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The Effect of a New Graduate Registered Nurse Residency Program on Retention

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The Effect of a New Graduate Registered Nurse Residency Program on Retention

by

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Abstract

New graduate registered nurse residency programs are being adopted as best practice by many organizations. The purpose of this thesis was to evaluate the effectiveness of two different types of programs implemented at an organization to see which produced the largest amount of retention. One group was hired directly into a nursing unit or area where orientation began. Another group was hired into a practice area and rotated through three different areas prior to being matched to a unit or area and then completing orientation. Dr. Patricia Benner's Novice to Expert Framework was used to guide this study because successful residency programs should expound onto the new graduate registered nurses educational base and should offer a variety of experiences to assist with moving towards the stage of expert nurse. Retention data was collected retrospectively and included 12 months of retention data for the two cohort groups being compared. Comparison of this data showed a 4.5% increase in retention from one to another. Further comparison of this data showed that the difference in length of service at 12 months between these two cohort groups was not statistically significant (p=.285). Further comparisons of independent hospitals and practice areas also showed no statistically significant differences in overall length of service at 12 months.

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Acknowledgement

First, I would like to thank my wonderful husband for being so loving and supportive during this process. I could not have made it without him! I would also like to thank Dr. Candice Rome and Dr. Vallire Hooper for all of their help and guidance.

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CHAPTER I

Introduction

Nurse staffing shortages across the country are forcing organizations to examine the rate of turnover. Nurse residency programs may be the key to lower turnover rates in the registered nurse (RN) who has less than a year of experience. The Institute of Medicine (IOM) (2010) recommends that organizations develop nurse residency programs to support new registered nurses as they transition into their new role. The IOM also recommends that organizations evaluate these nurse residency programs to determine their impact on retention and patient outcomes (Institute of Medicine, 2010).

Purpose

According to the 2016 National Healthcare Retention & RN Staffing Report, the average cost of turnover for a nurse ranges from $37,700 to $58,400 (Nursing Solutions, Inc., 2016). RN first year turnover rates are 29.1% (Nursing Solutions, Inc., 2016). Turnover and low job satisfaction have been linked with role stress related to a lack of clinical time, skill deficiency, and lack of confidence, all of which can be improved by a nurse residency program (Crimlisk, 2017).

With this very costly problem looming over organizations, nurse residency programs should be examined to see if they are structured in a way so that turnover rates are decreased. The purpose of this MSN thesis was to explore two different models of residency programs implemented at an acute care tertiary hospital system and determine which model has had the greatest success with retaining nurses.

Conceptual Framework

Dr. Patricia Benner's Novice to Expert Framework (Figure 1) was used to guide this study. Dr. Patricia Benner developed a model for stages of clinical competence. The five stages are novice, advanced beginner, competent, proficient, and expert (Benner, 1984). Nurses go through these different levels by developing skills and understanding of patient care over time through a sound educational base as well as a multitude of experiences (Benner, 1984). Residency programs should expound onto the new graduate RN's educational base and should offer a variety of experiences to assist with moving through the stages. An organization's ability to provide these educational opportunities and experiences can be measured by the rate of new graduate turnover.

The transition from novice to expert occurs from experience in the clinical setting because it allows a nurse to continuously expand their knowledge base and to provide holistic, competent care to the patient (Benner, 1984). The new graduate often starts out in the advanced beginner stage. They have some prior experience in actual situations, and knowledge is continuing to develop (Benner, 1984). Residency programs should be developed to help the new graduate transition from the advanced beginner stage to the competent stage. This transition is essential to the success of the new graduate. Without this transition, the new graduate may lack competence and confidence to continue employment.
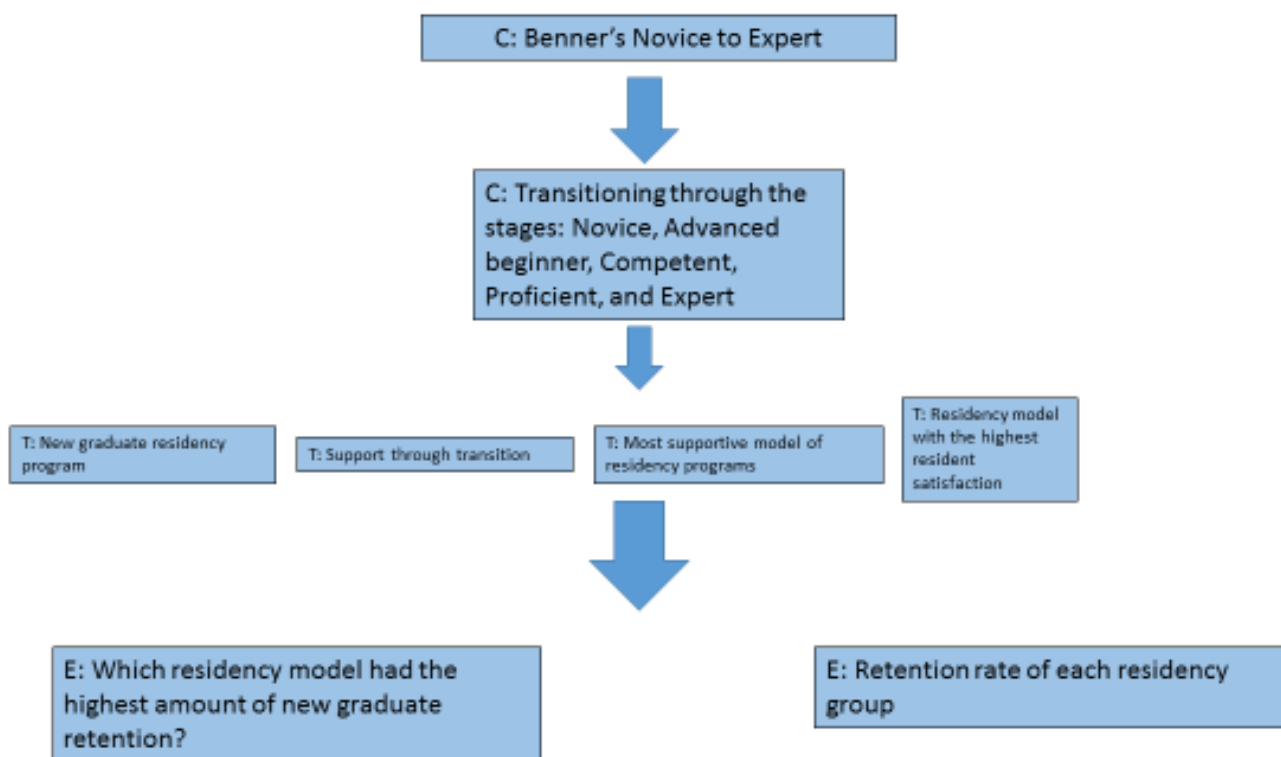
Figure 1. Conceptual – Theoretical- Empirical Diagram (CTE)

