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The Use of the QSEN Framework in NRP for Graduate Nurses: A Systematic Review

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Walden University

College of Nursing

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Debra M. Friedl

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University

2021

Abstract

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Nurses: A Systematic Review

by

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MS, SUNY Stony Brook, 1991

BS, SUNY Stony Brook, 1987

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2021

Abstract

In hospitals offering a nurse residency programs (NRP) for new graduates, the framework used can impact retention and job satisfaction rates. To meet the nursing needs of the hospitalized population, it is critical to understand which NRP framework results in higher retention and job satisfaction rates as compared to national rates. The purpose of this systematic review was to examine the evidence on those NRP using the quality and safety for education of nurses' framework (QSEN) to compare rates of job satisfaction and job retention with published national rates. A comprehensive search outlined in the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart located 29 relevant articles. Of these, seven met the review's inclusion criteria. Only one study reported a comparison of pre-and post NRP rates finding an increase in retention from 59% to 87% in the first year vs. an 82.5% national one-year retention rate. Three other studies that reported one-year post-NRP program had retention rates at one year following the NRP higher than the national average (90%, 91%, 94.6% vs 82.5%). Two studies reported retention rates two years after the NRP, with one study reporting a 90% retention rate and the other reporting 79%. The one study that reported retention rates at three years following the NRP had retention rates of 78%. It appears that while a NRP using a QSEN framework is initially successful, the success is not sustained over time. Job satisfaction was not reported in any of the studies and could not be evaluated. Identifying the NRP that increases and sustains new graduate retention is imperative to promote social change in the face of an increasing nursing shortage.

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Dedication

This project is dedicated to my family. My parents, Mildred Blindbury and Arthur C. Blindbury (deceased), strong advocates of higher education, and my mother, my lifelong cheerleader, study partner and biggest supporter throughout all my nursing degrees. To my husband, the greatest love of my life, Gus A. Friedl, for his ongoing encouragement, patience and my number one go to, fix it person, whether it was getting dinner on the table or fixing a technical issue, he was always there. To my sons, Christopher Arthur Friedl and Michael Steven Friedl, the lights of my life, being their own persons and teaching me it's okay to pursue your own dream. To my brother, Steven Arthur Blindbury, and his family (Cara, Benjamin, and Rebekah), always there to listen, commiserate and for taking over when needed. I also want to thank my in-laws, Elizabeth and Gus Friedl, for being there and showing the greatest appreciation for everything I do. To Cynthia Larocca, who came into my life five years ago, immediately inspiring me to reach for the stars, and for her ongoing persistence and motivational talks. All of you kept me going, especially through the pandemic, I love you all! We made it!

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Section 1: Nature of the Proposal

Introduction

New graduate nurses are challenged by the multifaceted decision making necessary for clinical practice in increasingly complex hospital environments. This challenge may be due, in part, to a lack of real-world clinical experience. Many new graduate nurses who choose to work in hospital settings feel overwhelmed and ill-equipped for practice, despite having passed a nursing licensure examination (Goode et al., 2013). This discrepancy between demonstrated knowledge and competent practice, termed a transition-to-practice gap, is not only a safety issue for hospitalized persons, but has been reported as a reason for job dissatisfaction and up to 35% of turnover among new nurses within their first year of work (Ackerson et al., 2018; Beecroft et al., 2001). O'Neill and Seago (2002) reported that hospital nurses are four times more likely to be dissatisfied with their jobs than the average United States employee. Consequently, many hospitals now provide new graduates with clinical experience and a safe learning environment to develop the ability to demonstrate sound decision-making and competent practice when it comes to patient care to increase retention rates and job satisfaction. These are called NRP (NRPs).

Problem Statement

NRPs are comprehensive, transition-to-practice programs that allow graduates to continue practicing and acquiring skills either after the completion of a prelicensure or advanced practice degree program, or during the transition into new areas of clinical practice for more experienced nurses. NRP are typically housed in hospitals and most

often in acute care settings (The Joint Commission, 2002). Goode et al. (2013), as well as Pillai et al. (2018), reported that retention rates for nurses participating in a NRP(NRP) at the 1-year mark of employment is higher than nurses who did not participate in an established nurse residency program. In comparison, Van Camp and Chappy (2017) estimated that 35% to 60% of new graduate nurses leave their first place of employment within 1 year of hire following a traditional nursing orientation. Fater et al. (2008) suggested that 50% of the nurses leave their employment in the first-year post-graduation due to job dissatisfaction. Sherwood and Zomorodi (2014) stated that nurses who participated in a NRP are more engaged in their professional role and demonstrate an increase in job satisfaction.

The move from a traditional orientation to a NRP, therefore, is significant to the nursing profession for retaining new graduate nurses beyond one year of employment. There is, however, a practice gap, as the NRPs are not standardized, with some new nurse graduates receiving basic hospital orientation and others participating in NRP of varied length and content.

Purpose Statement

The purpose of this project was to examine the best available literature regarding new graduate nurse retention and job satisfaction among QSEN-based versus non-QSEN based NRP. The American Association of Colleges of Nursing (AACN; 2017) and American Nurses Credentialing Center (ANCC; 2016) have supported that using the QSEN framework can positively influence new graduate nurse retention rates and job satisfaction. QSEN's (n.d.) program is based on six subject matter areas: patient centered

care, teamwork and collaboration, evidence-based practice, quality improvement, safety, and informatics. This subject matter is designed to address the needs of the new graduate nurse, providing a comprehensive outline for the foundation, and building of an NRP. Specifically, QSEN (n.d.) sets goals so the new graduate can gain knowledge, develop skills, and acquire appropriate attitudes for all situations. The knowledge, skills and attitude goals defined by QSEN (n.d.) go beyond other NRP models as QSEN encompasses critical thinking skills, new graduate development of comfort level in emergencies, and establishes an ongoing network of support for new graduates in dealing with stress levels. While analyzing the gap in the literature for this project, I found that there is no standardization of content in NRPs. In this project, I reviewed the impact of one standardized and validated framework—the QSEN framework—on retention rates and job satisfaction of new graduate nurses.

