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## The Influence of Nurse Residency Programs on Retention Rates

Jennifer Wagner

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THE INFLUENCE OF NURSE RESIDENCY  
PROGRAMS ON RETENTION RATES

An Evidence-based Practice Capstone Project

Submitted to the Faculty of the

Graduate Program in Nursing

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Nursing

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Messiah College

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School of Graduate Studies  
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Title of Capstone Project: The Influence of Nurse Residency Programs on Retention Rates

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### **Abstract**

**Background:** New nurses face many challenges when starting their jobs, leading to job vacancy if the challenges are not addressed. Turnover can be costly for an institution due to training costs. Nurse residency programs have become more common to reduce turnover rates. Additionally, nurse residency programs provide support and professional development opportunities as new nurses' transition into their new positions. Mentorship, preceptorship and the duration of orientation are all components of nurse residency programs that are necessary to evaluate. The purpose of the paper is to investigate how nurse residency programs affect retention rates of new nurses after one year.

**Methods:** After a literature search using Cumulative Index of Nursing and Allied Health Literature and PubMed databases, seven of fifty-five articles were selected for appraisal. The articles included were available by full-text, peer reviewed and discussed nurse residency programs, retention rates, Baccalaureate Degree prepared nurses. The articles were critically appraised using the John Hopkins Evidence Based Nursing model and guidelines.

**Results:** The implementation of a nurse residency program increased retention rates among new nurses after the first year of the program. The nurse residency programs with components such as mentorship, preceptorship and debriefing helped to increase retention rates, ultimately having a positive impact of the financial state of an institution.

**Implications:** Creating programs with didactic and clinical learning methods with mentors and preceptors is needed to create a successful nurse residency program to ultimately increase retention rates.

*Keywords:* nurse residency, turnover, retention rates, and new nurses.

## DEDICATION

I would like to acknowledge my family, especially my husband, for support during my graduate schooling as well as my friends in the Master of Science in Nursing Education program.

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## CHAPTER I

### INTRODUCTION

The retention rates of new nurses can greatly affect the financial stance of an institution. Orienting new nurses can be very costly; however, orienting new nurses due to frequent turnover can be even more costly (Fiedler, Read, Lane, Hicks & Jeigier, 2014). Thus, evaluating the components of an orientation program and the effect on new nurses is important to reduce turnover rates. The Institute of Medicine (2011) published a report which suggested implementing a nurse residency program to improve care. Nurse residency programs incorporate various aspects such as mentorship, debriefing, and simulation to increase job satisfaction and professional development (Van Patten & Bartone, 2019). Institutions incorporate these aspects into their nurse residency programs in hopes to ultimately increase retention rates.

#### **Statement of Problem**

New nurses may face many challenges during the first year of employment, which can affect the new nurse retention rates. Identifying the challenges for new graduate nurses is imperative when helping new nurses to transition into their role. The general retention rate is 13%, while the new nurse retention rate is 18-50% (Cochran, 2017). One method, suggested by the Institute of Medicine, to address the retention issues of nurse rates is the implementation of a nurse residency program (Fiedler et al., 2014). Nurse residency programs are recognized by the American Nursing Credentialing Center (ANCC) and are considered part of the Structural Empowerment component of Magnet (Dang & Dearholt, 2018). Nurse residency programs can be costly, especially due to the time commitment of training (Trepanier, Early, Ulrich & Cherry, 2012).

In addition, the institution must have a nurse educator dedicated to creating and maintaining the program. Unfortunately, the programs may not appear feasible to hospital stakeholders. Fiedler et al. (2014) reported that studies have shown nurse residency programs may improve retention rates and strengthen skills such as critical thinking. Investigating the evidence of effectiveness of these residency programs is important in determining the impact on retention rates and the cost to an institution.

### **Background and Need**

About 55% of nurses between the ages of 50-64 who are currently employed will plan to retire by the end of 2020 (Cochran, 2017). Thus, vacant positions will increase as well as the need for nurses as the number of older adults rises. Trepanier (2012) reported turnover rates at 12 months after hire of new nurses have been 13%-75%. Consequently, the cost of overtime incentive pay has the potential to equal or exceed the cost of a nurse residency program. Thus, closely evaluating the cost of nurse residency programs and the impact on turnover is important.

According to Van Patten and Bartone (2019), new nurses have stress transitioning into a new role due to lack of confidence, organizational skills and clinical. Thus, new nurses may be influenced by issues arising during the first year of employment, which can ultimately affect their job satisfaction and desire to stay in their position. Consequently, new nurse retention rates may decrease. Nurse turnover becomes costly for an institution and can ultimately impact patient care (Fiedler et al., 2014). Specifically, the cost of replacing new graduate nurses who resign within the first year of practice is substantial. According to Church, Zhaomin He, and Yarbrough (2018), the cost of new graduate resignations within the first year of hire can cost an institution from \$37,000 to \$58,000 per graduate. Conversely, Trepanier et al. (2012) reported the cost to replace a nurse resident can be between \$49,000 and \$92,000 per nurse resident. Additionally,

there are indirect and direct costs of nurse residency programs such as costs of non-productive time (hourly wages and benefits), preceptors, program development and nurse educators. An investigation of current literature is necessary to address these needs.

### **Purpose Statement**

The purpose of the project is to review evidence regarding nurse residency programs and to determine their influence on the retention rates of new graduate nurses during their first-year year of employment.

### **Evidence-based Practice Question**

In new graduate nurses working in acute care during their first year of employment, how does participation in a nurse residency program compared to no participation in a nurse residency program influence retention rates of new graduate nurses after the first year of employment?

### **Significance to Nursing Education**

If nurse educators truly understand the challenges for new nurses, educators can create an orientation that breaks down barriers, so the new nurses are successful. The increased acuity and complexity of patient care has influenced the need for adequate orientation in nurse residency programs (Fiedler, et al., 2014). Consequently, nurse educators created nurse residency programs to help address the concerns and barriers of new nurse transition. The nurse residency programs help to reduce turnover rates, increase career satisfaction, and develop professional goals (Cochran, 2017). Further, nurse educators can achieve these goals through developing programs incorporate components such as preceptorship, debriefing, mentorship, simulation, and professional development.

## **Definition of Terms**

**New nurse.** A new nurse is defined as someone who recently graduated with a Bachelor of Science in Nursing degree and has passed the NCLEX. Thus, the new nurse is a Registered Nurse.

**Nurse residency.** Nurse residency is the term used to describe an orientation program for new nurses as they transition on their own, working in the clinical practice setting. Nurse residency programs vary in length and may include supportive measures such as debriefing sessions and simulation.

**Retention rates.** Retention rates are the percentage of employees that stay in the position they were hired for after a given amount of time.

**Turnover.** Turnover refers to the number of employees who leave a position after a given amount of time.

**Mentorship.** Mentorship is a supportive, professional relationship between two people to help accomplish goals that are determined ahead of time. A mentor serves in a teaching role and provides support for personal and professional manners (Van Patten & Bartone, 2019).

**Simulation.** Simulation is the use of scenarios, sometimes using manikins and technology, to increase possible clinical judgement, preparedness for situations and even confidence of staff.

**Versant Residency Program.** The residency program was formed by the Children's Hospital in Los Angeles in 2004 and is the leading residency program adopted by hospitals (Van Patten & Bartone, 2019). Additionally, the program is tailored to the graduates' needs and can have in classroom education that can be from 8-18 weeks with the preceptorship ranging from 8-18 weeks. Furthermore, the duration of the mentorship component is a full year.

## **Chapter Summary**

New nurses require support in order to be successful, especially in their first year of transitioning into clinical practice. Evaluating the specific components of a successful nurse residency program is necessary. The turnover rate can be very costly for an institution.

Implementing nurse residency programs can help improve retention rates to ultimately improve an institution's financial status due to the impact of turnover.

## CHAPTER II

### METHODS

Implementation of nurse residency programs is necessary to evaluate to determine the impact on retention rates. Additionally, evaluating the components included in a nurse residency program is necessary to determine what makes the program successful. Through a process of data collection, supportive articles were found to assess the impact of nurse residency programs to reduce nurse retention rates within the first year of practice. The purpose of the project was to review evidence regarding nurse residency programs and to determine their influence on the retention rates of new graduate nurses during their first-year year of employment. The EBP question guiding this project was “In new graduate nurses working in acute care during their first year of employment, how does participation in a nurse residency program compared to no participation in a nurse residency program influence retention rates of new graduate nurses after the first year of employment?”

