the education, which included examples of higher order questions that CNEs can engage in with a student after a patient situation (Rubenfeld & Sheffer, 2012). In addition, principles of how to give feedback with examples of effective feedback were provided to the CNEs. The sixth module encouraged the CNEs to reflect on the learning experience and how it could impact their own personal practice and teaching style. Finally, the participants were able to practice the clinical coaching behaviors using two clinical scenarios from Critical Conversations: The National League of Nursing Guide for Teaching Thinking. The program was presented over 90 minutes in a classroom using PowerPoint slides. Participants were able to ask questions during and at the end of the program.

Clinical Coaching Interactions Inventory

The primary instrument used to collect data on the clinical coaching behaviors of the CNEs was the CCII: EGV (Appendix A). This tool was appropriate for the study because it measures the teaching-questioning strategies and feedback of CNEs during a student interaction in clinical. A total of eight questions on the tool identified specific clinical coaching behaviors that the CNEs utilized in clinical, and the tool was implemented immediately before and eight weeks after the clinical coaching education program.

Reliability and validity of tool. The original tool, CCII: Student Version was developed to include two groups of participants: 53 traditional baccalaureate nursing students and 82 accelerated baccalaureate-equivalent Master of Science in Nursing (MSN) students (Jessee & Tanner, 2016). The overall teaching questioning section of the original tool demonstrated a reliability of .70. New instruments initially show a moderate internal reliability of 0.70 to 0.79 with subscales ranging from 0.60 to 0.69 (Gray et al., 2017).

The validity of an instrument establishes the degree in which it measures the constructs in the tool (Polit & Beck, 2012). In a new tool, content validity is obtained using evidence in the literature, including qualitative data, content experts, and a relevant sample population, to determine the relevance of the constructs being measured (Gray et al., 2017; Polit & Beck, 2012). The authors of the CCII demonstrated evidence of this by using a qualitative study to identify clinical coaching interactions and the types of teaching-questioning used by clinical faculty. Second, the authors had six experienced

nursing faculty clinical supervisors review the items for content validity (Jessee & Tanner, 2016; Polit & Beck, 2012). The expert review was completed after a second round with a reported scale-content validity index/average (S-CVI/Ave) of .91. A S-CVI/Ave of .90 demonstrates an excellent content validity (Polit & Beck, 2012). The item-content validity index (I-CVI) was .80 to 1.0. (Jessee & Tanner, 2016). An I-CVI of .80 is an acceptable value (Polit & Beck, 2012). The dependent variable, clinical coaching behaviors, was operationalized using the eight questions on the CCII: EGV. The dependent variable was measured by counting the number of favorable answers.

Influence of the Education to CNE Practice

One question was added to the posttest to assess the CNEs' intended use of the clinical coaching strategies in their practice after participating in the clinical coaching strategies education program. The participants were given this question to answer and it was measured using a Likert-type scale with levels from 1 (Not at all influential) to 4 (Very influential).

Data Analysis Plan: Secondary Analysis

Procedure for Gaining Access to the Data Set

Several meetings were arranged with Deans of each academic setting to develop a procedure for sharing access to the secondary data analysis. Walden University required a Data Use agreement from each academic setting stipulating that the partner sites agree to provide de-identified data for the study. The Walden University IRB approved the study to conduct secondary analysis for this capstone. The IRB approval number for this study is 08-22-19-0662227.

The program Deans provided me with deidentified data of the pre- and posttest which were used to calculate the secondary data analysis using SPSS 25. For the secondary data analysis plan, eight questions were included (Appendix D). The same questions were used to measure the dependent variable pre- and post-presentation of the clinical coaching education. Comparing the means of data on the same participants meets the assumption that the dependent variable is measured on a continuous scale.

To determine whether the intervention, the clinical coaching education program, was influential to the CNEs' practice, frequencies and percentages were calculated to summarize the respondents' responses. A Wilcoxon matched-pairs test was used to compare the mean group rating against a standard of "2 (slightly influential)." The Wilcoxon was used given the small sample as well as the ordinal nature of the rating scale. A Spearman's rho was utilized to analyze the CNEs' years of experience and their utilization of clinical coaching behaviors after participating in the clinical coaching education program.

Data cleaning and screening procedures. The secondary data analysis was entered first in an Excel spreadsheet and then into SPSS 25 software. The data was examined carefully for errors and to identify invalid responses by cross-checking the original data sheet to the data file. Missing data and outliers were evaluated using a box plot. The was no missing data from the participants. All data values outside the range of values for the variable were checked (Gray et al., 2017), and all errors were corrected. All demographic and survey tools were included in the survey.

Statistical Tests

The research study was guided by the following questions and hypotheses:

Research Question 1: Are there differences in the clinical nurse educator's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program? (Kirkpatrick Level 3)

$H_0$1: There is no difference in the clinical nurse educator's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program.

H_a1: There is an increase in the clinical nurse educator's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program.

Research Question 2: How influential was participation in the clinical coaching strategies education program in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice? (Kirkpatrick Level 2)

$H_0$2: Participating in the clinical coaching education program was not influential in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice.

H_a2: Participating in the clinical coaching education program was influential in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice.

Research Question 3: Is there a relationship between the clinical nurse educator's length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program? (Kirkpatrick Level 3)

$H_0$3: There is no relationship between the clinical nurse educator's length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program.

H_a3: There is a relationship between the clinical nurse educator's length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program.

A Pearson's correlation or a Spearman's rho was used based on the sample size of CNEs completing both the pretest and the posttest to accept or reject the null hypothesis.

Threats to Validity

Threats to External Validity

Threats to external validity may limit generalization of the relationship of the study (Gray et al., 2017). One threat to external validity is that the sample of CNEs may not be representative of the population. Attempts were made to decrease this threat by collecting data from CNEs at two sites offering Diploma degrees in the Northeastern United States. However, because an exact number of CNEs in the United States cannot be determined, the researcher was unable to estimate the availability of the population.

Threats to Internal Validity

Threats to internal validity occur when changes to the dependent variable are a result of not controlling for extraneous variables (Gray et al., 2017). In a quasi-experimental study, the threats to internal validity are history, maturation, and testing (Polit & Beck, 2012). Observed results may be explained by events or experiences that occurred during the data collection (Polit & Beck, 2012). During this study time frame no

external events were identified that would impact internal validity. However, to completely eliminate the threat of history in the study would require limiting the follow up time between the pretest and posttest data collection. Evaluating external events such as professional education programs offered at each of the academic settings would be explained.