Nature of the Doctoral Project

In this project, I used the systematic review method. In a systematic review, a researcher uses the most reliable sources of evidence to guide practice. The purpose of a systematic review is to summarize available primary research in response to a focused question. The key characteristics of a systematic review are a clearly stated set of objectives with preestablished eligibility criteria, a transparent and reproducible methodology, a systematic search to identify all relevant studies using the eligibility criteria, and a synthesis of the findings (Holly et al., 2021). I reviewed literature published between 2005 to 2020 for relevance to QSEN, new graduate retention, and job satisfaction. I used the following databases: CINAHL, ERIC, Education Source,

Embase, Medline, ProQuest, PsycInfo, SocIndex, ScienceDirect, Gale OneFile, and Google Scholar. The search encompassed the years 2005 (the year the QSEN project was founded) up to the present time. I obtained additional sources of evidence by manually reviewing reference lists in which all references were peer reviewed. I used the following key search terms and phrases: *new graduate nurse, novice nurse, beginner nurse, new registered nurses, nurse residency, residencies, transition to practice, QSEN, turnover, retention, and job satisfaction.*

I used the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) checklist and flow diagram to identify, select, and appraise the literature (Page et al., 2021). I graded studies using the Melnyk Levels of Evidence Tool (Fineout-Overholt et al., 2010).

Definitions

New Graduate Nurse: A newly licensed registered nurse with less than one year experience (ANCC, 2016).

Nurse Residency Program: Any transition to practice program offered to new graduate nurses, regardless of length (Chappell, 2014).

PeriOp 101: A core competency program based on QSEN competencies for the transition to practice of the new graduate peri operative nurse (Wilson, 2012).

Versant: A transition to practice program based on QSEN competencies for the transition to practice of a new graduate nurse (Ulrich et al., 2010).

Vizient/AACN: A nationally recognized transition to practice program developed with the American Association of Colleges of Nursing, based on QSEN competencies for the transition to practice of a new graduate nurse (Vizient/AACN, 2019).

Significance

The current need for increasing the workforce of competent registered nurses was predicted over 10 years ago. The National Academy of Medicine (formerly known as the Institute for Medicine; 2010) responded to the projected need by calling for succession planning by hospitals. Part of the succession planning recommendation was to implement new graduate NRP to increase new graduate retention at hospitals. The NRPs were to be created to support a transition to practice where, on completion of a NRP, the new graduate nurse could successfully perform in a fast paced, high acuity environment. The development and implementation of NRPs was expected to increase new graduate nurse retention and increase job satisfaction by enhancing the preparation of the new graduate nurses in their transition to a practicing registered nurse.

The AACN (2020) reported that by 2029 the need for nurses will increase by seven percent. At current rates, enrollment into nursing schools will not meet the demand for registered nurses, as the enrollment into nursing schools is predicted to increase by only 5.1% yearly (AACN, 2020). The demand for registered nurses is increasing for two main reasons: retirement and poor job satisfaction (AACN, 2020). Consequently, the number of working registered nurses is expected to decrease as the working nurse baby boomers retire. Cochran (2017) stated that the age range of approximately 75% of the currently working nurses' population is 50–64 years with 55% of the current workforce

retiring by the year 2020. The demand for registered nurses will increase due to attrition, aging population needs, and limited nursing school enrollment.

New graduate nurse retention is directly related to job satisfaction. New graduate nurses leave their first position at an alarming rate of 35%-61% (Cochran, 2017). Poor job satisfaction was noted as being a primary reason that new graduate nurses leave the profession as they feel they have no support in transitioning to independent practice (Levine, 2017).

This DNP project has significance as the hospitalized population has the right to have quality nursing care available when needed. I reviewed whether implementing a specific NRP framework, QSEN, has a positive impact on increasing new graduate nurse retention and job satisfaction. Both the QSEN and Walden University missions address the long-term goals of commitment to the nursing profession, preparing students to meet challenges with confidence and initiate positive change using evidence-based practice within their professional areas. The mission of QSEN is to address the challenge of assuring that nurses have the knowledge, skills, and attitudes (KSA) necessary to continuously improve patient quality and safety.

Summary

NRPs are generally considered to increase retention and job satisfaction for new graduate nurses (AACN, 2020). Although NRPs have been implemented across the United States, there is no accepted standardized program framework within the nursing profession (Jones-Bell, 2018). The lack of NRP standardization creates a gap in practice as the nursing profession cannot easily identify and validate best practice for retention

and job satisfaction among new graduate nurses. Retention and job satisfaction of new graduate nurses is essential to improve quality patient care, safety, and increase retention within the nursing profession.

In this systematic review, I compared new nurses' retention rates and job satisfaction for NR's that use the QSEN framework to published national rates of retention and job satisfaction of new graduate nurses in any NRP.

Section 2: Background and Context

Introduction

The IOM/National Academy of Medicine identified in 2010 that there needed to be NRP put in place in hospitals to provide a successful pathway for new graduate nurses in transitioning to practice. Following this recommendation, many NRPs were created, some individually developed by organizations using their own internal data and others using an evidence-based practice model, like QSEN (Van Camp et al., 2017).

QSEN was founded in 2005 with the initial focus on academia for prelicensure undergraduates, to improve the student nurses' knowledge, skills, and attitude in six core competency areas:

1. Patient centered care,
2. Teamwork and collaboration,
3. Evidence-based practice,
4. Quality improvement,
5. Safety,
6. Informatics.