Summary

The conceptual framework used for this study was Benner's Novice to Expert Theory. This theory states that the nurse transitions through the stages from novice, advanced beginner, competent, proficient, to expert. The theoretical framework of this study examines how nurse residency programs assists new graduate RNs through these phases by offering support. This study examined which of two delivery models was the most supportive. This support will increase satisfaction, and therefore increase retention. The question "Which model has the highest retention rate?" was asked and individual cohort retention rates were examined.

Chapter II

Literature Review

Introduction

The purpose of this MSN thesis was to compare participant attrition rates between two different new graduate residency program models implemented in a hospital system. Dr. Patricia Benner's Novice to Expert Framework was used to guide this study. As hospital costs increase, it is important to examine programs that affect retention.

Literature Related to the Statement of Purpose

A review of the literature was conducted using Cumulative Index to Nursing and Allied Health (CINAHL), Medline, and Up-to-Date databases. Keywords utilized in the search included residency programs, new graduate, and retention.

Nurse Residency Programs and Retention

Little, Ditmer, and Bashaw (2013) examined two different residency models and compared many aspects from both models. They looked at two different organizations and compared their residency models as well as retention rates for new graduate nurses. Organization A spent 1-2 weeks in general orientation, and then they spent 5-12 weeks on nursing unit orientation, depending on the unit. The residents then spent the next 12 months in monthly four-hour class that focused on managing resources, professional growth, and patient outcomes. Total orientation hours ranged from 280 to 532. Organization B spent 52 hours in general orientation, and then spent 12-20 weeks in nursing unit location, depending on the unit. The nursing unit orientation weeks were broken up into 32 hours on the unit, and eight hours in class each week. Total program orientation hours' ranges from 538 to 794. Organization A had an overall nurse resident

retention rate of 97.8 % (n=138) over two years. Organization B had an overall nurse resident retention rate of 97.05% (n=34) over two years. Both programs had higher retention rates than the overall nursing retention rates at their organizations.

Beyea, Slattery, and Reyn (2010) studied the outcomes of a nurse residency program that included simulation. The residency program's goals were to implement a standardized approach to teaching, reduce turnover, increase the quality of nursing applicants, decrease the cost of the program, create a learning experienced focused on experiential learning, and assist the residents with developing skills to provide high quality, safe patient care. The study looked at four cohorts of residents that included 260 participants. The program included four program tracts: medical-surgical, pediatrics, adult critical care, and neonatal critical care. Each tract then had an orientation plan that included clinical site orientation and simulator-based orientation. The medical-surgical tract, for example, included 82 hours of lecture, 40 hours of hands on simulation based exercises, and 358 hours of clinical experience with a preceptor. Success of the program was measured using a three-item global confidence, competence, and readiness for independent practice measurement instrument administered on week 1 and week 10 of orientation. Nurse residents were also asked to complete a weekly confidence and competence rating tool. Residents were also asked to complete a 53 item self-assessment scale. Reliability of this test was established with a Cronbach's alpha of .97 at baseline and .98 at 10 weeks. Based on a paired t-test, there was improvement (p<.001) from baseline to completion of the program. Turnover improved from 17% to 9.2% after the program was implemented. Preceptors reported that residents had more competence and

confidence overall than prior to the program. The use of human patient simulation was a powerful and effective strategy in the nurse residency program.

