

New Graduate Nurses' Perception of the Impact of
Dedicated Education Units on Transition to Practice: A Descriptive Study

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Abstract

PURPOSE: The purpose of this research was to identify the value of undergraduate nursing student clinical preparation within a dedicated education unit on transition to practice.

SPECIFIC AIMS:

1. Describe perceived competence, practice readiness, self-efficacy, job satisfaction, intent-to-stay and orientation length of students who participated in a clinical experience in a dedicated education unit upon graduation, 3- and 6-months employment.
2. Explore new graduate nurses' perception of the impact of a dedicated education unit clinical experience on transition to practice.
3. Examine relationships between outcome variables.
4. Explore associations between outcome variables and demographic and employment characteristics.

FRAMEWORK: This research was guided by Albert Bandura's Social Learning Theory.

DESIGN: This study used a descriptive, longitudinal design with quantitative measures and qualitative interviews.

RESULTS: 18 participants provided quantitative data, and five participated in an interview. Competence, practice readiness and job satisfaction were relatively high. Self-efficacy remained essentially unchanged at all three time points. Average orientation length was 13 weeks, with 41.7% reporting their orientation was shorter than planned. At 6-months employment, 91.7% planned to stay in their current position for one year. Competence and Self-efficacy were associated at 3- and 6-months. Prior healthcare work experience was associated with higher competence at 3- and 6-months. Participants valued the experience of working with a preceptor and the supportive learning environment that allowed them to develop technical and professional nursing skills.

CONCLUSION: These findings support dedicated education units as having a positive impact on new graduate nurse's transition to practice.

KEYWORDS: dedicated education units, transition to practice, competence

Proposal

Introduction & Specific Aims

New graduate nurses (NGNs) are unprepared for the reality of nursing practice (Benner, Sutphen, Leonard, & Day, 2010) and transitioning to practice is a challenging period for NGNs, as a gap between education and practice exists (Hickerson, Taylor, & Terhaar, 2016). In one report, only 10% of nurse executives felt NGNs were prepared for practice, while 90% of nursing school leaders felt NGNs were prepared (Advisory Board, 2008). Furthermore, nurse leaders are not consistently satisfied with NGN performance (Berkow, Virkstis, Steward, & Conway, 2008; Numminen et al., 2014). NGNs also report challenges transitioning to practice as 8% reported no role transition difficulties upon entry to practice, 28% reported no difficulties at 6-months, and 58% reported no difficulties at 12-months (Fink, Casey, Krugman, & Goode, 2008). A large study of over 5,000 NGNs found that only 23% are competent within a safe range for practice (Kavanagh & Szveda, 2017). As a result of this preparation-practice gap, nurses, organizations, and patients are affected. Nurses can experience stress and anxiety, which leads to job turnover and resulting financial impact for organizations, and patients can experience poor outcomes (Hickerson et al., 2016).

To minimize the preparation-practice gap and to ease the transition to practice for NGNs, hospitals have implemented orientation periods, residencies and mentorship programs and schools of nursing have updated curricula, implemented evidence-based teaching strategies, and have built relationships with practice partners. One such practice partnership is the creation of innovative dedicated education units (DEUs) for student nurse clinical preparation. DEUs promote nursing students' problem solving, integration of theory and clinical, improves critical thinking, decision making and clinical inquiry, and promotes students' growth by providing for

more opportunities to practice skills which leads to increased knowledge development, confidence, capacity to prioritize, and the ability to think like a nurse (Dean et al., 2013; Mulready-Shick, Flanagan, Banister, Mylott, & Curtin, 2013; Murray, Crain, Meyer, McDonough, & Schweiss, 2010; Ranse & Grealish, 2007; Rhodes, Meyers, & Underhill, 2012; Sharpnack, Koppelman, & Fellows, 2014). While DEUs have been successful in improving student outcomes, there is a lack of research evaluating the effect of DEUs on the transition to practice for NGNs.

The purpose of this research is to identify the value of undergraduate baccalaureate nursing (BSN) student clinical preparation within a DEU on transition to practice. The specific aims of the study are as follows:

1. Evaluate perceived competence and rate of change in perceived competence of BSN students who participated in a DEU and those who participated in a traditional clinical education experience upon graduation and at 3-months and 6-months employment.

Hypothesis: 1) Perceived competence will be higher among participants who had a clinical rotation on a DEU compared to those who did not.

2. Determine if competence is associated with age, gender, ethnicity, grade point average, previous non-nursing degree, prior health care work experience, previous employment within organization, facility type, hospital magnet status, employment status, residency experience/length, time-to-hire, self-efficacy, intent to stay, practice readiness, job satisfaction and orientation length.

Hypothesis: 1) NGNs with higher self-efficacy will have higher perceived competency.

3. Compare 1) practice readiness at baseline, 2) self-efficacy at baseline, 3-months and 6-months employment, 3) job satisfaction at 3-months and 6-months employment, 4) intent to stay at 6-months employment and 5) orientation length of BSN students who participated in a DEU and those who participated in a traditional clinical education experience.

Hypotheses: 1) Self-efficacy, intent-to-stay, job satisfaction, and practice readiness will be higher among participants who had a clinical rotation on a DEU compared to those who did not. 2) Orientation length will be shorter among participants who had a clinical rotation on a DEU compared to those who did not.

The individualized learning and real-world nursing experiences offered by DEUs may improve clinical preparation for nursing students and facilitate the transition to nursing practice, thereby improving outcomes for nurses, organizations and patients. It is expected that the findings from this study will support the use of DEUs as an effective, evidence-based solution to the preparation-practice gap.

Background and Significance

Transition to Practice

The practice-preparation gap is not a new phenomenon. Kramer (1974) described the gap between school and the real world of nursing as “reality shock,” which NGNs experience while transitioning into practice. More recently, Boychuk Duchscher (2008) created a model that depicts the first year of role transition as a process by which the NGN moves through the stages of doing, being and knowing. Boychuk Duchscher (2009) describes the initial months of practice for NGNs as “transition shock” in which they experience role performance stress, moral distress, discouragement and disillusionment. Additionally, Benner (1984) developed a Novice to Expert

Theory of new graduate role transition to practice which describes five stages of skill acquisition. NGNs typically begin as an advanced beginner and reach a level of competence over a period of 2-3 years, a time which can be marked by uncertainty and self-growth and development.

The evolution of the health care system environment has increased the complexity required for NGN transition to practice. Current challenges to successful transition to practice include workforce shortages, fiscal restraints, increasing patient acuity, decreasing lengths of stay, the use of technology, lack of access to experienced mentors, generational differences in the workplace, bullying, and the ever expanding role of nurses (Hofler & Thomas, 2016; Kavanagh & Szweda, 2017; Wolff, Pesut, & Regan, 2010a).

The preparation-practice gap and challenging transition to practice period affects nurses, organizations and patients. NGNs report stress, anxiety and lack of support which can lead to turnover (Hickerson et al., 2016). In a large nationally representative sample, Kovner, Brewer, Fatehi, and Jun (2014), estimated a one-year turnover rate for NGNs of 17.5%, and a two-year turnover rate of 33.5%. Financially, turnover affects organizations, as Jones (2008) estimated the cost of turnover for hospitals to be between \$82,000 and \$88,000 per nurse. Patient outcomes are also affected when NGNs are not prepared for practice (Hickerson et al., 2016). Smith and Crawford (2003) report that 49% of NGNs had been involved in a medical error, and primary types of errors involving NGNs include medication errors and errors that result in patient falls and delay of treatment (Saintsing, Gibson, & Pennington, 2011).

Perspectives on new graduate nurse transition to practice. For the purposes of this discussion, the term “new graduate nurse” refers to newly licensed registered nurses within the first year of practice. In the studies below, educational preparation was not always noted, but

when described, reflects primarily a mixture of associate- and baccalaureate-prepared nurses. The findings are consistent for new graduate nurses regardless of their education preparation.

Quantitative research findings suggest that 65-75% of NGNs do not meet the expectations for safe nursing practice. In a large study of over 5,000 NGNs' performance on a web-based competency assessment tool found that only 23% of NGNs scored in the safe or acceptable range for practice (Kavanagh & Szweda, 2017). This is similar to Del Bueno (2005) who reported on the same assessment method, over a ten-year period, and found the range for safe or acceptable practice to be 26-35%.

Qualitative findings from NGNs also support the preparation-practice gap, as NGNs report colliding expectations, or conflict between their personal view of nursing and their actual experience as a nurse (Pellico, Brewer, & Kovner, 2009). Other studies report NGNs lack confidence in skill performance, have deficits in critical thinking, clinical knowledge, organization, prioritization and communication (Casey, Fink, Krugman, & Propst, 2004; Fink et al., 2008; Myers et al., 2010), and they struggle with complex patient situations, interprofessional collaboration (Monegle, Lasater, Stoyles, & Dieckman, 2018) and stress management (Theisen & Sandau, 2013).

Competence. There are multiple outcomes relevant to transition to practice (Dwyer & Hunter Revell, 2016). This study will evaluate NGN competence, intent-to-stay, self-efficacy, practice readiness, job satisfaction, and orientation length. Competence is defined as the “functional adequacy and capacity to integrate knowledge and skills to attitudes and values into specific contextual situations of practice” (Meretoja, Leino-Kilpi, & Kaira, 2004b, p. 330-331). Competence has predicted NGN job satisfaction and work engagement (Walker & Campbell,

2013) and has been associated with empowerment (Numminen, Leino-Kilpi, Isoaho, & Meretoja, 2015b).

Casey et al. (2004) assessed NGN competence and found significant differences in competence based on level of experience within the first year of practice. They found that NGNs initially rate themselves as comfortable in their role, however this declines over 3, 6, and 9 months of practice, and then increases to a high after 1 year. This is consistent with more recent findings from Spector (2015) who found that NGNs had an increase in reported errors and work stress and a decrease in job satisfaction at 6-months employment, and by a year of practice, reported errors and work stress decreased and job satisfaction increased.