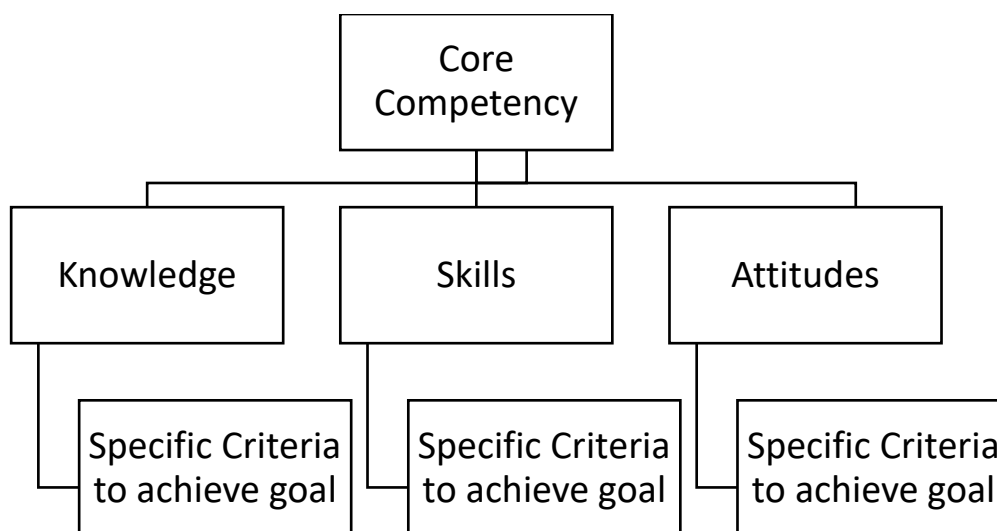
In 2012 (QSEN, n.d.), based on the IOM recommendations to develop NRP's, QSEN's scope expanded to include graduate nurse education. Identifying a specific NRP that provided high return on investment (ROI), can positively impact hospital NRP's ability to increase new graduate nurse retention and job satisfaction. Chappell (2014) concurred with this, stating that hospitals with strong NRPs have identified a high ROI with increased nurse retention and job satisfaction.

The purpose of this doctoral project was to complete a systematic review on the use of QSEN framework in NRPs. The practice focused question for this project was: In those NRP using the QSEN framework, how do levels of job satisfaction and retention of new graduates compare with published national rates of job satisfaction and retention for nurses completing any NRP?

Concepts, Models, and Theories

How a new graduate nurse is transitioned to practice has an impact on the retention and the job satisfaction of the new graduate. Higher levels of new graduate nurse retention and job satisfaction are reported in the literature to have a direct correlation to participation in a NRP (Goode, 2013). I selected the QSEN framework for this project to review as the framework as it was recognized by ANCC, TJC, AACN, and Magnet (Drenkard, 2015), as being a standard for assuring critical competencies are met for patient care and safety.

Each of the QSEN six core competencies: patient centered care, teamwork and collaboration, evidence-based practice, quality improvement safety, and informatics, were drilled down to specific criteria for knowledge, skills, and attitude (KSA) as required to meet the competencies for each of the core elements. Figure 1 depicts the QSEN core competency relationship with KSA specific criteria that can successfully meet each core competency. It is important to understand the QSEN framework, as the new graduate nurse is considered competent to practice when all the specific criteria associated with the KSA are met.

Figure 1*QSEN Competencies*

Note. Adapted from QSEN, Six Core Competencies (n.d.).

Relevance to Nursing Practice

The number of nurse graduates that leave the nursing profession within their first year of hire is estimated at to be at least 50% (Fater et al., 2008). Current rates of registered nurse turnover are at a high level, with Nursing Solutions (2020) reporting national data to be 14.7% registered nurse turnover and new graduate nurse turnover at 21.2%. The AACN fact sheet on nursing shortage (2020) reported a seven percent increase in the required number of registered nurses that will be needed by the year 2029. This number does not include the number of registered nurses that are expected to retire each year, which is estimated at five percent retirement each year through the year 2029 (AACN, 2020). Estimates are that there will be a country-wide nursing shortage in the United States by the year 2029, with not enough nurses to meet the patient care demand (AACN, 2020). With high turnover and retirement of experienced nurses expected over

the next decade the need to successfully transition new graduate nurses to competent practice will increase.

New graduate nurses leave the nursing profession due to low job satisfaction, high stress, lack of confidence in their ability to care for patients and fear they will cause harm to a patient (Letourneau & Fater, 2015; Van Camp & Chappy, 2017), suggesting that the new nurse graduates are not prepared to manage the complexity of the professional role or patient issues.

As the nursing shortage increases it is imperative that the nursing profession take ownership of the issue, use the best practice model for NRPs and standardize NRPs, adopting the framework that provides the best ROI. I reviewed one NRP framework, QSEN, and the effectiveness of the QSEN framework on new graduate nurse retention and job satisfaction.

Local Background and Context

Implementing a standardized NRP has been challenging for many hospitals. The financial cost associated with a lengthy residency program along with the personnel required to operate the residency program serves as a deterrent to initiating an NRP. Nursing Solutions (2020) reported that in 2019, smaller, community hospitals, 200 or less beds, had the highest registered nurse turnover rate at 16.1%. This is higher than the reported national average turnover rate of 14.7% (Nursing Solutions, 2020). Nursing Solutions (2020) also reported that 21.2% of all new graduate nurse hires left their position within the first year of hire. The average cost of turnover for a bedside RN is \$40,038 and ranges from \$28,400 to \$51,700 resulting in the average hospital losing

between \$3.6 million to \$6.5 million per year (Nursing Solutions, 2020). With registered nurse shortages predicted over the next 10 years, hospitals need to recognize the ROI with the implementation of an NRP. There are multiple resources for hospitals to create a NRP, including the purchase of existing programs that are based on the QSEN framework. Although cost was not a focus for this project, it is important to note that new graduate nurse retention does have monetary significance for hospitals with a high turnover rate.