Goode, Lynn, McElroy, Bednash, and Murray (2013) looked retrospectively at 10 years of research on a post-baccalaureate nurse residency program. The nurse residency program curriculum was composed of three core areas of content, including leadership, patient safety and outcomes, and professional role. From 2002 to 2012, six hospitals in the system began the nurse residency program and have over 31,000 graduates. Program evaluation morphed over time, but the standard evaluation tools used were the Casey-Fink Graduate Nurse Experience survey and the Graduate Nurse Residency Program Evaluation (GNRPE). Quantitative scoring of the Casey-Fink survey comes from summing items and has a reliability estimate (Cronbach a) of .89. Residents' perception of confidence and competence showed statistically significant increases over the one-year residency period. Retention rates increased from 88% to 94.6% overall. Residents rated the program, faculty, goals, and topics in a very positive manner.

Crimlisk (2017) studied residency models and retention rates from a large cohort of new graduates. The residency program followed an educational model consistent with the Nurse Transition Best Practices special report on nurse residency programs, and included lecture (34%), simulation (7%), and technical skills (34%). Clinical orientation began on a unit different from the hiring unit and lasted one month. This orientation was five days per week. After this one month, the clinical orientation then continued onto the new graduates hiring unit. One year retention rates for the hired group of RNs accepted into the program (n=46) was 91% (n=41). The program was also evaluated using a survey sent out to the nurse residents at six months and one year. Of 45 respondents,

93% (n=42) indicated that a five day per week clinical orientation was beneficial and helped them to integrate into the hospital community. Recommendations of this study were to consider this framework when hiring a large influx of new graduate RNs into multiple clinical sites.

Welding (2011) studied the success of a nurse residency program implemented at a western Pennsylvania health system. This program began with training geared at the preceptors and nurse managers which consisted of six 1-day intensive leadership development activities offered over a nine month period of time. The new graduate spent one week in general hospital orientation and one week in arrhythmia training. If graduates were hired into critical care, they then took a week long critical care course. After basic hospital orientation ended, each graduate started a year-long clinical orientation with the chosen preceptor. Evaluation of the program was then determined by the reduction of attrition rates and an online survey completed by the nurse residents and nurse managers. Turnover was decreased from 15% to 10 % within the first year of creation, with continued program evaluation ongoing. The author predicted that it may take a few years of implementation to review the full benefit of the program.

Bratt (2009) looked at a nurse residency program started in Wisconsin that offered educational and psychosocial support for the newly licensed registered nurse. These supportive elements lasted for 15 months after hire. Elements included specialized preceptor training, monthly educational sessions for the new graduate, and continued mentoring by clinical coaches. Monthly all day educational sessions were designed to engage the nurse resident and promote critical thinking. During these learning sessions, active learning strategies were implemented, including the use of a high-fidelity human

patient simulation. Clinical coaches followed the nurse resident closely from month six to 12 with regular check-ins. Preceptor training was a formalized two day work shop that was geared towards empowering the preceptor as a professional role model, socializer, learning facilitator, and evaluator. Retention for the program at one year following program completion was 90%. Two year retention rates were 83%. Some of the hospitals in this system had prior retention rates of 50%, so this represented a vast improvement.

Pine and Tart (2007) examined the benefits and challenges of a baccalaureate nurse residency program. Methodist Hospital was facing a 50% turnover rate of new graduate registered nurses when they decided to implement a nurse residency program. This program was designed to address issues of competency, as well as navigation of the hospitals organizational structures. The program was built to address many issues including clinical judgement, decision making, leadership, professional commitment, individual development, and evidence based practice. These topics were covered in four hour educational sessions that occurring monthly. Unit orientation consisted of specialized classes and clinical orientation. This orientation ranged from six weeks to six months depending on the unit. Turnover rates dropped to 13% in one year of program implementation. This was an estimated cost savings of $823,680.

Trepanier, Early, Ilrich, and Cherry (2012) studied the cost-benefit analysis of a new graduate residency program based on turnover and contract labor usage. This information was accessed through secondary data analysis of extant data collected by a national provider of a new graduate nurse residency program and a multi-site health care corporation in the southwest United States. This healthcare operative owns 49 acute care

hospitals across the nation. The health care corporation contracted to offer its nurse

residency program in 15 of the community based hospitals. The health care system

Accounting and Human Resources databases were accessed electronically and had actual

contract labor dollars per hospital and per department. The residency company's

databases were also accessed and provided de-identified facility level data on age,

gender, highest degree, ethnicity, and turnover up to 24-months post-residency. The 12-

month turnover went from 36.8% pre-residency to 6.41% post residency. The annual

contract dollars per average daily census went from $19,099 pre-residency to $5490 post-

residency. In conclusion, facilities should consider nurse residency programs as having a

large impact on the economic status and should work towards improving them.

Friedman, Delaney, Schmidt, Quinn, and Macyk (2013) studied the effects of a

specialized pediatric orientation program on retention of new graduate RNs and the net

cost of the orientation program. The study was a retrospective descriptive evaluation

where retention was compared between two groups of graduate RNs in the critical care

units of Cohen Children's Medical Center. The samples were convenience samples of

new graduates hired prior to the implementation of the specialized program and new

graduates hired after the implementation of the program. The retention of both groups

were measured using data retrieved from reports generated from the hospitals Human

Resources department. Retention was measured at 3, 6, 9, and 12 months. The sample

consisted of 77 new graduate RNs. Retention rates were 82% prior to program

implementation and 94% after program implementation. The difference between groups

was significant: $p=0.05$, f (-1.97), df (75). Specialized orientation programs can offer

support and increased satisfaction to the new graduate, which will increase retention rates.