Intent to stay. Intent to stay was defined by Kim, Price, Mueller, and Watson (1996) as the “extent to which an employee plans to continue membership with his/her employer” (p. 951) and is important because of its relationship with turnover ($r = -0.438$) (Brewer, Kovner, Greene, Tukov-Shuser, & Djukic, 2012). Nurse turnover is costly, as organizations incur costs for hiring, orientation, decreased productivity, and temporary replacements (Kovner, Brewer, Greene, & Fairchild, 2009). In a sample of 533 NGNs, Unruh and Zhang (2014) identified that 42% of NGNs planned to stay with their current employer and 19% would not voluntarily leave their current employer, while 23% would like to leave their current employer and 14% plan to leave their current employer.

Job satisfaction. Job satisfaction is the “extent to which employees like their work” (Price, 2001, p. 608). Job satisfaction is negatively associated with turnover and predicts intent to stay (Brewer et al., 2012). Job satisfaction is associated with intention to leave the profession ($r = -0.46$) (Lo, Chien, Hwang, Huang, & Chiou, 2017), intention to stay in nursing ($r = 0.43$) (Chen et al., 2015), and intention to quit present workplace ($r = -0.57$) (Masum et al., 2016). Due to the

complex nature of job satisfaction and its interaction with other variables, it is an important factor for ensuring the stability of the nursing workforce and the quality of health care (Lu, Zhao, & While, 2019).

Practice Readiness. Being ready for practice, or practice readiness, means NGNs have a generalist foundation and some job-specific capabilities to provide safe patient care and to keep up with the current and future realities of nursing practice (Wolff, Regan, Pesut, & Black, 2010b). There is evidence that nurse leaders do not feel NGNs meet the expectations for practice readiness. On a visual analog practice readiness scale of 1-100, 140 nurse managers assessed new graduates at an average of 43.7 (SD 22) (Numminen et al., 2014). In a study of 5,700 frontline nurse leaders only about 25% were fully satisfied with NGN performance (Berkow et al., 2008).

Orientation Length. Orientation is defined as “the traditional means of assisting a new graduate to transition to practice” (Rush, Adamack, Gordon, Janke, & Ghement, 2013, p. 144). Orientation has been positively associated with job satisfaction and retention (Scott, Engelke, & Swanson, 2008). And length of orientation is significantly associated with transition to practice scores, with significant improvements in the domains of communication/leadership, support, and professional satisfaction (Rush et al., 2013). Anecdotally, there are reports that DEUs have decreased orientation time for new graduates (Miller, 2005; Sharpnack et al., 2014; Smyer, Gatlin, Tan, & Tejada, 2015).

Self-Efficacy. Self-efficacy is described by Bandura (1977a) as the belief that one has about being able to successfully execute a behavior required to produce a desired outcome. The strength of ones’ belief in their ability affects their motivation to achieve the desired outcome and affects the degree in which they will persist in their efforts (Bandura, 1977a). Self-efficacy is

positively related with job satisfaction (De Simone, Planta, & Cicotto, 2018), has been negatively correlated with burnout in nurses (Molero, Perez-Fuentes, & Gazques, 2018), and higher self-efficacy has been shown to reduce turnover intention (De Simone et al., 2018).

Preparation-practice gap recommendations. The preparation-practice gap has led to a call for innovative transformation of clinical education so NGNs can meet the emerging needs of the health care system (Benner et al., 2010; Ironside & McNelis, 2011; Robert Wood Johnson Foundation, 2014). A literature review identified emerging partnerships among academic and practice organizations, where quality learning environments are their joint responsibility, as essential for student learning and patient safety (Budgen & Gamroth, 2007). DEUs are an innovative approach to clinical education that provide a supportive, flexible, nurturing learning environment.

Dedicated Education Units

DEUs are a partnership between schools of nursing and clinical practice partners that maximize the clinical learning environment to optimize student learning. Moscato, Miller, Logsdon, Weinberg, and Chorpenning (2007) describe DEUs as:

“a client unit that is developed into an optimal teaching/learning environment through the collaborative effects of nurses, management, and faculty. It is designed to provide students with a positive clinical learning environment that maximizes the achievement of student learning outcomes, uses proven teaching/learning strategies, and capitalizes on the expertise of both clinicians and faculty” (p. 32).

DEUs are unique, innovative clinical education models where staff nurses provide direct hands on teaching to students and they are guided by clinical faculty in teaching/learning strategies. Staff nurses generally undergo specialized training to assume the role of clinical instructor and

clinical faculty act as coordinators who guide the staff nurses, maintain collaborative relationships and facilitate student learning (Moscato, Nishioka, & Coe, 2013). The staff nurses who serve as the clinical instructors, typically are assigned two nursing students for the duration of the experience, the teaching aligns with clinical and course objectives, and by nature of design, the DEU allows for more individualized student teaching (Nishioka, Coe, Hanita, & Moscato, 2014b).

History of dedicated education units. The dedicated education model originated in Flinder's University in Australia in 1997 in response to clinical preparation concerns (Edgecombe, Wotton, Gonda, & Mason, 1999). The researchers found success with the model and reported that DEUs were conducive to learning, facilitated students to integrate theory and practice, and supported relationships with peers and clinicians (Gonda, Wotton, Edgecombe, & Mason, 1999). The model was later adapted in Oregon at the University of Portland in 2003 (Moscato et al., 2007) and since then has been widely disseminated in the United States.

DEUs are an appealing alternative to traditional clinical education models. In traditional clinical education models, a single instructor is responsible for a set number of students on a clinical unit, and faculty must be present for observation of skills/procedures, and students spend a limited number of hours on the unit (Budgen & Gamroth, 2007). Challenges with this model include a nursing faculty shortage; limited number of clinical sites; unwelcoming clinical units; inconsistency in working with staff nurses and staff nurses who aren't familiar with student learning objectives; nursing faculty having a large number of students leading to limited instruction time with faculty and lost opportunities for learning; and staff nurse expertise that is not fully utilized (Budgen & Gamroth, 2007; MacIntyre, Murray, Teel, & Karshmer, 2009; Nishioka, Coe, Hanita, & Moscato, 2014a; Smyer et al., 2015; Springer et al., 2012). DEUs offer

a creative solution to these challenges and offer a way for clinical education to keep step with the ever-changing health care environment to facilitate transition to practice (Mulready-Shick, Kafel, Banister, & Mylott, 2009).

Dedicated education unit outcomes. Staff nurses and nursing students overwhelmingly are satisfied with their experience as part of a DEU (Crawford et al., 2018; Miller, 2005; Mulready-Shick et al., 2013; Rhodes et al., 2012; Ryan, Shabo, & Tatum, 2011) and they provide students with a realistic perspective of nursing (Nishioka et al., 2014a). Students report higher overall quality ratings for DEUs and value the mentoring and individualized instruction (Nishioka et al., 2014a). Student evaluation of the clinical education environment for DEUs has significantly exceeded that of the traditional clinical education model (Instructor Quality subscale: DEU cohort 3.72, traditional clinical cohort 3.21); Unit Learning Opportunities subscale: DEU cohort 3.67, traditional clinical cohort 3.17) (Mulready-Shick et al., 2013).

Positive student outcomes support the implementation of DEUs, as nursing students report feeling welcomed (Moscato et al., 2007; Nishioka et al., 2014a; Ranse & Grealish, 2007), feeling like part of the team (Crawford et al., 2018; Nishioka et al., 2014a; Rhodes et al., 2012) and being treated like nurses (Nishioka et al., 2014a). Students in DEUs have been shown to significantly improve leadership skills (Galuska, 2015) and self-efficacy (George, Locasto, Pyo, & Cline, 2017; Plemmons, Clark, & Feng, 2018), and improvement in perception of competence and confidence (Schechter, Gallagher, & Ryan, 2017) and nurse-to-nurse and nurse-to-nursing student collaboration (Moore & Nahigian, 2013). DEUs also promote student learning of QSEN competencies (McKown, McKeon, & Webb, 2011; Mulready-Shick et al., 2009).

Academic outcomes for students in DEUs has been equivocal. Smyer et al. (2015) found no difference in academic outcomes (critical thinking, nursing process, quality and safety

measures, and standardized exit exam) between students in a DEU as compared to a traditional clinical education model. Similarly, Mulready-Shick et al., (2013) found no differences in course level outcomes or standardized comprehensive examination scores between students in a DEU as compared to a traditional clinical education model. And, O'Lynn (2013) found no differences in student scores on simulations, course grades, or standardized exam scores. Whereas, Springer et al., (2012) found some evidence that students participating in the DEU experience had better scores on faculty developed tests and standardized content tests, but the difference was not statistically significant. In contrast, Sharpnack et al., (2014) found that a DEU cohort had statistically significantly higher final course grades in 4 out of 7 courses, higher standardized exam scores in 4 out of 5 exams, and higher simulation scores.

Schools of nursing and hospitals are seeing benefits to implementing DEUs as well. Schools have seen increased enrollment (Miller, 2005; Moscato et al., 2013) and the ability to place more students in the clinical setting (Hill, Foster, & Oermann, 2015). Springer et al., (2012) reported a 60% reduction in faculty costs by implementing the DEU model. Anecdotally, there are reports that DEUs have improved outcomes for organizations such as the ability to attract new nurses (Springer et al., 2012), improved retention (Sharpnack et al., 2014), and that the DEU model is cost effective (Miller, 2005). Furthermore, Eskilsson, Carlsson, Ekebergh, and Horberg (2015) assessed patient's perspectives of receiving care on DEUs and found that patients feel as though students can provide an extra dimension to healthcare, particularly when they go above and beyond what is expected.

