Effects of Preceptor Clinical Reasoning Training on Preparedness

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DNP Scholarly Project

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Abstract

Objective: To improve nurse preceptor ability to onboard and teach graduate nurses on the importance of and how to clinically reason. Framework and Design: Model for Improvement and PDSA (Plan, Do, Study, Action) Setting: An acute care hospital located in East Tennessee with a 408-bed capacity, that employs 80 new nurses each year, and is experiencing a high turnover. Participants: Nurse preceptors after attending a preceptor training session on clinical reasoning. Intervention/Measurements: Using PDSA (plan-do-study-act) cycles, the Preceptor Self Assessment Tool (PSAT) was selected, and clinical reasoning education was developed for preceptor education classes. All preceptors attended before training new nurses. The use of the Preceptor Self Assessment Tool (PSAT) was provided before and after the educational training using a Likert scale. The aim of this project was to increase preceptor preparedness to teach clinical reasoning by 80%. Results: The results of the presurvey result of the PSAT were mean of 4.29 and a standard deviation of 0.64, while the results of the post-survey of the PSAT were a mean of 4.31 and a standard deviation of 0.66. The p-value was 0.86, which was not statistically significant. Conclusion: With formally trained preceptors, clinical reasoning can be taught confidently and implemented early in the new nurse orientation leading to new nurses gaining the skill to clinically reason. While the results gathered from the preceptors were not statistically significant. The results were clinically significant for preceptor preparedness to train new graduate nurses on clinical reasoning due to the hospital adopting preceptor clinical reasoning training to policy for intensive care unit (ICU) nurses, floor nurses, and surgery nurses.

Keywords: Preceptor, preparedness, clinical reasoning, onboarding, new nurse, nurse retention.

Effects of Preceptor Clinical Reasoning Training on Preparedness

Nurses comprise one of the largest groups of healthcare providers and are important to patient care (Haddad et al., 2020). There are 3.9 million nurses in the United States, with 155,000 graduating yearly (Rosseter, 2020). Even with these yearly graduates, the United States still faces a shortage of bedside nurses.

Despite the significant number of nurses graduating yearly, there are high new nurse turnover rates (Brook et al., 2019). With the current new nurse turnover rate of 25%, the United States will lack an estimated 85,000 nurses by 2023, leading to an even more significant gap in available nurses to approximately 123,000 nurses by 2025 (Brook et al., 2019). Decreased nursing staff leads to greater nurse-to-patient ratios, which can contribute to stress, costly errors, and high patient morbidity rates (Haddad et al., 2020). With the high stress that new graduate nurses face when transitioning into practice, they often deal with inadequately trained preceptors or have shortened orientation. While nurses do leave nursing for other reasons, approximately 17.5% of new nurses leave within a year of licensure due to stressful working conditions (Brook et al., 2019).

Formal preceptor training in clinical reasoning may be one of many ways to address the issue of new nurses leaving the bedside. According to Powers et al. (2019), to help ensure the ease of transition, continued education emphasizing enhanced new nurse clinical reasoning is imperative. Since the focus is on retaining new nurses and easing their transition into practice, preceptors will need to be educated on teaching and promoting clinical reasoning in their assigned new staff orientees.

Significance

The nursing shortage has put the focus on new nurses filling these gaps long before the COVID-19 pandemic. The shortage has led to increased stress, fatigue, and burnout, contributing to nurses leaving their jobs within a year of becoming licensed (Brook et al., 2019). Due to these conditions, the focus needs to be on easing the transition into practice for new nurses and increasing nurse retention.

The current bedside nursing shortage has led to increased nurse-to-patient ratios, placing a strain on new nurses' transition into practice. The nursing shortage is a significant issue locally and nationwide, which has been exacerbated by the COVID-19 pandemic (Nurse Journal, 2021). According to Nurse Journal (2021), in 2018, the United States had 3,956,080 nurses with a total population of 328,055,000, leading to 12.06 nurses per 1,000 population. For Tennessee, the total number of nurses in 2018 was 92,000; the total state population was 6,833,000, with 13.46 nurses per 1,000 population. Tennessee's number of nurses available per patient was higher than the national average; however, some states were as low as eight nurses available per 1,000 population (Nurse Journal, 2021).

New graduate nurses leave within the first year due to the stress, fatigue, and burnout experienced during their first year, which is further exacerbated by inadequate orientation (Quek & Shorey, 2018). This inadequate onboarding of new nurses can be due to the lack of preparation and competence experienced by the preceptor (Powers et al., 2019). New nurses have reported that preceptors are crucial in transitioning into practice by increasing their knowledge, creating a supportive environment, and building confidence (Powers et al., 2019). Easing the transition to practice allows new nurses to become more independent and capable of taking on full workloads over time without feeling overwhelmed (Quek & Shorey, 2018). The focus on preceptors and their training should continue and increase as new

graduate nurses report a vital relationship with their preceptors during the orientation process. According to Quek and Shorey (2018), most preceptors orient new nurses without formal training, which can lead to the preceptor feeling more stressed and negatively affecting the new nurse (Quek & Shorey, 2018). The adverse effects can be decreased knowledge of the unit and patient care responsibilities, a nonsuppurative environment, and a lack of confidence (Powers et al., 2019). However, formal preceptor training can increase confidence and preparedness to train new graduate nurses. The preceptor preparedness acquired from formal preceptor training can transfer to more straightforward and safer transitions into practice for new graduate nurses (Quek & Shorey, 2018).

A key element in the transition into practice is clinical reasoning skills. According to Lateef (2018), clinical reasoning is a complex process needed to assess the patient's situation and implement the necessary interventions. Nurses use clinical reasoning daily to assess the patient's situation and act quickly with the necessary interventions. Without proper training, a new graduate nurse will likely focus on tasks and getting through the day, which leads to increase stress for new nurses. However, when using clinical reasoning to move through the complex steps it allows the new nurse to reduce stress and improve the quality of care provided and prevent progressing disease processes (Powers et al., 2019).