Role of the DNP Student

New graduate nurses are the nursing future. As such, the nursing profession needs to implement NRP that are evidence-based practice with high retention and job satisfaction. I have created and taught many different nurse orientation programs over my 42 years as a nurse educator, participated in multiple nurse fellowship orientations and implemented two very different new graduate NRP. There is such a large variation of programs used to transition new graduate nurses into practice, even within the same health care system, that new graduates are frustrated and have reported feeling discouraged. My interest in this project developed from a professional interest to evaluate if a specific NRP framework would impact the retention and job satisfaction of new graduate nurses. My role in this project was as the primary reviewer. With the assistance of the Walden University librarian, I searched and identified relevant sources of evidence that met the project's purpose, synthesized the findings and identified best practice recommendations. When a question arose as to whether to include an article in the review, I sought the advice of my project committee.

Summary

There is a current nursing shortage in the United States, with the nurse shortage situation predicted to worsen over the next several years. There is a great need to invest in our new nurse graduates, transitioning them to practice with the knowledge, skills, and attitudes to take care of patients, in any situation. A clear pathway of how to transition new graduates to practice needs to be identified for hospitals to achieve the highest ROI. NRP's are known to increase new nurse graduate retention and job satisfaction, however there is no standardized program that the nursing profession follows to ensure new nurse graduates are receiving the support and education they need to increase job satisfaction and improve retention rates. The purpose of this project was to complete a systematic review on NRPs using the QSEN framework and compare how new graduate nurse retention and job satisfaction compare to published national rates of retention and job satisfaction.

Section 3: Collection and Analysis of Evidence

Introduction

It is important to understand which framework used in NRPs to transition new graduate nurses to practice, provides the highest retention rate and level of job satisfaction. There is a national nursing shortage in the United States that is expected to intensify over the next several years (AACN, 2020). Implementing a NRP increases new graduate nurse retention and job satisfaction (Goode et al., 2013). Hospitals began to provide new graduate nurses with NRPs to develop their KSA to provide patient care and improve patient safety and outcome with the expectation that implementation of a NRP would increase new graduate nurse retention and job satisfaction. However, despite the implementation of NRPs, high rates of turnover with new graduate nurses within the first year and low job satisfaction continue.

The purpose of this project was to complete a systematic review on NRP that use the QSEN framework to determine if such a framework makes a difference in turnover rates. My intent was to compare NRPs that use the QSEN framework to published national data on new graduate nurse retention and job satisfaction.

Practice-Focused Question(s)

The practice focused question for this project was: In those NRP using the QSEN framework, how do levels of job satisfaction of new graduate nurses compare with published national rates of nurse retention and job satisfaction for nurses completing any residency program?

Sources of Evidence

In this systematic review, I followed the steps in the *Walden University Manual for Systematic Review Doctor of Nursing Practice (DNP) Scholarly Project (2019)* and PRISMA reporting requirements for systematic reviews (2020). The search strategy included a search of 11 databases: ERIC, Education Source, Embase, Medline, ProQuest, PsycInfo, SocIndex, ScienceDirect, Gale OneFile, and Google Scholar for the years 2005 (when QSEN was founded) to the present time. I used key search terms and a combination of these terms: *new graduate nurse, novice nurse, beginner nurse, new registered nurses, nurse residency, residencies, transition to practice, QSEN, turnover, retention, and job satisfaction*. I obtained other evidence by manually reviewing reference lists in which all references were peer reviewed (ancestry searching). Inclusion and exclusion criteria were as follows:

Inclusion Criteria

1. Time period was from 2005 to 2021.
2. English language.
3. Peer reviewed articles using experimental and quasiexperimental study designs including randomized controlled trials, non-randomized controlled trials, before and after studies, analytical observational studies including prospective and retrospective cohort studies, case-control studies, and analytical cross-sectional studies.
4. Articles that contained data on the retention and job satisfaction of new graduate nurses who participated in NRP that used QSEN framework.

Exclusion Criteria

1. NRPs that included experienced nurses (over one year of experience) transitioning to a different area of practice.
2. NRPs that did not use QSEN as a framework for the program.
3. NRPs outside the United States.
4. Expert opinion, including literature reviews, other systematic reviews, and editorials as well as qualitative studies will be excluded.

National published data used for comparison was obtained from American Association of Colleges of Nursing (2020).

Analysis and Synthesis

I conducted a systematic review to determine if a NRP using the QSEN framework increased retention and job satisfaction of new graduate nurses compared to published national rates of new graduate retention and job satisfaction. The PRISMA flow diagram (Page et. al., 2021) was used to record the studies that were included in the review. I analyzed each paper retrieved for possible inclusion in the review against the inclusion and exclusion criteria. Data were extracted from studies found to meet inclusion criteria and which used a QSEN framework for the NRP. Included studies were entered into a Table of Evidence (Figure 2). I determined the level of evidence of each included study using the criteria suggested by Fineout-Overholt, et al. (2010). The data extracted included specific details about the populations, study methods, interventions, and outcomes of significance to the review objective (i.e., retention rates and job satisfaction) and level of evidence. After completing the table, I synthesize the data. Synthesis

involves bringing together data from the included studies with the aim of drawing conclusions about a body of evidence. This included synthesis of study characteristics and, potentially, statistical synthesis of study findings related to job turnover and satisfaction. Findings including appendices describing retention and job satisfaction of new graduate nurses who participated in a NRP where the QSEN framework will be discussed in Section 4.

Summary

The purpose of this DNP project was to complete a systematic review to determine if the use of QSEN framework for new graduate NRP have a positive impact on nurse retention and job satisfaction rates at 1-year post completion of the program. The results of the review may provide essential information on what the foundation framework should be for NRP's.

