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Measuring Nurse Competence in the Emergency Department

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MEASURING NURSE COMPETENCE IN THE EMERGENCY DEPARTMENT

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DEDICATION

I dedicate this accomplishment to the individuals who inspired me to keep my heart, mind, and passion at the forefront for any role I assume in the field and profession of nursing and education.

ACKNOWLEDGEMENTS

I would like to acknowledge several individuals for their positive impact with this accomplishment. My family for their utmost patience, understanding, and support. My dissertation committee, instructors, and cohort mates for their positivity and motivation, especially during the most stressful times. My friends and academic and hospital colleagues for their openness to hear, read, and respond to my evolving ideas. My writing mentor at University of the Pacific's Graduate Writing Center for her assistance in reviewing this manuscript. A big "thank you" to everyone.

MEASURING NURSE COMPETENCE IN THE EMERGENCY DEPARTMENT

Abstract

By Matthew Lojo, EdD, MSN, RN, CEN, NPD-BC, CNL

University of the Pacific
2020

Background: "Nurses provide essential care to the millions of people who are hospitalized each year as a result of illness or injury" (Smith, 2012, p. 172). The Institute of Medicine reported approximately 44,000-98,000 patients die annually resulting from a medical error, and health care errors ranked among the top 10 for the leading causes of death in the United States (Smith, 2012).

Problem: Nurse competence impacts safe and quality nursing, and several research studies investigated the measurement of nurse competence among nurses in various nursing settings (Flinkman et al., 2016). However, a review of the research revealed limited studies in the emergency department (ED) setting and in the United States (O'Leary, 2012).

Method: This study implemented a quantitative nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey for this study's sample. An Internet-based SurveyMonkey questionnaire collected data on nurse competence from registered nurses (RNs) working in the ED at a San Francisco Bay Area hospital. Part I of the questionnaire integrated Meretoja, Isoaho, and Leino-Kilpi's (2004) Nurse Competence Scale (NCS) consisting of 73 closed-ended clinical indicators divided into seven competence areas. Participants rated their level of competence and frequency of use for each clinical indicator. Part II of the questionnaire obtained background

information about participants. A total of 21 out of 110 potential participants completed the survey.

Results: The data analysis using Statistical Package for Social Sciences (SPSS) provided descriptive and nonparametric correlation statistics. Descriptive statistics described survey respondents. The least and most competent areas were ensuring quality and managing situations, respectively. The most frequent length of nursing experience was at least 60 months and the most frequent number of hours worked was at least 65 hours per 2-week period. Nonparametric correlation statistics, including Kendell's tau-b and Spearman's rho, identified significant relationships. A significant relationship existed between the frequency of using clinical skills and level of competence for four of the seven competence areas. A significant relationship existed between the background factor of experience, both as an RN and an ED RN, and level of competence for many clinical indicators. A significant relationship existed between the background factor of hours worked and level of competence for one clinical indicator.

Conclusion: Despite the small sample size of 21 survey respondents, this study revealed findings consistent with the existing research on nurse competence. This study offers implications and recommendations for practice relative to nurse competence, nurse competence assessment, and transitions to new settings of nursing practice to support the nursing profession and safe and quality nursing.

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LIST OF ABBREVIATIONS

ACEP	American College of Emergency Physicians
ANA	American Nurses Association
CI	Confidence Interval
ED	Emergency Department
ENA	Emergency Nurses Association
FLSA	Fair Labor Standards Act
FTE	Full Time Equivalent
HNCS	Holistic Nursing Competence Scale
IRB	Institutional Review Board
NCLEX	National Council Licensure Examination
NCLEX-RN	National Council Licensure Examination for Registered Nurses
NCSBN	National Council of State Boards of Nursing
NCS	Nurse Competence Scale
PDF	Portable Document Format
RN	Registered Nurse
SPSS	Statistical Package for Social Sciences
URL	Uniform Resource Locator
VAS	Visual Analog Scale

LIST OF SYMBOLS

α	alpha
=	equals
>	greater than
<	less than

CHAPTER 1: INTRODUCTION

Registered nurses (RNs) care for patients in various hospital settings, including, but not limited to emergency department, medical-surgical, operating room, post anesthesia care, intensive care, progressive care, spinal cord and brain injury rehabilitation, pediatric, obstetrics and gynecology, oncology, and mental health. RNs working in the emergency department (ED) immerse themselves in chaotic, yet controlled, settings as they strive to function at their greatest capacity to save the lives of patients either coming in through the doors of a busy waiting room or after the rapid ambulance ride originating from a 9-1-1 call. Although the ED is an entry point for many patients admitted to the hospital for a variety of reasons, the atypical characteristics of this setting differentiate it from other nursing settings. Nurses reprioritize planned interventions, reevaluate patient outcomes, document the timeline of events, and advocate for patients in the ED resulting from the instability of patients and their presenting conditions due to injury and illness, high flow of patient volume due to discharges and hospital admissions, and required essential communication skills (Wolf, 2005).

RNs practice in licensing states and may receive certification for specialized skills in specific settings. The care RNs give patients originates from the RN's skills, knowledge, and experience. These elements influence competence. "Nurses provide essential care to the millions of people who are hospitalized each year as a result of illness or injury" (Smith, 2012, p. 172). Unsafe care arises from problems in nurse competence and may lead to unfavorable patient outcomes. The Institute of Medicine reported approximately 44,000-98,000 patients die annually resulting from a medical error, and health care errors ranked

among the top 10 for the leading causes of death in the United States (Smith, 2012). With safe and quality nursing being a significant focus in healthcare, the measurement of RNs' levels of competence is a key factor.