Health Care Cost

Often the main issue is not hiring enough nurses but keeping them. Currently, hospitals spend, on average, $5.13-$7.86 million for recruitment and orientation for new nurses (Brook et al., 2019). According to Perron et al. (2019), with the proper implementation of trained preceptors with a nurse residency program, nurse turnover rates could be reduced by 36% and have a cost-benefit of approximately $8.1 million. Training

preceptors on techniques and thinking skills that new graduate nurses need to succeed has significantly improved new nurse retention (Perron et al., 2019).

New nurse retention is crucial to patient health and well-being, but it is also essential to improve retention rates to save money and resources. By implementing a clinical reasoning training program for nurse preceptors, costs could be reduced by decreasing new nurse turnover rates.

Purpose and Aim

Quality improvement projects aim to improve patient care by focusing on safety, effectiveness, and experience by testing and implementing changes (Jones et al., 2019). The current practice for preceptors at the project site is one class of formal training; however, if a nurse preceptor has trained a nurse before, that nurse is allowed to precept without attending a training course. The purpose of this quality improvement project was to implement and evaluate preceptor preparedness to teach new nurses clinical reasoning. The project aimed to increase preceptor preparedness to train new nurses on clinical reasoning to at least 80% or above on the PSAT survey after the clinical reasoning training. The PICOT question guiding this scholarly project was:

In nurse preceptors, how does training preceptors on clinical reasoning, compared to not training preceptors on clinical reasoning, affect nurse preceptor preparedness immediately after attending the training course?

Literature review

Literature Search Strategy

The following databases were used to find the most recent and relevant research to answer the PICOT question: PubMed, CINHAL, and Cochrane. The keywords utilized for

each search were preceptor training, clinical reasoning, competency, and preparedness. The date range for all database searches were from 2016-2021, and other limitations such as publications in English, full-text articles, meta-analysis, randomized controlled trial (RCT), and systematic reviews.

The first database searched was PubMed. First, the search was performed without MeSH terms and resulted in 206 articles using the filters described. The keywords along with the Boolean connectors applied were (preceptor* training)) OR (mentor* training)) AND (clinical reason*) OR (critical thinking) AND (prepare*) OR (competency). Out of the PubMed search, two articles were selected for critical appraisal and evaluation.

The next database that was utilized was CINAHL. The original filters were utilized with the following keywords: nurse preceptor training AND (clinical reasoning or clinical judgment or clinical competency or clinical decision making) AND (preparedness or readiness or preparation) AND competency 194 articles resulted, and of two articles were selected for critical appraisal and evaluation.

The last database to be used was Cochrane. The keywords utilized were as follows (nurse preceptor training) AND clinical reasoning) AND (preparedness) AND competency, as well as the original filters, which resulted in six articles, with only one article being kept for critical appraisal and evaluation.

Once all the searches were conducted, an evaluation of each article was performed. During the critical appraisal and evaluation, articles with clinical reasoning training interventions to nursing students, newly licensed nurses, and preceptor training were kept. Excluding criteria were interventions with nurses who had previously worked as nurses at

different hospitals and preceptors who were not registered, nurses. The search process has been diagramed in Figure 1 in a literature search diagram.

Critical Appraisal of the Literature

According to Melnyk and Fineout-Overholt (2019), critical appraisal is a valuable skill that clinicians can possess. There is a wealth of research readily available for implementation into practice. However, appraisal of the evidence will be completed before implementation to ensure that the evidence is beneficial. Critical appraisal allows clinicians to systematically evaluate research studies to determine validity and reliability. Once the validity and reliability are determined, the clinician can see how the research can improve the specific patient population (Al-Jundi & Sakka, 2017).

Before performing the critical appraisal, each article was reviewed based on the inclusion and exclusion criteria related to the PICOT statement and organized for ease of understanding. The remaining relevant articles were then systematically evaluated using The John Hopkins Nursing Evidence-Based Practice (JHNEBP) Research Evidence Appraisal Tool, located in Appendix A. The John Hopkins Nursing Evidence-Based Practice (JHNEBP): Evidence Level and Quality Guide is located in Appendix B. The JHNEBP was used to determine the article strength and quality level. Table 1 provides how the literature was evaluated.

Synthesis of Evidence

A review of literature finds that training preceptors significantly affects a new graduate nurse's transition into practice, especially when preceptors are specifically trained on clinical reasoning (Alfayoumi, 2019; Biagioni et al., 2020; Liao et al., 2019; Powers et al.,

2019; Quek & Shorey, 2018). Clinical reasoning is a process by which nurses assess the patient and their situation and implement timely actions to prevent further deterioration (Lateef et al., 2018). Across the evidence reviewed, one common theme was noticed. That was the need and recommendation for nurse preceptors to be trained and receive training concerning clinical reasoning before onboarding new graduate nurses. Without training on clinical reasoning skills, nurse preceptors reported a lack of preparedness and confidence to teach new nurses clinical reasoning. (Quek & Shorey, 2018). Untrained preceptors had adverse effects on new nurses in relation to not knowing how to train or what skills to teach the new nurse. The research reviewed discussed that training preceptors on clinical reasoning led to greater preparation of new nurses to complete orientation and take patient assignments with a decreased amount of stress (Quek and Shorey, 2018). This decrease in stress led to greater nurse retention of new nurses. The evidence from the research was gathered via self-report surveys and the use of Likert scales (Quek and Shorey, 2018).