#### **Data Collection of Evidence**

Key words were used in the data collection included, *nurse residency*, *turnover*, *retention rates*, and *new nurses*. These search words were combined with “and” when searching databases. The tools used to collect the data included using Cumulative Index of Nursing and Allied Health Literature (CINAHL) and PubMed data bases. The data collection methods were systematic and rigorous through using inclusion and exclusion criteria. The inclusion criteria included nurse residency programs, retention rates and Baccalaureate Degree prepared nurses. Additionally, only articles that were peer-reviewed in full text were used. The exclusion criteria included traditional orientation programs and registered nurses with an associate degree as the highest degree earned.

First, fifty-five articles were originally identified and seven remained after eliminating articles according to inclusion and exclusion criteria (see Figure 1). Articles were identified through database searches as previously mentioned. Peer review articles that were published in the English language were used. Studies were examined according to the inclusion criteria, including the involvement of nurse residency programs, retention rates, baccalaureate degree prepared nurses, articles that were available by full-text and peer reviewed evidence-based practice. The search resulted in seven articles that correlated with relevant outcomes.

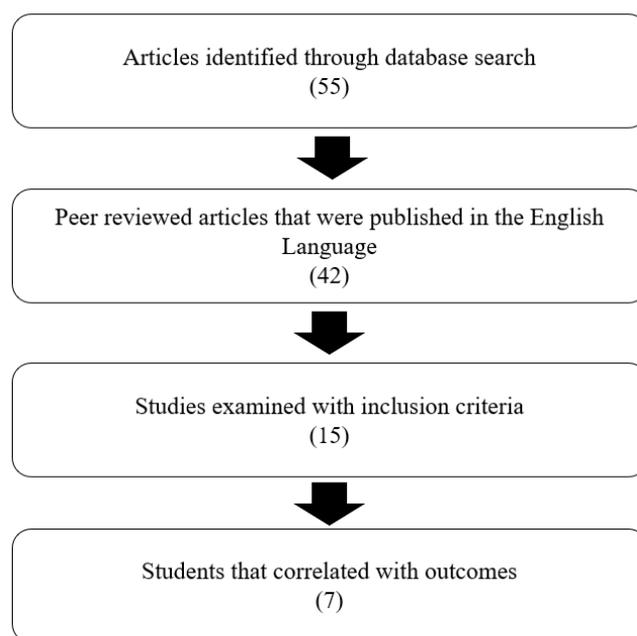


Figure 1: Flow diagram depicts the process of article selection to review

### **Evidence-based Practice Model and Appraisal Tools**

The evidence-based practice model used for this evidence-synthesizing project was the John Hopkins Evidence Based Nursing Model (JHEBP) and Guidelines which is a systematic method (Dang & Dearholt, 2018). The John Hopkins critical appraisal tools help determine the evidence level and quality as well as the limitations that exist.

Additionally, the Research Evidence Appraisal Tool and Research Quality Appraisal Tool are two reliable tools that were used to analyze the data. The desire to find the best evidence is what leads to evidence-based practice to improve clinical decision making (Dang & Dearholt, 2018). The question is if best practices are being used that lead to a safe, cost conscious, and quality environment. Thus, the JHEBP model was used to guide this evidence-based practice investigation to determine best practices for improvement in retention rates of nurse residents during the first year of practice.

Dang and Dearholt (2018) reported five different levels of evidence with the JHEBP model. Specifically, the first three are considered research evidence. Level I studies are experimental studies, randomized controlled trials, explanatory mixed methods with quantitative level I study and systematic reviews, which may or may not include meta-analyses. Level II studies include quasi-experimental study with or without meta-analysis, explanatory mixed methods with quantitative level II study, or a systematic review with randomized control trial and quasi-experimental studies.

Additionally, quasi-experimental may or may not have a meta-analysis which are used when there are practical and feasibility issues as well as ethical issues that prohibit a randomized control trial. Level III includes studies that are a quantitative nonexperimental study, a systematic review with randomized control trials, quasi-experimental and non-experimental studies, that may or may not have meta-analysis. Additionally, level III may have an explanatory mixed method with level III quantitative study, qualitative study or systematic review with or without meta-analysis.

Furthermore, level II includes exploratory, convergent and mixed methods that are multiphasic.

Level IV and V are considered non-research evidence (Dang & Dearholt, 2018). Evidence is considered non-research when there is a lack of quality appraisal. Level IV includes clinical practice guidelines and consensus panels. Additionally, Level V includes literature reviews, quality improvement programs, or financial evaluations, community standard, patient and consumer experience, and case reports and opinions of experts. A literature review is a summary of research that is not necessarily from scientific findings and does not provide a critique with a quality rating (Dang & Dearholt, 2018).

### **Critical Appraisal of Evidence**

Critically appraising evidence entails assigning a quality grade to the evidence. During the critical appraisal, limitations can be addressed. According to Dang and Dearholt (2018), there are three quality ratings for research evidence. Grade A, high quality, is when the evidence has consistency, generalizable results, adequate sample size and control, a clear conclusion and provides recommendations that are based on evidence from a literature review that includes scientific evidence. Further, grade B is considered good quality, which is when there are consistent results, adequate sample size with some control, a somewhat clear conclusion from a somewhat comprehensive literature review based on scientific evidence. Grade C is considered low quality in which there is little evidence with results that are not consistent, a poor sample size and there are no conclusions (Dang & Dearholt, 2018).

According to Dang & Dearholt (2018), Level IV non-research also has three quality levels. Grade A is considered high quality if the material is supported by a professional, public or private organization or a government sector, there is

documentation of the systematic search strategy, there are consistent results with sufficient numbers of studies that were well orchestrated, criterion-based evaluation of strength and quality of included studies with clear conclusions, national expertise is evident and it has been addressed in the last 5 years. Grade B, good quality, is when the material is supported by a professional, public or private organization or government sector, there is a thorough and systematic search strategy explained, results are consistent, a sufficient number of the studies are well-designed, the conclusions are definitive after evaluation of strengths and limitations, expertise is evident and the revision or creation of the article has occurred in the last 5 years. Grade C is considered low quality because material is not supported by an organization or government sector, the literature search is poorly described, the evaluation of strengths, limitations and evidence are lacking, conclusions are not definitive, and it has not been revised in the last 5 years.

Level V non-research, grade A, aims to have clear objectives, results are consistent among multiple settings, formal quality improvement and financial evaluation exists, there are definitive conclusions and consistent recommendations with a scientific rationale (Dang & Dearholt, 2018). Additionally, good quality, grade B, aims to have clear objectives, formal quality improvement, single settle results that are consistent, and provides logical and reasonable recommendations. Furthermore, low quality, grade C, does not have clear objectives, quality is poorly defined, there are improvement and analysis methods, results are inconsistent, and recommendations cannot be made.

According to Dang & Dearholt (2018), Level V, standard, clinical experience or consumer preference has high quality, good quality and low-quality ratings. High quality, grade A, is a leader in the field, definite conclusions are drawn, expertise is present, and offers scientific rationale. Good quality, grade B, offers logical argument for opinions, fairly-definite conclusions are drawn, and expertise is considered credible. There are a lack of conclusions and expertise is not present in low quality or level C reports.

### **Chapter Summary**

Through a thorough evaluation using specific inclusion criteria and exclusion criteria, articles were evaluated to determine the best practices to improve retention rates of new nurses. The John Hopkins Critical Appraisal Model helped to determine the quality of evidence that was reviewed. Once the quality of evidence was evaluated, themes were discussed, and conclusions were drawn to determine best practices.

## **CHAPTER III**

### **LITERATURE REVIEW AND ANALYSIS**

New nurses face different struggles which can affect their desire to stay in their current position. An examination of successful nurse residency programs can elicit information about methods to alleviate new nurse turnover. Furthermore, skills developed through-new nurses' participation in nurse residency programs are thought to facilitate a positive work environment for new nurses and thereby contribute to retention rates thus decreasing turnover rates (Van Patten and Bartone, 2019).