Section 4: Findings and Recommendations

Introduction

The national nursing shortage in the United States is expected to extend well past the year 2030 (NSI Nursing Solutions, 2021). During 2020 which includes the COVID-19 pandemic, the national turnover rate for registered nurses was 18.7%, an increase of 2.8% from 2019 (NSI Nursing Solutions, 2021). The top identified reasons that nurses are leaving the profession were identified as relocation, career advancement and retirement. Retirement for the first time placed in the top three reasons nurses leave the profession (NSI Nursing Solutions). Vizient/AACN (American Association of Colleges of Nursing, 2020) reported that the national nurse retention rate is 82.5%. Job satisfaction among registered nurses decreased over the past year, with 34% of the nurses polled stating they would not choose nursing as a career (Stokowski, 2020). The purpose of this project was to examine whether a NRP using the QSEN framework would demonstrate a positive impact on the retention rates and job satisfaction of new graduate nurses compared to national rates.

Findings and Implications

An extensive search included 11 databases: ERIC, Education Source, Embase, Medline, ProQuest, PsycInfo, SocIndex, ScienceDirect, Gale OneFile, and Google Scholar for the years 2005 (when QSEN was founded) to the present time. I used key search terms and a combination of these terms including *new graduate nurse, novice nurse, beginner nurse, new registered nurses, nurse residency, residencies, transition to practice, QSEN, turnover, retention, and job satisfaction*. The search yielded 374 articles

and after removing duplicates, I screened 319 articles for potential inclusion in the review. Of these, I closely analyzed 29 article and determined that 7 met inclusion criteria. I excluded 22 articles. The reasons for exclusion were entered into the PRISMA Flow Diagram (Appendix A). Of the seven articles that met inclusion criteria, four studies met level IV criteria (case-controlled trials and cohort studies) and three studies met level VI criteria (qualitative) as presented in Table 1.

Table 1

Hierarchy of Evidence for Selected Studies

Type of Evidence	Study Type	Number of Studies
I	Systematic review or meta-analysis	0
II	Randomized controlled trials	0
III	Controlled trials without randomization	0
IV	Case controlled trials and cohort studies	4
V	Systematic review of qualitative or descriptive studies	0
VI	Qualitative or descriptive studies	3
VII	Expert opinions or consensus	0

All studies were conducted in the United States as required in the inclusion criteria. The sample size for this systematic review included over 7,000 participants representing over 100 acute care hospitals. Exact numbers of new graduate nurses and participating hospitals cannot be reported as not all the researchers provided exact numbers. NRPs covering all clinical areas were represented in the review. All the authors of the research studies agreed that an intervention is needed to meet the increasing demand for registered nurses. The common theme was that new graduate nurse required

a NRP with specific QSEN framework to meet their needs so they could safely care for patients.

Level IV Studies

The four studies in the level IV evidence category all reported an almost 90% increase in retention as compared to their previous retention rates among new graduates (Crimlisk et al., 2017; Goode et al., 2013; Ulrich et al., 2010; and Vortman, et al., 2019).

Vortman et al. (2019) conducted a cohort study on nurse retention in the operating room (OR) following the implementation of Periop 101, which is a NRP that follows the QSEN framework. The study was conducted as the hospital was finding that orienting new graduate nurses to the OR is an expensive and time-consuming venture, only to have the new graduate nurses leave the OR during or right after orientation. The inability to retain new graduates in the OR not only impacts hospital finances, but it also has an impact on staff morale. This study was initiated due to financial concerns of the cost of orienting a new graduate nurse in the OR, as it was costing the hospital an excess of \$50,000 per new graduate orientation. Prior to the implementation of Periop 101, the hospital had lost over half a million dollars as their orientation retention rate was 59% at 1 year (Vortman et al., 2019). This is the only study that reported new graduate retention rates prior to implementation of QSEN NRP framework. Post implementation of Periop 101, the new graduate nurse retention was reported as 87% ($n=23$) at 1 year (Vortman et al., 2019). Implementation of Periop 101 was considered a success since the 1-year retention rate had increased by 28%. The 87% retention rate is slightly higher than the

national nurse retention rate of 82.5% as reported by American Association of Colleges of Nursing (2020).

The individual hospital retention rates, compared to pre-implementation of Periop 101, demonstrated significant improvement in new graduate nurse retention. This can be considered a hospital success in implementing a QSEN framework NRP. On a national scale, review of retention rates post implementation of a NRP with QSEN framework would indicate little success of the program noting the small difference between national retention rates and hospital retention rate.

Using a cohort study, Crimlisk et al. (2017) implemented a NRP for multiple clinical areas to improve new graduate nurse retention rates. Crimlisk et al. (2017) described a 1-month orientation and then a 5-month continuation of NRP on clinical units. Clinical areas for new graduate nurses spanned across all inpatient clinical areas including OR, ED, ICU, Med-Surg and Maternal. Crimlisk et al. (2017) made specific note that social integration was included in the NRP in the form of informal lunch conferences. Retention rate at one year was 91% ($n=46$). The implementation of the NRP was concluded to be a success for the hospital in the ability to orient large groups of new graduate nurses for different clinical areas at the same time. Hospital reported new graduate nurse retention rates were higher than national nurse reported new graduate retention rates by 8.5%.

Nurse satisfaction rates were not addressed or measured in Vortman et al. (2019) or Crimlisk et al. (2017). In both studies, limitations identified were the lack of

addressing the hospital culture, civility, administrative sponsorship, and staff engagement in assisting the new nurse graduate in succeeding.

In a cohort study, Goode et al. (2013) examined the outcomes over a 10-year period, 2002 through 2012, to determine effects on retention and satisfaction of the new graduate nurse who participated in an NRP. Goode et al. (2013), measured retention rates at one year to be 94.6%. Job satisfaction was looked at without providing specific numbers related to job satisfaction. Goode et al. (2017), noted that new graduate nurses had high job satisfaction levels at the start of the program. There was a significant decrease in job satisfaction at the six-month employment, where job satisfaction scores remained at the program completion. There was no significant correlation between the implementation of a NRP and new graduate job satisfaction.