While the evidence demonstrates that training preceptors on clinical reasoning is beneficial to better prepare nurse preceptors and increase new nurse retention, more research needs to be done to assess the best practice recommendations for the length and repetition of preceptor clinical reasoning training. The research did not test if multiple training sessions over time were needed to help the preceptor to remain prepared to precept new nurses. Also, the research on the length of the training courses that were beneficial to nurse preceptors was not discussed in the literature. Knowing the recommended length and repetition of training would be helpful in the future in training nurse preceptors. The findings from the research can be found in Table 2, which discusses the evidence relating to the preparedness and

knowledge of the preceptors on teaching clinical reasoning to new nurses and the effects of retention on new nurses. The evidence rating of each article can also be located in table 2.

Clinical Expertise and Patient/ Family Preferences

Training preceptors to properly guide and teach new graduate nurses in clinical reasoning is highly beneficial to patients and their families. Clinical reasoning helps nurses to see the big picture and implement timely solutions to improve patient conditions. Providing training to preceptors on clinical reasoning can allow for preceptors to feel more prepared when given the task of training new nurses. Without the proper training, preceptors can negatively affect new nurse transition into practice and decrease new nurse retention (Quek & Shorey, 2018).

According to Heath (2018), burnout can cause impaired attention, memory, and reduced attention to detail. Patients receiving care from nurses suffering from burnout were twice as likely to report low satisfaction and even poor patient outcomes (Heath, 2018). Patients are not coming to the hospital for poor outcomes, nor do their families want poor outcomes for their loved ones. With clinical reasoning training incorporated early in the onboarding process, nurses will gain the skill and knowledge to assess when a patient is declining and to implement the necessary solutions to prevent further disease progression (Quek & Shorey, 2018).

Recommendations for Practice Change

Upon critically appraising the literature, recommendations for practice change were found. Implementation of formal preceptor training on clinical reasoning to improve preceptor preparedness was strongly recommended by utilizing the JHNEBP tool.

Implementation of clinical reasoning education to nurse preceptors led to preceptor preparedness. It will allow new nurses to complete orientation with the knowledge to begin to clinically reason and improve patient care. Due to the research strongly recommending training nurse preceptors in clinical reasoning, those research articles guided the implementation of this project. These recommendations for training nurse preceptors on clinical reasoning can be found in Table 3 and Table 4.

Design

Framework

The framework chosen to guide this quality improvement project is the Model for Improvement. This model aims to prescribe improvement based on a specific and measurable aim to promote changes (Institute for Healthcare Improvement [IHI], 2019). The Model for Improvement has two significant parts. The first part of the model consists of three questions, “What are we trying to accomplish" "How will we know that a change is an improvement" and "What change can we make that will result in improvement" (p.1). These questions allowed the aims to be direct and measurable while ensuring the implemented changes were beneficial.

The next part of the model includes the Plan-Do-Study-Act (PDSA) Cycle. This cycle allowed for implementation of the changes to see if the change resulted in an improvement (IHI, 2019). The PDSA cycle is an evidence-based practice improvement model. During this cycle, a method or plan is developed, keeping those three questions in mind. Next, the intervention is performed. After implementation, the project will be discussed with the team to see what went well, what needed improvement, and if the project still aligned with the three questions. This may mean gathering more data and adding information to help the

intervention be implemented more efficiently. Or this could be changing the project entirely to result in an improvement. This can be performed as often as needed until the desired result of improvement is achieved.

The Model for Improvement is still congruent with current nursing and healthcare standards. The current health research practice improves the quality of care provided to all patients (Health Catalyst, 2019). The Model for Improvement allows for the best practices to be deciphered by implementing an intervention, gathering data on how well the intervention worked and reevaluating as necessary. The Model for Improvement is a continuous test. There is always more data and interventions to test to find the best practices available.

Intervention

Setting

The project setting was an acute care hospital located in East Tennessee with a 408-bed capacity. The hospital comprises of an emergency department, critical care, orthopedics, neurosurgery, cardiac, medical surgery, and obstetrics. There are approximately 1,800 employees, with around 80 new nurses starting each year. There are ten positions available for nurse preceptors each month. Nurse preceptors are required to attend one training session before orienting a new nurse. The class was held at the hospital on a day that the nurse is not scheduled to work. This training session lasted five hours with breaks. The portion on clinical reasoning training lasted one hour. A letter of support from the facility is located in Appendix C.

Intervention Participants

The participants evaluated were nurse preceptors before and after attending a preceptor training session on clinical reasoning. The nurse preceptors were given the PSAT survey that

measured preparedness to orient new nurses on clinical reasoning before training and immediately after. Preceptors attend one preceptor training course before training new graduate nurses. This project implementation occurred over three months. The demographics for nurse preceptors are average ages 24-34, 91% are female, with 77% reporting being white and not Hispanic. The average age range of nurses working in the hospital is from 24 to 55 years old, with 70% female.

Screening tool. Since the project aimed to measure preceptor perception of preparedness to train new nurses on clinical reasoning, the PSAT was chosen. Permission to use this tool was obtained by Dr. Kris L'Ecuyer. This tool utilizes a Likert scale to measure perceived perception. The PSAT is a 69-question survey that allowed preceptors to self-report their perceived clinical reasoning self-preparedness before the training and after the training. The content validity of the PSAT scale was 0.91and the reliability of the tool was found to be highly reliable and relevant by a panel comprised of 14 expert nurse preceptors (L'Ecuyer, K. et al., 2021).

Intervention process. The preceptor training process was developed utilizing the facilities nurse education team and the new graduate nurse educators and PDSA cycles to develop a well-rounded preceptor training program. There was a total of three PDSA cycles. During the first cycle, changes were made to the PowerPoint to include the survey quick response (QR) code to be available on multiple slides throughout the PowerPoint for ease of preceptors to pull up the survey. The second PDSA cycle included a change to the PowerPoint slides to include each scenario for ease for the class to follow along with how the groups used clinical reasoning for their scenario. The third PDSA cycle included changing the preceptor clinical reasoning training to be the first portion of the training class.