There are many factors that influence turnover rates for new nurses, which include participation in mentorship programs, participation in clinical ladder programs, participation duration or length of an orientation program, and participation in an official residency program (Brook et al., 2019). Further, deeper examination of these factors in nurse residency programs is important to determine the potential impact on retention rates. The project therefore was guided by the EBP question "In new graduate nurses working in acute care during their first year of employment, how does participation in a nurse residency program compared to no participation in a nurse residency program influence retention rates of new graduate nurses after the first year of employment?"

#### **Review of Evidence**

Fiedler, et al., (2014), used a quantitative descriptive design to study a nurse residency program to address the long-term effects of the participation in a nurse residency program. The goals of the study were to describe the long-term turnover rates of nurse residency programs, to examine the satisfaction of nurses in the residency programs past one year, and to examine long-

term leadership development of the nurse residency graduates. In addition, Benner's Novice to Expert model (as cited in Fiedler, et al., 2014) was used to frame the study.

To conduct the study, Fiedler et al. (2014) used a convenience sample of 51 nurses hired over a two-year period. No power analysis was conducted. All study participants held a BSN or MSN and most of the participants were female, worked night shift, full-time hours, medical-surgical units, mother-child units or critical care units and were under the age of 30. Human subject protection requirements were met with approval of the institutional review board of the organization where the study was conducted. Data collection included the use of an electronic survey distributed via email to gather demographic data of the participants of the study as well as use of the McClockey/Mueller Satisfaction scale (as cited in Fiedler et al., 2014) which is a tool using eight subscales to measure satisfaction using a Likert scale ranging from (1) very dissatisfied to (5) very satisfied. The subscales of the McClockey/Mueller instrument included extrinsic rewards, scheduling satisfaction, family/work balance, coworkers, opportunities for social contacts, professional responsibilities, praise/recognition and control/responsibility. Fiedler et al. (2014) reported that the instrument had a Cronbach's alpha of 0.89 and reliability of 0.94 with criterion-related and construct validity.

The study results were grouped according to fiscal year, as there was no statistical significance in the demographic differences of the study participants. Specifically, Fiedler, et. al., (2014) determined turnover rates by dividing the number of residents who departed from the program by the total number of nurse residents who started the program. Turnover rates included 5.6% of residents during the year long program and 8.5% after the first year. The co-workers subsection resulted in the highest satisfaction response while family-work balance had the lowest satisfaction response. The scheduling satisfaction subsection ( $p=.027$ ) was the only subsection

with a statistically significant difference between the three groups of fiscal years. While all the subscales increased over time, except praise and control, there was no statistically significant difference except when nurses had the opportunity to be in charge ( $p=0.16$ ). The opportunity to be in charge correlates with an increase in experience over time. Participation in committees decreased overtime while all other aspects of professional development increased (precepting, certification, pursuing a degree, member of a professional organization) for the study participants. Fiedler et al. (2014) concluded that the decrease in committee participation may have been related to time constraints if former nurse residents were balancing personal life and work along with advancing degrees.

Fiedler et al.'s (2014) study was a level II piece of evidence and appraised as good quality, grade B. The study revealed consistent results. The researchers presented a comprehensive literature review based on scientific evidence. However, threats to both internal and external validity were present in the study. For example, the main identified threats to internal validity and external validity were selection bias and selection effects respectively. Specifically, participation in the study was voluntary and was restricted to nurses who checked their email and took the time to respond to the email. In some cases, nurse residents did not have access to the survey due to being on maternity leave or having a recent name change. Such factors likely contributed to the somewhat limited sample size of the study. In addition, no power analysis was conducted to ensure effective sample size. Another main threat to both internal and external validity of this study was maturation and reactive effects respectively. Specifically, maturation and reactive effects in relation to nursing skill development and to increasing responsibility and development in the professional nurse role over time such as charge nurse duties. Therefore, Fiedler et al. (2014) recommended replication of the study at a similar

academic medical institution with a stronger sample and selection to enhance the possibility of more meaningful study results for generalization.

Trepanier, Early, Ulrich and Cherry (2012) conducted a retrospective quantitative descriptive cost-benefit analysis study with a focus on the occurrence of turnover and contract labor usage in a nurse residency program. Secondary data were used and retrieved from a national provider and a corporation who implemented a nurse residency program in 15 community-based hospitals and one academic institution. From the secondary data, a convenience sample of 524 nurses was extracted and used for analysis. The study did not require approval from the institutional review board because a retrospective analysis occurred.

From the secondary data, Trepanier et al. (2012) retrieved a convenience sample of 524 nurses who participated in a nurse residency program. The nurses in the sample were between the ages of 23 to 30 years of age and 54% held a baccalaureate degree or higher. Trepanier et al., (2012) assessed contract labor amounts, characteristics of nurse residents and turnover 12 months prior to residency and 12 to 24 months after residency. Turnover was defined as the number of residents at 12 and 24 months divided by the number of residents who completed the residency (Trepanier, et al., 2012). Further, characteristics of the residents (gender, age, ethnicity and education level), contract labor usage and turnover were analyzed. Contract labor was defined as “labor dollars paid to an external entity to provide nursing care” (Trepanier et al., 2012, p. 210). Additionally, turnover was described as the total number of new nurses leaving an institution before 12 months after residency completion divided by the number of residents who finished the nurse residency program.

Trepanier et al. (2012) combined two conceptual models to frame the study. Specifically, Benner’s conceptual model of novice to expert (as cited in Trepanier et al., 2012) and Beecroft’s

new nurse turnover intention model (as cited in Trepanier et al., 2012) were used to frame the study. According to Beecroft et al.'s new nurse turnover intention model (as cited in Trepanier et al., 2012), components included individual nurse characteristics (age, level of education, work experience, practice specialty preferences, and coping strategies for stress), factors of the organization where the new nurses worked (work place relationships, leader empowerment, organizational commitment), and the day-to-day work environment (job satisfaction, autonomy, decision making, opportunities for advancement).

To prepare for data analysis, data were retrieved from the accounting and human resources data bases and the residency company data based (Trepanier et al., 2012). Data were analyzed using stepwise regression analyses. The independent variable was identified as the nurse resident characteristics. Turnover and contract usage were identified as dependent variables for the analyses. Findings included that the turnover rate of nurse residents between the age of 31 and 40 years had a 44% turnover rate at 12 months ( $F=8$ ,  $df$ , 1, 10,  $p<0.05$ ). Nurse residents with a master's degree showed a 97.6% of turnover at 24 months ( $F=69$ ,  $df$  2, 4,  $p<0.05$ ) which was the highest turnover rate found. Specific findings related to contract labor usage and correlations to nurse resident characteristics showed that nurse residents between the ages of 31 to 40 provided 54.8% of the contract labor per daily census ( $F= 6.4$ ,  $df$  1, 12,  $p< 0.05$ ).

Trepanier et al. (2012) found that the average 12-month turnover rate went from 36.8% prior to nurse residency programs to 6.41% after the nurse residency programs. Specifically, the turnover of 255 nurse residents with costs of \$17,977,500 prior to the nurse residency program compared to the turnover of 39 nurse residents with costs of \$2,749,500 after the nurse residency program was implemented. In addition, the annual contract labor dollars per daily census average decreased from \$19,099 prior to resident to \$5,490 after residency. Ultimately, the residency

program saved \$15,228,000 among 15 hospitals with a decrease in contract labor costs by \$33.68 million, indicating the nurse residency programs provided a reduction in turnover costs.

The study by Trepanier et al. (2012), would be considered a level III retrospective quantitative descriptive study with a quality rating of B. Positive aspects of the methodology used for this piece of evidence included that the objectives of the study were clearly stated, results were consistent across multiple hospitals, and financial evaluation methods were used. Additionally, conclusions were clearly stated with recommendations derived from scientific evidence. Threats to both internal and external validity were identified. Specifically, since the sample was a retrospective sample of convenience elicited from database sources without any indication of a power analysis to determine sample size, the threat to internal validity of selection bias and the threat to external validity of selection effects were present. Also, the threat to internal validity of history and the threat to external validity of reactive effects was evident related to the economic situation during the time in which the study was conducted. The challenging economic environment may have affected the study findings.