Silvestre, Ulrich, Johnson, Spector, and Blegen (2017) studied the return on investment that a multisite new graduate RN transition to practice program generated. Transition to practice programs are considered an evidence based way to increase retention in new graduate RN residency programs. This model is costly and some are worried that that implementation will not result in a return on investment. This was a comparison study using a randomized, controlled, multisite design. Data were analyzed on 1,032 new graduate RNs from 70 different hospitals. Chi-square analysis was used to analyze the differences in turnover and turnover characteristics between the two groups. The transition to practice group was made up of 734 new graduate RNs and the limited control group was made up of 298 new graduate RNs. Overall, 81.2% of the new graduates were still at the hospitals at the end of the first year. The transition to practice group had an 84.5% retention rate and the limited control group had a 73.7% retention rate. The total cost per new graduate was $3185 in the transition to practice group, which added up to be $1,458 for each new graduate retained. Taking into account the replacement cost of each new graduate, the overall cost for each new graduate retained would be $11,173. Transition to practice programs can increase retention and save organizations a substantial amount of money.

Nurse Residency Program Design

A study conducted by Adams et al. (2015) looked at 34 new graduate nurses who had participated in a critical care nurse residency program. The participants of the study included 34 new graduate nurses, 18 preceptors, five clinical nurse specialists, and five

nursing directors. Twelve different focus groups were held, and two independent reviewers analyzed recordings and transcripts of the focus groups to identify themes. The reviewers identified five themes including program design, future expectations, developing nurse expertise, program impact on the unit, and communication. The key concern was the resident not having an identified dedicated nurse preceptor. Changing preceptors each week made the resident feel like they had to start over on different parts of orientation. The conclusion of this study was that structural input from multiple program stakeholders is beneficial in evaluating a residency program's impact and can also be used as a way to identify areas of improvement.

McCalla-Graham and De Gagne (2015) conducted a phenomenological study to explore the lived experiences of new graduate nurses employed in an acute care setting. Ten participants who were traditional students in a baccalaureate nursing program were selected through purposeful and snowball sampling. They were interviewed with open ended questions and using Colaizzi's classic phenomenological method of data analysis and NVivo 10 software they found that there were three themes that emerged. Knowledge, skills, and environment were themes that were interpreted from the new graduates lived experiences. The new graduate expressed the need to have the worst case scenarios present themselves in orientation and as part of their clinical rotation. They wished that they had learned more skills related to time management, prioritization, customer service, and assessing resources. They found that nurses were often too overwhelmed with patient assignments to adequately train them. Recommendations from this study included the implementation of innovative initiatives that address the new graduate's experience which will ultimately increase retention.

Molinari, Monserud, and Hudzinski (2007) studied the Rural Nurse Internship, which is a collaborative educational program that allows new nurse residents in rural areas to have access to distance education technologies. This allowed them to complete training at their own facility with the experts around them, but also allowed them to have the resources and support from a nurse residency program. Graduates of this program received 203 continuing education hour, a certificate, and a letter for their personnel file. The program provides many types of support including monthly seminars, weekly case studies, preceptor training, and a weeklong new resident training. All 26 nurse residents (n=26) were still employed at their respective facilities at one year, which met the retention goal for the Rural Nurse Internship program. This program supported that distance education can be used as a model for nurse residency programs. These programs need to be flexible, ensure local control, provide social support, and provide just-in-time education and information.

Agosto (2017) studied a pilot program which hired nurse residents into a central staffing office critical care program. This program was designed to build up nurses who have core critical care skills and can migrate between the demanding settings of different ICUs. Each nurse resident was assigned to one of the ICUs and the orientation was tailored to that unit. These rotations were four weeks long and then the resident rotated through a different ICU for a total of 13 preceptor weeks. Once off of orientation they were assigned to three ICUs in eight week cycles. Twenty-seven nurse residents have been hired into the central staffing ICU model and an estimated cost savings of $40,000 was expected with the elimination of overtime alone. Other metrics that will be followed with this program include safety events, preceptor assignments, and the satisfaction

scores of the nurse residents. Flexible staffing is an economic necessity for hospitals in today's changing medical models. Creating training methodologies that help nurse residents learn in challenging and diverse professional opportunities can help organizations on many different levels.

Dyess and Sherman (2009) studied the first year of practice and the new graduate nurses' transition and learning needs. The Novice Nurse Leadership Institute (NNLI) was developed to assist with the transition of new nurses into the role, and was not meant to replace unit orientation. The institute provided education that would build on the learning that occurred in the clinical setting. The first three classes of the NNLI included 81 participants, who all had less than 12 months experience in the field. To better understand the needs of the new graduate, a qualitative research study was conducted and involved pre- and post- program focus groups. The focus groups were asked semi structured questions, and the sessions were videotaped and later transcribed. Seven key themes emerged from the groups. The themes were: confidence and fear, less than ideal communication, experiencing horizontal violence, perception of professional isolation, complex units requiring critical decision making, and contradictory information. Recommendations from the study were for nursing educators to design programs that contain curriculum content that gives new graduates the tools to handle these common themes. Other recommendations included administrators and educators to advocate for consistent preceptors and extended orientation of the new graduate RN.

Guthrie, Tyrna, and Giannuzzi (2013) studied the transitional model of orientation as being a cost effective alternative to traditional RN residency programs. The transitional residency model was designed to help increase RN residency retention.