Intervention Implementation

This project aims were to implement preceptor education on clinical reasoning skills and how to train new nurses to obtain clinical reasoning skills by the end of orientation. By implementing this project, the aim was to increase preceptor preparedness to train new nurses to at least 80% or above on the survey after completing the clinical reasoning training course. Completion of this training was deemed essential before the nurse preceptor trained a new nurse. The framework chosen to guide this quality improvement project was the Model for Improvement. The first part of the Model for Improvement consists of three questions to allow the aims to be direct and measurable. During this quality improvement project, the goal was to implement and evaluate the impact of training preceptors on clinical reasoning on preceptor preparedness to train new nurses on clinical reasoning.

Next, a team was assembled, forming the needed members of the hospital and university. Upon project approval, the team implemented a preceptor clinical reasoning training course. This course was in an in-person setting and lasted one hour, and occurred over three months. Before training was started, the participants took the PSAT pre-survey to see their baseline knowledge and preparedness to train a new nurse on clinical reasoning. Then the power point training was performed which provided information on the importance, how to teach, and how to implement clinical reasoning into daily training. Following the PowerPoint, the preceptors broke off into small groups and practice scenarios. Once the groups discussed how they used the steps to train the new nurse, the class came together as one group to discuss each scenario and the different ways each could have been handled. After the scenarios were discussed and questions were answered, the PSAT post-survey was taken, which was the same

as the pre-survey, and was given to assess post-training knowledge and preparedness. The education plan is located in Appendix E.

The preceptor training was performed during one day of training and included interactive, direct instruction, and kinesthetic learning. The same instructors did the training at one facility. The sessions were voluntary but did have a financial incentive of $250 for attending the class. The preceptor training was implemented from February to April 2022.

Ethical Considerations

This project required the preceptors to attend a training course before training new nurses. This was completed when the nurse was not scheduled to work, and the nurse received payment for attending the class. The PSAT survey was provided to nurse preceptors before and after the clinical reasoning training. The results of these surveys were collected anonymously by having the participant use the last two digits of their badge number and the last four digits of their phone number. Before implementation, permission to complete this quality improvement project was sought from the University of Tennessee Institutional Review Board and was deemed an exempt project.

Outcome Measures

During this project, outcomes were measured utilizing the PSAT pre-and post-survey that was provided to the preceptors before and after the clinical reasoning training. The PSAT was a 69-question survey that used the five-point Likert scale, which allowed nurse preceptors to self-assess their preparedness based on clinical reasoning (L'Ecuyer, K. et al., 2021). This tool allowed preceptors to self-report their perceived clinical reasoning self-preparedness before the training and imediately after the training. The content validity of the

PSAT scale was 0.91and the reliability of the tool was found to be reliable and relevant by a panel comprised of 14 expert nurse preceptors (L'Ecuyer, K. et al., 2021).

The outcomes of preceptor preparedness, which are defined in Table 5, were measured before and after the preceptor had completed clinical reasoning training. These self-reported levels of preparedness were measured before the preceptor clinical reasoning training course was implemented and after to compare the effectiveness of the implementation on each preceptor. The results gathered were compared to whether the preceptor clinical reasoning training was effective regarding the perceived preparedness of the preceptor. A data evaluation plan is outlined in Table 5.

Data Collection and Security

Nurse preceptors were provided surveys before and after clinical reasoning training. The surveys were provided to the nurse preceptors through Qualtrics. This survey did not collect any identifying information such as name or date of birth. All results were coded in a combination of the preceptor's last two digits of the badge number and the last four numbers of their phone number to keep the participants anonymous. This survey was created with the input and expertise of a statistician provided by the university.

With this survey, the nurse preceptors remained anonymous. Questions about preceptor training and preparedness were gathered using the survey. The information was gathered by responses to Likert scale questions. The information gathered was stored on the Qualtrics database under a password-protected account. Information that was utilized from this database was kept on a password-protected laptop. Upon transferring, data between the student, chair, and statistician, UT Vault software was utilized to ensure the security of the

information. UT Vault is a secure file transfer service allowing data encryption during transfer.

Data Analysis Plan

The data was first gathered and analyzed with the Qualtrics survey tool. A university-appointed statistician oversaw and guided the data analysis. The data were first analyzed with Qualtrics, and then the second analysis was performed using a paired sample t-test through Statistical Package for the Social Sciences (SSPS). The survey responses from preceptors before and after the preceptor training course will be compared and analyzed to see if the intervention yielded any changes.

Significance and Implication of Project

Hospitals are currently facing staffing shortages which Covid-19 has exacerbated. To make matters worse, new graduate nurses are leaving the profession at increasing rates during their first year of licensure due to poor orientations and lack of proper transition to practice (Powers et al., 2019). However, one solution may include the implementation of preceptor clinical reasoning training.

Clinical reasoning is how nurses assess the patient situation and quickly implement interventions to promote improved patient outcomes (Lateef, 2018). According to Powers et al. (2019), preceptors are imperative to new nurse success and ease of transition into practice. Improving how we train preceptors on clinical reasoning will improve the orientation and transition into practice for new nurses.

The project of implementing preceptor clinical reasoning training was performed with sustainability in mind. I worked closely with the nurse educators teaching the course and providing detailed teaching plans, scenarios, and resources for the preceptor course. I also

provided the facility with surveys to be distributed to nurse preceptors. That way, the facility can continue to monitor the effectiveness of preceptor clinical reasoning training on preceptor preparedness to teach new nurses.

Results

Through the PSAT survey, results were gathered. The PSAT allowed nurse preceptors to self-assess their preparedness based on clinical reasoning before the training and after the training utilizing a 5-point Likert scale. The Likert scale responses were as follows: 1- strongly disagree, 2- disagree, 3- neutral, 4- agree, and 5- strongly agree.