The second threat is participation maturation. Because the length of data collection was eight weeks, it provided the CNEs an opportunity to utilize the clinical coaching education in the clinical environment with students. Reducing the time between pretest and posttest may have limited maturation threat, but at the same time it may not have allowed the clinical coaching behaviors to be utilized by the CNEs. A third threat to internal validity occurs when the same test is used to collect data in a pretest and posttest. In the study there were only two points of data collection, the pretest and posttest. To maintain consistency and decrease the threat to testing, the same instrument was used. In addition, the posttest will be completed eight weeks after the pretest, which may decrease the participants' familiarity with the questions in the tool.

Threats to Construct or Statistical Conclusion Validity

A threat to statistical conclusion validity can cause incorrect data analysis conclusions (Gray et al., 2017). A potential threat that may occur in this study is having a low statistical power. This translates into a sample size that is not large enough to detect a statistically significant finding. To eliminate this threat, the researchers conducted a power analysis using G*Power software to find an adequate sample size. A second threat is fishing and error rate problem occurring when multiple statistical tests are used (Gray

et al., 2017). The researcher decreased this possibility by meeting the assumptions of the statistical tests and using a tool with reliability and validity (Polit & Beck, 2012).

Ethical Issues

Participants at two nursing programs located in the Northeastern United States participated in the study. The Deans of each academic setting received IRB approval from their institutions. The Deans provided me with the de-identified data for the pre and posttest.

The data that was provided to me remained locked in a file cabinet in my home. The computer used to store the data is password protected and kept in my home. I alone am in possession of the password. I will delete all data after five years as required by the Walden IRB. Additionally, neither of the academic centers was named in the study.

Other ethical issues. I was employed at one of the nursing programs during data collection. I was not, however, in a leadership role at the school of nursing nor did I professionally evaluate any CNEs. I was also not employed in a supervisory position over the CNEs who participated in the study; therefore, potential coercion was minimal.

Summary

A secondary analysis approach was used to determine the impact of a clinical coaching education program on the utilization of clinical coaching behaviors of CNEs. A total of 54 CNEs participated in the clinical coaching education program from two Diploma degree programs in the Northeastern United States. All participants met the inclusion criteria of teaching the clinical component of a nursing course during the study time frame. The CCII: EGV was used to operationalize the dependent variable, the

clinical coaching behaviors. Participants completed a demographic tool and pretest before receiving the clinical coaching education program. After eight weeks a posttest was completed.

After receiving Walden University IRB approval, the Deans from the two academic centers shared the de-identified pre and posttest data with me. The research questions were answered using the secondary data analysis of the CNE data. In addition, the secondary data that was provided to me was secured on a password protected laptop in my home. In conclusion, I implemented the research methods and design ethically when analyzing the secondary data. Results will be presented in Chapter 4.

Chapter 4: Results

Introduction

The purpose of this quantitative study was to determine whether CNE clinical coaching behaviors increased after participating in a clinical coaching education program. The research questions and hypotheses for the study addressed differences in CNEs' teaching strategies, intended use of clinical coaching strategies, and the influence of length of experience on clinical coaching. In Chapter 4, I present a review of data collection, descriptive and demographic characteristics of the sample, statistical assumptions, and a review and analysis of the research questions and hypothesis testing. Finally, a review of the data analysis and a summary of the findings will be discussed.

Data Collection

Clinical nurse educators who were employed at two academic centers located in the Northeastern United States participated in this study. The data collection began on August 28, 2019 and concluded on October 30, 2019 for the first participating site. The data collection for the second participating site began on September 3, 2019 and concluded on November 5, 2019. The pretest data collection was conducted face to face. The posttest data collection was completed via an online survey by each participating site beginning 8 weeks after the education program. The online surveys were open for one week for the participants to have time to complete the posttest survey. The deidentified pre- and post-test results were sent to me from the participating sites in an encrypted e-mail.

The data analysis was completed from a password-protected computer in my home. A prior power analysis for a dependent two-tailed *t* test was conducted using G*Power with a power of 0.8, an alpha of .05, and a medium effect of .5, yielding a predicted sample size of 34. A total of 54 participants completed the pretest survey and participated in the education program; however, only 36 participants completed the posttest survey. Therefore, 36 participants were included in the secondary data analysis, yielding a 66% response rate. G*Power was met with the sample size of 36 for the study.

The clinical coaching education program was delivered as planned to the participants. The program was presented over a 90-minute time frame. No adverse events or concerns were reported to me by the two participating sites during the data collection of this study.

Comparison of Sample to Population

The CNEs examined in this study were employed at two academic programs in the Northeastern United States. The sample size obtained in this study met the required sample population to demonstrate significance, according to the G* Power calculated. According to the Bureau of Labor Statistics (2018) there are 48,580 nursing faculty in the United States. This number includes nursing faculty who teach in diploma and associate degree programs as well as baccalaureate and graduate programs. The statistics provided do not allow for the identification of the number of faculty in each group. The number of CNEs an academic setting employs is determined by the nursing program, and it is based on the number of students in the program for each semester; this number therefore varies each semester.

Results

Descriptive Statistics

The sample consisted of 36 CNEs who worked in two academic settings in the Northeastern United States and who met the following inclusion criteria: CNEs actively working in the clinical setting and providing one-to-one teaching and feedback to students. The sample was mostly female (91.7%), with more participants working full time (52.8%). Additionally, most of the had a master's degree (88%). Of the 32 participants with a master's degree, 25 majored in nursing education (78%). The participants' teaching experience ranged from 1 to 35 years (M = 10.08, *SD* = 9.46) with a mean of 10 (see Table 1).

Table 1

Participant Demographics

Variable	Category	*n*	%
Highest education	Masters—Nursing	25	69.4
	Masters—Other	7	19.4
	PhD/DNP	4	11.1
Years teaching students	1 to 5 years	17	47.2
	6 to 13 years	7	19.4
	14 to 19 years	8	22.2
	20 to 35 years	4	11.1
Employment status	Full-time	19	52.8
	Part-time	17	47.2
Gender	Male	3	8.3
	Female	33	91.7

Note. Experience: *M* = 10.08, *SD* = 9.46.

Statistical Analysis Findings by Research Question

Research Question 1

Research Question 1: Are there differences in the clinical nurse educator's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program?