A quantitative retrospective correlational study was completed by Church, Zhamoin He and Yarbrough (2018), to determine how autonomy, competence, cohesion, structural empowerment, and job satisfaction affected turnover among newly licenses RNs. Autonomy allows nurses to improve care of patients while group cohesion promotes employees who are committed (Church, et al., 2018). Furthermore, job satisfaction is derived from a positive work environment and structural empowerment deals with the factors that allow nurses to accomplish goals in the workplace and patient care.

Church et. al. (2018) used secondary data from Versant New Graduate Nurse Residency was analyzed (VNGNR). Moreover, the secondary data was from a voluntary sample consisted

of 1,498 newly licensed Registered Nurses (NLRNs) from a cohort of 1,573 NLRNs in acute care hospitals in the United States. Institutional review board approvals and consent were obtained. Additionally, NLRNs participated in a 22-week program that involved experiences with comprehensive education, mentoring, debriefing sessions with continual support sessions for the first year.

Church et. al. (2018) collected data with subsequent analysis during the first year and annually for the next 5 years using different instruments that were all considered to be reliable. Specifically, the instruments included the Schutzenhofer Professional Nursing Autonomy Scale with a Cronbach's alpha of .91, the Group Judgement Scale with a Cronbach's alpha of .90, the Slater Nursing Competencies Rating Scale with a Cronbach's alpha of .99, the Nursing Job Satisfaction Scale with a Cronbach's alpha of .77, the Organizational Commitment Questionnaire with a Cronbach's alpha of .91, the Conditions for Work Effectiveness Questionnaire-II with a Cronbach's alpha of .83, the Job Activities Scale with a Cronbach's alpha of .77, and the Organizational Relationships Scale with a Cronbach's alpha of .88.

According to Church (2018), findings showed higher levels of structural empowerment, job satisfaction and competence, commitment and autonomy and moderate levels and a low level of group cohesion. Autonomy and competence did not predict commitment. Group cohesion, job satisfaction, and structural empowerment affect commitment levels; thus, these concepts are important to incorporate in nurse residency programs to have positive outcomes on retention rates of nurse residents (Church et. al., 2018). Additionally, the study demonstrates effectiveness of standardized residency programs.

Church et al.'s (2018) study would be considered a level III and to have good quality, grade B. Results were consistent and there were fairly definitive conclusions based on a

comprehensive literature review that referenced some scientific evidence. Sufficient sample size was present, and participation was voluntary with consent obtained. Reasonably consistent results are present. Power analysis was not discussed. Selection bias was an internal threat to validity and present due to needing to study a specific sample. Additionally, the instruments used led to limitations of the study since the data used were from a secondary source and did not provide details of the instruments' validity. Due to using data from Versant nurse residencies, the generalizability of findings was limited to nurse residency programs of the Versant nurse residencies group (Church et. al., 2018). The convenience sample used for the study led to the external threat of selection effects and therefore the lack of generalizability of the study findings.

In a quantitative, descriptive, cross sectional survey design study by Van Patten and Bartone (2019), mentorship, preceptors and debriefing were studied to examine the effect on new nurses in residency programs. Specifically, a cross-sectional survey design was used to compare data to address four questions:

1. Is there a significant relationship between higher preceptor ratings associated with higher residency ratings?
2. Is there a significant relationship between higher debriefing ratings associated with higher residency ratings?
3. Does decreased stress due to mentorship moderate the relationship between preceptor ratings and residency ratings?
4. Does the decreased stress due to mentorship moderate the relationship between debriefing ratings and residency ratings? (Van Patten and Bartone, 2019, p. 65)

The study used a descriptive analysis of secondary data with a cross-sectional design approach.

Data were gathered after registered nurses who completed the nurse residency programs completed two surveys (Van Patten and Bartone, 2019). The study used convenience sampling, with 1,078 graduate (894 females and 171 males) nurses who completed the Versant RN

Residency program. The adequate sample size was determined to be 150 with the power set at 0.80 and a Cronbach's alpha of .05. Additionally, the study included 793 Caucasians with 457 having a baccalaureate degree and 622 had experience in the medical field prior to licensure. Approval from the Institutional Review Board was obtained, and the names of the participants were kept private. Additionally, the data were kept in a password protected computer that was secure, could only be accessed by researcher.

Van Patten and Bartone (2019) reported data from the Demographic Information Survey as well as the Evaluation of RN Residency Survey, which was administered during the last week of residency. The Evaluation of RN Residency Survey used 52 questions, which was comprised of Likert-type, open ended and closed-ended questions with 4 sections relating to nurse residency, preceptors, mentoring and debriefing. Three phrases of data analysis were used. First, data were screened for integrity through using computer plots, evaluating the maximum and minimum scores. Any missing data was evaluated, and test assumptions were verified for parametric testing such as "normal distributions, outlier scores, linearity, multicollinearity and independence of errors" (Van Patten & Bartone, 2019, p. 65). Test assumptions that had violations were corrected. In the second phase, using bivariate analysis was used to examine statistically significant associations between variables such as demographics, certifications and characteristics such as certifications and experience. Finally, the third phase examined the effects of independent variables and relationships of independent and dependent variables using a multiple regression.

Debriefing and preceptor experiences as the two independent variables using a Likert-type scale, reduced stress as the moderating viable and nurse residency as the dependent variable (Van Patten & Bartone, 2019). Furthermore, the Likert-type scale had exceptional internal

consistency with a Cronbach's alpha of .99 when measuring debriefing experiences, a Cronbach's alpha of .97 when measuring preceptor experiences, and a Cronbach's alpha of .95 when measuring nurse residency experiences. Nurse residency experiences were not considered to be significantly associated, as the  $p$  values were all greater than 0.05 with gender, race/ethnicity, basic nursing education, and previous healthcare experience. Also, using a Pearson  $r$  correlation analysis, debriefing and preceptor experiences were considered to have significant association with nurse residency experiences, with  $p$  values  $<.01$  and multivariate analysis,  $p = 0.001$ .

According to Van Patten and Bartone (2019), there was a strong correlation between preceptorship and debriefing and a quality residency programs based on the results of the multiple linear regression model. The multiple linear regression model revealed statistical significance in identifying reduced stress due to mentoring overall, but also resulted in a lack of statistical significance in reduced stress due to mentoring with preceptorship or debriefing and the quality of nurse residency programs. The nurse residency program correlation with demographics was not statistically significant.

According to Van Patten and Bartone (2019), common themes reviewed included mentorship, debriefing and simulation. In nurse residency programs, mentorship led to personal and professional development as well as increased confidence and learning. The confidence that was developed led to increased job satisfaction, resulting in nurse residents remaining in their current positions. Debriefing is designed to allow designated time for nurse residents to share about their experiences, feelings and views. The practice of debriefing resulted in increasing clinical reasoning, as nurse residents evaluate situations, resulting in concepts and theories being

solidified. Furthermore, debriefing leads to self-efficacy, decreased stress and performance improvement through evaluation of situations.

Van Patten and Bartone's (2019) study would be considered level II, quality B. The study was considered good quality related to consistent results, adequate sample size with some control, and a somewhat clear conclusion from a somewhat comprehensive literature review based on scientific evidence. Convenience sampling was used which led to the threat to internal validity of selection bias. In other words, the sample was based on who completed a particular nurse residency program and chose to respond to the survey. The data from the study came from one particular nurse residency program; thus, generalizability must be considered as a threat to external validity. Since the results were derived from one questionnaire from one type of residency program, the results cannot be generalizable. Specific results of the open-ended questions were not report and validity of the instruments were not discussed. Van Patten and Bartone (2019) reported the data were only from the curriculum of the Versant RN residency program. Another limitation was participants may not have been honest in fear of identification (Van Patten and Bartone, 2019). Data were only collected from one survey.