Dedicated education units and transition to practice. Outcome measures of NGNs who worked on a DEU during the first 4 weeks of their employee orientation illustrated improved retention from 85% to 94% at one year, and improvements in fall rate (from 5/month

to 1/month) and medication error reporting (Pappas, 2007). Glynn, Wendt, Russell, Conley, and Hill (2018) found no significant differences between staff nurses' perception of nursing students' readiness for transition to practice in a sample of students participating in a DEU versus a preceptor clinical experience. Anecdotally, Murray et al., (2010) felt students who participated in a DEU were far more advanced in future courses, suggesting a potential for facilitated transition to practice. Nishioka et al., (2014a) proposed that DEUs provide students with more opportunities to learn professional skills to help them successfully transition into practice. Kavanagh and Szweda (2017) report that on a competency tool NGNs who had experience on a DEU during their nursing program scored in the safe or acceptable range at a slightly higher rate of 28%, as compared to non-DEU graduates (23%), however this difference was not statistically significant.

Knowledge gap. Despite the extensive research on DEUs and nursing students, there is no research regarding transition to practice in NGNs who had a DEU clinical experience during undergraduate education. Researchers have called for further investigation to determine if DEUs impact transition to practice (Moscato et al., 2007; Mulready-Shick et al., 2013; Murray et al., 2010; Wotton & Gonda, 2004).

Theoretical Framework

Social Learning Theory

Social learning theory (Bandura, 1977b) considers behavior within the context of the environment, where psychological functioning occurs within a continuous reciprocal interaction between personal and environmental factors, and the environment is as influenceable as the behavior that it controls. According to Bahn (2001) social learning theory focuses on the social

aspects of learning and acknowledges the complexity of the environment and people, and in this way it is advantageous to apply social learning theory to nursing education.

In terms of learning new behavior, behavior can be learned through direct experiences or through observation (a process called modeling). Learning through direct experience is considered a rudimentary form of learning. This type of learning occurs through evaluating the positive or negative outcomes of a behavior. Some behaviors produce successful outcomes while others produce unfavorable outcomes. In the process of learning, eventually behaviors that result in positive outcomes are favored and adopted. Learning through modeling differs in that people don't need to directly experience or perform a behavior in order to learn. People have the capacity to learn from others through observation. Modeling is a process of observing others, forming an idea of how the behavior is performed, and coding this information to later serve as a guide to perform the behavior (Bandura, 1977b). According to Bandura (1977b), the ability to learn through observation allows people to learn new behaviors without a tedious process of trial and error.

Observational learning is guided by four components: attentional processes, retentional processes, motor reproductive processes, and motivational processes. Attentional processes refer to the need for the observer to pay attention to and accurately perceive the modeled behavior. This can be affected by observer characteristics and the salience and complexity of the modeled behavior. Retentional processes, or the retention of modeled behavior, requires that behaviors be stored as memory in symbolic form for future performance. Motor reproduction processes refer to converting stored symbolic representations into actions/behavior. Motivational processes refer to the fact that people are more likely to adopt modeled behavior if its outcomes are valued (Bandura, 1977b).

Another component of social learning theory is individual efficacy expectations, wherein the stronger the efficacy expectations, the stronger the efforts to learn and adopt new behavior. Efficacy is based on 1) performance accomplishments (i.e., personal successes raise expectations and failures lower expectations); 2) vicarious experience (i.e., beliefs that if others can be successful, they can be too); 3) verbal persuasion from others; 4) emotional arousal (i.e., physiological state) and; 5) situational circumstances that are present (Bandura, 1977b).

Of note, Bandura (1977b) states that observers, more so than performers, are able to determine connections between actions and outcomes because they can focus their attention solely on observing behavior. People with status, competence, and power are effective models and people who are perceptive and confident are more likely to adopt successful modeled behavior. And if an observer knows that a modeled behavior produces valued outcomes, their attentiveness to learning the behavior increases.

Application of Theory to Research

Dedicated education units. DEUs promote learning through observation and participation in day-to-day operations of a given unit. And DEUs provide a concentrated and in-depth experience, whereby student nurses work with members of the interdisciplinary team and learn to function as members of the team. Learning in this manner takes place within a social context and student nurses learn from observation of the staff around them. In this way, students are able to assimilate into the role of nurse, it is suggested, more so than traditional clinical education models allow.

There are multiple aspects of social learning theory that are evident in the use of DEUs for clinical experiences. DEUs provide for direct hands-on learning, where student nurses are able to try skills (e.g., therapeutic communication) and see what behaviors work well and what

behaviors don't work well. DEUs also provide the opportunity for motor reproduction, as students are able to perform observed behaviors. And students are able to focus their full attention to observing, which promotes their ability to learn. DEUs also provide for many opportunities for modeling, whereby student nurses can observe the behavior of team members.

There is also a motivational aspect to dedicated education units, as students are typically motivated to learn because they want to function proficiently as a nurse and they spend a large amount of time and resources in fulfilling this goal. In general nursing students are typically attentive within the clinical education unit as their goal is to eventually assume the role of registered nurse. Students are aware that the modeled behavior produces a valued outcome (i.e., competence as a registered nurse), thereby they are motivated to learn.

Methods

Design

This study will use a repeated-measures comparative analysis design of two cohorts. One cohort will be new graduate baccalaureate prepared nurses who participated in a DEU clinical experience in their undergraduate nursing program and the other cohort will include NGNs who did not participate in a DEU clinical experience in their undergraduate nursing program. Upon graduation from a BSN program, baseline data will be collected from participants to ensure that the two groups are comparable or to identify factors on which the two groups differ, which will be included as predictors in multivariate analyses. Participants will then be followed through 6-months employment as a NGN for evaluation of outcomes measures in transitioning to practice. Specifically, participants will be surveyed at baseline, at 3-months and 6-months employment. Outcome measures will be assessed and compared between the two groups.

Setting

The target school is a 4-year BSN program in the northeast. The program runs 5-6 DEU clinical sections out of a total of 10 sections in the fall and 4-5 DEU clinical sections out of a total of 8 sections in the spring, for seniors in an Adult Health II course. Students self-select their preference to either a DEU or traditional clinical experience. The program graduates approximately 72-88 students annually that have participated in a DEU and 56-72 students that have traditional clinical experiences.

For either clinical experience, 112 hours of clinical for the semester is required, and the clinical experiences take place on medical-surgical units. Students in the DEU may work either 8-hour or 12-hour shifts, while the traditional clinical students complete 8-hour shifts with their assigned clinical instructor.

Sample

The sample for this study will consist of NGNs from a traditional (non-accelerated) 4-year BSN program. Two cohorts will be sought- those who did and those who did not participate in a DEU experience during their undergraduate nursing program.

Inclusion/Exclusion Criteria.

Inclusion	Exclusion
NGNs within a month of graduating from traditional BSN program	Previous experience as Licensed Practical Nurse (LPN)
Plan to obtain employment as a direct patient care nurse within 6 months of graduation	
Email access	

Sample size and power calculation. The required minimum sample size for this study is 21 NGNs in both cohorts (42 total, not accounting for attrition). This is calculated based on a significant level of 0.05 (two-tailed), power of 80%, and meaningful difference of 12.5 with standard deviation of 14 (corresponding Cohen's effect size of 0.89). The meaningful difference

of 12.5 was selected because the visual analog Nurse Competence Scale (Meretoja, Isoaho, & Leino-Kilpi, 2004a) measures from 0-100 with categories 0-25 indicating low competence, 25-50 indicating quite good competence, 50-75 indicating good competence, and 75-100 indicating very good competence. A change of 12.5 represents a difference of a “half category”, this is similar to Strandell-Laine et al., (2018) who used a difference of 10. The standard deviation estimate is conservative based on Wangenstein, Johansson, Bjorkstrom, and Nordstrom (2012) who had a standard deviation of 13 (sample size: 620) and Lima, Newall, Jordan, Hamilton, and Kinney (2015) who had a standard deviation of 10.3 at baseline, 13.9 at 3-months, 12.1 at 6-months, and 10.6 at 12-months in a sample of 47.

A total sample of 68 will be recruited based on potential study attrition, attributed to potential study drop out and factors related to inclusion criteria such as 1) NGNs need to pass the NCLEX-RN within 6-months of graduating to stay enrolled, and 2) those employed as a registered nurse within 6-months of graduating need to maintain their employment status through the 6-month follow-up period. The following explanation provides a rationale for determining total sample size based on potential attrition. NGN NCLEX-RN first attempt pass rate for BSN graduates was 91.57% in 2018 (National Council of State Boards of Nursing, 2018). Nurse graduate nurse turnover rate at 1 year is estimated to be 17.5% (Kovner et al., 2014), for the 6-month study period an estimate of half the 1-year estimate will be used (9%). And NGN retention in a longitudinal study at 6-months follow up was 85% (Lima et al., 2015).

Recruitment and retention. NGNs will be recruited from a BSN program just prior to graduation. The principle investigator will meet with students immediately after a class period prior to graduating. At this time, students will be provided with an explanation of the study and informed consent will be obtained from eligible students. Eligible students who are agreeable to

participate in the study will provide baseline information at this time. Baseline information will include: name, primary and alternative email addresses (not school email, as students will not have access after graduation), cell phone number (for text message notifications), and whether they had clinical in a DEU or not (if participants did not have a DEU clinical, they will be asked if they had wanted to). Within a week of graduation, participants will receive an email with a link to a REDCap Baseline Survey #1. For each survey sent, a repeat email will be sent to those who do not respond to the initial email after one week and after another week if they still don't respond. At which point, a final email will be sent to the alternative email address that was provided. The remaining procedures are outlined below.

To improve retention, 3 strategies will be employed. For each of the 3 surveys that participants complete they will be provided with a \$5 gift card. The gift card will be emailed after each survey is completed. Additionally, participants that complete all 3 surveys will be entered in a raffle to win an iPad. The winner will be notified by email and the prize will be available at the school to pick up. Finally, participants will receive text message notifications each time a survey is sent, in addition to 3-4 updates/reminders throughout the study period. If enrollment is not high enough after the first cohort, a second cohort graduating in May 2020 will be recruited, using the same procedures outlined.