$H_0$1: There is no difference in the clinical nurse educator's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program.

H_a1: There is an increase in the clinical nurse educator's utilization of clinical coaching teaching strategies after participating in a clinical coaching education program.

The four assumptions of the dependent *t* test are that (a) the dependent variable is measured on a continuous level; (b) that related groups, or the same participants in each group, are measured on two occasions on the same dependent variable; (c) that no significant outliers are found in the differences between the two groups; and (d) the differences of the dependent variable should be normally distributed (Laerd, 2015). First, the data were evaluated for normality outliers using SPSS 25. The data identified that there were a few points lying off the hypothetical straight line. In addition, the Shapiro-Wilk test was used because of the small sample size ($N = 36$) to determine normality in numbers. According to the test, data are not normally distributed if the significance level is less than $p < .05$ (Laerd, 2015). The results of the Shapiro-Wilk test showed that the differences are not normally distributed ($p = .000$; see Table 2); therefore, the assumption of normality was violated. Due to these concerns, a Wilcoxon test, a nonparametric test, was used instead of the paired *t* tests due to the sample size ($N = 36$).

Table 2

Shapiro-Wilk Test for Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
difference	.471	35	.000	.314	35	.000

a. Lilliefors Significance Correction

To answer Research Question 1, Table 3 displays the Wilcoxon test comparing changes in clinical coaching teaching strategies. Table 4 shows no significant changes in the utilization for seven of eight coaching strategies. However, there was a significant increase in the question related to CNEs engaging students in a discussion that required them to synthesize knowledge, patient data, and the events of the day (88.9% versus 100.0%; p = .05). These findings provided limited support to reject the null hypothesis (see Table 3).

Table 3

Wilcoxon Tests Comparing Changes in Clinical Coaching Teaching Strategies (N = 36)

	Pretest		Posttest			
Strategy	*n*	%	*n*	%	*z*	*p*
1.Verbal feedback to students about questions	34	94.4	36	100.0	1.41	.16
2.Verbal feedback on nursing care issues	36	100.0	36	100.0	0.00	1.00
3.Students felt supportive	35	97.2	35	97.2	0.00	1.00
4. Feedback given soon	27	75.0	31	86.1	1.16	.25
5. Role Model Professional Practice	35	97.2	35	97.2	0.00	1.00
6. Ask probing questions	34	94.4	36	100.0	1.41	.16
7. Discussion to synthesize	32	88.9	36	100.0	2.00	.05
8. Discuss how events impacted them personally	30	83.3	32	88.9	0.71	.48

Research Question 2

Research Question 2: How influential was participation in the clinical coaching strategies education program in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice?

$H_0$2: Participating in the clinical coaching education program was not influential in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice.

H_a2: Participating in the clinical coaching education program was influential in increasing clinical nurse educators' intended use of the clinical coaching strategies in their practice.

To answer this question, Table 4 displays the frequency counts for ratings pertaining to the influence of participation. Eighty-three percent of the educators rated the clinical coaching education as either *influential* or *very influential*. These findings provided support to reject the null hypothesis (see Table 4).

Table 4

Frequency Counts for Ratings Pertaining to the Influence of Participation (N = 36)

Influence rating	*n*	%
Not at all influential	1	2.8
Somewhat influential	5	13.9
Influential	12	33.3
Very influential	18	50.0

Research Question 3

Research Question 3: Is there a relationship between the clinical nurse educator's length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program?

$H_0$3: There is no relationship between the clinical nurse educator's length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program.

H_a3: There is a relationship between the clinical nurse educator's length of clinical experience and their utilization of clinical coaching after participating in a clinical coaching education program.

To answer this question, Table 5 displays the Spearman correlations for length of teaching experience with posttest utilization of the eight clinical coaching strategies. Spearman correlations were used instead of the more common Pearson correlations due to the sample size (N = 36). For four of eight strategies, 100% of the educators reported utilizing that strategy. Among the other four strategies, one strategy was significantly related to years of experience. Educators with more experience provided earlier feedback to the students after a patient experience (rs = -.41, p <.01). These findings provided limited support to reject the null hypothesis (see Table 5).

Table 5

Spearman Correlations for Length of Experience with Posttest Utilization of Clinical Coaching Strategies (N = 36)

Strategy	Experience	
1.Verbal feedback to students about questions	n/a	
2.Verbal feedback on nursing care issues	n/a	
3.How student felt	.25	
4.Timing of feedback	-.41	**
5.Role Model Professional Practice	-.25	
6.Ask probing questions	n/a	
7.Discussion to synthesize	n/a	
8.Discuss how events impacted them personally	.06	

Note. "n/a" were added for the coefficient when 100% of the respondents used that strategy.
* $p < .05$. ** $p < .01$.

Summary

In summary, 36 educators participated in this study to determine whether CNEs' clinical coaching behaviors increased after participating in a clinical coaching education program. Research Question 1 (change in utilization of coaching strategies) and Research Question 3 (experience with post-training utilization) found limited support (see Table 4) found limited support (see Table 2), but Research Question 2 (influence of participation) was supported (see Table 3). In Chapter 5, the findings will be interpreted including a comparison of the findings to the literature, limitations to the study will be discussed, implications, and recommendations will be suggested.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative study using a secondary data analysis was to determine whether CNEs' clinical coaching behaviors changed after participating in a clinical coaching education program. Secondary data were retrieved from 36 CNEs who had one-to-one interaction through teaching, questioning, and feedback to students in a clinical setting. The study was conducted over 8 weeks with CNEs from two academic settings located in the Northeastern United States who worked either full- or part-time. The results from this study concluded that there was a difference in one of the eight clinical coaching strategies utilized by the CNEs.

Interpretation of the Findings

Comparison of Findings to Existing Literature

As discussed in Chapter 2, the role of the CNE is complex and critical in teaching students how to make quick and safe patient decisions. However, the current literature identifies that CNEs focus on skill acquisition rather than engaging students in developing thinking skills through teaching and questioning in the clinical setting (Forneris & Fey, 2019). Over time, this lack of learning opportunities results in students not being prepared to provide safe patient care with the potential for negative patient outcomes (Jessee, 2018). To teach students how to think, the CNE requires supportive professional development programs to improve their teaching effectiveness (Summers, 2017). One pedagogical supported strategy to improve students clinical reasoning is through the application of clinical coaching. Clinical coaching is the synthesis of

information after a patient situation through the timely and relevant feedback between the CNE and student (Jessee & Tanner, 2016). However, studies relating to the application of clinical coaching strategies after participating in an education program are lacking. This study addressed this gap.