The pre-training survey had 37 participants, and the post-training survey had 29 participants; eight participants did not take the post-survey. A paired t-test is used to compare the two population means. The pre-survey mean was 4.23, and the post-survey mean was 4.31, which were very close results. A p-value of 0.864 was obtained, meaning the project was not statistically significant due to the p-value for statistical significance for this project being set at p less than or equal to 0.05. The results from the pre and post-survey descriptive statistic calculations and simple paired t-test can be seen in Table 6.

The project was clinically significant for the hospital's education team for training preceptors due to the facility accepting the training into policy for future training of preceptors in ICU, floor nurses, and surgery nurses.

Discussion

While the project did not yield a greater than 80% increase on the PSAT like project, the project was clinically significant due to the clinical reasoning training being utilized in future preceptor training. The project will be used by the facility to continue to train intensive care unit, surgery, and floor nurse preceptors on clinical reasoning. The facility will have

access to the educational PowerPoint, scenarios, PSAT, and other resources used in developing the preceptor training class. The facilities educators have already been trained on how to teach the class and taught the class as part of the implementation of preceptor clinical reasoning training.

While the results were not significantly significant, the hospital's adoption policy makes it clinically significant. This is important for future research because the facilities lead educator and the team of educators found the education for clinical reasoning to provide easy-to-follow steps that will be beneficial in training new graduates to establish clinical reasoning early in training. Also, the feedback from the preceptors about the training was supportive of continuing training. This is important for future research because while the numbers did not support the success of the project, the project facility admitting training into policy and using the training for future preceptor training means the education team felt this training was beneficial and necessary for future preceptors and to increase the effectiveness of new nurse onboarding.

While the results were very close, it will be beneficial for future research to be done with larger class sizes, evaluate preceptors after precepting a new nurse to see if the perception of preparedness is different from immediately after training and evaluate the new nurse's perception of the preceptor's abilities.

Limitations

There were several limitations of this project. First, there was a small sample size; only 37 participants took the pre-survey, and 29 participants took the post-survey. Originally class sizes were supposed to consist of 20 preceptors; however, due to COVID-19 restrictions, the maximum number of participants was ten preceptors. Due to personal illness

or changes in work schedule, classes consisted of less than ten preceptors per training course. With small sample sizes, this could reduce the accuracy of any results. Along with the small sample size, there was a total of 8 participants who did not take the post-survey, which can affect the relationship's legitimacy. Also, due to the time restraints of the project, there was neither a follow-up on how preceptor's perception of preparedness after training a new nurse nor how the new nurse felt about the preceptor's precepting abilities. Finally, some of the preceptors were precepting before the preceptor training, which could have altered the responses in regard to preparedness to precept.

Implications for Practice

As discussed throughout this paper, preceptor training is a vital component to the growth and success of the nurse preceptors and the new nurse receiving the training. Without the proper formal training on how to teach clinical reasoning, this can lead to the preceptor feeling more stressed and negatively affecting the new nurse (Quek & Shorey, 2018). Nurses use clinical reasoning daily; however, it can be hard to know how to put it into steps that easily translate to a new nurse. Through this project, the stress the inadequately trained preceptor feels can be alleviated through training with an easy-to-follow step-by-step process to use to precept new nurses. Also, by utilizing the steps provided the preceptor training, the preceptor can easily diagnose what the new nurse is needing more assistance with, whether that be mediation education, resources to use, or timely intervention use.

With nursing already having strains due to nursing shortages and the COVID-19 pandemic, there should be steps taken to relieve the stress burden. One way this is possible is through formal preceptor training, which can help the onboarding process to be effective and help new nurse transition to practice and feel more confident to assess and implement

interventions based on clinical reasoning to help improve patient outcomes, which can reduce stress, fatigue, and burnout, which can lead to increased retention.

Conclusion

Clinical reasoning is a complex process that is a large part of the role of nursing. Clinical reasoning helps nurses to see the big picture and implement timely solutions to improve patient outcomes. This skill of being able to clinically reason can be difficult for new nurses and can take time to develop. New nurses rely on their preceptors to ease their transition into practice; however, if preceptors are not formally trained to precept new nurses, it can lead the preceptor to exhibit poor confidence and increased stress that can negatively impact the new nurse. However, with formally trained preceptors, clinical reasoning can be taught confidently and implemented early in the new nurse orientation leading to new nurses gaining the skill to clinically reason. Gaining the skill to clinically reason allows the nurse to assess the situation and implement solutions that lead to better patient outcomes, reducing the stress the new nurse feels and improving the overall quality of care to their patients. Especially with the nursing shortage that COVID-19 has further exacerbated, the ability to reduce any perceived stress and ease the transition into practice for new nurses is vital in increasing nurse retention and improving patient care.

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542 **Appendix A**

Johns Hopkins Nursing Evidence-Based Practice
Research Evidence Appraisal Tool

Evidence Level and Quality:_____

Article Title:		Number:	
Author(s):		Publication Date:	
Journal:			
Setting:	Sample (Composition & size):		
Does this evidence address my EBP question?	☐Yes	☐No Do not proceed with appraisal of this evidence	
Level of Evidence (Study Design)			
A. Is this a report of a single research study? ***If No, go to B.***		☐Yes	☐No
1. Was there manipulation of an independent variable?		☐Yes	☐No
2. Was there a control group?		☐Yes	☐No
3. Were study participants randomly assigned to the intervention and control groups?		☐Yes	☐No
If Yes to all three, this is a Randomized Controlled Trial (RCT) or Experimental Study →	☐ LEVEL I		
If Yes to #1 and #2 and No to #3, OR Yes to #1 and No to #2 and #3, this is Quasi Experimental (some degree of investigator control, some manipulation of an independent variable, lacks random assignment to groups, may have a control group) →	☐ LEVEL II		
If No to #1, #2, and #3, this is Non-Experimental (no manipulation of independent variable, can be descriptive, comparative, or correlational, often uses secondary data) **or Qualitative** (exploratory in nature such as interviews or focus groups, a starting point for studies for which little research currently exists, has small sample sizes, may use results to design empirical studies) →	☐ LEVEL III		
NEXT, COMPLETE THE BOTTOM SECTION ON THE FOLLOWING PAGE, "STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION"			