Background

The shortage of RNs in the workforce is a significant issue in the nursing profession resulting from population health trends, the aging workforce, and poor retention. These smaller issues lead to hiring RNs in nursing settings who possess minimal experience (Kinghorn, Halcomb, Froggatt, & Thomas, 2017). RNs encounter opportunities to transition their nursing practice into new nursing settings through additional training and orientation programs for skillset advancement to care for patients safely. Safe nursing practices associate with competence, and competence is crucial when taking caring of patients in unique settings, such as the ED. Through training and orientation programs, RNs could provide quality nursing, gain competence in unfamiliar settings, and build on pre-existing competence (Takase, 2012).

RNs in the ED setting encounter situations, such as bodily injuries from blunt or sharp force, burns, life-threatening infections, lung injuries, strokes, and patients' prior experiences with care (Evans & Kohl, 2014). In response to situations occurring in the ED setting, RNs develop skills, such as stabilizing a patient's condition, assigning degrees of urgency, administering fluids rapidly into the body, monitoring heart and blood vessels, inserting a needle into bone cavities to access the bloodstream, performing immediate tests at the bedside, and applying restriction devices for a patient's arm or leg movement (Evans & Kohl, 2014). These situations and skills identify as being high-risk and low-volume, suggesting an increased risk of error due to their low frequency in practice. Evans and Kohl

(2014) argued the need for ED RNs to possess a "diverse knowledge base" and be "jack of all trades and master of many" (p. 256).

The current research reveals competence associates with an RN's ability to provide safe and quality nursing to patients (Dickerson & Chappell, 2016). RNs need to maintain ongoing competence as they change roles or immerse themselves in new nursing settings. Dickerson and Chappell (2016) described this role change and transition as "a commitment of a registered nurse to integrate and apply the knowledge, skills, and judgement with attitudes, values, and beliefs required to practice safely, effectively, and ethically in a designated role and setting" (p. 46).

Research Problem

Nurse competence impacts safe and quality nursing, and several research studies investigated the measurement of nurse competence among nurses in various nursing settings (Flinkman et al., 2016). In current quantitative research on nurse competence, such as self-assessment of nurses' levels of competence, limited studies exist in critical care settings in the United States (O'Leary, 2012). This limitation in the research literature warrants the need to investigate and measure the nurse competence of RNs working in the ED setting at a public hospital in the San Francisco Bay Area.

Research Purpose

The purpose of this study was to describe the sample of RNs working in the ED at a public hospital in the San Francisco Bay Area while investigating how the frequency of using clinical skills and background factors, including experience in the form of the number of months of experience and number of hours worked, impacted RNs' levels of competence.

Research Questions

With the hypothesis that increased length of experience in key skill areas relates to increased nurse competence, four questions guided this study:

1. What area(s) possessed the lowest level of competence for the study sample?
2. What area(s) possessed the highest level of competence for the study sample?
3. What was the relationship between the frequency of using clinical skills and level of competence?
4. What was the relationship between the background factors, including the length of nursing experience and number of hours worked, and level of competence?

Research Objective

A quantitative nonexperimental research design combining an instrumental case study and a cross-sectional survey yielded data specific to this study's sample. The description of this study's sample and investigation of nurse competence provides a baseline understanding in this study's setting. This study's findings offer meaningful information for research and practice to better support the development of the nurse competence of RNs. As a result, this information influences decisions for initiating quality improvement projects, proposing pilot programs, modifying departmental and organizational policies and procedures and protocols, and continuing the investigation of nurse competence in the ED and hospital facility.

Significance

This study investigates and measures the nurse competence of RNs working in the ED setting and provides a basis for implications and recommendations at the scholarly level and site level to improve and enhance nurse competence development, encourage nurse competence assessment, and facilitate professional development. The limitations of this

study justify the need for ongoing research to investigate and measure nurse competence in the ED setting using a similar, replicated, or different methodology. Beyond this study's site and participants, the significance of this study builds on Dickerson and Chappell's (2016) argument on competence and patient safety. The Institute of Medicine explained the leading causes of death and injury were from medical errors, which were preventable adverse events (Committee on Quality of Health Care in America and Institute of Medicine, 2000). The Institute of Medicine defined an *error* as "the failure of a planned action to be completed as intended … or the use of a wrong plan to achieve an aim" (Committee on Quality of Health Care in America and Institute of Medicine, 2000, p. 28). The Institute of Medicine defined an *adverse event* as "an injury caused by medical management rather than the underlying condition of the patient. An adverse event attributable to error is a 'preventable adverse event'" (Committee on Quality of Health Care in America and Institute of Medicine, 2000, p. 28). The Committee on Quality of Health Care in America and Institute of Medicine (2000) stated medical errors and adverse events resulted in the billions of dollars in United States healthcare expenditures. Relative to expenses in healthcare, Dickerson and Chappell (2016) discussed the Centers for Medicare and Medicaid's implementation of reimbursement policies for healthcare organizations to safeguard the focus on improving care, such as strategically offering initiatives for sustaining patient safety and competence. Many professional nursing organizations, including the American Nurses Association (ANA) and Emergency Nurses Association (ENA), articulate competence as an essential component in nursing professional practice and patient safety.