Procedures

Institutional review board approval will be sought from University of Massachusetts Medical School and from the target school. Participants will be contacted 4-5 times during the course of 6-12 months. Contact periods will be baseline, 3-month follow-up, and then 3- and 6-month post-employment (4 contacts). For those participants who do not have eligible employment (are not employed as a registered nurse providing direct patient care) at the 3-month

follow-up time point, a 6-month follow-up will occur, and if they subsequently are eligible to participate they will be contacted at 3- and 6-month post-employment (5 contacts). The contact periods are described as follows. Length of time for completing each questionnaire is as follows: Baseline Survey #1, 3-Month Post-Employment Survey #2, and 6-Month Post Employment Survey #3: ~10 minutes; 3-Month & 6-Month Follow-Up Survey: ~1-3 minutes.

Procedures for Data Collection

Contact Point	Data Collection	
Enrollment Baseline Information (hard copy at recruitment)	<u>Baseline Data:</u> Name Primary email address Alternative email address Cell phone number DEU clinical status: Yes/No If no: did you want to be in a DEU section?	
Baseline Survey #1 (via REDCap)	<u>Baseline Data:</u> Age Gender Ethnicity	<u>Confounders:</u> GPA Previous non-nursing degree Prior health care work experience <u>Outcome Measure:</u> Competence Practice Readiness Self-Efficacy
3-Month Follow-Up (Determines eligibility for 3- & 6-Month Post-Employment Surveys) (via REDCap)	<u>Baseline Data:</u> Same email: Yes/No If no, preferred email: Eligible Employment (registered nurse providing direct patient care): Yes/No If yes, start date: If yes, facility type: If yes, employment status: If no, reason:	<u>Study Plan</u> If eligible → 3- and 6-month post-employment survey If not eligible because no eligible employment → 6-month follow-up to determine eligibility
6-Month Follow-Up	<u>Baseline Data:</u> Same email: Yes/No	<u>Study Plan</u>

<p>(Only for those not eligible at 3-month follow-up)</p> <p>(via REDCap)</p>	<p>If no, preferred email: Eligible Employment (registered nurse providing direct patient care): Yes/No If yes, start date: If yes, facility type: If yes, employment status: If no, reason:</p>	<p>If eligible → 3- and 6-month post-employment survey</p> <p>If not eligible because no eligible employment → eliminate</p>
<p>3-Month Post-Employment Survey #2</p> <p>(via REDCap)</p>	<p><u>Baseline Data:</u> Same email: Yes/No If no, preferred email: Same position: Yes/No</p>	<p><u>Study Plan:</u> If same position → assess measures</p> <p>If not same position → eliminate</p> <p><u>Confounders:</u> Hospital Magnet Status Previous employment within organization Residency: Yes/No If yes, length</p> <p><u>Outcome Measures:</u> Competence Job Satisfaction Self-Efficacy</p>
<p>6-Month Post-Employment Survey #3</p> <p>(via REDCap)</p>	<p><u>Baseline Data:</u> Same position: Yes/No</p>	<p><u>Study Plan:</u> If same position → assess measures</p> <p>If not same position → eliminate</p> <p><u>Outcome Measures:</u> Competence Job Satisfaction Intent-to-stay Self-Efficacy Orientation Length</p>

Measures

As described above, the following variables will be collected:

Variable	Measures & Instruments
Subject Characteristics	
Age (Years)	Continuous
Gender (Male/Female/Prefer not to answer)	Categorical
Ethnicity (White, Black/African American, Asian, American Indian, Alaska Native, Native Hawaiian, Pacific Islander, Other)	Categorical
Facility type (Acute care/Long-term care/Rehabilitation/Community/Outpatient)	Categorical
Screening Questions	
Eligible Employment [Registered nurse providing direct patient care] (Yes/No)	Categorical
Same Position (Yes/No)	Categorical
Start Date	
Confounders	
Grade Point Average (GPA)	Continuous
Previous Non-Nursing Degree (Yes/No)	Categorical
Prior health care work experience (Yes/No)	Categorical
Previous employment within organization (Yes/No)	Categorical
Magnet Status (Yes/No)	Categorical
Residency Program (Yes/No)	Categorical
Residency Length (weeks)	Continuous
Employment Status (Full-Time/Part-Time)	Categorical
Time-to-hire (Start date: month/date/year)	Continuous
Outcomes	
Competence	Nurse Competence Scale
Intent-to-Stay	Single question
Self-Efficacy	General Self-Efficacy Scale
Job Satisfaction	Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale
Practice Readiness	Casey-Fink Readiness for Practice Survey
Orientation Length	Two items

Outcomes.

Competence. Competence will be assessed using the Nurse Competence Scale (NCS) (Meretoja et al., 2004a). The scale was developed by Finnish researchers and has been used extensively internationally, including in the United States (Delaney, Friedman, Dolansky, &

Fitzpatrick, 2015; O’Leary, 2012). The NCS is a generic scale for nurse competence, and has been used in the NGN population (Hengstberger-Sims et al., 2008; Lima, Newall, Kinney, Jordan, & Hamilton, 2014; Numminen et al., 2015b; Numminen et al., 2016b; Numminen, Leino-Kilpi, Isoaho, & Meretoja 2015a; Numminen, Leino-Kilpi, Isoaho, & Meretoja, 2016a; Salonen, Kaunonen, Meretoja, & Tarkka, 2007; Wangensteen et al., 2012; Wangensteen, Johansson, & Nordstrom, 2015). The scale is a 73-item assessment of competence, with theoretical underpinnings from Benner’s Novice to Expert Theory of Skill Acquisition (1984). The scale contains 7 subscales including: the helping role (7-items), teaching-coaching (16-items), diagnostic functions (10-items), managing situations (8-items), therapeutic interventions (10-items), ensuring quality (6-items) and work role (19-items). Items are rated on a visual analog scale of 0 to 100, where 0 indicates a very low level of competence and 100 indicates a very high level of competence.

The scale was initially tested in a sample of 498 medical-surgical nurses with an average of 11 years nursing experience; Cronbach’s alpha was found to be between 0.79 to 0.91 for each subscale (Meretoja et al., 2004a). The scale was also tested for concurrent validity in this sample with the Six-Dimension Scale of Nursing Performance (Schwirian, 1978), which was an established tool in assessing competence in graduating/new nurses. There was a significant positive correlation between the two scales ($r = 0.829$, $p = 0.00$) (Meretoja et al., 2004a). The tool has subsequently been evaluated in the NGN population. In a national sample of NGNs, Cronbach’s alpha was between 0.72 to 0.92 for subscales (Wangensteen et al., 2012) and in a sample of 116 acute-care NGNs, Hengstberger-Sims et al., (2008) found Cronbach’s alpha to be between 0.79 to 0.93 for the subscales and 0.90 for total scale.

Intent to stay. Intent to stay will be measured with a single question: “I plan to stay in my current position for at least 12 months,” with response options Yes, No, or Unsure.

Orientation Length. Orientation length will be assessed using two questions: 1) orientation length in weeks and, 2) was your orientation shorter than originally planned (Yes/No)?

Job satisfaction. Job satisfaction will be measured using the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS) (Cammann, Fichman, Jenkins, & Klesh, 1983). The MOAQ-JSS is a 3-item instrument that measures global job satisfaction and is scored on a Likert scale from 1 (strongly disagree) to 7 (strongly agree) (Bowling & Hammond, 2008; Laschinger, Zhu, & Read, 2016). In a sample of 393 NGNs, Cronbach’s alpha was 0.88 (Laschinger et al., 2016).

Practice Readiness. Practice readiness will be measured using the Casey-Fink Readiness for Practice Survey ©. This tool was developed in 2011 to measure graduating senior nursing students level of confidence and comfort in providing care (Casey et al., 2011). This survey consists of 20 items that students report their comfort/confidence in performing key practice skills, and it is scored on a Likert format 1 (strongly disagree) to 4 (strongly agree) (Casey et al., 2011). In the original sample of 429 students, Cronbach’s alpha was reported 0.69 (Casey et al., 2011). The scale was subsequently used in a sample of 113 nursing students and Cronbach’s alpha was similar (0.70) (Woods et al., 2015).

Self-Efficacy. Self-efficacy will be measured using the General Self-Efficacy Scale (GSE) (Schwarzer & Jerusalem, 1995). The scale was developed in 1979 and subsequently revised and adapted to 26 languages (The General Self-Efficacy Scale, n.d.). The scale consists of 10 items, scored on a scale of 1 (not at all true) to 4 (exactly true), with a score range of 10 to

40 (The General Self-Efficacy Scale, n.d.). In a sample of 747 early career nurses, the scale had a Cronbach's alpha of 0.884 (Wang, Tao, Bowers, Brown, & Zhang, 2017).

Data Management

All participant questionnaire data will be collected via REDCap and exported to IBM Statistical Package for the Social Sciences (SPSS) on an encrypted computer and maintained on a secure research drive. To protect anonymity, participants will be given a unique identifier. The list of each participant and their identifier will be stored in a separate file on a secure research drive. Information collected from participants will include name and email addresses. Hard copies of these personal identifiers will be stored in a locked file in a locked room/office. Personal identifiers will be kept until data analyses are complete and then destroyed (double deleted off the computer and the paper record will be shredded).

Data Analysis

Data will be initially analyzed for skewness, outliers and missing data. Participants will be included at all time points where they have outcome and predictor data, even if they're missing data at other time points. Descriptive statistics will be used to describe the sample, including age, gender, ethnicity, grade point average, previous non-nursing degree, prior health care work experience, previous employment within organization, employment status, facility type, hospital Magnet Status, and residency experience. Both cohorts will then be analyzed for comparability on these characteristics at baseline using cross-tabulations and 2-sample t-tests.

Specific Aim 1. Evaluate perceived competence and rate of change in perceived competence of BSN students who participated in a DEU and those who participated in a traditional clinical education experience upon graduation and at 3-months and 6-months employment.

Steps in Analysis of Aim 1.

- (1) Perform linear mixed models statistical analyses with outcome (perceived competence), predictor (DEU or traditional clinical education), time points (baseline, 3-month, and 6-month employment), and their interaction.
- (2) Determine significant relationships between competence and predictors (age, gender, ethnicity, grade point average, previous non-nursing degree, prior health care work experience, previous employment within organization, employment status, facility type, hospital Magnet Status, residency experience and time-to-hire). Refer to Specific Aim #2, Steps #1-3 for this process.
- (3) Perform linear mixed models statistical analyses, adjusting for significant relationships identified in Step #2.