A Wilcoxon-ranked test was used to examine the first research question to identify whether there was a difference in clinical coaching teaching strategies after CNEs participated in a clinical coaching education program. Of the eight questions on the CCII: EGV that was used to answer this question, one question showed a significant increase: “Did you engage your students in discussion that required them to synthesize knowledge, patient data, and the events of the day?” However, the findings provide limited support to reject the null hypothesis. For the second research question, a frequency count was completed to determine the extent to which the CNEs believed participating in the clinical coaching education program influenced their intended use of the strategies into practice. The findings support the rejection of the null hypothesis, with 83% of the CNEs reporting the education program either was *influential* or *very influential* to their practice application in clinical. For the third research question, a Spearman correlation was used to determine if there was a relationship between CNEs length of experience and utilization of clinical coaching experience. The findings support the rejection of the null hypothesis and found that CNEs with more experience provided verbal feedback to students soon after delivery of patient care.

The findings from this study provide some support that a clinical coaching education program does improve CNEs ability to engage the students to synthesize

knowledge, patient data, and events of the day. Students' ability to synthesize information can help them in prioritizing care and can propose alternative solutions (Summers, 2017). A CNE who uses higher order thinking can guide the student in reframing their thinking by uncovering assumptions and provide a new perspective (Whitmore, 2017). In addition, the findings from this study confirms that CNEs found that their participation in the clinical coaching education program was influential in their ability to utilize clinical coaching behaviors in clinical. Further findings of the study support that more experienced CNEs provided feedback to the students soon after the patient situation compared to novice CNEs. However, as experienced nursing faculty retire, academic institutions look to fill this gap by hiring nurses who are clinical experts but may have limited or no teaching experience (McPherson & Candela, 2019; Summers, 2017).

The results of the study support the literature, as 19% of nurses hold a master's degree in a major other than nursing education. In addition to this lack of preparedness of educational theory, 47% of the study participants had 5 years or fewer of teaching experience. According to Benner's novice-to-expert theory (2001), the novice nurse educator is one who has been teaching between 3 to 5 years. This gap in nurse educator learning may lead to difficult role transition with clinical faculty that can result in decrease in retention in this position (McPherson & Candela, 2019). This further supports the need for academic institutions to create professional educational programs to mentor and support the CNEs' teaching practice. At its core, the findings of the study support the continued need of a clinical coaching education program to CNEs. Clinical faculty must

be knowledgeable through a formal educational preparation and supported to continue in the development of deliberate practice in students (Miner, 2019). Furthermore, committing the necessary resources to this education program will prepare the CNEs to support the student in being a safer practitioner with the potential for more positive patient outcomes.

Theoretical Findings

Integrated clinical education. The ICET supports students' development of clinical reasoning in the clinical environment (Jessee, 2018). Two of the three tenets of the theory guided the development of the clinical coaching program: promoting a positive relationship between the CNE and student along with the CNE providing immediate feedback using teaching and questioning strategies that reframe students thinking for improving their decision making (Jessee, 2018). A key competency of the CNE is to create a helpful and learning environment where performance can be discussed one-to-one to use specific observations, using higher level questioning to discuss and reflect on performance, and identifying areas that need improvement (Rangachari, Brown, Kern, & Melia, 2017). The CNEs are responsible for integrating higher-order questioning to reframe thinking in students to improve their clinical reasoning.

The result of this study indicate that CNEs improved their questioning that required students to synthesize patient data to promote learning. In addition, the findings support that feedback was provided soon after a patient situation rather than later in the day by experienced CNEs compared to novice educators. These findings support that students' development of clinical reasoning is determined by the experience and

education in a clinical coaching program of the CNE. Consistent professional development programs are needed that focus on characteristics of effective feedback and teaching using higher-level questioning. An evidence-based pedagogy that promotes CNEs' ability to facilitate learning in the clinical environment would bridge the theory–practice gap. The CNEs empowered with this knowledge have the potential to create a positive learning environment among students and develop their clinical reasoning skills at the bedside.

Knowles's theory of adult learning. Knowles's theory of adult learning explains that adults must be actively involved in the learning process, want an explanation as to why the learning is important, and want to apply new learning as soon as possible to their practice (Knowles et al., 2015). In addition, these life experiences should have meaning to the learners. The andragogic theory was used in the design of the clinical coaching education program, which provided two simulated case studies of issues that are common during a medical surgical clinical rotation. Both scenarios were focused on common themes in clinical education and required the CNE to use clinical coaching teaching strategies to engage the student to safely determine the next step in patient care. In the first scenario, the student had to determine how to prioritize care in a patient who was experiencing shortness of breath. The second scenario required the student to decide whether to administer a medication after reviewing laboratory results on a patient. The CNEs were provided with examples of higher-level teaching questions to provide feedback during the simulated case study. During the programs question period, CNEs whose practice was not medical surgical focused requested examples of patient scenarios

relevant to their practice. The discussions provided an opportunity for the participants to share insight and help solve problems that may be helpful to less experienced CNEs. This learning aligns with the assumption that adult learners are ready to learn when content can be applied to real-life situations; therefore, additional simulated case studies that are inclusive of the CNEs who practice in specialties other than medical surgical should be included (Knowles et al., 2015). The study identified that through active participation and engagement, the participants were motivated to learn about the clinical coaching strategies.

Kirkpatrick's training evaluation model. The Kirkpatrick model provides an evaluative progress from one step to the next to measure learning and behavior change during a training program (Kirkpatrick et al, 2016). The model has four levels of evaluation; however, in this study Level 2 learning and Level 3 behavior were used. In measuring Level 2 in this study, 83% of the CNEs reported that their commitment of learning clinical coaching strategies and their intended use in practice was either *influential* or *very influential* to their applying the strategies to clinical practice. Acquisition of clinical coaching knowledge can be determined by measuring CNEs' behavior change after participating in the clinical coaching program. The evaluation of Level 3 provided insight into whether the information taught was transferred in the CNEs practice and how much transfer of learning occurred (Kirkpatrick et al., 2016). A total of 8weeks transpired between the education program and the posttest surveys (Kirkpatrick et al, 2006). The length of time between the education and the posttest survey was appropriate to allow the CNEs to practice the behaviors in clinical. The study confirms

that learning did occur; one of eight clinical coaching behaviors was statistically significant. In addition, experienced CNEs reported providing feedback timelier rather than less experienced CNEs, after the patient situation.