Changes were made to internship education, orientation time, clinical precepting, and development strategies. Transitional units were identified that the new graduate RNs would be hired into. These units limited patient ratios to 1 to 4 and made sure that a clinical coach was available for each new graduate who was precepting. The orientee and the coach were responsible for a patient assignment. Two intern development specialists were hired to ensure the success of the program. These specialist worked with the preceptor and orientee to create individualized orientation plans. Data analysis showed that retention rates for inexperienced nurses went from 38 to 72%. A total of 146 new graduate RNs were hired into this program (n=146). The transitional model decreased orientation time by 69 cumulative weeks. This model will continue to be used and developed at this facility.

Goode, Krsek, Bednash, and Jannetti (2009) studied some of the essential elements that a residency program must have to be effective. They looked at the outcomes of 655 residents hired into a post-baccalaureate residency program. Four instruments were used to measure the outcomes from this one-year residency program: The Casey-Fink Graduate Nurse Experience Survey (α=0.89), the Gerber Control over Nursing Practice Scale (CONP) (α= 0.96), the McCloskey Mueller RN Job Satisfaction Scale (MMSS) (α= 0.82), and a Program Evaluation Scale developed by the research team. All reliability estimates used Cronbach's alpha. The nursing residents showed statistically significant improvements in confidence and communication abilities throughout the transition. They also showed a decrease in overall satisfaction around the six month mark, with a rebound occurring around one year. Turnover rates continued to decline to around 9%. The components and support of a residency program can

determine the success of the program. Constant evaluation and modifications is critical in the overall success of a residency program.

Lee, Coakley, Dahlin, and Carleton (2009) studied a nurse residency program designed to address the needs of the aging population with a geropalliative care component. Massachusetts General Hospital developed a RN residency program based on transitioning to geriatric and palliative care. The program provides new RNs opportunities to learn and apply current, evidence-based geriatric and palliative nursing knowledge with a combination of didactic teaching and clinical experience. Evaluation was completed by class evaluations, focus groups, informal discussions, online surveys, and formal research instruments. They found with this formative evaluation that the developments a RN residency program is an effective way of engaging and developing practicing nurses, no matter where they are on their career path. A program of this nature can help meet the needs of the aging population.

Chesnut and Everhart (2007) studied ways to meet the needs of new graduate nurses in a critical care setting. The University of Colorado Hospital assessed the critical care orientation in the surgical intensive care unit to determine if the needs of graduate nurses were being met. The need to improve traditional orientation led to the development of a unit specific staged orientation program to help better prepare the graduate nurse for the critical care setting. The goal was to better prepare graduate nurses for safe and competent practice but also to ensure that they had a solid understanding of and competence in basic critical care concepts. The six-month clinical orientation was divided into five defined segments or stages that ranged from two to six weeks. The stages also delegated the type of patient assignment the orientee would have and which

nursing concepts they would focus their attention on. Four didactic modules were also developed as classroom adjuncts to this plan. Direct verification of clinical competence ensured that the new graduate was ready to progress. They had 14 graduate nurses complete the staged program. Three of these nurses did not pass stage three on the first attempt. Two continued on to pass this stage, but the third transferred to a non-ICU setting. Feedback from the graduates indicated that they felt confident in their clinical practice. The program overall was a success and other ICUs in the medical system are considering implementing similar programs.

Jones et al. (2017) studied the development of an aggressive new graduate residency program to promote the opportunity for new nurses to tap into the knowledge and wisdom offered by retiring nurses. The Swedish Medical Center in Seattle, WA identified that more than half of their RN workforce would retire within 10 years. They determined that they would need a very aggressive approach to build a new graduate residency program that would help offset these workforce numbers. The program was structured so that orientation took place over 12 weeks and consisted of weekly precepted clinical orientation experiences. Active training occurred through online self-paced modules, and simulation experience were conducted six times during the 12 week period. Weekly debriefing sessions took place with the entire cohort to promote bonding. The medical center demonstrated financial return on their investment into this program. Data was analyzed to find a cost savings of $2.5 million within the first year of the program. Other outcomes to note involved patient safety improvements. Rapid response calls increased dramatically, but incidence of codes outside of the ICU dropped to almost zero. RN residency simulations were thought to attribute to these changing values.

Strengths and Weakness of the Literature

One weakness that the researcher found within this literature review was that there was not a lot of description of unit based orientation activities. Most of the available research focused on the implementation of residency programs, and did not focus on the unit orientation process. A strength to the literature review was that there was a great deal of literature related to residency programs, program evaluation, and retention.

Summary

The literature review conducted contained a surplus of data and information related to new graduate RN residency programs and retention. There was a summary of each program that gave many details about the program and the professional development activities that each program had included. Each program produced an increase in retention compared to not having a residency program at all.

CHAPTER III

Methodology

Introduction

The purpose of this study was to compare attrition rates of two different new graduate residency program models implemented in a hospital system to determine which had the largest rate of retention after one year of employment. Dr. Benner's Novice to Expert Framework was used to guide this study. A literature review revealed that institutions who have implemented nurse residency programs show an increase in retention. As healthcare cost increase, it is essential for these institutions to complete program evaluations.