Specific Aim 2. Determine if competence is associated with age, gender, ethnicity, GPA, previous non-nursing degree, prior health care work experience, previous employment within organization, facility type, hospital magnet status, employment status, residency experience/length, time-to-hire, self-efficacy, intent to stay, practice readiness, job satisfaction and orientation length.

Steps in Analysis of Aim 2.

- (1) For continuous variables (age, grade point average, residency length, time-to-hire, self-efficacy, job satisfaction, practice readiness, orientation length) perform correlations at all 3 time points (baseline, 3-month post-employment, and 6-month post-employment) with competence.
- (2) For dichotomous variables (previous non-nursing degree, prior health care work experience, previous employment within organization, Magnet status, residency

experience, employment status, and orientation shortened) perform T-tests at all 3 time points (baseline, 3-month post-employment, and 6-month post-employment) with competence.

- (3) For categorical variables (gender, ethnicity, facility type, intent-to-stay) perform analysis of variance (ANOVA) at all 3 time points (baseline, 3-month post-employment, and 6-month post-employment) with competence.

Specific Aim 3. Compare 1) practice readiness at baseline, 2) self-efficacy at baseline, 3-months and 6-months employment, 3) job satisfaction at 3-months and 6-months employment, 4) intent to stay at 6-months employment and 5) orientation length of BSN students who participated in a DEU and those who participated in a traditional clinical education experience.

Steps in Analysis of Aim 3.

- (1) Perform the following unadjusted analyses:
 - a. Assess practice readiness at baseline between groups by performing analysis of variance.
 - b. Perform linear mixed models statistical analyses with outcome (self-efficacy), predictor (DEU or traditional clinical education), time points (baseline, 3-month, and 6-month employment), and their interaction.
 - c. Perform linear mixed models statistical analyses with outcome (job satisfaction), predictor (DEU or traditional clinical education), time points (3-month and 6-month employment), and their interaction.
 - d. Assess intent-to-stay at 6-months between groups by performing crosstabs.
 - e. Orientation length:

- i. Assess orientation length (in weeks) between groups by performing analysis of variance.
 - ii. Assess dichotomous orientation outcome (i.e. was orientation shorter than expected) between groups by performing crosstabs.
- (2) Determine if there are significant relationships between each outcome (practice readiness, self-efficacy, job satisfaction, intent-to-stay, and orientation length) and predictors (age, gender, ethnicity, grade point average, previous non-nursing degree, prior health care work experience, previous employment within organization, employment status, facility type, hospital Magnet Status, residency experience, and time-to-hire).
 - a. For continuous outcomes (practice readiness, self-efficacy, job satisfaction, orientation length in weeks, and time-to-hire) refer to Specific Aim #2, Steps #1-3 for this process.
 - b. For dichotomous outcome (orientation length shortened) perform:
 - i. For continuous predictors (age, grade point average, and residency length): perform T-tests.
 - ii. For dichotomous and categorical predictors (previous non-nursing degree, prior health care work experience, previous employment within organization, Magnet status, residency experience, employment status, gender, ethnicity, and facility type): perform crosstabs.
 - c. For categorical outcome (intent-to-stay) perform:
 - i. For continuous predictors (age, grade point average, and residency length): perform analysis of variance.

- ii. For dichotomous and categorical predictors (previous non-nursing degree, prior health care work experience, previous employment within organization, Magnet status, residency experience, employment status, gender, ethnicity, and facility type): perform crosstabs.

(3) Adjusting for significant relationships identified in step #2, perform the following analyses:

- a. Assess practice readiness at baseline between groups by performing analysis of variance (for categorical predictors) or analysis of covariance (for continuous predictors).
- b. Assess self-efficacy by performing linear mixed models statistical analyses.
- c. Assess job satisfaction by performing linear mixed models statistical analyses.
- d. Assess intent-to-stay at 6-months between groups by performing analysis of variance (for continuous predictors) and binominal logistic regression (including educational group).
- e. Orientation length:
 - i. Assess orientation length (in weeks) between groups by performing analysis of variance (for categorical predictors) or analysis of covariance (for continuous predictors).
 - ii. Assess dichotomous orientation outcome (i.e. was orientation shorter than expected) between groups by performing T-tests (for continuous predictors) and binominal logistic regression (including educational group).

Human Subjects

While there are no anticipated risks to participants in this study, there is always a risk of breach of confidentiality. However, the aforementioned measures will be taken to safeguard participant identity and information.

Potential Challenges

There is the potential for attrition as the study will follow participants over the course of 6-12 months. To help prevent against attrition, each time contact is made with a participant, their contact information (email) will be updated, and participants will receive each survey 4 times, one week apart. Participants will also be provided with a small gift card for each survey completed and those who complete all 3 surveys will be entered to win a raffle.

A consideration for this study is that students are not randomized into the DEUs. Students are able to self-select either DEU or traditional clinical experience. There may be inherent differences between students who select DEU or traditional clinical experiences, that in turn are related to the outcomes studied here. However, the two groups will be assessed at baseline for comparability, and any differences will be adjusted for.

Conclusion

DEUs evolved as a strategy to improve NGNs' preparation for practice. This research will be the first known study that evaluates graduate transition to practice outcomes associated with DEU undergraduate clinical education. Significant positive findings from this research will support the use of DEUs as an effective clinical model to decrease the preparation-practice gap.

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Summary of Changes from Proposal

The following changes were made in the execution of this study:

1. Participants were asked to provide their unique participant ID number when responding to all REDCap surveys, in order to link individual participants to their survey responses throughout the study period.

In September 2020, a major modification to the study was approved because the original study design was no longer feasible as a result of the COVID-19 pandemic. The following modifications were made to the study:

Original	Modification	Rationale
Title: “Dedicated Education Units and Perceived Competence, Practice Readiness, Self-Efficacy, Job Satisfaction, Orientation Length, and Intent-to-Stay among New Graduates Nurses: A Longitudinal Comparative Analysis of Two Cohorts”	Title: “New Graduate Nurses’ Perception of the Impact of Dedicated Education Units on Transition to Practice: A Descriptive Study”	Study specific aims and methods changed
Specific Aims: 1. Evaluate perceived competence and rate of change in perceived competence of BSN students who participated in a DEU and those who participated in a traditional clinical education experience upon graduation and at 3-months and 6-months employment. 2. Determine if competence is associated with age, gender, ethnicity, grade point average, previous non-nursing degree, prior health care work experience, previous employment within organization, facility type,	Specific Aims: 1. Describe perceived competence and rate of change in perceived competence of BSN students who participated in a DEU during their undergraduate education upon graduation (baseline), and at 3-months and 6-months employment. 2. Describe practice readiness (at baseline), self-efficacy (at baseline, 3-months and 6-months employment), job satisfaction (at 3-months and 6-months employment), intent-to-stay (at 6-months employment) and orientation length of BSN students who	Due to the Covid-19 pandemic, student’s use of DEUs was disrupted, limiting the ability to recruit graduates for this study. A change of methods was sought to facilitate data collection and continuation of dissertation.

<p>hospital magnet status, employment status, residency experience/length, time-to-hire, self-efficacy, intent to stay, practice readiness, job satisfaction and orientation length.</p> <p>3. Compare 1) practice readiness at baseline, 2) self-efficacy at baseline, 3-months and 6-months employment, 3) job satisfaction at 3-months and 6-months employment, 4) intent to stay at 6-months employment and 5) orientation length of BSN students who participated in a DEU and those who participated in a traditional clinical education experience.</p>	<p>participated in a DEU during their undergraduate education.</p> <p>3. Explore new graduate nurses' perception of the impact of a DEU clinical experience in facilitating their transition to practice.</p> <p>Secondary aims:</p> <p>4. Examine relationships between competence, practice readiness, self-efficacy, job satisfaction, intent-to-stay and orientation length.</p> <p>5. Explore association of competence, practice readiness, self-efficacy, job satisfaction, intent-to-stay and orientation length to age, gender, ethnicity, grade point average, previous non-nursing degree, prior healthcare work experience, previous employment within organization, facility type, hospital Magnet status, employment status, residency experience/length and time-to-hire.</p>	
<p>Design: repeated-measures comparative analysis of two cohorts</p>	<p>Design: longitudinal, descriptive study with quantitative and qualitative data</p>	<p>Required sample size for statistical power for initial design was not achievable as in-person recruitment was stopped and students' participation in a DEU was stopped for an unidentified time because of COVID-19</p>
<p>Design: Quantitative data collected at baseline, 3-month employment, and 6-month</p>	<p>Design: Quantitative data collected at baseline, 3-month employment, and 6-month</p>	<p>Because the required sample size for statistical power was not achieved, research question revised and research</p>

employment compared between 2 cohorts (DEU vs. traditional clinical)	employment described within a DEU cohort Qualitative data collected regarding DEU cohorts' perception of the impact of a DEU on transition to practice	design was changed to a descriptive study including both quantitative and qualitative data
Sample: Two cohorts- those who did and those who did not participate in a DEU experience during their undergraduate nursing program.	Sample: A cohort that participated in a DEU experience during their undergraduate nursing program.	Modification to research question and research design led to change in sample
Sample size & power calculation: Required N of 42, with 21 participants within each cohort (DEU and traditional clinical)	Sample size & power calculation: Change in study design to a descriptive study with a qualitative component allows use of recruited participants with no need for additional recruitment	Change in study design led to change in sample size
Recruitment: Remained the same with the addition of the following modifications.	Recruitment: Method 1: Identify participants with variation (high/low scores) on outcome variables. Once these participants have finished responding to quantitative data collection methods, invite them to participate in a brief interview to explain/clarify quantitative findings. Method 2: With insufficient responses (< 8-10 participants), invite the remaining participants who have finished responding to quantitative data collection methods to participate in a	Change in study design necessitated a change

	brief interview to explain/clarify quantitative findings.	
Retention: Remained the same with the addition of the following modifications.	Retention: \$25 amazon gift card for participation in qualitative interview	Additional incentive to acknowledge additional time of participants
Procedures: Remained the same with the addition of the following modifications.	<p>Procedures:</p> <p>Modification #1: Seek modification from IRB</p> <p>Modification #2:</p> <p>Send participants an email inviting to participate in brief interview.</p> <p>The email to include a copy of the updated fact sheet and a REDCap link. If necessary, a reminder email will be sent once, a week later.</p> <p>The REDCap link will ask Yes/No: “are you willing to briefly talk to me on the telephone so I can learn more about your first 6-months of working and how, if at all, your experience on the DEU during your education was helpful?”</p> <p><u>If yes</u> → have free text box for participants to enter dates/times they are available</p> <p>Additional email communications back and forth will set up date/time.</p>	In order to obtain qualitative data from participants