Limitations of the Study

The following limitations were recognized in Chapter 1 which potentially impact the study outcomes. The first limitation is the time between a pretest and the posttest. According to Kirkpatrick, behaviors cannot change unless the participants have the opportunity to practice the new behaviors (Kirkpatrick, 2007). For this study the posttest was completed eight weeks after the pretest and the education and evaluation. The weeks between the pre and posttest may have contributed to the limited number of participants who completed the posttest. However, completing the survey at the same time may increase the sample size but would not allow for the time needed to change behavior. The most convenient way to collect data is face-to-face (Polit & Beck, 2019). The pretest and education program was completed this way. The posttest was collected using an online survey which allowed participants to complete the survey on their own time. The participants from this study are at two facilities and are located at different clinical sites at different times. Therefore, using an online format at the time was convenient to the faculty but may have resulted in a lower response rate (Polit & Beck, 2019). This study had a 66% response rate. Another limitation was that a small sample size and convenience sampling may limit the generalizability of the study to other academic settings such as Baccalaureate and Associate degree programs.

Recommendations

The study reflects, overwhelmingly, that participating in a clinical coaching program positively impacts CNEs decision to utilize the behaviors. However, only one of eight clinical coaching behaviors by CNEs had a significant difference between the pre- and posttest, and use of synthesis styles questions to guide teaching and feedback to students. Therefore, the study results support the need for continued evaluation of a clinical coaching program on CNEs utilization of this innovative teaching method.

This study used Kirkpatrick levels 2 and 3. Further studies should utilize Kirkpatrick level 4 to evaluate longer term effects of the education. A recommendation is to consider the CNEs application of clinical coaching behaviors from semester to semester. Measuring the behaviors over time may provide information to the time between the coaching program and CNEs consistent utilization of the behaviors. The information may provide direction as to the timing of follow up resources to ensure that the level of application remains consistent from semester to semester.

A second recommendation is to use a larger population with participation from other geographic regions to improve generalizability. Improving CNEs utilization of clinical coaching behaviors is essential to students improved performance. However, the literature finds that students report that CNEs provide feedback that lacks clarity, is not timely, and often invokes an emotional response that can impact student's motivation and confidence (Paterson, Paterson, Jackson, & Work, 2020). This can lead to poor student performance. Evaluating student's perception of CNEs utilization of clinical coaching behaviors at the same time as CNEs are self-reporting their own utilization of clinical

coaching behaviors may provide a better understanding of this gap. A comparison of CNEs behaviors to student's perception that their clinical performance, including their ability to make safer decisions, directly related to clinical coaching behaviors would provide further evidence that clinical coaching is an effective teaching strategy in promoting clinical reasoning. By comparing CNEs and students reported clinical coaching behaviors has the potential to identify strategies that may transform CNEs teaching behaviors resulting in students improved performance at the bedside.

A third recommendation is to include a clinical coaching education program in CNEs orientation and annual education. To fill the vacancies left by retiring faculty, many nursing programs hire adjunct or part-time nurses who are clinically competent but lack understanding of educational theory and teaching strategies to support student learning (Collier, 2017). The current literature identified a lack of studies on the best practices to orient new CNEs (Ross & Dunker, 2019). The integration of a clinical coaching education in a CNE orientation would provide faculty with the tools needed to improve practice. Measuring their utilization of clinical coaching program before and after receiving the education may result in increase in CNEs competency within the role, resulting in more confidence in their clinical teaching. Additionally, the results would provide nursing education leaders with key insight into information that should be included in an orientation program.

Implications

Positive Social Change

The results of the study have the potential to provide positive social change at the national and state level, and for CNEs and nursing students. This study identified that CNEs who participated in a clinical coaching program was influential in increasing their intended use of these behaviors with students in the clinical environment. In addition, CNEs utilized synthesis focused questions which has the potential to facilitate student learning and improve their thinking at the bedside. In addition, the results of the study identified that the clinical coaching, which should be given soon after the patient situation, was provided more timely by experienced CNEs compared to novice CNEs. As more experienced faculty retire, nursing programs will rely on faculty with less training. Therefore, an opportunity to strengthen novice CNEs timely feedback to students with strong theoretical based teaching and questioning is needed to ensure better student outcomes which will positively affect patient outcomes.

Implications at the National Level

The National Academy of Medicine and the National League for Nursing recommend the development of a nursing workforce that meets the demands of increasing complexities of patient health care (Institute of Medicine, 2015; National League of Nursing, 2019). Improving the quality of a clinical education program will ensure that students will provide safe care resulting in improved patient outcomes (World Health Organization, 2016). Academic institutions who teach nurses and organizations that employ nurses are equal stakeholders in ensuring that nursing programs produce safe

and competent nurses. To meet these demands, nursing programs must invest in faculty to ensure they receive consistent professional development programs that are grounded in educational theory and evidence based teaching strategies. Academic institutions should look beyond the traditional teacher centered to student-centered approach to learning that builds knowledge and creates opportunities for students to think safely (Forneris & Fey, 2019). Integrating a clinical coaching program in nursing programs helps students to learn to clinically reason (Shellenbarger, 2019). The individual feedback that faculty provides to students using higher-order thinking skills provides guidance for students to consider alternatives, uncover assumptions, and reframe their thinking after a patient situation, will improve their future performance (Jessee & Tanner, 2016). The improvement in students' knowledge to quickly notice and act during a change in a patient's situation will result in nurses making safer decision resulting in improved patient outcomes.

Implications at the State Level

The National Council Licensure Exam for Registered Nurses is the qualifying exam that assess new graduate's ability to provide safe practice at an entry level (Foreman, 2017). However, only 23% of newly hired nurses were able to think at the entry-level requirements to provide safe care (Kavanagh & Szweda, 2017). Concerned with the practice readiness of new graduates to make critical decisions at the bedside, the National Council of State Boards of Nursing developed the Next Generation National Council Licensure Examination (Bristol, 2019). This exam will move away from content questions to realistic clinical scenarios that will align with how nurses think in clinical

practice (Caputi, 2019). In reacting to this change and to ensure that new graduates meet the expected competencies of this exam, nursing programs will need to change how students develop and apply clinical decision. Programs must build into their curriculum opportunities for students to practice thinking. Clinical coaching strategies can be integrated as a teaching method across the curriculum to teach students how to think and to prepare students to practice safely. Using an evidence-based teaching strategy to teach students how to think critically will improve student's preparation not only for the components of the exam but to safely practice in the profession (Bristol, 2019).