Methodology

In this study, the researcher compared attrition rates of two different nurse residency programs implemented at a hospital system. The differences in the programs occurred during the orientation period. One program hired nurse residents directly onto a nursing unit, while the other program hired nurse residents into a categorical pool. The nurse residents then rotated to three different units within these pools before they were placed into a permanent unit. The researcher examined and compared retention data one year after implementation of each program to see which produced the greatest retention.

Implementation

This study was a retroactive review of retention rates one year after residency program implementation at this hospital system. Nurse residency retention data is currently collected and maintained by the new graduate residency coordinator at this facility.

Setting

The setting for this research was an acute care tertiary hospital with over 700 beds. The hospital is a regional referral system and is a level two trauma center located in the southeastern United States. The nurse residency programs selected for this research started at this medical system in July of 2015 and in July of 2016. The July 2015 new graduate residency cohort participants were hired directly onto the unit that they would be working on after orientation. The July 2016 new graduate residency cohort participants were hired into different categorical pools including medical surgical, progressive care, intensive care, emergency department, and women's and children's and then rotated through different areas within that pool. They were then hired into one of the areas they had rotated through after 12 weeks of rotation.

Sample

The sample was hires from the 2015 July new gradate nurse residency cohort (n=78), and from the 2016 July new nurse residency cohort (n=96). The sample included new graduate registered nurses holding either an Associate's or Bachelor's degree in nursing. An inclusion criterion was those that were hired directly into these two different cohorts. Exclusion criteria were those who were hired outside of these cohorts, for example in the months before and after July 2015 and July 2016.

Design

Data was collected retrospectively, utilizing the files maintained by the new graduate residency coordinator. The new graduate residency coordinator provided de-identified retention data via an excel spreadsheet to the researcher. This data included only those individuals who were included in the July 2015 and July 2016 new graduate

cohorts. This data was free from any identifying properties other than the unit of hire and the number of months of retention. Statistical analysis was completed using descriptive statistics and a t-test.

Protection of Human Subjects

Institutional Review Board approval was obtained from the hospital system and the University. Residency participant's personal information was protected and no identifying information was provided to the researcher.

Data Analysis

Data was entered into an Excel spreadsheet and Statistical Package for the Social Sciences (SPSS) 24 by the researcher. Each group was compared to see which group had the highest rate of retention after one year of employment. This assessment occurred by the researcher in the form of comparing percentages of retention rates as well as participant length of service in months. The researcher ran independent t-tests and ANOVA when completing data analysis.

Summary

Data was collected retrospectively using de-identified data provided by the new graduate residency coordinator. This data included retention data from the July 2015 and July 2016 new graduate registered nurse cohorts. Institutional Review Board approval was obtained. Statistical analysis of the data was completed using descriptive statistics and a t-test. The two groups were analyzed to see which had the highest rate of retention.

CHAPTER IV

Results

Introduction

Program evaluation is extremely important with the changes occurring in the healthcare system. New graduate residency programs can increase retention rates and save hospital systems money. Dr. Patricia Benner's Novice to Expert Framework was used to guide this study. A literature review revealed that new graduate RN residency programs do increase retention and reduce costs. Two different residency programs implemented at a hospital system was compared to see which produced the greatest amount of retention one year after implementation.

Sample Characteristics

The sample were hires from the 2015 July new gradate nurse residency cohort (n=78), and from the 2016 July new nurse residency cohort (n=96). The sample included new graduate registered nurses holding either an Associate's or Bachelor's degree in nursing. An inclusion criterion were those that were hired directly into these two different cohorts. Exclusion criteria were those who were hired outside of these cohorts, for example in the months before and after July 2015 and July 2016. The data analyzed included one year (12 months) worth of retention data for each group. The July 2015 cohort was hired directly into their unit of hire. The July 2016 cohort rotated through three different areas within their practice area. There was a matching ceremony at the end of this 12-week rotation period where the managers and the new graduate RNs decided which area they would like to be hired into.

Major Findings

Retention data from two different new graduate residency programs was

analyzed for this thesis. In retrospective review, overall one-year retention data for each

cohort was calculated as detailed in Table 1.

Table 1

Percentage of Overall Retention at One Year

Percentage of Overall Retention at One Year	
July 2015 New Graduate RN cohort	80.8%
July 2016 New Graduate RN cohort	84.4%

Percent increase was calculated and found to be a 4.5% increase from the July

2015 group to the July 2016 group. The average number of months the residents were

employed over a 12-month period (length of service) was calculated for each group, as

listed in Table 2.

Table 2

Cohort Mean Length of Service

	Group Statistics				
	Cohort Year	N	Mean	Std. Deviation	Std. Error Mean
Length of Service	2015	78	10.92	2.691	.305
	2016	96	11.31	2.099	.214

The mean for the 2015 group was found to be 10.9 months and the mean for the 2016 group was found to be 11.3 months. An independent t-test was used to determine significance, as seen in Table 3. The differences in mean were not statistically significant (p=.285).

Table 3

Statistical Analysis of Overall Cohort Length of Service

		Independent Samples Test								
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff-erence	Std. Error Diff-erence	95% Confidence Interval of the Difference	
									Lower	Upper
Length of Service	Equal variances assumed	4.132	.044	-1.072	172	.285	-.389	.363	-1.106	.327
	Equal variances not assumed			-1.046	143.531	.298	-.389	.372	-1.126	.347

The researcher examined the mean of the number of months that residents were employed over a 12-month period in the 700 plus bed acute care tertiary hospital compared to the rural hospitals that are part of this hospital system, as detailed in Figure 2.