	<p>A confirmation email will be sent 24 hours prior to scheduled call</p> <p>If the call does not take place as scheduled, a final attempt via email will be made to set up a call</p> <p>If no → ask if they would answer 3 open-response questions and include the questions in the survey</p> <p>Modification #3: To conduct telephone interviews:</p> <ul style="list-style-type: none"> • Consent will be verified prior to onset of the interview and participants will be able to ask any questions that they have • Use personal cell phone in a private setting • Record the conversation with 2 digital recorders 	
<p>Measures: Remained the same with the addition of the following modifications.</p>	<p>Measures:</p> <p>Added a brief qualitative interview for those agreeable to participate in a telephone interview and an option to respond in writing to 3 open-ended questions if participation did not want to be interviewed.</p> <p>See Appendix F: Interview Guide</p>	<p>Needed to obtain qualitative data from participants.</p>
<p>Data management: Remained the same with the addition of the following modifications.</p>	<p>Data management:</p> <ul style="list-style-type: none"> • Email securely through umassmed.edu account 	<p>Required to collect and manage qualitative data.</p>

	<ul style="list-style-type: none"> • Use REDCap to collect and manage the following data: 1) if the participant is agreeable to participate in telephone interview, and 2) to collect data for open-ended questions • Recorders will be secured in a locked safe, in a locked room • All data will be de-identified • Digital files of interviews will be stored on secure research drive. • Transcripts will be professionally transcribed verbatim via a secure, encrypted online platform • Transcripts will be secured on a research drive • Files for data analysis will be stored on secured research drive • Digital files, transcripts, and analysis files will be double deleted when data analyses are completed 	
<p>Data Analysis:</p> <p><u>Specific Aim #1:</u> Step 1: Perform linear mixed models statistical analyses with outcome, predictor, time points, and their interaction. Step 2: Identify significant relationships between competence and predictors. Step 3: Perform linear mixed models statistical analyses, adjusting for significant relationships identified in Step #2.</p>	<p>Data Analysis:</p> <p><u>Specific Aim #1:</u> Step 1: Descriptive statistics for competence at each time point. Step 2: Repeated measures of analysis of variance to determine rate of change within subjects (unadjusted) Step 3: If indicated, repeated measures of analysis of variance to determine rate of change within subjects, adjusted with predictors</p>	<p>Required for updated specific aims.</p>

<p><u>Specific Aim #2:</u> Step 1: For continuous variables perform correlations at all 3 time points with competence. Step 2: For dichotomous variables perform T-tests at all 3 time points with competence. Step 3: For categorical variables perform analysis of variance at all 3 time points with competence.</p> <p><u>Specific Aim #3:</u> Step #1: Perform unadjusted analyses. Step #2: Determine if there are significant relationships between each outcome and predictors. Step #3: Adjusting for significant relationships identified in step #2, perform either analysis of variance, analysis of covariance, linear mixed models, binominal logistic regression, or T-tests as indicated by variable type.</p>	<p><u>Specific Aim #2:</u> Descriptive statistics for practice readiness (at baseline), self-efficacy (at baseline, 3-month and 6-month employment), job satisfaction (at 3-month and 6-month employment), intent-to-stay (at 6-month employment), and orientation length.</p> <p><u>Specific Aim #3:</u> Conventional Content Analysis for illustrative purposes Step 1: repeatedly read text to get a sense of the whole Step 2: read text word by word to derive codes using the exact words from the text Step 3: re-read text and make notes of thoughts and ideas Step 4: label codes Step 5: sort codes into categories based on how they relate to each other Step 6: group codes into meaningful clusters Step 7: refine codes/clusters into larger categories Step 8: identify the meaning of the categories and select exemplars</p> <p><u>Specific Aim #4:</u> Perform correlations between competence (at baseline, 3-month, and 6-month employment), practice readiness (at baseline), self-efficacy (at baseline, 3-month and 6-month employment), job satisfaction (at 3-month and 6-month employment), intent-to-stay (at 6-month</p>	
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	<p>employment), and orientation length.</p> <p><u>Specific Aim #5:</u></p> <p>Step 1: Continuous outcomes (competence, practice readiness, self-efficacy, job satisfaction, and orientation length in weeks) perform:</p> <ul style="list-style-type: none"> ○ Continuous variables (age, grade point average, residency length, and time-to-hire) → correlations at each time point ○ Dichotomous variables (previous non-nursing degree, prior health care work experience, previous employment within organization, residency experience, and employment status) → T-tests all each time point ○ Categorical variables (gender, ethnicity, Magnet status, and facility type) → analysis of variance at each time point <p>Step 2: Dichotomous outcome (orientation length shortened) perform:</p> <ul style="list-style-type: none"> ○ Continuous variables (age, grade point average, residency length, and time-to-hire) → T-tests ○ Dichotomous and categorical variables (previous non-nursing degree, prior health care work experience, previous employment within organization, residency experience, employment status, gender, ethnicity, 	
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	<p>Magnet status, and facility type) → crosstabs</p> <p>Step 3: Categorical outcome (intent-to-stay) perform:</p> <ul style="list-style-type: none"> ○ Continuous variables (age, grade point average, time-to-hire, and residency length) → analysis of variance ○ Dichotomous and categorical variables (previous non-nursing degree, prior health care work experience, previous employment within organization, residency experience, employment status, gender, ethnicity, Magnet status, and facility type) → crosstabs 	
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The following changes were made in the execution of the modification of this study:

1. Due to a lack of qualitative data collection (either interview or written), a group of participants who remained active in the study after completing the baseline survey (i.e., completed 3-month employment survey and/or 6-month employment survey) were contacted by email a final time asking them to either participate in the interview or answer 3 open-ended questions via REDCap.

Slide Presentation

New Graduate Nurses' Perception of the Impact of Dedicated Education Units on Transition to Practice: A Descriptive Study

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Introduction

- ▶ The gap between education and practice can make transitioning to practice (TTP) a challenging period for new graduate nurses (NGNs) (Hickerson et al., 2016).
- ▶ To minimize this gap and ease TTP, schools of nursing and health care organizations have collaborated to form dedicated education units (DEUs) for clinical education.
 - ▶ DEUs are learning environments where staff nurses provide direct hands on teaching and are guided by clinical faculty in teaching/learning strategies (Moscato et al., 2013).

Purpose & Specific Aims

- ▶ Purpose: to identify the value of baccalaureate nursing student clinical preparation within a dedicated education unit on transition to practice outcomes
 - ▶ Specific Aim #1: Describe perceived competence of students who participated in a DEU during their undergraduate education upon graduation through 6-months of employment
 - ▶ Specific Aim #2: Describe practice readiness, self-efficacy, job satisfaction, intent-to-stay and orientation length in the sample
 - ▶ Specific Aim #3: Explore new graduate nurses' perception of the impact of a DEU clinical experience in facilitating transition to practice
 - ▶ Secondary Aims
 - ▶ Specific Aim #4: Examine relationships between outcome variables
 - ▶ Specific Aim #5: Explore associations between outcome variables with demographic and employment characteristics

Background – Transition to Practice

- ▶ Reality shock (Kramer, 1974)
- ▶ Evolution of the healthcare system has increased the complexity required to TTP (Wolff et al., 2010a).
- ▶ Experience of NGNs
 - ▶ Deficits in critical thinking, clinical knowledge, organization, prioritization, leadership, communication, and performing advanced technical skills (Casey et al., 2004; Song & McCreary, 2020; Theisen & Sandau, 2013).

Background – Outcomes

- ▶ Competence
 - ▶ “Functional adequacy and capacity to integrate knowledge and skills to attitudes and values into specific contextual situations of practice” (Meretoja et al., 2004b, p. 330-331).
- ▶ Practice Readiness
 - ▶ A generalist foundation and some job-specific capabilities to provide safe patient care and keep up with the current and future realities of nursing practice (Wolff et al., 2010b).
- ▶ Self-Efficacy
 - ▶ The belief one has about being able to successfully execute a behavior required to produce a desired outcome (Bandura, 1977a).

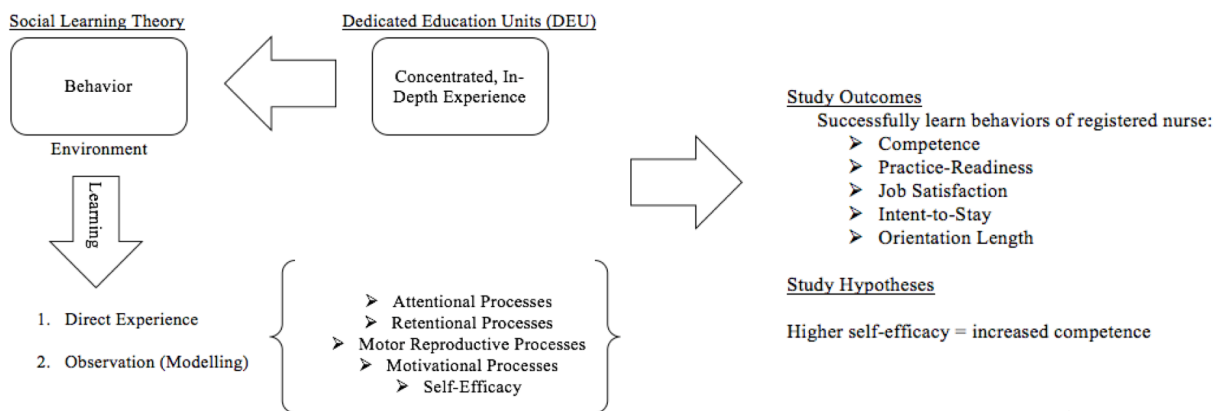
Background – Outcomes

- ▶ Job Satisfaction
 - ▶ “Extent to which employees like their work” (Price, 2001, p. 608).
- ▶ Intent-to-stay
 - ▶ “Extent to which an employee plans to continue membership with his/her employer” (Kim et al., 1996, p. 951).
- ▶ Orientation Length
 - ▶ “The traditional means of assisting a new graduate to transition to practice” (Rush et al., 2015, p. 144).