Implications for the Clinical Nurse Educator

The CNE role is challenging and requires the planning of appropriate clinical learning that bridges classroom learning to clinical application, supports student's development of clinical reasoning skills, and promote a positive learning environment through role-modeling behaviors (Shellenbarger, 2019). Nursing programs employ part-time and adjunct clinical staff to fill the vacancies left open by a shortage of nursing faculty (McPherson & Candela, 2019). In response, nursing programs may have no choice but to fill clinical openings with nurses who may be expert clinicians but who lack an understanding of educational theory and evaluating principles (Barker, 2019). The CNE must be provided with consistent orientation programs and annual education programs that incorporate evidence based teaching strategies which prepares them to evaluate students' performance (McPherson & Candela, 2019). Supporting the integration of a clinical coaching education program in CNEs orientation will ensure CNEs are exposed to evidence based teaching methods to improve their clinical teaching.

Not only will students benefit from an improved quality of education, and learning to think, but faculty attainment of clinical teaching strategies may result in improved faculty satisfaction that could decrease role turnover (Candice, Bassell, & Fillmore, 2019).

Implications for the Student

New graduates rely on their teachers to prepare them to practice safely within an environment that is complex and challenging. However, new graduates report that they lack confidence and that the clinical learning environment in school did not prepare them to develop clinical reasoning skills (Kavanagh & Szweda, 2017). Clinical reasoning is essential to safe practice. CNEs who use teaching strategies, such as clinical coaching, to develop students clinical reasoning skills in clinical will be able to guide students to improve their skills and knowledge (Akram, Mohamad, & Akram, 2018). Consistent and repetitive practice over time will improve students' decisions by shaping clinical reasoning in practice (Forneris & Fey, 2019).

Conclusion

In conclusion, clinical education provides students with an opportunity to develop their clinical reasoning skills (Herron et al., 2016). The CNE is the key figure that guides the student to uncover assumptions and to reframe their thinking in patient care to consistently provide safe nursing care (Collier, 2017). The results obtained from this study will provide an evidence based teaching pedagogy for academic institutions to implement for CNEs which is grounded in educational theory. This study concluded that a clinical coaching program influenced CNEs intended use of the strategies in their

clinical practice. Specifically, the CNEs ability to engage students to synthesize patient information to improve students' performance and decision making.

Clinical nurse educators must implement teaching strategies that are appropriate and facilitate learning in the clinical environment (Shellenbarger, 2019). Clinical coaching is a teaching strategy that bridge the gap between theory and practice and support the development of students' clinical reasoning (Jessee & Tanner, 2016; Shellenbarger, 2019). The implementation of clinical coaching has benefits for the CNE to their clinical practice, students to improve safe decision making, and healthcare facilities to ensure employees make quality decisions that results in positive patient outcomes.

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Appendix A: CCII: EGV

Clinical Coaching Interactions Inventory: Educator Group Version

Section I. Number of interactions you had with a typical student on a typical clinical day.

Please consider your most recent clinical day. Answer these questions about your typical student.

1. How many interactions did you have during the clinical day? **(Choose one)**
1-2 ____
3-4 ____
5 or more ____

2. The number of interactions you had with your student was: **(Choose one)**
____ Too few to improve their learning
____ Just enough
____ Too many, but did not interfere with their learning
____ Too many, interfered with their learning

Section II. Description of your one-to-one interactions with your student.

Please indicate the types of interactions you had with your student on your most recent clinical day.

1. Did you tell or give your student specific instructions or directions regarding care of the patient such as, "Take this patient's vital signs every four hours. Ambulate the patient for 15 minutes. Give this medication with plenty of water."?

____ Yes
____ No

2. Did you ask your student task-focused questions requiring a yes or no answer such as, "Did you bathe your patient? Did you get your charting done? Did you report to the nurse?"

____Yes
____ No

3. Did you ask your student knowledge questions requiring specific answers such as, "What is the patient's diagnosis? What is the pathophysiology of the diagnosis? What medications is your patient receiving?"

____ Yes
____ No

4. Did you demonstrate to your student (show, or walk through) how to do a nursing procedure such as an assessment or a skill?

____ Yes
____ No

5. Did you role model professional practice to your student such as talking to or resolving a conflict with a patient, or collaborating with a member of the healthcare team?

____ Yes
____ No

6. Did you ask your student probing questions requiring them to use their knowledge to analyze the patient situation such as, "What did you notice about your patient today? How will you manage the patient's problem? How will you prioritize your care? How will you know if your interventions worked?"

____ Yes
____ No

7. Did you engage your student in discussion that required them to synthesize knowledge, patient data, and the events of the day such as, "Tell me how you made your decisions for prioritizing care. Tell me how you chose your nursing interventions. How have your plans or actions changed during the course of caring for this patient? How did you make those decisions?"

____ Yes
____ No

8. Did you ask your student to discuss how the events of the day impacted them personally or professionally such as, "What was most meaningful to you about the clinical day? What did you learn from this situation? How will this experience impact your nursing actions and decisions in the future?"

____ Yes
____ No

9. Please pick the one type of interaction that is most representative of those you had with your student on your most recent clinical day, then pick the one type that is second most representative.

Type of Interaction	**Most Representative Interaction**	**2nd Most Representative Interaction**
Told them or gave them specific instructions or directions regarding care of the patient.		
Asked them task-focused questions requiring a yes or no answer.		
Asked them specific knowledge questions requiring specific answers.		
Demonstrated how to do a nursing procedure such as an assessment or skill.		
Role modeled professional practice.		
Asked probing questions requiring them to use their knowledge to analyze the patient situation.		
Engaged them in discussion that required them to synthesize knowledge, patient data, and the events of the day.		
Asked them to discuss how events impacted them personally or professionally.		

Section III. Description of feedback you gave your student regarding your one-to-one interactions.