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B. Is this a summary of multiple research studies? ***If No, go to Non-Research Evidence Appraisal Form.***		☐Yes	☐No
1. Does it employ a comprehensive search strategy and rigorous appraisal method (**Systematic Review**)? ***If No, use Non-Research Evidence Appraisal Tool; if Yes:***		☐Yes	☐No
a. Does it combine and analyze results from the studies to generate a new statistic (effect size)? (**Systematic review with meta-analysis**)		☐Yes	☐No
b. Does it analyze and synthesize concepts from qualitative studies? (**Systematic review with meta-synthesis**)		☐Yes	☐No
If Yes to either a or b, go to #2B below.			
2. For Systematic Reviews and Systematic Reviews with meta-analysis or meta-synthesis:			
a. Are all studies included RCTs? →	☐ LEVEL I		
b. Are the studies a combination of RCTs and quasi-experimental or quasi-experimental only? →	☐ LEVEL II		
c. Are the studies a combination of RCTs, quasi-experimental and non-experimental or non-experimental only? →	☐ LEVEL III		
d. Are any or all of the included studies qualitative? →	☐ LEVEL III		
COMPLETE THE NEXT SECTION, "STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION"			

STUDY FINDINGS THAT HELP YOU ANSWER THE EBP QUESTION:

NOW COMPLETE THE FOLLOWING PAGE, "QUALITY APPRAISAL OF RESEARCH STUDIES", AND ASSIGN A QUALITY SCORE TO YOUR ARTICLE

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Quality Appraisal of Research Studies			
• Does the researcher identify what is known and not known about the problem and how the study will address any gaps in knowledge?	☐Yes	☐No	
• Was the purpose of the study clearly presented?	☐Yes	☐No	
• Was the literature review current (most sources within last 5 years or classic)?	☐Yes	☐No	
• Was sample size sufficient based on study design and rationale?	☐Yes	☐No	
• If there is a control group:			
○ Were the characteristics and/or demographics similar in both the control and intervention groups?	☐Yes	☐No	☐NA
○ If multiple settings were used, were the settings similar?	☐Yes	☐No	☐NA
○ Were all groups equally treated except for the intervention group(s)?	☐Yes	☐No	☐NA
• Are data collection methods described clearly?	☐Yes	☐No	
• Were the instruments reliable (Cronbach's α [alpha] ≥ 0.70)?	☐Yes	☐No	☐NA
• Was instrument validity discussed?	☐Yes	☐No	☐NA
• If surveys/questionnaires were used, was the response rate ≥ 25%?	☐Yes	☐No	☐NA
• Were the results presented clearly?	☐Yes	☐No	
• If tables were presented, was the narrative consistent with the table content?	☐Yes	☐No	☐NA
• Were study limitations identified and addressed?	☐Yes	☐No	
• Were conclusions based on results?	☐Yes	☐No	

Quality Appraisal of Systematic Review with or without Meta-Analysis or Meta-Synthesis		
• Was the purpose of the systematic review clearly stated?	☐Yes	☐No
• Were reports comprehensive, with reproducible search strategy?	☐Yes	☐No
○ Key search terms stated	☐Yes	☐No
○ Multiple databases searched and identified	☐Yes	☐No
○ Inclusion and exclusion criteria stated	☐Yes	☐No
• Was there a flow diagram showing the number of studies eliminated at each level of review?	☐Yes	☐No
• Were details of included studies presented (design, sample, methods, results, outcomes, strengths and limitations)?	☐Yes	☐No
• Were methods for appraising the strength of evidence (level and quality) described?	☐Yes	☐No
• Were conclusions based on results?	☐Yes	☐No
○ Results were interpreted	☐Yes	☐No
○ Conclusions flowed logically from the interpretation and systematic review question	☐Yes	☐No
• Did the systematic review include both a section addressing limitations and how they were addressed?	☐Yes	☐No

QUALITY RATING BASED ON QUALITY APPRAISAL

A **High quality:** consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence

B **Good quality:** reasonably consistent results; sufficient sample size for the study design; some control, and fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C **Low quality or major flaws**: little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn

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Dang, D., Dearholt, S., Bissett, K., Ascenzi, J., & Whalen, M. (2018). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: model and guidelines.* 4th ed. Indianapolis, IN: Sigma Theta Tau International

551 Appendix B

Johns Hopkins Nursing Evidence-Based Practice
Appendix D: Evidence Level and Quality Guide