Background – Dedicated Education Units

- ▶ Clinical education model that maximizes the clinical learning environment to optimize student learning (Moscato et al., 2007).
 - ▶ Positive student perspectives (Crawford et al., 2018; Nishioka et al., 2014).
 - ▶ Positive student outcomes (Bittner et al., in press; Galuska, 2015; Moore & Nahigian, 2013; Plemmons et al., 2018; Rusch et al., 2018; Schechter et al., 2017).
- ▶ NGN outcomes
 - ▶ Higher confidence with communication, delegation, prioritization, organization & helpful in managing the complexities of the floor (Dimino et al., 2020).
 - ▶ Decreased anxiety & increased confidence from baseline – 12 months (Vnenchak et al., 2019).

Framework – Social Learning Theory



Methods

- Descriptive, longitudinal – quantitative measures and qualitative interviews
- Sample: convenience sample of 33 senior undergraduate nursing students who participated in a DEU clinical experience and planned to obtain employment as a direct patient care nurse within 6 months of graduation

Study Timeline & Data Collection

1 Week of Graduation	3-Months after Graduation	6-Months after Graduation (if needed)	3-Months Employment	6-Months Employment	Completed Surveys
Baseline Survey #1	3-Month Follow-Up	6-Month Follow-Up	3-Month Employment Survey #2	6-Month Employment Survey #3	Qualitative Interview
<ul style="list-style-type: none"> Competence Practice Readiness Self-Efficacy 	<i>Do you have a job working as a registered nurse providing direct patient care? Yes/No</i> <i>If Yes, Start Date:</i>	<i>Do you have a job working as a registered nurse providing direct patient care? Yes/No</i> <i>If Yes, Start Date:</i>	<ul style="list-style-type: none"> Competence Self-Efficacy Job Satisfaction 	<ul style="list-style-type: none"> Competence Self-Efficacy Job Satisfaction Intent-to-Stay Orientation Length 	<i>Experience on DEU</i> <i>Experience TTP</i> <i>Impact of DEU on TTP</i>

Measures

Outcome	Measure	Description	Metrics
Competence	Nurse Competence Scale (Meretoja et al., 2004a)	73-items, 7 subscales, generic competence Visual analog scale: 0 (very low) – 100 (very high)	α 0.97 - 0.98
Practice Readiness	Casey-Fink Readiness for Practice Survey ® (Casey et al., 2011)	20 items, comfort/confidence in performing key practice skills Likert Scale: 1 (strongly disagree) - 4 (strongly agree)	α 0.88
Self-Efficacy	General Self-Efficacy Scale (Schwarzer & Jerusalem, 1995)	10 items Likert Scale: 1 (not at all true) - 4 (exactly true)	α 0.81 - 0.90
Job Satisfaction	Michigan Organizational Assessment Questionnaire- Job Satisfaction Subscale (Cammann et al., 1983)	3-items, global job satisfaction Likert Scale: 1 (strongly disagree) – 7 (strongly agree)	α 0.94 - 0.95
Intent-to-Stay	I plan to stay in my current position for at least 12 months: Yes/No/Unsure		
Orientation Length	Orientation length in weeks:		
	Was your orientation shorter than originally planned: Yes/No		

Interviews

- ▶ Semi-structured interview guide
 - ▶ Experience on DEU, experience TTP, impact of DEU on TTP
 - ▶ Specific probing questions based on baseline competence scores (low vs. high)
- ▶ Five interviews by phone, lasting between 15-45 minutes
- ▶ Informational redundancy was not achieved – used to illustrate quantitative results

Data Management & Analysis

- ▶ Quantitative Data:
 - ▶ Completed via REDCap and exported to IBM SPSS
 - ▶ Unique identifier to link survey data over time
 - ▶ Missing data - participant-specific mean for the observed subscale
 - ▶ Descriptive statistics, paired t-tests, nonparametric correlations and analysis of variance, crosstabs
- ▶ Interview Data:
 - ▶ Recorded, transcribed verbatim and analyzed using conventional content analysis

Results – Demographics & Employment Characteristics

Age	N = 18	Mean 26.83 (SD 6.002)		
GPA	N = 18	Mean 3.44 (SD .228)		
Time to Hire	N = 14	Mean 65.36 days (SD 20.77)		
Gender	N = 18	Male	Female	
		3 (16.7%)	15 (83.3%)	
Ethnicity	N = 18	White	Black or African American	Other
		16 (88.9%)	1 (5.6%)	1 (5.6%)
Previous Degree	N = 18	Yes	No	
		2 (11.1%)	16 (88.9%)	
Prior Healthcare Work Experience	N = 18	Yes	No	
		9 (50%)	9 (50%)	
Facility Type	N = 13	Acute Care		
		13 (100%)		
Employment Status	N = 13	Full Time	Part Time	
		9 (69.2%)	4 (30.8%)	
Previous Employment in Facility	N = 13	Yes	No	
		6 (46.2%)	7 (53.8%)	

Results – Specific Aim #1

- ▶ Competence at baseline 71.73 (SD 14.7), at 3-months employment 76.08 (SD 9.36) and at 6-months employment 75.7 (SD 11.98)
- ▶ There were no significant changes in total competence between any time points
- ▶ All subscales saw an increase in scores from baseline to 3-months employment, with the therapeutic ($p < 0.05$) and work ($p < 0.01$) subscales significantly increasing over this time period.
- ▶ Baseline competence of participants who provided follow-up data at 3- and 6-months did not differ significantly from those who did not.

Results – Specific Aim #2

Outcome	T1 (N = 18)	T2 (N = 13)	T3 (N = 12)
	Mean (SD)	Mean (SD)	Mean (SD)
	Range	Range	Range
Practice Readiness	3.16 (.31) 2.7-3.8	-	-
Self-Efficacy	3.16 (.34) 2.1-3.6	3.17 (.31) 2.8-3.8	3.23 (.38) 2.8-3.8
Orientation Length	-	-	13.08 (7.04) weeks 6-30
Orientation Shortened	-	-	Yes 5 (41.7%) No 7 (58.3%)
Job Satisfaction	-	6.51 (.59) 5.33-7	5.94 (1.13) 3.33-7
Intent-to-Stay	-	-	Yes 11 (91.7%) No 0 Unsure 1 (8.3%)

T1 = Baseline; T2 = 3-Months; T3 = 6-Months

Results – Specific Aim #3

Experience on DEU	Experience TTP	Impact of DEU on TTP
<ul style="list-style-type: none"> Value of Preceptor DEU Environment Skills Development <ul style="list-style-type: none"> Technical Skills Professional Skills Being there for patients 	<ul style="list-style-type: none"> Support System Being on Your Own <ul style="list-style-type: none"> Gaining Independence and Confidence Being there for patients 	<ul style="list-style-type: none"> Supportive Value of Preceptor & Skills Development 'Outside the job but still in the job' Establish a routine Become familiar with hospital environment Develop independence and confidence Develop critical thinking skills Provide comprehensive care to patients

Results – Specific Aim #4

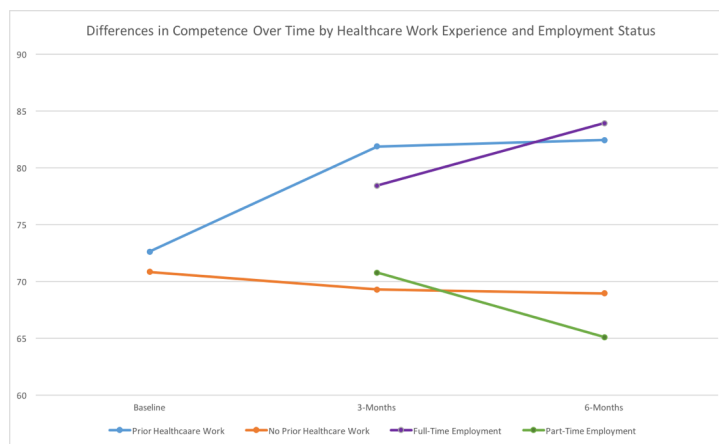
	T1NCS	T2NCS	T3NCS	T1SE	T2SE	T3SE	T2JS	T3JS	PR	Orient
T1NCS	-									
T2NCS	.698**	-								
T3NCS	.552	.582	-							
T1SE	.066	.409	.475	-						
T2SE	.222	.601*	.696*	.600*	-					
T3SE	.312	.633*	.704*	.549	.878**	-				
T2JS	.222	.534	.535	.417	.889**	.682*	-			
T3JS	.584*	.572	.537	.735**	.545	.446	.641*	-		
PR	.358	.490	.067	.409	.244	.221	.138	.446	-	
Orient	.240	.187	.105	.166	.190	.169	.510	.508	.231	-

T1 = baseline; T2 = 3-months; T3 = 6-months;

NCS = nurse competence scale; SE = self-efficacy; JS = job satisfaction; PR = practice readiness; Orient = orientation length

• = Significance $p < 0.05$; ** = Significance $p < 0.01$

Results – Specific Aim #5



Discussion

- ▶ Competence: 'good' at baseline, increased to 'very good' at 3- and 6-months
 - ▶ Associated with prior healthcare work experience
- ▶ Practice Readiness: relatively high, 89% felt ready for the professional nursing role
- ▶ Self-Efficacy: unchanged over time
 - ▶ Associated with competence
- ▶ Job Satisfaction: relatively high
 - ▶ Slight decrease in competence and job satisfaction at 6-months
- ▶ Intent-to-Stay: not associated with any other variables; high in this sample
- ▶ Orientation length: average 13 weeks; >1/3 shorter than originally planned

Limitations

- ▶ Sample size
- ▶ Attrition
- ▶ Findings have limited generalizability
- ▶ Self-report of outcome measures
- ▶ COVID-19 pandemic
- ▶ Follow-up period 6-months

Conclusions

- ▶ High competence, practice readiness, job satisfaction, and intent-to-stay during the first 6-months of practice
- ▶ DEU model supported the development of independence, confidence, critical thinking, technical and professional nursing skills.
- ▶ DEU is a supportive learning environment that may facilitate TTP

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Dissemination Plan

The primary description of this dissertation work was submitted as a manuscript on May 16th, 2021 to Nurse Education in Practice for review and consideration for publication.