1. Did you give your student verbal feedback on their responses to your questions?

____ Yes
____ No

2. Did you give your student verbal feedback on their delivery of nursing care or performance of nursing procedures?

____ Yes
____ No

3. Was the verbal feedback you gave **(Select one)**

____ Given in a way that made the student feel discouraged?
____ Given in a way that the student found supportive?

4. Was the verbal feedback you gave **(Select one)**

____ Given soon after student responses or delivery of care?
____ Given at the end of the clinical day?

5. Was the verbal feedback you gave **(Select one)**

____ Too general to be helpful?
____ Helpful but not specific?
____ Very specific about how to improve?

6. Did the verbal feedback you gave address **(Select all that apply)**

____ The student's level of knowledge?
____ The student's skill level during nursing procedures?
____ Decisions the student made regarding care of your patient?
____ Verbal communications or interactions the student had with patients, families, or members of the healthcare team?

7. Please enter any comments you feel are needed to clarify your responses:

Question Added to Posttest Only

1. How influential was participation in the clinical coaching strategies education program in increasing your intended use of the clinical coaching strategies in your practice?

1- Not at all influential 2- Somewhat influential 3- Influential 4-Very influential

Appendix B: Demographic Tool

Participant Demographic Sheet

Directions: Please provide a response for each of the following questions:

1.What is your highest level of education?

- Master's degree in nursing education
- Master's degree (indicate type)?
- PhD/DNP

2. How many years do you have teaching students in clinical education?

_____ years

3. As a clinical nurse educator, how would you describe your employment status?

- Full-time
- Part-time/Adjunct

4. What is your gender?

- Male
- Female

Appendix C: Clinical Coaching Education Program

Clinical Coaching Education Program for Clinical Nurse Educators

Revised from the education tool *Supportive Learning for Clinical Preceptor I Course*

developed by C. Garner, DrPH, MSN, MPA, RN

One: The Adult Learner

Welcome to the series on clinical education. Research suggests that 10% of learning comes from formal learning methods such as lecture, 20% from readings, study materials, and via information technology. Fully 70% of what individuals learn comes from on-the job training and interaction with team members and the patient. So, as a clinical nurse educator, your influence is extremely important in shaping the learning of the young professional.

Adults have achieved a self-concept of being in charge of their own life and making their own decisions and living with the consequences. Many studies have found that nursing students, particularly the millennials, learn best when they are included in the experiential process. They are quick to self-correct (the Nintendo generation) and respond best when they feel that the educator actively cares about their learning.

The adult student wants to know that learning is relevant. This means that we approach the adult learner in a way that involves them with their learning, rather than assume that they have absorbed what they have been "taught." The clinical experience is where the student takes the passive learning and becomes an active learner, engaging in critical thinking and decision making.

Learning Theory

A learning theory attempts to explain how persons learn. There is a rich literature in psychology about learning and learning behaviors that explores the many theories. While it is helpful to understand the nursing school's theoretical base, this clinical coaching course will focus using Malcolm Knowles's adult learning theory (3).

1. We learn by doing. Allow the student to do the task, no matter how slowly.
2. We learn by focusing on one task. Focus on developing a single task each day.
3. We must be ready to learn new materials/tasks. Assess your student to determine a readiness to learn new material.
4. We must be motivated to learn. Encourage your student each time a task is accomplished.
5. We must have immediate reinforcement of learning. Discuss the learning experience and its value to your student.
6. The learning situation must have meaningful content. The planned learning experiences must relate directly to the care processes on the unit.

7. Responses to the learning situation will vary. You may have a different perception of the learning experience than your student.
8. The learning atmosphere will have an impact. When you allow your student to make mistakes without humiliation, trust will ensue.
9. Backgrounds and physical abilities will vary. You will have different dexterity skills than the student."

Two: Curriculum Objectives, Activities, and Outcomes

Learners absorb information in different ways and at different rates. The experienced educator is able to recognize the level of knowledge of the learner in specific domains of learning and to construct activities to support movement to the next level. First, know what the objectives of the clinical course and the clinical experience are. For the beginner student, the curriculum may specify learning by using verbs such as recognize abnormal vital signs, list the symptoms, name the side effects of this medication, or observe. Note that the student is not yet expected synthesize assessments into plans of care or to analyze the impact of the plan of care on patient outcomes. These come later in the learning experience.

Taxonomy

Educators use different verbs to describe the levels of learning. The most widely used is Bloom's taxonomy (4).

Domains of Learning

Educators generally divide learning activities into three domains of learning:

The ***Cognitive Domain*** refers to knowledge-based learning in three levels:

- ***Fact***: Outline a simple concept. The verbs most commonly used are defined, compare, and contrast.

  "What are the most common complications from a surgical procedure?"
- ***Understanding***: Define a situation by putting two or more concepts together. The verbs most commonly used are describe, compare, and contrast.

  "What is the difference between short-acting and long-acting insulin?
- ***Application***: Put together two or more concepts to form something new. The verbs most commonly used are explain, apply, and analyze.

  "Why would the doctor order a change to long-acting insulin with this patient?"

The ***Psychomotor Domain*** refers to skills-based learning at three levels:

- ***Imitation***: a return demonstration.
- ***Practice***: proficiency building practice of a technique or skill.
- ***Habit:*** student can perform the skill in twice the time of an experienced nurse. Proficient would be the verb to describe the level of an experienced nurse.

The ***Affective Domain*** is based upon behavioral aspects:

- ***Awareness***: able to describe the status of the patient.

- ***Distinction***: able to distinguish normal versus abnormal findings.
- ***Integration***: able to integrate findings into a nursing diagnosis and plan of care.

Three: Coaching to Competency

The clinical nurse educator-student relationship is conducted in the context of experiential learning, which is different from the classroom based learning. Think of being a clinical nurse educator as that of a coach, rather than teacher. A coach encourages the player to utilize knowledge of the plays in putting the play into action. A good coach is there to provide not just positive and corrective feedback, but to explain how real life can take an unexpected direction from the playbook. Coaching to reframe how students think is the most important role of the clinical nurse educator.