Retention rates over the 10-year study period demonstrated new graduate retention rates to be a 12% increase from national retention rates. The study included a large number ($n=1,016$) of participants from different hospitals across the United States, in different clinical settings. Goode et al.'s (2013) study is referenced throughout the literature review and viewed as a success that NRP's with QSEN framework do increase retention rates.

Ulrich et al. (2010), conducted a cohort study, over a 10-year period (1999 through 2009) on NRP's. The study measured retention and job satisfaction of the new graduate nurse. The nurse retention rate was not reported by years, which is important to the validity of the effect of a NRP framework as the study transformed in 2004 to a company called Versant. Versant adopted QSEN core competencies in 2005 and began

the implementation into the program (Versant, 2019). These data are relevant as for part of the time, 2005 through 2009, the NRP used the QSEN framework. Prior to Versant taking over the NRP, data were inconsistent with reports of 25% to 73% retention rate. Following the Versant takeover with the NRPs the retention rate is reported as 93% at one year. Ulrich et al. (2010) stated that the implementation of the NRP with QSEN framework was a success with a 10% higher retention rate than the national average. The study had many participants from different clinical settings across the United States ($n > 6,000$). The nurse job satisfaction scale was used to measure nurse satisfaction (1–5 with 1 being the lowest) which is slightly higher at 1 year (above 3.5) than it was at program completion. The nurse satisfaction rate remained the same from the 6-month measure to the 2-year measure. In summary, the Level IV studies indicated an increase in new graduate nurse retention as compared to the national rate of new graduate nurse retention.

Level VI

The three studies at Level VI had small sample sizes with a range in retention rates from 50% to 90% (Byrd et al. 2015; Hudson-Weires et al. 2020; Wilson, 2012). None of the studies addressed nurse satisfaction as part of the study findings. The studies all drew the same conclusion that NRPs with QSEN framework are beneficial to retention of new graduate nurses at their individual facilities.

In a qualitative study, Hudson-Weires et al. (2020) examined the retention of the new graduate who participated in an NRP specific to nephrology nursing. The sample size was small ($n=6$) and covered two NRP's. The first NRP had 0% retention ($n=2$) and

the second had 50% retention ($n=4$). The program was based on QSEN framework and administered through Vizient/AACN. The same NRP was used for all clinical areas and was not specific to nephrology. The goal of the program was for the new graduate nurses to learn critical thinking and assessment to be applied in the dialysis setting with critical care patients and the goal of the program was realized.

Byrd et al. (2015) using qualitative methods examined the implementation of NRP Periop 101 and the effect on retention rate ($n=9$). From 2010 through 2013, nine new graduate nurses participated in Periop 101 NRP. The Periop 101 NRP was selected as the program of choice as it reduced turnover by 25% (Byrd et al., 2015). There are no data for retention at 1 or 2 years. The retention data presented was at 3 years, with a retention rate of 78%.

Due to the high cost of recruiting, hiring, and orienting perioperative nurses, Wilson (2012), examined retention data following the implementation of Periop 101 NRP. Periop 101 was implemented by Wilson in 2006 after unsuccessful attempts at orienting new graduate nurses to the perioperative setting. The first 2 years the program reported 100% retention rate ($n=22$). The second 2 years, the program reported 80% retention rate ($n=10$). The overall measurement for retention is at 2 years, not 1 year, with a combined total of 90% retention rate ($n=27$).

The three level VI studies were completed in single hospitals with the goal to improve new graduate retention rates. Hudson-Weires et al.'s (2020) implementation was not a success as the new graduate retention rate was 32.5% lower than national rates. Byrd et al. (2015) reported retention rates at the three years of employment which was

below the national average. Wilson (2012) reported higher than national average retention rates, however the comparison to national average retention rates is difficult as Hudson-Weires et al. (2020) and Byrd et al. (2015) reported new graduate retention rates at 2-and 3-years post NRP implementation. Table 2 presents the available retention rates across these studies.

Implications

The implications from this systematic review have an impact on the nursing profession regarding the use of NRP using QSEN framework. The findings from NRPs that used QSEN framework were that five of the seven studies demonstrated new graduate retention rates at one year higher than the national average. Not all the studies are able to be compared to national new graduate nurse retention rates as the studies report new graduate retention levels at 2 and 3 years. The implication for the research has a greater influence at the individual hospital level, where three of the studies reported an increase in new graduate nurse retention when a NRP using QSEN framework was implemented. There is indication for the perioperative clinical area that using Periop 101, a QSEN based NRP, will increase new graduate retention rates over the national average in perioperative settings as all three studies completed in the perioperative area had higher retention rates than the national average. There were no data in any of the studies that suggest an increase in job satisfaction when the NRP uses the QSEN framework.

Table 2*Comparison of New Graduate Retention*

Author	Retention Year		
	Year 01	Year 02	Year 03
Hudson-Weires et al., 2020	*	**	***
Vortman et al., 2019	87%	70%	***
Crimlisk et al., 2017	91%	**	***
Byrd et al., 2015	*	**	78%
Goode et al., 2013	94.6%	**	***
Wilson, 2012	*	90%	***
Ulrich et al., 2010	90%	**	***

*No data available for comparison

**No data available for comparison

***No data available for comparison

National new graduate retention rate 82.5%

Recommendations

The purpose of this project was to examine the best literature on QSEN-based NRPs and compare new graduate nurse retention and job satisfaction rates to nationally published rates. There are several recommendations that can be made regarding the results of this systematic review. The findings indicate that most of the studies reported an initial increase in new graduate nurse retention when a QSEN based NRP was implemented. Although an exact comparison cannot be made due to differing lengths of the NRP's, five of the studies reported an increase in new graduate retention that was above the reported national published retention rate (four at one year following the NRP

and one at two years following the NRP). However, rates in two studies decreased following year one with one study reporting a retention rate of 70% at year two and one study reporting a retention rate of 78% at year three (Table 2). In comparison, the national new graduate retention rate is 82.5% after one year. It appears that while a NRP using a QSEN framework is initially successful, success is not sustained over time. Job satisfaction was not reported in any of the studies and could not be evaluated. It is important, therefore, for nurse leaders to examine closely the reasons new graduates are leaving at increasing rates within the first few years following the NRP. In addition, future studies on this topic need to use consistent data regarding time measurements, separate clinical area data, and include job satisfaction as part of the study.