Evidence Levels	Quality Ratings
Level I Experimental study, randomized controlled trial (RCT) Explanatory mixed method design that includes only a level I quaNtitative study Systematic review of RCTs, with or without meta-analysis	QuaNtitative Studies A High quality: Consistent, generalizable results; sufficient sample size for the study design; adequate control; definitive conclusions; consistent recommendations based on comprehensive literature review that includes thorough reference to scientific evidence. B Good quality: Reasonably consistent results; sufficient sample size for the study design; some control, fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence. C Low quality or major flaws: Little evidence with inconsistent results; insufficient sample size for the study design; conclusions cannot be drawn.
Level II Quasi-experimental study Explanatory mixed method design that includes only a level II quaNtitative study Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis **Level III** Nonexperimental study Systematic review of a combination of RCTs, quasi-experimental and nonexperimental studies, or nonexperimental studies only, with or without meta-analysis Exploratory, convergent, or multiphasic mixed methods studies Explanatory mixed method design that includes only a level III quaNtitative study QuaLitative study Meta-synthesis	QuaLitative Studies No commonly agreed-on principles exist for judging the quality of quaLitative studies. It is a subjective process based on the extent to which study data contributes to synthesis and how much information is known about the researchers' efforts to meet the appraisal criteria. *For meta-synthesis, there is preliminary agreement that quality assessments of individual studies should be made before synthesis to screen out poor-quality studies*[1]. A/B High/Good quality is used for single studies and meta-syntheses)[1]. The report discusses efforts to enhance or evaluate the quality of the data and the overall inquiry in sufficient detail; and it describes the specific techniques used to enhance the quality of the inquiry. Evidence of some or all of the following is found in the report: ▪ Transparency: Describes how information was documented to justify decisions, how data were reviewed by others, and how themes and categories were formulated. ▪ Diligence: Reads and rereads data to check interpretations; seeks opportunity to find multiple sources to corroborate evidence. ▪ Verification: The process of checking, confirming, and ensuring methodologic coherence. ▪ Self-reflection and -scrutiny: Being continuously aware of how a researcher's experiences, background, or prejudices might shape and bias analysis and interpretations. ▪ Participant-driven inquiry: Participants shape the scope and breadth of questions; analysis and interpretation give voice to those who participated. ▪ Insightful interpretation: Data and knowledge are linked in meaningful ways to relevant literature. C Lower-quality studies contribute little to the overall review of findings and have few, if any, of the features listed for High/Good quality.

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Evidence Levels	Quality Ratings
Level IV **Opinion of respected authorities and/or nationally recognized expert committees or consensus panels based on scientific evidence** **Includes:** ▪ **Clinical practice guidelines** ▪ **Consensus panels/position statements**	A High quality: **Material officially sponsored by a professional, public, or private organization or a government agency; documentation of a systematic literature search strategy; consistent results with sufficient numbers of well-designed studies; criteria-based evaluation of overall scientific strength and quality of included studies and definitive conclusions; national expertise clearly evident; developed or revised within the past five years** B Good quality: **Material officially sponsored by a professional, public, or private organization or a government agency; reasonably thorough and appropriate systematic literature search strategy; reasonably consistent results, sufficient numbers of well-designed studies; evaluation of strengths and limitations of included studies with fairly definitive conclusions; national expertise clearly evident; developed or revised within the past five years** C Low quality or major flaws: **Material not sponsored by an official organization or agency; undefined, poorly defined, or limited literature search strategy; no evaluation of strengths and limitations of included studies, insufficient evidence with inconsistent results, conclusions cannot be drawn; not revised within the past five years**
Level V **Based on experiential and nonresearch evidence** **Includes:** ▪ **Integrative reviews** ▪ **Literature reviews** ▪ **Quality improvement, program, or financial evaluation** ▪ **Case reports** ▪ **Opinion of nationally recognized expert(s) based on experiential evidence**	Organizational Experience **(quality improvement, program or financial evaluation)** A High quality: **Clear aims and objectives; consistent results across multiple settings; formal quality improvement, financial, or program evaluation methods used; definitive conclusions; consistent recommendations with thorough reference to scientific evidence** B Good quality: **Clear aims and objectives; consistent results in a single setting; formal quality improvement, financial, or program evaluation methods used; reasonably consistent recommendations with some reference to scientific evidence** C Low quality or major flaws: **Unclear or missing aims and objectives; inconsistent results; poorly defined quality improvement, financial, or program evaluation methods; recommendations cannot be made** Integrative Review, Literature Review, Expert Opinion, Case Report, Community Standard, Clinician Experience, Consumer Preference A High quality: **Expertise is clearly evident; draws definitive conclusions; provides scientific rationale; thought leader(s) in the field** B Good quality: **Expertise appears to be credible; draws fairly definitive conclusions; provides logical argument for opinions** C Low quality or major flaws: **Expertise is not discernable or is dubious; conclusions cannot be drawn**

Dang, D., Dearholt, S., Bissett, K., Ascenzi, J., & Whalen, M. (2018). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: model and guidelines.* 4th ed. Indianapolis, IN: Sigma Theta Tau International

Appendix C



July 23, 2021

Amanda Makely

9352 Parkwest Blvd, 5th floor, Knoxville, TN 37923

Dear Ms. Whitney Leon

I am pleased to write this letter of support on behalf of Parkwest Medical Center indicating our commitment and support for your DNP Scholarly Project entitled “Effects of Preceptor Clinical Reasoning Training”. Parkwest Medical Center supports the anticipated collaboration of the University of Tennessee, Knoxville, College of Nursing (CON) to improve the quality of care. A relationship with the CON is ideal for applying evidence-based strategies to meet community needs in health promotion and disease prevention through research and practice. Parkwest Medical Center will provide a venue for execution of the DNP Scholarly Project. This letter also documents our commitment to support the CON in the conduction of this project. Our facility does not require an IRB. Parkwest Medical Center is pleased to partner with the CON to implement strategies to examine the effects of preceptor training on new graduate retention. I understand that Whitney Leon will be collecting data anonymously and will not name any individuals or our facility in any publications or professional presentations. We look forward to this partnership and anticipate learning the outcomes of this project.

Sincerely.

Amanda Makely, RN BSN CNML

5 Riverstone Nurse Manager (Cardiac, Pulmonary and Renal unit)

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558 Appendix D

Preceptor Self-Assessment Tool (PSAT)- 40 DRAFT

Instructions to preceptors: Please reflect on your current role as a preceptor. The PSAT-40 contains 3 domains. Read each item and rate your level of competence on a scale of one to five. 1 (lowest); 2 (low); 3 (average); 4 (high); 5 (highest)

Each domain (1-3) can be scored individually to yield a domain competency score.