Goode, Lynn, McElroy, Bednash and Murray (2013) conducted a longitudinal, descriptive, quantitative study to examine outcomes of a post-baccalaureate new graduate nurse residency program. According to AACN (as cited in Goode et al., 2013), nurse residency programs promote leadership development and were designed to have an evidence-based curriculum based on the AACN *Essentials of Baccalaureate Education for Professional Nursing Practice*. In addition, nurse residency programs include specialty classes, simulation, interprofessional exercises, an evidence-based practice project and monthly class meetings for general discussions, and discussion of case studies. Goode et al. (2013) reported that 31,000

nurse residents from 100 hospitals in the United States over a 10-year period volunteered to be included in the study. Four instruments originally were used to collect data from participants. After three years of collecting data, two of the four instruments were eliminated from the study. Specifically, the McCloskey Mueller Satisfaction Scale (MMSS) (as cited in Goode et al., 2013) and Gerber's Control over Nursing Practice Scale (GCNPS) (as cited in Goode et al., 2013) were eliminated due to lack of fit of the data elicited from the instruments with the purpose of the Goode et al.'s (2013) study. The two instruments that were used to collect data for the entire duration of the study were the Casey-Fink Graduate Nurse Experience Survey (CFGNES) (as cited in Goode and the Graduate Nurse Residency Program Evaluation (GNRPE) (as cited in Goode et al., 2013).

The CFGNES (as cited in Goode et al., 2013) was used to examine demographics and skills using a 4-point response ranging from strongly disagree to strongly agree as well as yes or no questions. The CFGNES was determined to have a Cronbach score of .89 and was focused on "support (0.82), organizing and prioritizing (0.76), stress (0.73), professional satisfaction (0.76) and communication/leadership (0.74)" (Goode, et al., 2013, p. 75). The CFGNES was given to nurse residents at 6 months, the middle of the program, and the end of the program, which was after one year.

The Graduate Nurse Residency Program Evaluation (GNRPE) was used to evaluate three aspects of a nurse residency program in the form of a Likert style survey. Specifically, the GNRPE was used to examine recruitment with welcoming graduates to the residency and institution, to evaluate objectives for the program, and to examine the organizational commitment and opinions of the program. The developers of the GNRPE (as cited in Goode et al., 2013) reported a Cronbach score of .86.

From the results of the GNRPE, Goode et al. (2013) reported that nurse residents were still uncomfortable with specific skills such as emergency situations, ventilator and tracheotomy management. Two questions from the GNRPE that guided the study for elicitation of data were “How did the residents change across the program” and “What was the retention rate of the residents” were two questions that were examined (Goode et al., 2013, p. 75). A repeated measures analysis of variance was used to analyze the data obtained through responses to these questions on the GNRPE. Goode et al. (2013) reported that during the first three years of the study, a repeated measures analysis of variance for annual analysis of data indicated that nurse residents’ responses indicated a trend toward relatively high self-perceptions, but the trend was not continuous and fluctuated during the one-year length of the nurse residency program. For example, at the six-month point there was a decrease in nurse residents’ perceptions in the areas of support and professional satisfaction followed by an increase in the aforementioned areas from the midpoint of the program to the end of the program. Goode et al. (2013) noted that exceptions to the reported fluctuating trend were in the areas of organize-prioritize and communication leadership which were areas that showed a positive increase from the start, to midpoint, to the end of the nurse residency program.

Goode et al. (2013) compared the results from the CFGNES and the GNRPE for nurse residents working in Magnet hospitals with the results of nurse residents not working in Magnet hospitals and found that confidence, competence, organization, prioritization, communication and leadership increased after participation in a nurse residency program. Furthermore, demographics did not predict turnover rates; however, using the Casey-Fink scores of organize-prioritize and communication-leadership played a significant role in predicting the commitment to positions ( $R^2 = 0.44$ ) and nursing ( $R^2 = 0.33$ ). Goode et al. (2013) also noted that over the 10

years of their study, retention rates increased from 88% to 94.6%. In addition, nurse residents' evaluations of nurse residency programs showed consistent positive ratings especially in the areas of the faculty presenting the nurse residency program and the welcome provided at the beginning of the nurse residency program. Goode et al. (2013) concluded that these findings indicated that the infrastructure of the program was effective.

Goode et al.'s (2013) study is level III evidence and considered to be of good quality, grade B. Indicators of the study's quality included that the results of the study were consistent, there was an adequate sample size with some control, and there was a somewhat clear conclusion derived from a somewhat comprehensive literature review which was based on scientific evidence.

The critical appraisal revealed some study limitations. For example, Goode et al., (2013) attempted to use residents as a control group; however, participation was limited, leading to the elimination of a control group. Other limitations noted were the lack of participation overtime from the nurse residents indicating the internal threat to validity of mortality and external threat of reactive effects. Specifically, the analysis of results at the end of the program was based on 40% participation as opposed to 85% participation present at the beginning of the study. Also, there was no pre-nurse residency program retention data for comparison. The threat to internal validity of selection bias and external threat to validity of selection effects was present because participation in the study was voluntary. No power analysis was performed to determine appropriate sample size for the study. Since the study occurred over 10 years, maturation also was a threat to internal validity of the study. Although Cronbach's alpha findings for the CFGNES and the GNRPE were strong at 0.89 and 0.86 respectively, instrument validity was not reported indicating the internal threat of validity of instrumentation and the external threat of

validity of measurement effects. Therefore, the critical appraisal indicated that the results of Goode et al.'s (2013) study are more difficult to generalize to multiple settings.

Brook, Aitken, Webb, MacLaren, and Salmon (2019) conducted a systematic review to examine the characteristics of interventions used in efforts to decrease turnover and increase retention for new nurses. The authors' presented a statement of purpose to guide the search strategy for their systematic review. Brook et al. (2019) implemented a search strategy based on population and outcomes to determine key search terms. As a result of the population and outcome search strategy, key search terms used were "retain, retention, attrition, leave, turnover, quit, loyalty and staff, personnel, employee, workforce, nurse" (Brook et al., 2019, p. 49). Additionally, to ensure a systematic approach to the literature search, PRISMA guidelines were followed. Databases searched included Academic Search Complete, Medline, Health Policy Reference Centre, EMBASE, Psycinfo, and CINAHL. In addition, Google Scholar and the Cochrane Library were searched to identify already conducted systematic reviews for inclusion in the systematic review. Inclusion criteria required that identified literature was peer-reviewed, was written in English language, was published between 2001 and 2017, had full text availability, and was primary research with interventions to reduce turnover or increase retention (Brook et al., 2019). Identified duplicate literature was excluded.

The Joanna Briggs Institute checklists for quasi-experimental studies and randomized control trials (as cited in Brook et al., 2019) were used to appraise the quality of the studies. Specifically, the number of positive responses on each checklist compared to the total number of items on the checklist was used to determine study quality. Other relevant data from the articles included the author and year of publication, the country where the study was conducted, the study design, the intervention(s) with any special characteristics, the sample size, the

characteristics of the sample participants in each study, the outcome measures, the retention and the turnover data as well as any other outcomes elicited from information from the literature reviewed. Brook et al. (2019) compared pre-intervention group data with post-intervention group data to determine any changes in retention and turnover rate among new nurses. By subtracting the pre-intervention comparison group data from the post-intervention group data, Brook et al. (2019) determined a retention/turnover rate. Measures of central tendency and dispersion based on normed data were used to summarize intervention benefits in regards to new nurse retention and decreased turnover.

Brook et al. (2019) analyzed studies according to the interventions used, as a primary method and the components of interventions, as a secondary method. These interventions included preceptorship, mentorship, teaching, assessment, incentives, externships, specialty tracks and clinical ladder programs. Due to including a preceptor component ( $n = 22$ ), there was a 14% decrease in turnover and 23% increase in retention (Brook et al., 2019). Further, a 14% decrease in turnover and a 17% retention increase in two studies occurred in seven studies that studied mentorship. According to Brook et al. (2019), 37 of 53 studies had a teaching aspect of the residency program which combined classroom teaching, simulation and clinical practice. Thus, there was a 15% decrease in turnover and 24% increase in retention. However, there was a small number of studies ( $n=3$ ) that showed a negative effect on turnover and retention. A formal assessment component led to a 20% increase in retention (Brook et al., 2019). Additionally, there was a decrease in turnover by 12% and an increase in retention by 15% due to incentives in the first two years. Incentives entailed payment to attend conferences and trainings, bonus payments for employees who showed loyalty, and pay increases. Externship programs led to decreased turnover; however, after using the Casey-Fink experience survey, the decrease was not correlated

with the perception of the externship program (Brook et al., 2019). Further, specialty training in critical care with a specialized mentor and preceptor led to a 9% decrease in turnover and 16% increase in retention. Additionally, clinical ladder involvement led to a 11% decrease in turnover. According to Brook et al. (2019), team building, completing a hospital project, and a new fellowship provided insignificant findings to demonstrate effectiveness in reducing the turnover rate and increasing the retention rate.