National new graduate nursing retention is reported at 1 year after hire. To have comparison and evaluate research studies, the retention rate of new graduate nurses needs to be consistent with national reporting. Clinical areas using QSEN framework NRPs need to be identified and data separated out. The range of clinical areas in the literature review covered most of the inpatient clinical areas and perioperative area. Separation of the clinical areas would provide further insight in specific areas where QSEN framework NR's can impact new graduate nurse retention rates most. The lengths of the NRPs from the literature review ranged from 6 months to 1 year. Standardized NRP length will enhance the ability to compare the NRPs. Collecting data on job satisfaction of the new graduate nurse at consistent time frames during the NRP can offer valuable information as many authors link job satisfaction with higher new graduate nurse retention rates.

Contributions of the Doctoral Team

The chief nursing officer and the director of clinical professional development for each hospital within the health system, collectively determine the programs that will be implemented to develop the new nurse graduate. Feedback from clinical professional development educators, nurse managers and the research nurses review EBP and feedback from NRP graduates to make recommendations to their individual site leaders on whether the current NRP continues to benefit the healthcare system. Data were reported monthly to the DEC (directors and chief nursing officer education council), with discussions regarding the effectiveness of the health system program. New strategies, possible program changes and current evidence are introduced at these meetings where a select, existing committee of directors of clinical professional development are charged with continuous review of the program. I will share the findings of this doctoral project findings at the individual hospital level, and at the DEC to support the use of the current NRP. These doctoral project findings can be expanded outside a singular healthcare system by sharing the project findings with the local counties hospital and healthcare association to reach all hospitals in the geographical area to provide critical information on QSEN based NRP retention data.

Strengths and Limitations

I used the systematic review method to assess and evaluate how NRP's using the QSEN framework compared to national standards of new graduate nurse job satisfaction and retention. A strength of the study was the reporting of new graduate retention rates over time, although in separate studies, so that a timeline could be seen. A limitation was

the limited number of studies completed on this topic that spanned over 21 years, the lack of consistent data and no on job satisfaction. Studies were of low quality (Levels IV and VI on the Melnyk grading scale). An additional limitation is the presentation of the data and the inconsistencies of data measurement making it difficult to draw conclusive recommendations. However, in those studies with adequate data for review (such as the Periop 101 program), the NRP using a QSEN did appear to be successful.

Section 5: Dissemination Plan

Dissemination

There is a need for the clinical professional development teams to understand the impact of NRPs using QSEN framework on new graduate nurse retention and job satisfaction. The dissemination plan is to present the findings of this to my current clinical professional development team and then roll out the findings to the clinical professional departments and nurse administrators throughout multiple campuses using our monthly meetings using a power point presentation. I plan to create a poster presentation to disseminate findings at the yearly local professional development conference.

Analysis of Self

My goal when I started this program was to increase my knowledge so, as a clinical professional development educator, I could assist the staff I teach and the staff I mentor. Frequently in classes we would have to present EBP, and just state to the nurses that a particular change or project was recommended from an EBP viewpoint. I realize now that I knew what the definition of EBP was and I thought I understood the concept. Completing this systematic review has strengthened my abilities to assess, evaluate and interpret EBP so that it can be conveyed to staff at a clinically applicable level.

Summary

The purpose of this project was to complete a systematic review regarding the use of QSEN framework in NRP and the effects on the new graduate nurse retention rate and job satisfaction. Identifying framework specific NRP's that increase new graduate

retention and job satisfaction can be beneficial to all healthcare facilities in implementing a NRP that demonstrates positive return on investment.