Theoretical Framework

This study considered Benner's (1982) novice to expert nurse theory since most scholars referenced the theory during their studies on nurse competence. Benner (1982) built on the work of Dreyfus and Dreyfus (1980) on their model of skill acquisition in which the proficiency of chess players and pilots was the basis for their model. During the development of the novice to expert nurse theory, Benner (1982) generalized Dreyfus and Dreyfus's (1980) model to the field of nursing based on the model's defining characteristics of skill performance, experience, education, knowledge, and career progression. As shown in Figure 1, Benner (1982) suggested nurses transitioned along a 5-level continuum (i.e., novice, advanced beginner, competent, proficient, and expert) in their experience. The transition from one level to the next was the process of reflecting on past and authentic experiences and understanding the immediate situation. The latter was the ability to view the situation "less as a compilation of equally relevant bits and more as a complete whole in which only certain parts are relevant" (Benner, 1982, p. 128).

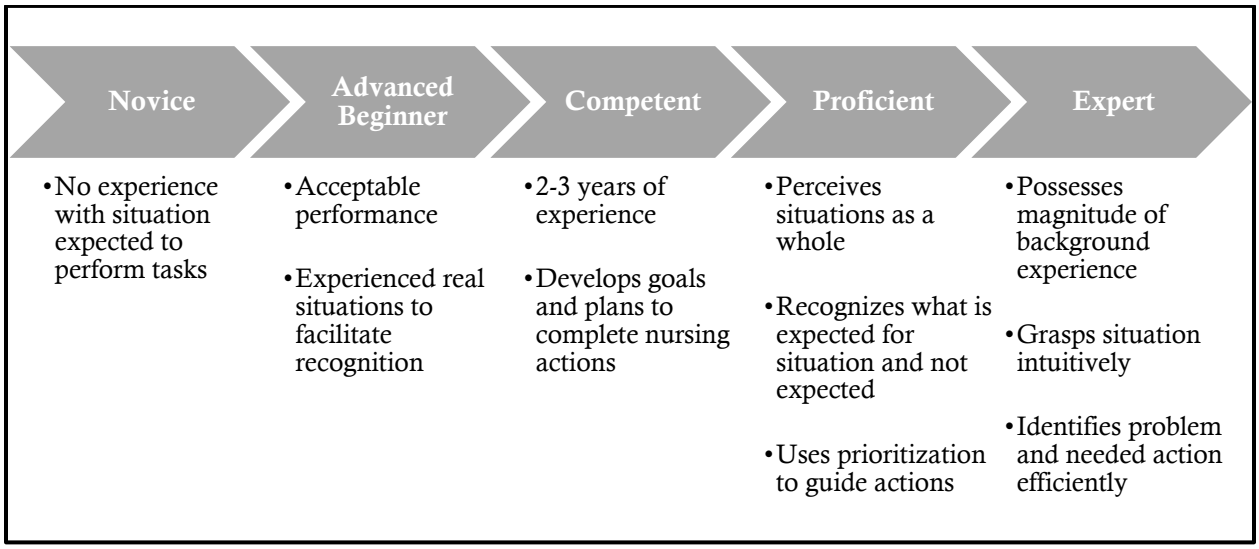

Figure 1. Benner's (1982) novice to expert nurse theory. This figure illustrated Benner's (1982) theory. Adapted from Benner, 1982.

Chapter Summary

This chapter presented a general overview of nurse competence and stated the topic of interest for this study. Although many scholars studied nurse competence, the lack of studies in critical care settings in the United States generated an opportunity to investigate and measure nurse competence in the ED at a public hospital in the San Francisco Bay Area. This study aimed to describe a specific sample population and investigate the relationship between the frequency of using clinical skills and level of competence, and the relationship between the background factors and level of competence. This study offers a baseline understanding of nurse competence in this study's setting. Research questions guided this study's investigation of nurse competence. The research objective focused on this study's impact on research and practice. The significance of nurse competence influences research and practice and extends beyond the nursing profession to impact society since safe and quality nursing are priority concerns in the healthcare industry. Benner's (1982) theory aligns with this study and the review of the literature in the following chapter discusses the theory.

Definition of Key Terms

- The American College of Emergency Physicians (ACEP) defined the *emergency department* as the setting to "[diagnose] and [treat] unforeseen illness or injury" ("Definition of Emergency Medicine," 2001).
- The ANA defined *nursing* as "the protection, promotion, and optimization of health and abilities, prevention of illness and injury, facilitation of healing, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, groups, communities, and populations" ("Nursing Scope of Practice," n.d.).
- The National Council of State Board of Nursing (NCSBN) defined a *registered nurse* as "an individual who has graduated from a state-approved school of nursing, passed the NCLEX-RN [National Council Licensure Examination-for Registered Nurses]

Examination and is licensed by a state board of nursing to provide patient care" ("Definition of Nursing Terms," n.d.).

- Benner (1982) defined *experience* as "not the mere passage of time or longevity; it is the refinement of preconceived notions and theory by encountering many actual practical situations that add nuances or shades of differences to theory" (p. 407).

- The U.S. Department of Labor's Fair Labor Standards Act (FLSA) and 2008 revised fact sheet described *hours worked* as "all time during which an employee is necessarily required to be on the employer's premises, on duty or at a prescribed work place" ("Fact Sheet #22," 2008).

- Meretoja, Isoaho, and Leino-Kilpi (2004) defined *frequency of use* as "the frequency with which individual [indicators of clinical competence] are actually used in clinical practice" (p. 126).

- No clear or consistent definition of *competence* exists in the current research on nurse competence. Many scholars lacked clarity in their definitions of competence and used the following words to define the term: task performance, skills, knowledge, capacity, values, attitudes, and personality. Scholars used competency and competence interchangeably; however, these terms possessed different meanings in which the former implied the actual doing of a skill (Smith, 2012). This study considered Meretoja, Leino-Kilpi, and Kaira's (2004) definition of competence – "functional adequacy and capacity to integrate knowledge and skills to attitudes and values into specific contextual situations of practice" (pp. 330-331) – since it acknowledges the situational context.