The systematic review by Brook et al. (2019) is a Level II piece of evidence with a quality rating of good, grade B. Brook et al.'s (2019) systematic review would be considered good quality for the following reasons. A purpose or thesis statement was presented in the introduction section of the report with identification of the outcome variables for the review. However, no specific PICO question or review question was presented to guide the systematic review process. A detailed narrative of the data reduction and analysis process reflected ample searching and identification of pieces of evidence for a sufficient sample to be used for the systematic review. However, even though Brook et al. (2019) included a detailed narrative of the data reduction and analysis process, no flow diagram was presented. Although intervention variables were identified, there were many different interventions presented with varying components across the studies reviewed. The critical appraisal of the quality of individual pieces of evidence was based on a comparison of outcomes of pre-intervention to post-intervention groups. Selection bias, a threat to internal validity, was present as the inclusion of pieces of evidence were based on outcomes. There was no presentation of a critical appraisal of individual studies presented in the systematic review. Brook et al.'s (2019) findings have merit and provide descriptive results for a variety of interventions aimed at increasing retention and decreasing turnover rates in new nurses. However, generalizability is somewhat limited. Further

investigation on the topic through original research or systematic reviews with meta-analyses is warranted.

Cochran (2017) conducted a literature review to determine the effectiveness of nurse residency programs in reducing retention rate and to identify the best practice for nurse residency programs. Cochran (2017) used databases such as CINAHL Medline, OvidSP and the Cochran Collaborative databases using key search words such as “*new graduates nurse, transition to practice, newly licensed nurse and residency program*” (p. 53). Additionally, inclusion criteria included articles published January 2011-September 2014 and peer-reviewed articles. The exclusion criteria entailed settings in outpatient and non-acute care, advanced practice nurses, students, interns, and unemployed RNS (Cochran, 2017). Data saturation was addressed through the exclusion and inclusion criteria. Cochran (2017) reviewed a total of sample included twenty-two articles which included three literature reviews, twelve qualitative articles, one expert opinion and six case studies. Seven of the twenty-two articles were eliminated due to exclusion criteria.

A few aspects of residency programs were considered in evaluating the effectiveness of implementing nurse residency programs. Two case studies and a cost analysis benefit study were used to analyze retention rates after implementing nurse residency programs. Retention rates improved to 94-96% and the costs of contract labor went from \$19,099 to \$5,490 (Cochrane, 2017). Additionally, the annual savings was greater than the cost of the average nurse residency program.

In the literature reviewed, Cochran (2017) examined best practices regarding transitional support for new nurses. From the reviewed literature, Cochran (2017) reported that critical thinking increased by 41%, basic knowledge increased by 12%, and that confidence ( $p=0.00$ ) and

communication ( $p=0.022$ ) improved as well. Also, incivility was found to be a major reason for nurse turnover as incivility relates to job stress, distraction and physiological distress, and can lead to the inability to develop time management skills and resolve conflict. In two qualitative studies, nurse residents reported the need for mentors for support as well as a strong preceptor relationship (Cochran, 2017). Further, healthy work environments were found to be necessary for effective communication, for a safe learning environment, and for proper interprofessional collaboration. Overall, lower levels of anxiety occurred when nurse residents worked in healthy work environments. Cochran (2017) concluded that supportive mentors and preceptors was an indicator of a healthy work environment for new nurses.

In Cochran's (2017) review, the components of the didactic classroom time were considered as well. The classroom sessions included developing management skills, delegation, prioritization and conflict resolution. Peer discussion led to support from the other nurse residents. Additionally, including evidence-based practice projects lead to skills in autonomous decision making. Through the literature review, Cochran (2017) noted that nurse residency programs led to increased retention rates, decrease turnover costs, and increases critical thinking skills.

According to Cochran (2017), nurse residency programs are not standardized, leading to different levels of success for new nurses. In addition, suggestions have been made to develop separate nurse residency programs to support different types of educational preparation (Cochran, 2017). Even so, Cochran (2017) found that many accredited nurse residency programs require baccalaureate-prepared nurses. Another finding was that standardized nurse residency programs that were at least 12 months in duration were more successful than those that were shorter than 12 months in duration. The longer programs provided for additional experiences

that included simulation, reflection, peer discussion, delegation and case studies. As a result, Cochran (2017) reported that longer nurse residency programs were found to produce new nurses who were able to more readily adjust to the professional role of a nurse.

Cochran's (2017) literature review is considered a level V. The quality of the article would be given B quality. Expertise seemed to be credible, fairly definitive conclusions were drawn, and logical argument was provided. Credibility was evident through triangulation. Clear collection methods led to the presence of auditability. However, clear analyzing methods were not present. Cochran mentioned the use of Critical Appraisal Skills Programme tools used to critically analyze the articles that were used but did not provide additional information on the tools. Transferability of the study was present, as the results can be useful outside the study. Data saturation was addressed by inclusion and exclusion criteria.

### **Summary**

The various components of the nurse residency programs are important to identify in order to evaluate the effectiveness of the programs on nurse retention rates. Components such as debriefing, preceptorship, mentorship, clinical ladder, and simulation all influence the effectiveness of nurse residency programs. Additionally, the length of orientation can influence the outcomes of nurse residency programs. Nurse residency programs are shown to influence retention rates due to many different components of the programs.

## **CHAPTER IV**

### **SYTHESIS AND RESULTS**

Nurse residency programs have been deemed to be advantageous in order to increase retention rates among new nurses. Incorporating various components such as mentorship, preceptorship, and debriefing in nurse residency programs, outcomes can be improved. After the analysis of supportive articles, synthesizing the evidence is an important step.

The articles reviewed were at varying levels of evidence. Three level II research articles were evaluated. This evidence included a systematic review without a meta-analysis, a quantitative descriptive analysis with a cross sectional survey design, and a quasi-experimental descriptive study. Three level III research articles were reviewed. The articles included a retrospective, descriptive study, a retrospective correlational approach study, and a longitudinal study. Additionally, a level V non-research article, literature review was reviewed.

All the articles presented and critically appraised were deemed as a quality rating of B. The research articles overall were considered good quality. Results were consistent, adequate sample size was taken into account, and a somewhat comprehensive literature review based on scientific evidence led to somewhat clear conclusions. Additionally, the non-research article was considered to be good quality, grade B. In the non-research article that was used, expertise seems to be credible, fairly definitive conclusions were drawn, and logical argument was provided.

The synthesis of level II articles led to the identification of various themes. Fiedler et al. (2014) reported peer support and development were the most important to job satisfaction. Further, after the implementation of the yearlong nurse residency program, turnover rates were lower than the national average. Van Patten and Bartone (2019) reported higher residency rates relating to quality preceptor and debriefing experiences. Additionally, debriefing enhanced skills

and built confidence in nurse residents. Brook et al. (2019) explained a 14% turnover rate decrease when a nurse resident had a mentor and retention rates increased by 23% with a preceptor.

Level III articles led to identified themes regarding the cost of residency turnover as well as components of the programs. The turnover rate went from 36% to 6.41% at the one-year mark after the implementation of a nurse residency program (Trepanier et al., 2012). Goode et al., (2013) reported 88% retention rate at year one after completion of a nurse residency program and 94.6 at 10 years. Further, contract labor decreased to \$5,490 from \$19,099 once the nurse residency program was implemented. According to Church et al. (2018), higher levels of structural empowerment, job satisfaction, competence existed. Thus, residency programs were recommended to incorporate these aspects into residency programs in efforts to increase retention rates of nurse residents. Furthermore, nurse residency programs improved confidence in leadership, organization, communication, and providing safe patient care.

The level V article, written by Cochran (2017), had several themes. Incivility was found to be a major reason for nurse turnover due as incivility relates to job stress, distraction and physiological distress. Additionally, lower levels of anxiety occurred when nurse residents worked in healthy work environments. Thus, nurse residency programs lead to increased retention rates, decrease turnover costs, and increases critical thinking skills.

### **Chapter Summary**

Through evaluating research and non-research articles, various themes were derived from the articles. Retention rates increased and turnover rates decreased through the implementation of nurse residency programs. Important components include adequate preceptorship, mentorship,

and debriefing. Confidence levels and critical thinking skills increased, leading to the retention of nurse residents.