Statistics

Length of Service

Urban Hospital	2015	N	Valid	65
			Missing	0
		Mean		10.8
		Median		12
	2016	N	Valid	86
			Missing	0
		Mean		11.48
		Median		12
Rural Hospitals	2015	N	Valid	13
			Missing	0
		Mean		11.54
		Median		12
	2016	N	Valid	10
			Missing	0
		Mean		9.9
		Median		12

Figure 2. Descriptive Statistics Urban vs. Rural Hospital Setting Length of Service

The mean number of months employed for the 2015 cohort at the larger urban hospital was 10.8 months, compared to the 2016 cohort at 11.5 months. The mean number of months employed at the rural hospitals for the 2015 cohort was 11.5 months, compared to the 2016 cohort at 9.9 months. A t-test was performed on this data, which found no statistical significance at the urban hospital (p=.08) and no statistical significance at the rural hospitals (p=.13). (Table 4).

Table 4

Statistical Analysis Length of Service Urban vs. Rural Hospital Setting

Independent Samples Test										
			Levene's Test for Equality of Variances		t-test for Equality of Means						
										95% Confidence Interval of the Difference	
Hospital type			F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Urban	Length of Service	Equal variances assumed	11.573	.001	-1.755	149	.081	-.677	.386	-1.439	.085
		Equal variances not assumed			-1.653	101.744	.101	-.677	.409	-1.489	.135
Rural	Length of Service	Equal variances assumed	16.386	.001	1.577	21	.130	1.638	1.039	-.522	3.799
		Equal variances not assumed			1.414	10.622	.186	1.638	1.159	-.923	4.200

Cohort retention data in the form of months employed was examined from the 700 plus bed acute care tertiary hospital and broken down by practice area. Behavioral health had a mean length of service for 2015 of 12 months and a mean length of service for 2016 of 10 months. Critical care had a mean length of service for 2015 of 9.8 months and a mean length of service for 2016 of 11.7 months. The emergency department had a mean length of service for 2015 of 11.7 months and a mean length of service for 2016 of 11.5 months. Medical surgical had a mean length of service for 2015 of 10.6 months and a mean length of service for 2016 of 11.2 months. Pediatrics and the neonatal intensive care unit had a mean length of service for 2015 of 10.5 months and a mean length of service for 2016 of 12 months. Progressive care had a mean length of service for 2015 of 10.9 months and a mean length of service for 2016 of 11.9 months. Women's health had a mean length of service for 2015 of 12 months and a mean length of service for 2016 of 12 months. (Figure 3)

Statistics

Length of Service

Practice Area	Year	Statistic		Value
Behavioral Health	2015	N	Valid	2
			Missing	0
		Mean		12
		Median		12
		Mode		12
	2016	N	Valid	3
			Missing	0
		Mean		10
		Median		12
		Mode		12
Critical Care	2015	N	Valid	5
			Missing	0
		Mean		9.8
		Median		12
		Mode		12
	2016	N	Valid	10
			Missing	0
		Mean		11.7
		Median		12
		Mode		12
ED	2015	N	Valid	9
			Missing	0
		Mean		11.56
		Median		12
		Mode		12
	2016	N	Valid	6
			Missing	0
		Mean		11.5
		Median		12
		Mode		12

Practice Area	Year	Statistic		Value
Med Surg	2015	N	Valid	31
			Missing	0
		Mean		10.58
		Median		12
		Mode		12
	2016	N	Valid	39
			Missing	0
		Mean		11.21
		Median		12
		Mode		12
PEDS/NICU	2015	N	Valid	2
			Missing	0
		Mean		10.5
		Median		10.5
		Mode		9[a]
	2016	N	Valid	3
			Missing	0
		Mean		12
		Median		12
		Mode		12
Progressive Care	2015	N	Valid	15
			Missing	0
		Mean		10.93
		Median		12
		Mode		12
	2016	N	Valid	19
			Missing	0
		Mean		11.89
		Median		12
		Mode		12
Women's	2015	N	Valid	1
			Missing	0
		Mean		12
		Median		12
		Mode		12
	2016	N	Valid	6
			Missing	0
		Mean		12
		Median		12
		Mode		12

Figure 3. Descriptive Statistics by Practice Area for Length of Service

An ANOVA was performed to compare the different practice areas from the 2015 and 2016 new grad RN cohorts. All were found to have no statistical significance: Behavioral health (p=.50), critical care (p=.24), emergency department (p=.94), medical surgical (p=.35), pediatrics and neonatal intensive care unit (p=.27), and progressive care (p=.17).