CHAPTER 2: REVIEW OF THE LITERATURE

Formal preparation through college and university settings provide registered nurses (RNs) the knowledge and skills needed to meet the demands of the workforce and care for patients in a variety of settings. RNs recognize, understand, apply, differentiate, evaluate, and characterize safe nursing practices resulting from their participation in classroom instruction and practical experiences. The rigorousness of nursing education ensures prospective RNs possess the skillset, acquired and developed over the course of the nursing program, to provide safe and quality nursing in practical settings. RNs need to pass an exam, called the National Council Licensure Examination (NCLEX), to practice their profession and gain employment in different nursing settings in licensing states.

RNs in the Workforce

RNs enter the workforce in nursing settings with no or minimal experience in response to nursing shortages. This section provides an overview of events leading to this problem to better understand the significance of nurse competence.

Shortage of RNs

With the current state of the workforce encompassing RNs predominantly in the baby boomer generation, nurses are retiring from the nursing profession progressively. The aging workforce contributes to shortages in the nursing workforce across various healthcare settings and results in the employment and transition of inexperienced RNs into specialized nursing settings. Insufficient staffing levels in many nursing settings influence healthcare organizations to acquire additional RNs to address the workforce shortage and maintain safe and quality nursing for patients.

Newly Licensed and Experienced RNs

More specialized settings hire novice and experienced RNs requiring additional knowledge and skills they do not possess. Referring to Benner's (1982) theoretical framework, novice RNs possessed no experience following the completion of formal preparation, such as nursing education and licensure. Experienced RNs possessed nursing experience specific to their former roles and practice settings before entering new and unfamiliar settings. Both novice RNs and experienced RNs need to develop competence in new settings to care for patients appropriately, effectively, efficiently, and safely.

Transition to Practice Programs for Knowledge and Skill Advancement

Nurse competence affects the safety and quality of nursing patients receive from RNs. Both newly licensed and inexperienced RNs in a setting, such as the emergency department (ED), possess no or minimal experience, knowledge, and skills and need to develop competence. When RNs enter new nursing settings, the transition process includes implementing hospital-developed transition to practice programs to bridge knowledge and skill gaps for both newly licensed and inexperienced RNs. These structured programs vary in duration and positively impact the nurse's development of competence and transition into a new and unfamiliar nursing setting. The outcome of a structured transition process and its relevance to competence benefits RNs entering settings requiring advanced knowledge and skills.

Patient Impact

The impact of the nursing shortage on safe and quality nursing is a priority. RNs need to provide safe and quality nursing for patients in any setting, including settings requiring the advanced knowledge and skills beyond what RNs acquired through their

formal preparation. With RNs entering specialized nursing settings in response to the workforce shortage, they need to develop competence in deficiencies related to knowledge and skills. Competence can sustain safe and quality nursing and prevent the occurrence of detrimental outcomes from medical errors.

Problem

The shortage in the nursing workforce contributes to newly licensed and inexperienced RNs entering specialized settings. These RNs need to develop competence to provide safe and quality nursing to patients in settings. Nurse competence impacts safe and quality nursing, and several research studies investigated the measurement of nurse competence in various nursing settings (Flinkman et al., 2016). In current quantitative research on nurse competence, such as self-assessment of nurses' levels of competence, limited studies exist in critical care settings in the United States (O'Leary, 2012). This limitation in the research literature warranted the need to investigate and measure the nurse competence of RNs working in the ED setting at a public hospital in the San Francisco Bay Area.

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Literature Review

This chapter briefly introduces the impact of the shortage of RNs on the nursing profession and urges the further development of knowledge and skills for safe and quality nursing for patients. The problem identified both in the nursing profession and existing literature presents the need to investigate nurse competence. This study's purpose and research questions clearly articulated to investigate nurse competence. This chapter explains Benner's (1982) novice to expert nurse model and nurse competence and discusses the existing literature surrounding nurse competence assessment and transitioning to a new setting of nursing practice.

This review includes studies investigating nurse competence based on the following criteria: quantitative, qualitative, and mixed methods research studies, and research literature reviews; English publications; sources available in PDF; and sources investigating the nurse competence of nurses using a self-assessment tool while considering experience as an independent variable. This review includes studies investigating the transition process of nurses based on the following criteria: quantitative, qualitative, and mixed methods research studies, and research literature reviews; English publications; sources available in PDF; and sources investigating the nurse's transition process in a new nursing setting. Initially, studies included in this review limit to the emergency setting; however, very few exist. This

review included studies outside of the ED to produce more evidentiary support for investigating nurse competence. This review excluded studies not meeting the established criteria for the study purpose and methods.

The synthesis of the existing literature relative to investigating nurse competence presents as the key argument to justify significance of this study.