## CHAPTER V

### DISCUSSION AND CONCLUSION

After a thorough investigation, nurse residency programs have shown to be effective in increasing retention rates after the completion of the first year. There are various components of a nurse residency program that have led to successful outcomes. Evaluating the gaps in literature, limitations and recommendations is important to determine future research that may be needed.

The evidence presented and critically appraised showed retention rates increased after the completion of the first year of a nurse residency program. Thus, the PICO question was answered. The cost-effective strategy to increase new nurse retention was found to occur with the additional education and support provided by nurse residency programs experienced within the first year of employment (Cochran, 2017). Turnover rates negatively affect outcomes of patients, nursing care and finances (Fiedler et al., 2018). The 12-month turnover went from an average of 54.8% to 6.41% after the implementation of a nurse residency program (Trepanier et al., 2012). Residency programs with a formal teaching, and preceptorship and mentorship and last 27-52 weeks have the most success in reducing retention rates (Brook et al., 2019). Additionally, the perception of organization, prioritization, communication, and leadership showed a statistically significant increase after one year (Goode et al., 2013).

The nursing implication derived from the research leads to a recommendation of translation of practice. The data suggested having an environment that promotes organizational engagement and professional development (Fiedler et al., 2018). Creating programs with didactic and clinical learning methods with mentors and preceptors is needed to create successful nurse residents (Brook et al., 2019). Additionally, Van Patten and Bartone (2019) suggested developing programs with mentorship and debriefing sessions.

Furthermore, a standardized nurse residency program should be considered (Church et al., 2018). Developing a standardized nurse residency program can ensure that all new nurses can have an adequate education and a supportive environment to transition to practice. Some may consider a standardized nurse residency program to be costly. However, if expected benefits are greater than the cost, a nurse residency program should be considered (Trepanier et al., 2012). Preparation for a nurse residency program would require institutions allocating funds as well as hiring a program leader with experience in nursing education.

While there were beneficial findings after analyzing data, limitations were derived from the articles. When evaluating the effects of nurse residency programs over time, the sample became more limited. Nurses became more difficult to locate as nurses moved, got married with a new name or stop responding (Fiedler et al., 2018). A lot of the data were based on voluntary samples which leads to selection bias. Secondary data was also used, leading to a lack of generalizability for all hospitals (Trepanier et al, 2012). Additionally, the overall state of the economy was not considered in the research, as the closure of positions due to the economy may influence the turnover rates.

There were limitations present in this evidence-synthesizing project. The articles used were not written in the past five years. The inclusion of more recent articles may have led to more relevancy in the project findings. Additionally, all the articles reviewed were quality B. Including quality A evidence at any level of evidence may help to further solidify the findings. Furthermore, including level I and level IV articles would provide a more diverse spectrum of evidence.

Gaps were identified in the evidence with respect to patient safety and quality outcomes in nurse residency programs (Trepanier et. al., 2012). For example, patient safety and quality

outcomes include falls and hospital acquired infections. Additionally, the educational background of the nurse residents and the effect on retention were not thoroughly evaluated.

After reviewing the evidence, practice change is important to address. Each hospital may have different components and variations of a nurse residency program. Preceptorship, debriefing and mentorship are all associated with positive outcomes and experiences for nurse residents (Van Patten and Bartone, 2019). When evaluating current practice, these components should be thoroughly considered. The duration of a program should also be considered. Changing the duration of a nurse residency program can affect outcomes. Additionally, the Commission on Collegiate Nursing Education (CCNE) accreditation application should be considered to ensure quality programs (Goode et al., 2013).

Future research is necessary in the area of nurse residency programs. The efficacy of residency programs in the transition from school to practice should be further researched (National League for Nursing as cited by Van Patten and Bartone, 2019). Long term data is limited as well as unclear due to a lack of participation (Fiedler et al., 2018). The transition period and long-term effects are important to research for educators and hospital stakeholders to understand the significance of nurse residency programs. Trepanier et al. (2012), suggested furthering research to determine if and how the economy had an impact on turnover and retention. Further, a more thorough evaluation of effective intervention components would be helpful in determining the impact of the components on the retention rate.

### **Chapter Summary**

While there were gaps and limitations from reviewing the data, the research leads to a recommendation of translation to practice. Incorporating the statistically significant components

of a nurse residency program can lead to increased retention rates of new graduate nurses. Further research is necessary to evaluate more components of residency programs.

### **Project Summary**

The cost-effective strategy to increase retention rates is through implementing a nurse residency program as the program provides additional education and support within the first year. Creating nurse residency programs with didactic and clinical learning methods with mentors and preceptors creates successful nurse residents. A nurse residency program with a longer duration can have a positive effect on retention rates. A more thorough evaluation of effective intervention components in a standardized nurse residency program would be helpful to determine the impact of specific components on the retention rates of new graduates in nurse residency programs.

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## Appendix A

### Evidence Summary Matrix

**Student Name: Jennifer Wagner**

**Key:**

- **Article #** - Assign a number to each piece of reviewed evidence. Provides an easy way to organize articles.
- **Author, Publication Source, and Date** – Indicate the last name of the first author, and the evidence source, date of publication.
- **Evidence Type** – Indicate the type of evidence reviewed. Examples: Original research study (quantitative or qualitative); Systematic review; Literature review; Clinical practice guidelines; Expert opinion article
- **Purpose** – State the purpose of the piece of evidence
- **Sample Type/Size/Setting** – Only applicable to Level I, II, III, and Level V quality improvement, financial or program evaluation evidence. Provides a quick view of the population, number of participants, and where the study took place.
- **Study Findings** – Indicate study findings – focus on those findings that are most pertinent to answering the PICO(T) question.
- **Limitations** – include a critical appraisal of the piece of evidence that may or may not have been indicated in the article. For example – for a quantitative study – note presence of threats to internal and external validity; for a qualitative study – note presence of trustworthiness, credibility, fittingness, auditability, and transferability. Refer to non-research appraisal tool in the JHEBP toolkit for non-research evidence.
- **Evidence Level and Quality** – Refer to the JHEBP Levels and Quality of Evidence tools in Dang and Dearholt (2018).

**PICO(T) Question:** In new graduate nurses working in acute care during their first two years of employment, how does participation in a nurse residency program compared to no participation in a nurse residency program influence retention rates of new graduate nurses after the first two years of employment?