Here are some key tips from Rubenfeld and Sheffer on use of the thinking –promoting teaching style:

Thinking-Promoting Teaching Style Checklist (Rubenfeld and Sheffer, 2012)

- Use deliberate methods to decrease anxiety
- Evaluate and give credit for thinking process
- Encourage lots of questions
- Do not get defensive when questioned or challenged
- Help students find information resources
- Describe to students how you think
- Develop teaching objectives/expected competencies that go beyond recall of information and require transforming information into usable knowledge
- Use humor
- Create a thinking-friendly environmental culture that accepts mistakes as opportunities to grow
- Vary teaching methods and strategies throughout each session
- Engage students in peer review activities
- Ask student to expand on their answers (tell me more)
- Promote students' positive self-concepts
- Emphasize collaborative learning
- Allow/encourage the student to be the teacher

Four: Clinical Problem Solving

The experiential nature of learning in the clinical setting demands that the student put theory into practice that does not always duplicate textbook learning. The clinical nurse educator has the opportunity to share their own clinical problem solving skills as a technique for developing those of the student. This is where a clinical nurse educator brings in experience, knowledge of policies and procedures, and evidence-based practice. This is a great time to explain the dangers of work-arounds and short-cuts in the context of nursing care.

Regardless of the experiential learning activity, both the experience and the learning are fundamental. In the learning process and in the relationship between the learner and any facilitator(s) of learning, there is a mutual responsibility. All parties are empowered to achieve the principles which follow. Yet, at the same time, the facilitator(s) of learning are expected to take the lead in ensuring both the quality of the learning experience and of the work produced, and in supporting the learner to use the principles, which underlie the pedagogy of experiential education.

1. ***Intention***: All parties must be clear from the outset why experience is the chosen approach to the learning that is to take place and to the knowledge that will be demonstrated, applied or result from it. Intention represents the purposefulness that enables experience to become knowledge and, as such, is deeper than the goals, objectives, and activities that define the experience.

2. ***Preparedness and Planning***: Participants must ensure that they enter the experience with sufficient foundation to support a successful experience. They must also focus from the earliest stages of the experience/program on the identified intentions, adhering to them as goals, objectives and activities are defined. The resulting plan should include those intentions and be referred to on a regular basis by all parties. At the same time, it should be flexible enough to allow for adaptations as the experience unfolds.

3. ***Authenticity***: The experience must have a real world context and/or be useful and meaningful in reference to an applied setting or situation. This means that is should be designed in concert with those who will be affected by or use it, or in response to a real situation.

Five: Assessment, Feedback, and Reflection

The use of assessment tools allows for the application of specific standards during the student experience. Feedback should always include both positive comments and opportunities for improvement. Absorption of feedback requires that students be able to reflect on their understanding, behavior, and clinical practice in order to bring about learning.

Assessment is based on the context of learning – what the student was supposed to learn according to the objectives of the course. Expectations should be clearly outlined in the syllabus and used as a guide to your assessment of the student's mastery of the objectives. Most schools will provide some level of achievement; as opposed to that expected of a practicing nurse.

Assessment of technical skills is relatively straightforward. Assessment of interpersonal competence is a bit more subjective. Assessment of critical thinking is the most difficult of all, but should be an on-going activity as you debrief the student at the end of each clinical day.

Feedback

The purpose of feedback is based within the context of open and honest communication about a student's performance in the clinical situations.

Basic Principles of Giving Feedback

- Ask permission or identify that you are giving feedback. "I would like to provide you with some feedback on what I observed today, How did caring this patient/family make you feel? What are your main concerns?"
- Use the first person: "I think, I saw, I noticed, I wonder."
- Ask the student to describe that they were thinking about during the experience, what sources of knowledge influenced/should have influenced their thinking, and what past experiences helped make sense out of the current situation.
- Give feedback in a "feedback sandwich." Start with a positive observation. Provide the critical observation and a suggestion on how to improve.
- Describe what you observed and be specific. State facts, not opinions, interpretations, or judgments
- Do not be judgmental or use labels.
- Do not exaggerate. Avoid terms such as always or never unless this is truly the case.
- When making suggestions for improvement, use statements like "you may want to consider, "or what will you do differently moving forward?
- Feedback should address what a person did, not your interpretation of his or her motivation or reason for it.

Six: Reflection for the Clinical Nurse Educator

The excellent clinical nurse educator is one who practices the reflective process in order to process information and act upon it in a way that enriches the individual. Just as we ask the student to reflect on the learning experience as a way to link current learning to previous learning, we as clinical nurse educators should do the same. Some questions to ask yourself:

Am I

- Reasonably sure of my thinking here?
- Taking into account the total context of this situation?
- Considering more creative, better approaches?
- Being too rigid? Too loose?
- Asking all the questions I should be asking?
- Using any preconceived notions that might be wrong?
- Going with my gut reactions or ignoring them?
- Closing my mind off to any possibilities?
- Forgetting any important rules here?
- Seeing the patterns and details?
- Missing anything?
- Making conclusions based on solid data?
- Able to predict where this is going?

New

Seven: Clinical Scenarios

Two clinical scenarios which include the educator action/discussion within context, content, and course after a patient situation will be used from, *Critical Conversations: The NLN Guide for Teaching Thinking* (Forneris & Fey, 2018).

Scenario 1: A student is taking care of a patient on a medical surgical unit who was recently transferred from Intensive Care Unit. The clinical nurse educator uses coaching conversation techniques to discuss with the student who is having difficulty managing this patient who is short of breath.

Scenario 2**:** The learner is caring for a patient with acute exacerbation of congestive heart failure. The learner identifies that the patient has an order furosemide and is preparing to administer the medication. The learner does not address that the patient is hypokalemic and does not address the low potassium.

Appendix D: CCII: EGV Data Analysis Plan

CCII: EGV Data Analysis Plan

High-level questioning teaching behaviors or clinical coaching behaviors	1.Did you role model professional practice to your student such as talking to or resolving a conflict with a patient, or collaborating with a member of the healthcare team? 2.Did you ask your student probing questions requiring them to use their knowledge to analyze the patient situation such as, "What did you notice about your patient today? How will you manage the patient's problem? How will you prioritize your care? How will you know if your interventions worked?" 3.Did you engage your student in discussion that required them to synthesize knowledge, patient data, and the events of the day such as, "Tell me how you made your decisions for prioritizing care. Tell me how you chose your nursing interventions. How have your plans or actions changed during the course of caring for this patient? How did you make those decisions?" 4.Did you ask your student to discuss how the events of the day impacted them personally or professionally such as, "What was most meaningful to you about the clinical day? What did you learn from this situation? How will this experience impact your nursing actions and decisions in the future?"
Description of Feedback	5. Did you give your student verbal feedback on their responses to your questions? 6. Did you given your student verbal feedback on their delivery of nursing care or performance of nursing procedures? 7. Was the verbal feedback you gave (quality)? 8. Was the verbal feedback you gave (timeliness)?