Conceptual Framework

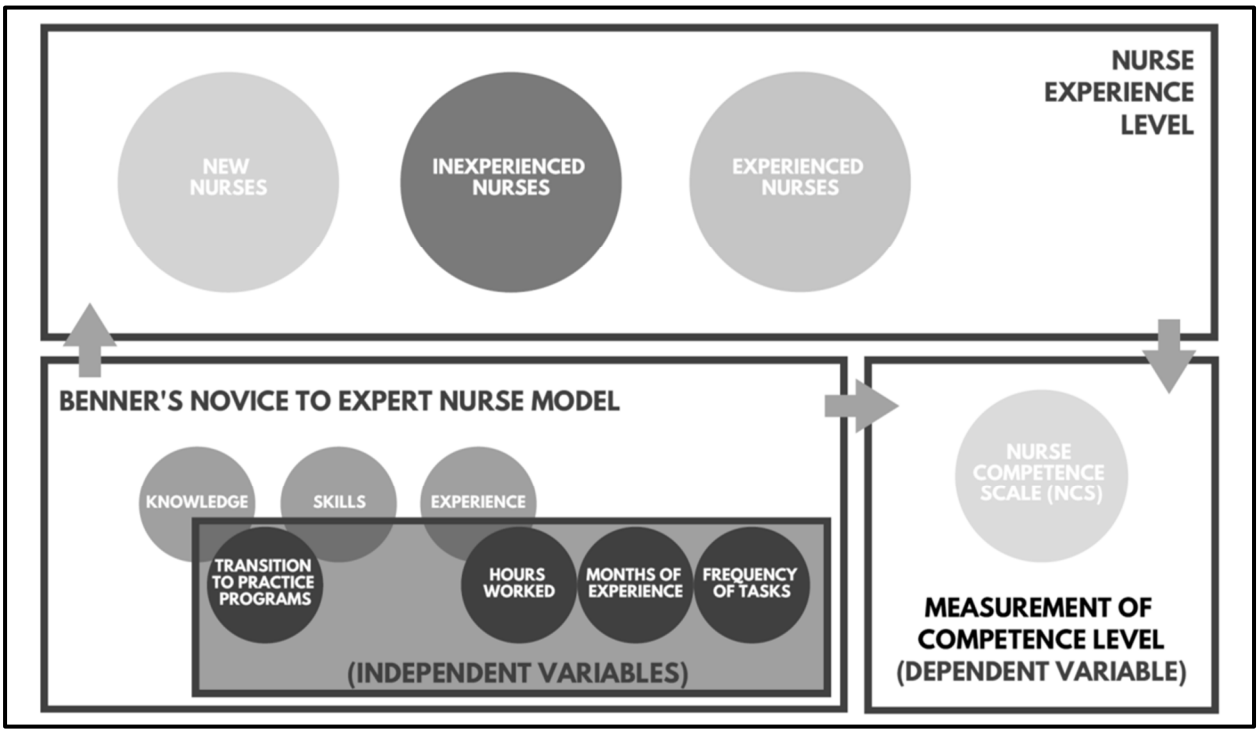

Figure 2. Conceptual framework. This figure illustrates the conceptual framework for this study.

Referring to Figure 2, three key ideas emerged from the review of the literature. The first idea was Benner's (1982) expert nurse model. Several studies referenced this model as the underlying framework surrounding nurse competence. Benner's (1982) model suggested knowledge, skills, and experience contributes to the development of nurse competence.

The second key idea was the measurement of nurse competence using a valid and reliable data collection tool. This tool referred to Benner's (1982) model and focused on the element of experience as a factor in nurse competence, such as the frequency of performing tasks. This study investigated the other types of experience, including the number of hours worked and months of experience, and developed specific experience level categories to illustrate the different levels of nursing experience (i.e., new, inexperienced, and experienced nurses). New nurses possessed no former nursing experience in the field of nursing (e.g., newly licensed nurse). Inexperienced nurses possessed current or former nursing experience in settings outside of the ED. Experienced nurses possessed current and former nursing experience in the ED. These different nursing experience level categories adopt Benner's (1982) model and reflect the reality of the nursing profession.

The third key idea was the use of transition to practice programs in the nursing profession, focusing on knowledge and skill development and advancement. Knowledge and skills were elements in Benner's (1982) model on competence development along a continuum, and transition to practice programs resulted in further developing the knowledge and skills of RNs entering the profession or transferring their current knowledge and skills to new and unfamiliar settings. The conceptual framework in Figure 2 illustrates three key ideas supporting this study's purpose to investigate the nurse competence of RNs in the ED.

Describing Benner's (1982) model and nurse competence supports this study's purpose. The inclusion of studies investigating nurse competence assisted in addressing this study's research questions. Equally important was the inclusion of studies investigating the transition process of RNs entering new nursing settings, such as transition to practice

programs and programs' outcomes in addressing the knowledge and skill gaps of inexperienced RNs. This study considered these studies since this study takes place in an ED in which newly licensed and inexperienced RNs participated in a hospital-developed training program during their transition into this nursing setting.

Novice to Expert Nurse Model

Benner (1982) argued knowledge and skill development were based on experience and developed over time as nurses gained experience and progressed along a continuum from the novice level to expert level. Benner's (1982) work built on a former study of Dreyfus and Dreyfus (1980) from the University of California, Berkeley, in which they examined the skill development of chess players and pilots in their Dreyfus Model of Skill Acquisition. Benner (1982) applied this 5-stage developmental model in the study of nursing practice to "clarify the characteristics of nurse performance" (p. 402) and revealed a consistent finding with Dreyfus and Dreyfus's (1980) study. Specifically, the different levels of progression (i.e., novice, advanced beginner, competent, proficient, and expert) considered two areas of skill development. The first area was the "movement from reliance on abstract principles to the use of past, concrete experience as paradigms" (Benner, 1982, p. 402). The second area was the "change in perception and understanding of a demand situation so that the situation is seen less as a compilation of equally relevant bits and more as a complete whole in which only certain parts are relevant" (Benner, 1982, p. 402). The following section discusses the development and acquisition of the different skill levels Benner (1982) described in the theory.

Novice Level

At the novice level, nurses lacked experience in a specific situation requiring the completion of a task. They needed to recognize the objective features of the situation prompting an expected task to perform. Novice nurses used rules to guide their actions.

Advanced Beginner Level

As novice nurses acquired experience, they transitioned to an advanced beginner in which recognizable cues in each situation guided action. Advanced beginner nurses continued to develop skills in establishing priorities and required the support of nurses in the competent level to assist in prioritizing tasks expected in a situation.