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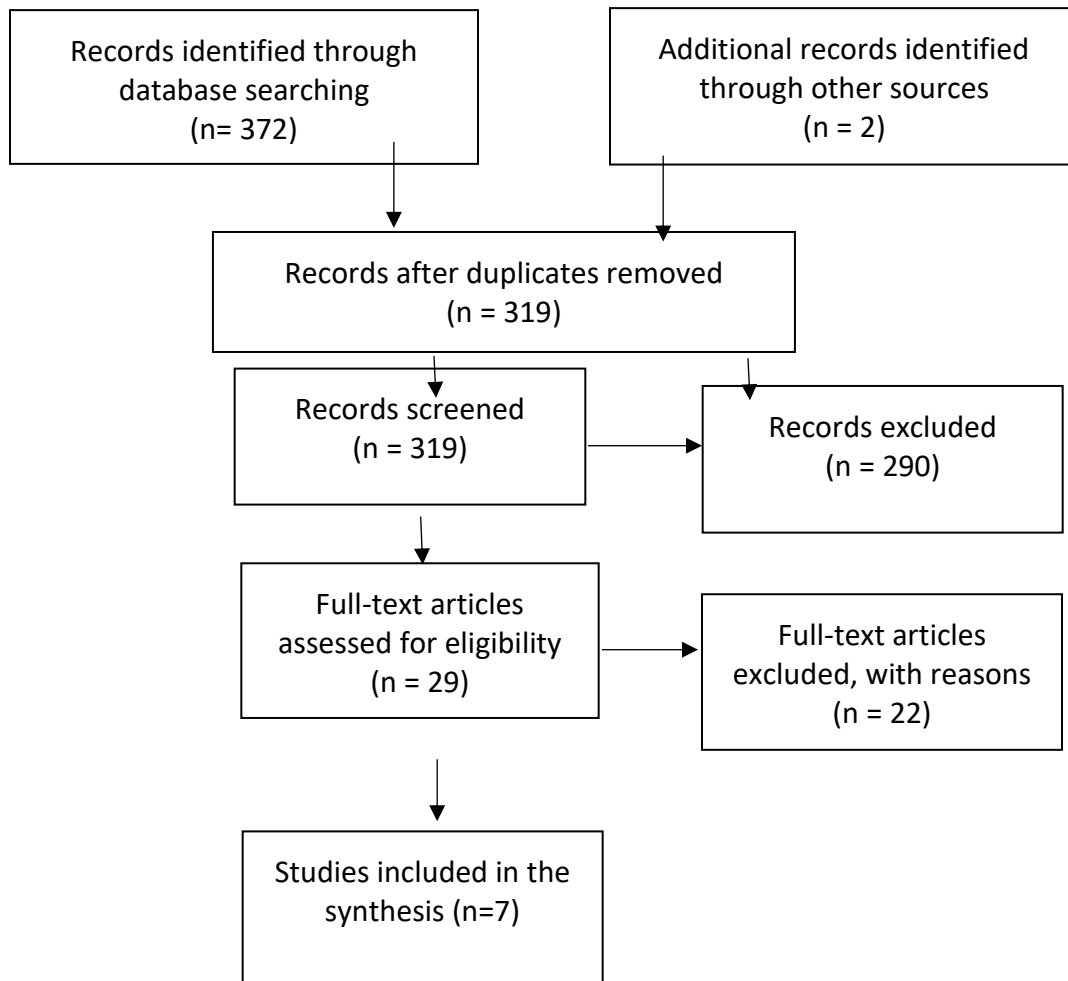
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Appendix A PRISMA Flow Diagram



Appendix B: Table of Evidence

Question	<i>In those NRP using the Quality and Safety for Education of Nurses (QSEN) framework, how do levels of job satisfaction and retention of new graduate nurses compare with published national rates of job satisfaction and retention for nurses completing any Nurse Residency Program?</i>						
Author/Year	Study and Question Design	Sample and Setting	Retention	Job Satisfaction	Limitations	L O E*	Comments
Hudson-Weires, E., et al., 2020	<u>NRP 1</u> Nephrology Nurse Residency Program, Retrospective Cohort Design, no specific study question.	Sample: 2 Setting: Dialysis	0%	RN's left for other areas of interest. Specific data related to job satisfaction not discussed.	Lack of defined study or question. Sample size was small.	VI	Retrospective longitudinal data of new graduate nurse retention. Focus was on critical thinking and ability of new graduate to take care of critically ill dialysis patients.
	<u>NRP 2</u> Nephrology Nurse Residency Program, Cohort Design, no specific study question	Sample: 4 Setting: Dialysis	50%	Not addressed	Lack of defined study or question. Sample size was small.	VI	Retrospective longitudinal data of new graduate nurse retention. Focus was on critical thinking and ability of new graduate to take care of critically ill dialysis patients. Change in the presentation/format of NRP from 1 to 2
Vortman, R., et al., 2019	Determine if implementing Periop 101 for novice nurses improve retention rates in the OR Design: Cohort	Sample Size: 23 Setting: Periop	1 year 87% retention rate 2nd Year 70% retention rate	No data provided	Study limited to 1 facility	IV	Periop 101 uses QSEN competencies. Demonstrated improved retention after Periop 101 program implemented
Crimlisk, J. T., et al., 2017	NRP was designed to evaluate if goals of the NRP will improve retention, expanding competencies and	Sample Size: 46	91% retention rate at 1 year	No data collected	No data on new graduate nurse job satisfaction	IV	Linking high percentage of reported competency to job satisfaction

Question	<i>In those NRP using the Quality and Safety for Education of Nurses (QSEN) framework, how do levels of job satisfaction and retention of new graduate nurses compare with published national rates of job satisfaction and retention for nurses completing any Nurse Residency Program?</i>						
Author/Year	Study and Question Design	Sample and Setting	Retention	Job Satisfaction	Limitations	LOE*	Comments
	improving patient outcomes Design: Cohort	Setting: Varied clinical areas					
Byrd, D., et al., 2015	Implementation of AORN Periop 101 program Design: Cohort	Sample Size: 9 Setting: Periop	Retention rate 78% at 3 years	No data collected	Small sample size	VI	4-month nurse residency program
Goode, C. J., et al., 2013	Examine outcomes from 10 years of research on a post baccalaureate new graduate NRP and to report lessons learned. Design: Cohort	Sample Size: 1,016 Setting: Varied clinical areas	94.6% retention rate at 1 year	Data not given in numbers	Did not provide specific data regarding nurse satisfaction	IV	At 1 year the residents had a significant increase in self-perceptions and job satisfaction
Wilson, G. 2012	Redesigning OR orientation Design: Cohort	Sample Size: 27 Setting: Periop	Average 90% retention rate, measured at 2 years from 4 cohorts over 4 years	No data given	Data not presented as research study, limited to one organization over 4 years	VI	Reviewed impact on retention of changing from orientation program to Periop 101, QSEN based NRP.
Ulrich, B. 2010	Improving retention, confidence, and competence of new graduate nurses; Results from a 10-year longitudinal database Design: Cohort	Sample Size: >6000 Setting: Varied clinical areas	At 1 year retention was over 90%	Nurse satisfaction was rated above 3.5 on a scale of 1-5 at 1 year and 2 years	Multiple facilities where Versant NRP was implemented	IV	Retention was reported in turnover rate: 1 year <10% 2 years=20%

*Level of Evidence