All domains can be combined to yield a total preceptor competency score.

The goal of this tool is to better understand expected preceptor competencies and identify your strengths and areas that need improvement.

1. INTERPERSONAL AND INTRAPERSONAL SKILLS AND ATTITUDES										
Competency	**Self-Rating 1-5**					**Competency**	**Self-Rating 1-5**				
Help preceptee develop critical thinking skills	1	2	3	4	5	Have problem solving skills	1	2	3	4	5
Be a good communicator	1	2	3	4	5	Be patient with preceptee	1	2	3	4	5
Work collaboratively	1	2	3	4	5	Be willing to be a preceptor	1	2	3	4	5
Give constructive feedback	1	2	3	4	5	Be understanding	1	2	3	4	5
Be able to evaluate performance	1	2	3	4	5	Be approachable	1	2	3	4	5
Create non-threatening environment	1	2	3	4	5	Be kind (friendly, respectful, personable)	1	2	3	4	5
Be organized	1	2	3	4	5	Be comfortable in preceptor role	1	2	3	4	5
Have prioritization skills	1	2	3	4	5	Know expectations of preceptor and preceptee	1	2	3	4	5
Be consistent	1	2	3	4	5	Be a role model	1	2	3	4	5
Work with preceptee to set goals	1	2	3	4	5	Be trustworthy	1	2	3	4	5
Have leadership qualities	1	2	3	4	5	Have a positive attitude	1	2	3	4	5
Be opened to improving preceptor skills	1	2	3	4	5	Have a caring attitude	1	2	3	4	5
Have delegation sills	1	2	3	4	5	Provide learning opportunities for preceptee	1	2	3	4	5
Domain score for inter/intrapersonal skills and attitudes competency ≤33 = beginner; 34-65 = intermediate; 66-99 = advanced; 100-130= proficient											

2. KNOWLEDGE AND UNDERSTANDING					
Competency (arrange in order of factor) look at table 4!!!	**1 (lowest) – 5 (highest)**				
Be prepared for the preceptor role	1	2	3	4	5
Have clinical nursing knowledge	1	2	3	4	5
Be knowledgeable about resources	1	2	3	4	5
Be knowledgeable about the institution	1	2	3	4	5
Be knowledgeable about policies and procedures	1	2	3	4	5
Understand the influence of learning styles	1	2	3	4	5
Adapt to preceptees various learning styles	1	2	3	4	5
Understand the influence of personality types	1	2	3	4	5
Have completed a preceptor training course	1	2	3	4	5
Understand the role of the preceptor	1	2	3	4	5
Domain score for knowledge and understanding competency ≤12 = beginner; 13-20 = intermediate; 21-39 = advanced; 40-50 = proficient					

559 For permission email Kris.Lecuyer@slu.edu

3. ADMINISTRATIVE RESOURCES AND SUPPORT: Rate on a scale of 1 (low) to 5 (high)	
Have administrative and managerial support of preceptor role	1 2 3 4 5
Have institutional resources to do the job of preceptor	1 2 3 4 5
Have an established team to enable preceptor function	1 2 3 4 5
Have adequate time to be a preceptor	1 2 3 4 5
Domain score for administrative resources and support competency ≤5 = beginner; 6-10 = intermediate; 11-15 = advanced; 16-20 = proficient	

TOTAL SCORE FOR ALL DOMAINS	
Add domain subtotals for 1. Inter/Intrapersonal skills and attitudes + 2. Knowledge and understanding and 3. Administrative resources and support **Total Competency Score:** **< 50 = beginner; 51-100 = intermediate; 101-150 = advanced; >150 = proficient**	
Definition for each category: **Beginner:** The preceptor is in the early stages of building preceptor competence and knows what to do and how to do it. **Intermediate:** Understands the role and can apply what they know to their initial preceptor practice. **Advanced:** Can prioritize the complexities of the role and is able to problem-solve withing specific situations that arise. **Proficient:** Demonstrates masterful implementation of the role in an intuitive, and effortless manner	

L'Ecuyer, K., Subramaniam, D., Reangsing, C.(2021). Development of the preceptor self-assessment tool and use of the content validity index. *Journal of Continueing Education in Nursing, 51*(10), 469-476. https://doi-org.utk.idm.oclc.org/10.3928/00220124-20200914-09

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Appendix E

Education Plan

PowerPoint with 13 slides. The PowerPoint will start with preceptors using a QRS code and taking the PSAT survey. This PowerPoint will last for 15 minutes.

The PowerPoint will include:

- Information on what clinical reasoning is and why it is important as a nurse.
- The Five minute preceptor. (Step 1get student to take a stand, Step 2 probe for supporting evidence, Step 3 teach general rules/ teach them what you think is important, Step four reinforce positives, Step 5 correct misinterpretations and errors.
- Provide an example of how to use the 5 minute preceptor using the 5 steps.

Next, the class will be broken up into groups of five, making four different groups. Once the groups are together, each group will be provided with a scenario. The groups will have 10 minutes to discuss the scenario and decide how they will handle the situation. Each group will designate a speaker who will stand up and present their case and how to teach the new graduate nurse how to clinically reason correctly. After each presenter, a group discussion will take place, discussing how the group handled the situation and any other solutions. This portion should take 20 minutes. The remaining 15 minutes will be used to take the posttest using the PSAT survey and answer any questions the preceptors may have.

Students will be provided a copy of the PowerPoint to take notes to use when orienting a new nurse. This clinical reasoning course will be taught a total of three times. I will teach the

first two times with the nurse educators present, and the educators will teach the third time to ensure the sustainability of the program. After each course, the Plan-Do-Study-Act cycle will be utilized to see if any improvements can be made to improve preceptor preparedness.