Competent Level

Nurse achieved the competent level upon possessing 2 to 3 years of experience, establishing confidence, and meeting the demands of nursing. Competent nurses considered problems, identified outcomes, and developed plans based on prioritizing goals most important to the current and forecasted situation.

Proficient Level

Nurses reached the proficient level upon accumulating additional experience and being able to anticipate the type of events expected to occur in each situation. They could modify developed plans and reprioritize established goals as situations changed, such as "when the normal picture does not present itself" (Benner, 1982, p. 405). Decision making took less effort at this level.

Expert Level

Nurses met the expert level after they maintained a significant amount of experience. This level yielded the use of intuition rather than rules or guidelines to understand a

situation while simultaneously recognizing the underlying cause of a problem. Expert nurses deeply understood situations beyond experience and knowledge. Benner (1982) argued expertise was "the refinement of preconceived notions and theory by encountering many actual practical situations that add nuances or shades of difference to theory" (p. 407) and "theory offers what can be made explicit and formalized, but clinical practice is always more complex and presents many realities than can be captured by theory alone" (p. 407).

Nurse Competence

Smith (2012) analyzed the concept of nurse competence using Rodgers's (2000) evolutionary concept analysis model. This model involved a sequenced process, including: identifying the concept of interest; identifying surrogate terms; identifying the sample for data collection; identifying the attributes of the concept; identifying references, antecedents, and consequences of the concept; identifying related concepts; identifying a model case; and conducting interdisciplinary comparisons of the concept. Smith (2012) argued most research referred to Benner's (1982) definition of nurse competence: "One who had experience to draw from in order to plan care considering known and anticipated factors in the patient's condition" (p. 173). Smith (2012) stated the concept of competence remains unclear due to researchers' confusing and inconsistent definitions of competence, such as using the term competency interchangeably for the term competence. Competency refers to performing a skill, whereas competence includes evaluating a task during skill performance and possessing knowledge and capability. Qualified and skilled are terms used to reference competence, and these terms alluded to licensure and an individual's description, respectively.

Smith's (2012) analysis of nurse competence, based on the literature from 1990-2012, revealed the notable characteristics of the concept of nurse competence, such as integrating knowledge into practice, experience, critical thinking, proficient skills, caring, communication, environment, motivation, and professionalism. Smith (2012) indicated confidence, safe practice, and holistic care as the outcomes of nurse competence. Benner (1982) argued nurse competence was a process of development and a continuum, such as when a nurse could be an expert in one setting and a novice in another setting. Smith (2012) built on Benner's (1982) theory and concluded nurse competence was a journey rather than a destination as an individual experienced each level of the novice to expert nurse model, suggesting competence was an ongoing developmental process throughout the nurse's professional career without a specific endpoint to their knowledge and skill acquisition.

Nurse Competence Assessment

The existing research investigating nurse competence assessment in different nursing settings revealed an association between experience and nurse competence. This section discusses the measurement of nurse competence, influence of experience, and theoretical basis.

Measuring Nurse Competence

Multiple studies measuring nurse competence utilized an assessment tool to collect self-reported data from their participants. Meretoja, Isoaho, and Leino-Kilpi (2004) supported the use of this method since

> self-assessment allows nurses to consider their practice within their own environments, and assists them to maintain and improve their practice … By using the process of reflection, nurses gain insight into their practice in order to identify strengths and areas that may need to be further developed. (p. 125)

Meretoja, Isoaho, and Leino-Kilpi (2004) designed a self-assessment tool using a thorough development process for validity and reliability to assess level of competence. The development process included referring to existing testing instruments, reviewing with an expert panel, pilot testing, subsequent reviewing by a different group of experts, and additional pilot testing by a different group. Meretoja, Isoaho, and Leino-Kilpi (2004) developed a tool, called the nurse competence scale (NCS), composed of a 73-item questionnaire, which divide into seven competence areas: helping role, teaching-coaching, diagnostic functions, managing situations, therapeutic interventions, ensuring quality, and work role as shown in Figure 3. The end users of the tool (e.g., nurses) provided both their level of competence and frequency of use for each item on the NCS.

Helping role
1. Planning patient care according to individual needs
2. Supporting patients' coping strategies
3. Evaluating critically own philosophy in nursing
4. Modifying the care plan according to individual needs
5. Utilizing nursing research findings in relationships with patients
6. Developing the treatment culture of my unit
7. Decision-making guided by ethical values

Teaching-coaching
8. Mapping out patient education needs carefully
9. Finding optimal timing for patient education
10. Mastering the content of patient education
11. Providing individualized patient education
12. Co-ordinating patient education
13. Able to recognize family members' needs for guidance
14. Acting autonomously in guiding family members
15. Taking student nurse's level of skill acquisition into account in mentoring
16. Supporting student nurses in attaining goals
17. Evaluating patient education outcome together with patient
18. Evaluating patient education outcomes with family
19. Evaluating patient education outcome with care team
20. Taking active steps to maintain and improve my professional skills
21. Developing patient education in my unit
22. Developing orientation programmes for new nurses in my unit
23. Coaching others in duties within my responsibility area

Diagnostic functions
24. Analysing patient's well-being from many perspectives
25. Able to identify patient's need for emotional support
26. Able to identify family members' need for emotional support
27. Arranging expert help for patient when needed
28. Coaching other staff members in patient observation skills
29. Coaching other staff members in use of diagnostic equipment
30. Developing documentation of patient care