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
1	Fiedler, Journal of Continuing Education in Nursing, 2014.	Type: Quasi experimental, descriptive (quantitative); Purpose: To determine the influence of a nurse residency program on long term outcomes including turnover rates, career satisfaction and	Type: Voluntary sampling; Size and setting: 51 nurses with BSN/MSN who were part of the nurse residency program over 2 years at an academic medical institution	Peer support and development were most important to job satisfaction. After the yearlong program, turnover rates were lower than national average.	The main identified threats to internal validity and external validity were selection bias and selection effects respectively. Participation in the study was voluntary and was restricted to nurses who checked their email and took the time to respond to the email. Some nurse residents did not have access to the survey due to being	II	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
		leadership development			on maternity leave or having a recent name change. There was no power analysis was conducted to ensure effective sample size. Maturation and reactive effects in relation to nursing skill development and to increasing responsibility and development in the professional nurse role over time such as charge nurse duties.		
2	Trepanier, Nursing Economics, 2012	Type: retrospective quantitative, descriptive study Purpose: To examine the effect of a residency program on turnover and contract labor costs	Sample Type: Convenience sampling Size and setting: 524 nurses from 15 hospitals throughout California, Georgia, Florida, Nebraska, Missouri, Texas and Tennessee	The turnover rate at 12 months went from 36% to 6.41%. Contract labor went from \$19,099 to \$5,490 when the residency program was implemented.	Since the sample was a retrospective sample of convenience elicited from database sources without any indication of a power analysis to determine sample size, the threat to internal validity of selection bias and the threat to external validity of selection effects were present. The threat to internal validity of history and the threat to external validity of reactive effects was evident related to the economic situation during the time in	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
					which the study was conducted.		
3	Church, The Journal of Continuing Education in Nursing, 2018	Type: quantitative retrospective correlational approach Purpose: determine how autonomy, competence, cohesion, structural empowerment, and job satisfaction effected turnover among newly licenses registered nurses	Sample type: voluntary sample size and setting: secondary data from Versant New Graduate Nurse Residency was analyzed from 1,498 newly licensed Registered Nurses from a cohort of 1,573 newly licensed Resisted Nurses in acute care hospitals in the United States	Higher levels of structural empowerment, job satisfaction and competence, commitment and autonomy and moderate levels and a low level of group cohesion were seen. Autonomy and competence did not predict commitment. Group cohesion, job satisfaction, and structural empowerment affect commitment level showing these concepts are important to incorporate in nurse residency programs to have positive outcomes on retention rates of nurse residents	Due to using data from Versant nurse residencies, the generalizability of findings is limited to nurse residency programs of the Versant nurse residencies group. Lack of generalizability is an external threat to validity. Selection bias is an internal threat to validity and present due to needing a study a specific sample. The instruments used, led to limitations of the study since the data used was from a secondary source and did not provide details of the instruments' validity (internal threat of	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
					instrumentation; external threat of selection effects).		
4	Van Patten, Nurse Education in Practice, 2019	Type: Quantitative descriptive analysis of data using a cross sectional survey design Purpose: To examine the relationship of factors to enhance nurse residency experiences.	Sample type: convenience sampling Sample and setting: 1,078 graduate (894 females and 171 males) nurses who completed the Versant RN Residency program	Higher residency ratings were related to quality preceptor and debriefing experiences. There was no reduced stress due to mentorship. Debriefing enhanced skills and build confidence.	Convenience sampling which is a threat to internal validity. The sample was based on who completed a particular nurse residency program and chose to respond to the survey. The data from the study came from one particular nurse residency program; thus, generalizability must be considered as a threat to external validity. Since the results were derived from one questionnaire from one type of residency program, the results cannot be generalizable.	II	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
					Specific results of the open-ended questions were not report and validity of the instruments were not discussed.		
5	Goode, The Journal of Nursing Administration, 2013	Type: longitudinal, Quantitative study Purpose: To study outcomes from a post-baccalaureate new graduate nurse residency program.	Sample type: voluntary Size and setting: 31,000 nurse residents across 100 hospitals in the United States over 10 years	The post nurse residency retention rates at 1 years were 88% and at 10 years 94.6%. Nurse residency programs improved confidence in leadership, organization, communication, and providing safe patient care.	Participation was limited, leading to the elimination of a control group. The lack of participation overtime from the nurse residents indicates the internal threat to validity of mortality and external threat of reactive effects. The analysis of results at the end of the program was based on 40% participation as opposed to 85% participation present at the beginning of the study. Also, there was no pre-nurse residency program retention data for	III	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
					<p>comparison. The threat to internal validity of selection bias and external threat to validity of selection effects were present because participation in the study was voluntary. No power analysis was performed to determine appropriate sample size for the study. Since the study occurred over 10 years, maturation also was a threat to internal validity of the study. Although Cronbach's alpha findings for the CFGNES and the GNRPE were strong at 0.89 and 0.86 respectively, instrument validity was not reported indicating the</p>		

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
					internal threat of validity of instrumentation and the external threat of validity of measurement effects.		
6	Brook, International Journal of Nursing Studies, 2019	Evidence type: Systematic review Purpose: To evaluate characteristics of successful interventions to increase retention and decrease turnover in newly registered nurses.	Sample type: Convenience sampling Size and setting: 53 studies (52 quasi experimental studies and 1 randomized control study); Participants in the studies ranged from a sample size of 3-6,000 new nurses; 16 programs had a duration of 4-26 weeks; 22 studies had a duration of 27-52 weeks	13 studies showed a decrease of 14% with a preceptor. Retention rates increased by 23% with a preceptor in 9 studies. Turnover rates decreased by 14% with a mentor in 7 studies.	Selection bias, a threat to internal validity, was present as the inclusion of pieces of evidence were based on outcomes. There was no presentation of a critical appraisal of individual studies presented in the systematic review. The external threat of selection effects makes generalizability somewhat limited.	Level II	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
7	Cochran, Medical Surgical Nursing, 2017	<p>Type: Literature Review</p> <p>Purpose: determine the effectiveness of nurse residency programs in reducing retention rate and to identify the best practice for nurse residency programs</p>	<p>Sample type: Convenience</p> <p>Size and Setting: 22 research articles with varied settings and sample sizes</p>	<p>Incivility was found to be a major reason for nurse turnover due as incivility relates to job stress, distraction and physiological distress</p> <p>Lower levels of anxiety occurred when nurse residents worked in healthy work environments.</p> <p>Nurse residency programs lead to increased retention rates, decrease turnover costs, and increases critical thinking skills</p>	<p>Expertise seems to be credible, definitive conclusions were drawn, and logical argument was provided.</p> <p>Credibility is evident through triangulation. Clear collection methods lead to the presence of auditability.</p> <p>However, clear analyzing methods were not present.</p> <p>Cochrane mentioned the use of Critical Appraisal Skills Programme tools used to critical analyze the articles that were used but did not provide additional information on the tools. The fittingness of the study is present, as the results can be</p>	V	B

Article #	Author, Publication Source, & Date of Publication	Evidence Type and Purpose	Sample Type, Size, Setting	Study Findings	Limitations	Evidence Level	Quality Rating
					useful outside the study. Data saturation was addressed by inclusion and exclusion criteria.		

\* From: Dang, D., & Dearholt, S. L. (2018). *Johns Hopkins evidence-based practice: Model and guidelines* (3rd ed.). Indianapolis, IN: Sigma Theta Tau.

## Appendix B

### Synthesis and Recommendations Tool

**EBP Question:** In new graduate nurses working in acute care during their first year of employment, how does participation in a nurse residency program compared to no participation in a nurse residency program influence retention rates of new graduate nurses after the first year of employment?

Category (Level)	Total # Sources	Overall Quality Rating	Synthesis of Findings Evidence That Answers the EBP Question
<b>LEVEL I</b> <ul style="list-style-type: none"> <li>• Experimental Study</li> <li>• Randomized controlled trial (RCT) Systematic Review of RCTs with or without meta-analysis</li> </ul>	<b>0</b>	<b>N/A</b>	<b>N/A</b>
<b>LEVEL II</b> <ul style="list-style-type: none"> <li>• Quasi-experimental studies</li> <li>• Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis</li> </ul>	<b>3</b>	<b>B</b>	<p><b>Fiedler et al. (2014)</b> After the yearlong program, turnover rates were lower than national average</p> <p><b>Van Patten &amp; Bartone (2019)</b> Higher residency ratings were related to quality preceptor and debriefing experiences</p> <p><b>Brook et al. (2019)</b> 14% turnover rate decrease when a nurse resident had a mentor; retention rates increased by 23% with a preceptor</p>
<b>LEVEL III</b> <ul style="list-style-type: none"> <li>• Non-experimental study</li> <li>• Systematic review of a combination of RCTs, quasi-experimental, and non-experimental studies, or non-experimental studies only, with or without meta-analysis</li> <li>• Qualitative study or systematic review of qualitative studies with or without meta-analysis</li> </ul>	<b>3</b>	<b>B</b>	<p><b>Trepanier et al. (2012)</b> The turnover rate at 12 months went from 36% to 6.41%.</p> <p><b>Church et al. (2018)</b> Group cohesion, job satisfaction and structural empowerment affect commitment level showing these concepts are important to incorporate in nurse residency programs to have positive outcomes on retention rates of nurse residents</p> <p><b>Goode et. al. (2013)</b> The post nurse residency retention rates at 1 year were 88% and at 10 years 94.6%.</p>

<p><b>LEVEL IV</b></p> <ul style="list-style-type: none"> <li>Opinion of respected authorities and/or reports of nationally recognized expert committee based on scientific evidence.</li> </ul>	<b>0</b>	<b>N/A</b>	<b>N/A</b>
<p><b>LEVEL V</b></p> <ul style="list-style-type: none"> <li>Evidence obtained from literature reviews, quality improvement, program evaluation, financial evaluation, or case reports</li> <li>Opinion of nationally recognized expert(s) based on experiential evidence</li> </ul>	<b>1</b>	<b>B</b>	<p><b>Cochran, 2017</b> -nurse residency programs lead to increased retention rates, decreased turnover costs and increased critical thinking skills.</p>

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