Table 5

Statistical Analysis Length of Service by Practice Area

ANOVA

Length of Service

Department		Sum of Squares	df	Mean Square	F	Sig.
Behavioral Health	Between Groups	4.800	1	4.800	.600	.495
	Within Groups	24.000	3	8.000		
	Total	28.800	4			
Critical Care	Between Groups	12.033	1	12.033	1.491	.244
	Within Groups	104.900	13	8.069		
	Total	116.933	14			
ED	Between Groups	.011	1	.011	.007	.936
	Within Groups	21.722	13	1.671		
	Total	21.733	14			
Med Surg	Between Groups	6.735	1	6.735	.898	.347
	Within Groups	509.907	68	7.499		
	Total	516.643	69			
PEDS/NICU	Between Groups	2.700	1	2.700	1.800	.272
	Within Groups	4.500	3	1.500		
	Total	7.200	4			
Progressive Care	Between Groups	7.748	1	7.748	2.020	.165
	Within Groups	122.723	32	3.835		
	Total	130.471	33			
Women's Health	Between Groups	.000	1	.000	.	.
	Within Groups	.000	5	.000		
	Total	.000	6			

Summary

One year of retention data from a 700 plus bed acute care tertiary hospital and regional system new graduate RN cohorts starting in July 2015 and July 2016 were analyzed. De-identified data was entered into an Excel spreadsheet and SPSS by the researcher, and was analyzed using statistical analysis to determine significance. The components of analysis included calculations of percent increase, descriptive statistics, independent t-tests, and ANOVA. Data were analyzed by urban hospital setting and rural hospital setting groups. Data was also analyzed at the urban hospital setting by practice area.

CHAPTER V

Discussion

Introduction

The researcher compared retention rates from two different new graduate

residency cohorts implemented at a hospital system to see which produced the largest

amount of retention. Program evaluation is an important process during changing

economic times. Dr. Benner's Novice to Expert Framework was used to guide this study.

A literature review revealed that new graduate residency programs increase retention, but

did not reveal which type of orientation model produced the best results. The researcher

examined and compared retention data from two different program models using

retention percentages, independent t-testing, and ANOVA. No statistical significance

was found in the comparison to this data.

Discussion

The researcher was surprised by the findings that there was no significant

difference in the retention of two different residency programs models implemented at a

hospital system. The researcher had hypothesized that the 2016 cohort, who had rotated

through different areas and then had a choice in where they would work permanently,

would have the largest amount of satisfaction and thus the largest amount of retention.

The findings varied from this hypothesis and no statistical differences were found

between the two groups. These findings and examining implications will be useful for

the organization as they plan future residency programs.

Implications of Findings

Retention data was analyzed from a 700 plus bed acute care tertiary hospital and regional system's new graduate RN cohorts starting in July 2015 and July 2016. There was no statistical significance found between the retention of these two groups over a 12-month timeframe. Comparison of the two cohorts showed an overall 4.5% increase from the July 2015 group to the July 2016 group. Average length of service was calculated for both groups up to one year. An independent t-test was performed revealing $p=.285$, showing no statistical significance. The data were analyzed further by urban and rural settings and practice areas. All comparisons showed no statistical significance in differences.

These findings are important to note as this hospital system plans future new graduate RN residency cohorts. Although formal analysis was not completed, informal feedback from hospital leadership and cohort participants revealed that the rotating model from the 2016 cohort was time consuming for leadership, educators, and preceptors. Participants spoke of the stress that occurred with switching preceptors many times. Leadership also reported informally an increase in orientation length by two-four weeks. Some residents reported that they were not matched with their first or second choice.

Results of this study can be used by hospitals implementing or changing new graduate RN residency programs to determine which model may work best for retaining nurses at their facilities.

Application to Conceptual Framework

Dr. Patricia Benner's Novice to Expert Framework was used to guide this study. This was an appropriate framework for this study because residency programs should

expound onto the new graduate RN's educational base and should offer a variety of experiences to assist with moving towards the stage of expert nurse. An organization's ability to provide these educational opportunities and experiences and their ability to help the new graduate RN move through these stages becoming comfortable and competent in their work can be measured by rate of new graduate turnover.

Limitations

Limitations of this study included the fact that the retention data examined only contained 12 months' worth of data for each group. Further studies should be completed to examine retention data at 24 months. Other limitations included that the sample size was small when comparing certain areas. The sample size for the rural hospital comparisons, for example, was small, which may have skewed the results. There was also no formal qualitative data for each group. A comparison of overall cohort satisfaction would be important. This study was conducted in one health system with a blend of urban and rural facilities. Results may not be generalizable to other health systems.

Implications for Nursing

New graduate RN residency programs are becoming the standard for many organizations across the country. The current research shows that these programs do increase retention rates, thus saving money in these organizations. Currently, there is not one standard best model for the way that these residency programs should function. When organizations begin a residency program, they should consider what works best for their organizations. The cost of the program and the overall cost of orientation should be compared to the cost savings that the residency program offers in increased retention.

Quality of care also becomes diminished when turnover rates are high. Quality can be increased with the overall increase in confidence and competence that these programs can offer.

Recommendations for Future Research

One of the major limitations of this study was limited amount of retention data that was examined. A more through comparison would have included retention data at 18 months and 24 months of employment. Follow up during these timeframes would be important to make a through recommendation about the future of this organizations residency program. The 2016 cohort was the first cohort at this organization to trial the rotating model. Further trials would be necessary for further evaluation.

The low volume of RNs hired into the rural hospitals made it difficult to compare retention to the larger facility. Further evaluation of these programs with a larger sample size would be necessary prior to making any permanent program changes.

Conclusion

The aim of this research study was to determine which of two different new graduate RN residency models increased retention at a 700 plus bed acute care tertiary hospital and regional referral system. Research showed that new graduate RN residency programs does improve retention and save organizations money. In this study, the results showed that there was no significant difference in retention rates produced by the two difference new graduate RN residency models trialed.

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