Managing situations
31. Able to recognize situations posing a threat to life early
32. Prioritizing my activities flexibly according to changing situations
33. Acting appropriately in life-threatening situations
34. Arranging debriefing sessions for the care team when needed
35. Coaching other team members in mastering rapidly changing situations
36. Planning care consistently with resources available
37. Keeping nursing care equipment in good condition
38. Promoting flexible team co-operation in rapidly changing situations

(Figure 3 Continued)

Therapeutic interventions
39. Planning own activities flexibly according to clinical situation
40. Making decisions concerning patient care taking the particular situation into account
41. Co-ordinating multidisciplinary team's nursing activities
42. Coaching the care team in performance of nursing interventions
43. Updating written guidelines for care
44. Providing consultation for the care team
45. Utilizing research findings in nursing interventions
46. Evaluating systematically patient care outcomes
47. Incorporating relevant knowledge to provide optimal care
48. Contributing to further development of multidisciplinary clinical paths

Ensuring quality
49. Committed to my organization's care philosophy
50. Able to identify areas in patient care needing further development and research
51. Evaluating critically my unit's care philosophy
52. Evaluating systematically patients' satisfaction with care
53. Utilizing research findings in further development of patient care
54. Making proposals concerning further development and research

Work role
55. Able to recognize colleagues' need for support and help
56. Aware of the limits of my own resources
57. Professional identity serves as resource in nursing
58. Acting responsibly in terms of limited financial resources
59. Familiar with my organization's policy concerning division of labour and co-ordination of duties
60. Co-ordinating student nurse mentoring in the unit
61. Mentoring novices and advanced beginners
62. Providing expertise for the care team
63. Acting autonomously
64. Guiding staff members to duties corresponding to their skill levels
65. Incorporating new knowledge to optimize patient care
66. Ensuring smooth flow of care in the unit by delegating tasks
67. Taking care of myself in terms of not depleting my mental and physical resources
68. Utilizing information technology in my work
69. Co-ordinating patient's overall care
70. Orchestrating the whole situation when needed
71. Giving feedback to colleagues in a constructive way
72. Developing patient care in multidisciplinary teams
73. Developing work environment

Figure 3. Nurse competence scale. This figure illustrated the 73 items of the NCS questionnaire. Adapted from Meretoja, Isoaho, and Leino-Kilpi, 2004.

In a cross-sectional study, Meretoja, Leino-Kilpi, and Kaira (2004) tested the NCS among 498 nurses across a variety of nursing settings in a Finnish hospital, including the medical-surgical, emergency and outpatient clinic, intensive care unit, and operation room.

In another study, Meretoja, Numminen, Isoaho, and Leino-Kilpi (2015) used the NCS among 2,052 nurses to identify differences in nurse competence between three different age groups (e.g., 20-29 years old, 30-39 years old, and 40 years old or older) in a Finnish hospital. In a comparative study, Numminen, Meretoja, Isoaho, and Leino-Kilpi (2013) used the NCS among 2,083 nurses to compare nurse competence between four different nursing settings in a Finnish hospital, including medical; surgical; pediatric, obstetrics, and gynecological; and psychiatric. Salonen, Kaunonen, Meretoja, and Tarkka (2007) used the NCS among 147 nurses to study the level of competence of nurses with less than 3 years of experience working in the intensive care, high dependency, and emergency settings of a Finnish hospital requiring a structured preceptorship program.

Although the NCS was an instrument used to collect data on nurse competence as presented in the studies mentioned above, most research took place in Finland. However, other research supported the use of the NCS as a method to measure the level of competence of nurses across different countries and nursing settings. The implementation of the NCS in the United States limits to few studies, including O'Leary's (2012) investigation of 101 critical care nurses at a hospital to assess their level of competence.

The Influence of Experience

The existing research investigating nurse competence revealed an association between experience and competence. The literature using the NCS revealed a consistent finding of competence developed as experience increased. Meretoja, Leino-Kilpi, and Kaira (2004) found an increase in performing a task corresponded with an increased level of competence for the clinical indicator stated in each item of the NCS. They suggested longer work experience increased the overall level of competence and found a positive correlation

existed between each variable under study (e.g., age, length of experience in current environment, length of work as a nurse, and length of experience in healthcare) and the overall level of competence. Meretoja, Leino-Kilpi, and Kaira's (2004) finding supported their argument relative to the higher level of competence occurring with longer work experience.

Salonen et al.'s (2007) study taking place in intensive care and emergency settings revealed current work experience significantly correlated with the level of competence and specified the correlations of the length of experience and frequency of use with the level of competence. Salonen et al.'s (2007) result was consistent with former studies using the NCS. Numminen et al. (2013) indicated a correlation between the quality and frequency of action, showing higher levels of competence with higher frequency for each competence area in the NCS. They found correlations between demographic variables, such as age, healthcare experience, and experience in the current setting, in both the level of competence and frequency of use for each competence area. Numminen et al.'s (2013) finding was found in all nursing settings in their study and was consistent with prior studies investigating nurse competence using the NCS, supporting the validity and reliability of the NCS across different settings.

Meretoja et al. (2015) presented differences in the quality of action (i.e., level of competence score) and frequency of action during their study of nurses in different age groups (e.g., 20-29 years old, 30-39 years old, and 40 years old or older). Nurses in the 40 years or older group possessed higher scores for both the level of competence and frequency of use, whereas nurses in the 20-29 years old group possessed lower scores for both the level of competence and frequency of use. Meretoja et al. (2015) suggested higher competence

with higher frequency in all competence areas of the NCS. They argued least competent nurses existed in the youngest cohort group (e.g., 20-29 years old) and most competent nurses existed in the oldest cohort group (e.g., 40 years old or older). Meretoja et al. (2015) found no statistical significance with age and competence; however, a statistical significance existed between the length of experience and competence.