Appendices

Appendix A: Baseline Survey #1

Variable	Response Options
Subject Characteristics	
Age: (in years)	
Gender	Male/Female/Prefer not to answer
Ethnicity	White/Black or African American/Asian/American Indian/Alaska Native/Native Hawaiian/Pacific Islander/Other
Confounders	
Grade point average	
Previous non-nursing degree	Yes/No
Prior health care work experience	Yes/No
Outcomes	
Nurse Competence Scale Meretoja, R., Isoaho, H., & Leino-Kilpi, H. (2004). Nurse competence scale: Development and psychometric testing. <i>Methodological issues in nursing research</i> , 47(2), 124-133. doi:10.1111/j.1365-2648.2004.03071.x	Visual analog scale 0-100 0 = very low level of competence 100 = very high level of competence Directions: For each statement indicate your level of competence in performing each skill.
Practice Readiness Casey, K., Fink, R., Jaynes, C., Campbell, L., Cook, P., & Wilson, V. (2011). Readiness for practice: The senior practicum experience. <i>Journal of Nursing Education</i> , 50(11), 646-652. doi:10.3928/01484834-20110817-03	Likert Scale 1-4 1= strongly disagree 2= disagree 3= agree 4= strongly agree Directions: Indicate the degree to which you agree or disagree with the following statements.
Self-Efficacy	Likert Scale 1-4 1= not at all true

Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, (Eds.), <i>Measures in health psychology: A user's portfolio. Causal and control beliefs</i> (pp. 35-37). Windsor, UK: NFER-NELSON.	2= hardly true 3= moderately true 4= exactly true Directions: Indicate the degree to which the following statements are true.
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Appendix B: 3-Month Follow-Up Survey

Variable	Response Options
Contact Information	
Same email	Yes/No
If no, preferred email:	
Subject Characteristics	
Eligible employment (registered nurse providing direct patient care)	Yes/No
If yes, start date:	
If yes, facility type:	Facility type (Acute care/Long-term care/Rehabilitation/Community/Outpatient)
If yes, employment status:	Full-Time/Part-Time
If no, reason:	

Appendix C: 6-Month Follow-Up Survey

Variable	Response Options
Contact Information	
Same email	Yes/No
If no, preferred email:	
Subject Characteristics	
Eligible employment (registered nurse providing direct patient care)	Yes/No
If yes, start date:	
If yes, facility type:	Facility type (Acute care/Long-term care/Rehabilitation/Community/Outpatient)
If yes, employment status:	Full-Time/Part-Time
If no, reason:	

Appendix D: 3-Month Post-Employment Survey #2

Variable	Response Options
Contact Information	
Same email	Yes/No
If no, preferred email:	
Subject Characteristics	
Same position	Yes/No
Confounders	
Hospital Magnet status	Yes/No
Previous employment within organization	Yes/No
Residency program	Yes/No
If yes, residency length (in weeks):	
Outcome	
Nurse Competence Scale Meretoja, R., Isoaho, H., & Leino-Kilpi, H. (2004). Nurse competence scale: Development and psychometric testing. <i>Methodological issues in nursing research</i> , 47(2), 124-133. doi:10.1111/j.1365-2648.2004.03071.x	Visual analog scale 0-100 0 = very low level of competence 100 = very high level of competence Directions: For each statement indicate your level of competence in performing each skill.
Self-Efficacy Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, (Eds.), <i>Measures in health psychology: A user's portfolio. Causal and control beliefs</i> (pp. 35-37). Windsor, UK: NFER-NELSON.	Likert Scale 1-4 1= not at all true 2= hardly true 3= moderately true 4= exactly true Directions: Indicate the degree to which the following statements are true.
Job Satisfaction Cammann, C., Fichman, M., Jenkins, G.D., & Klesh, J.R. (1983). Assessing the attitudes and perceptions of organizational members. In S.E. Seashore, E.E. Lawler III, P.H. Mirvis, & C. Cammann, (Eds.), <i>Assessing organizational change: A guide to methods, measures, and practices</i> (pp. 71-138). New York, NY: Wiley.	Likert Scale 1-7 1= strongly disagree 2= disagree 3= slightly disagree 4= neither agree nor disagree 5= slightly agree 6= agree

	<p>7= strongly agree</p> <p>Directions: Indicate the degree to which you agree or disagree with the following statements.</p>
--	---

Appendix E: 6-Month Post-Employment Survey #3

Variable	Response Options
Subject Characteristics	
Same position	Yes/No
Outcome	
Nurse Competence Scale Meretoja, R., Isoaho, H., & Leino-Kilpi, H. (2004). Nurse competence scale: Development and psychometric testing. <i>Methodological issues in nursing research</i> , 47(2), 124-133. doi:10.1111/j.1365-2648.2004.03071.x	Visual analog scale 0-100 0 = very low level of competence 100 = very high level of competence Directions: For each statement indicate your level of competence in performing each skill.
Self-Efficacy Schwarzer, R., & Jerusalem, M. (1995). Generalized Self-Efficacy scale. In J. Weinman, S. Wright, & M. Johnston, (Eds.), <i>Measures in health psychology: A user's portfolio. Causal and control beliefs</i> (pp. 35-37). Windsor, UK: NFER-NELSON.	Likert Scale 1-4 1= not at all true 2= hardly true 3= moderately true 4= exactly true Directions: Indicate the degree to which the following statements are true.
Job Satisfaction Cammann, C., Fichman, M., Jenkins, G.D., & Klesh, J.R. (1983). Assessing the attitudes and perceptions of organizational members. In S.E. Seashore, E.E. Lawler III, P.H. Mirvis, & C. Cammann, (Eds.), <i>Assessing organizational change: A guide to methods, measures, and practices</i> (pp. 71-138). New York, NY: Wiley.	Likert Scale 1-7 1= strongly disagree 2= disagree 3= slightly disagree 4= neither agree nor disagree 5= slightly agree 6= agree 7= strongly agree Directions: Indicate the degree to which you agree or disagree with the following statements.
Intent-to-Stay	Yes/No/Unsure
I plan to stay in my current position for at least 12 months.	

Orientation Length	
Length of orientation (in weeks):	
Was your orientation shorter than originally planned?	Yes/No

Appendix F: Interview Guide

Interview Guide – High Competence (*questions for the 3 open responses in REDCap)

Thinking back on your experience in a dedicated education unit:

1. *When you think back to your experience on the DEU, what was most valuable in making you feel competent in your nursing role?
2. Share with me 1 or 2 of your most memorable learning experiences in the DEU.
3. Tell me about 1 or 2 experiences you had while on the DEU that helped you really understand what it means to be a nurse.

Thinking about your transition to practice:

1. Tell me about your transition to practice.
2. *Over the past 6 months what has made you feel competent about your transition to practice?
3. Share with me 1 or 2 of your most memorable experiences as a new nurse.

Impact of dedicated education unit on transition to practice:

1. *Tell me how your experience on the DEU related to your sense of competence transitioning to practice.
2. Tell me about the impact of the DEU on your transition to practice.
3. Is there anything else you would like to add about DEUs and transition to practice?

Interview Guide – Low Competence (*questions for the 3 open responses in REDCap)

Thinking back on your experience in a dedicated education unit:

1. *When you think back to your experience on the DEU, what was most valuable about the time you spent there?
2. Share with me 1 or 2 of your most memorable learning experiences in the DEU.
3. Tell me about 1 or 2 experiences you had while on the DEU that helped you really understand what it means to be a nurse.

Thinking about your transition to practice:

1. Tell me about your transition to practice.
2. *What issues or concerns have you encountered during your first 6 months of working as a nurse?
3. Share with me 1 or 2 of your most memorable experiences as a new nurse.

Impact of dedicated education unit on transition to practice:

1. *How, if at all, do you think your experience on a DEU helped or hindered your transition to practice as a nurse?
2. Tell me about the impact of the DEU on your transition to practice.
3. Is there anything else you would like to add about DEUs and transition to practice?

Interview Guide - Generic (*questions for the 3 open responses in REDCap)

Thinking back on your experience in a dedicated education unit:

1. When you think back to your experience on the DEU, what was most valuable about the time you spent there?
2. Share with me 1 or 2 of your most memorable learning experiences in the DEU.
3. *Tell me about 1 or 2 experiences you had while on the DEU that helped you really understand what it means to be a nurse.

Thinking about your transition to practice:

1. Tell me about your transition to practice.
2. Over the past 6 months what has gone well in transitioning to practice? Have you experienced any issues or concerns?
3. *Share with me 1 or 2 of your most memorable experiences as a new nurse.

Impact of dedicated education unit on transition to practice:

1. Tell me how your experience on the DEU helped or hindered your transition to practice.
2. *Tell me about the impact of the DEU on your transition to practice.
3. Is there anything else you would like to add about DEUs and transition to practice?