Considering studies completed in the United States, O'Leary (2012) identified a correlation between experience and the total competence score, suggesting higher nurse competence existed for nurses with more years of experience. This finding was consistent with former studies using the NCS to assess nurse competence and supported the relationship between experience and overall competence. O'Leary (2012) suggested a positive relationship exists between age and the level of competence scores, contrasting Meretoja et al.'s (2015) finding in their study on nurses of different age groups. However, this contrasting result warrants further research.

Flinkman et al. (2016) reviewed 30 quantitative studies using the NCS tool to measure nurse competence. These studies were mostly cross-sectional, conducted in hospitals, and took place in Europe. Flinkman et al. (2016) revealed experienced nurses possess a good to very good level of competence while new graduate nurses possess a moderate to good level of competence. A study in their review occurred in the United States and presented a slight increase in the level of competence of new graduate nurses after completing an educational program. Although the level of competence increased for these nurses, they continued to possess a good level of competence. Flinkman et al. (2016) found an association between demographic variables and level of competence, suggesting age, education level, subsequent training, prior experience, and professional development were

related to a higher level of competence. Their finding is consistent with studies previously discussed above, except for Meretoja et al.'s (2015) finding of a nonsignificant relationship between age and level of competence. Although Flinkman et al. (2016) suggested higher self-assessed levels of competence were associated with longer work experience, as evidenced in several studies under their review, three studies examining experienced nurses contrasted this finding and indicated other variables associate with higher levels of competence, including organizational (e.g., employment status, work rotation, and autonomy), environmental (e.g., quality of care, learning environment, ethical climate, and perceptions of practice), and nurse-related (e.g., commitment to profession, empowerment, critical thinking, and motivation for professional development).

An alternative method to measure nurse competence revealed a consistent finding relative to experience and nurse competence. Takase's (2012) study of nurses in Japan using the Holistic Nursing Competence Scale (HNCS) indicated nurse competence increased during the progression of experience, arguing the development of competence took on a "growth curve model" (p. 1405). This model was a rapid increase in the level of competence during the initial 10 years of practice, and then a stable period or gradual increase in the level of competence after 10 years.

Benner's (1982) Framework

Benner's (1982) novice to expert nurse model supports the findings of several studies, suggesting a relationship between experience and nurse competence in which length of experience increases level of competence. The systematic review of Flinkman et al. (2016) revealed a correlation between a nurse's length of experience and level of competence,

supporting Benner's (1982) framework; however, they suggested other variables, such as age and educational level, associate with level of competence beyond experience alone.

Meretoja, Isoaho, and Leino-Kilpi (2004) found their development of the NCS, based on Benner's (1982) framework, to be highly indicative of differentiating novice level nurses from expert level nurses when compared to another reliable nurse competence assessment tool, such as the 6D Scale. Meretoja, Leino-Kilpi, and Kaira (2004) argued the existence of a positive correlation between length of experience and self-assessed overall nurse competence in their study further supported Benner's (1982) theory. In a later study, Meretoja et al. (2015) indicated a consistent finding with earlier studies; however, no statistically significant relationship existed between age and level of competence when they studied age more closely. They suggested the combination of age and length of experience influenced the development of nurse competence, supporting Benner's (1982) theory on the premise of experience increasing the development of nurse competence.

O'Leary (2012) presented the connection between a nurse's amount of experience and their level of competence, and this connection is consistent with Benner's (1982) theory. O'Leary (2012) built on Benner's (1982) work to argue experience evolves over a series of situations and encounters and emphasized its significance to competence. This type of experience along with intrinsic and extrinsic factors influenced a nurse's advancement to the expert level on the continuum.

Transitioning to a New Setting of Nursing Practice

With the ongoing and growing concern of a nursing shortage leading to the increased hiring of both newly licensed and inexperienced RNs into unfamiliar settings, this study reviewed the research on transition programs for RNs transitioning to new settings to begin

or continue their nursing practice. This section discusses transition to practice programs' impact to overall competence, outcome during implementation in the emergency setting, and process for transitioning RNs.

Transition to Practice Programs

The process of RNs transitioning into nursing settings impacts nurse competence. Missen, McKenna, and Beauchamp (2014) reviewed 11 quantitative studies examining the impact of training programs to the job satisfaction and confidence levels of nurses during their initial year of employment. Missen et al. (2014) indicated a transition program increased satisfaction, confidence, and retention, and they defined the program as "providing support for socialization of new nurses and their transition into the professional role, as well as teaching essential skills and knowledge required for competence and enhanced job satisfaction and to increase commitment and retention of new graduates" (p. 2430).

Innes and Calleja (2018) reviewed 30 studies, mostly qualitative and descriptive, to understand programs supporting the transition of nurses into critical care settings and identified six themes: immediate support, workplace culture, socialization, knowledge and skill acquisition, orientation, and rotation. Innes and Calleja (2018) found structured orientation programs promoted knowledge and skills and increased competence. Newer nurses identified increased confidence and improved job satisfaction, a finding consistent with Missen et al.'s (2014) finding, while senior nurses identified improved patient outcomes. Innes and Calleja (2018) suggested critical care settings need to determine competencies new nurses need to know and provide opportunities for the frequent exposure and repetition of tasks and procedures to improve skills, confidence, and competence.

Spector et al. (2015) studied the effects of transition to practice programs on competence as well as other factors, such as quality and safety, stress, job satisfaction, and retention. In their comparison study of 1,088 nurses across 94 hospitals, the intervention group implemented a formalized transition to practice program (e.g., the National Council of State Boards of Nursing's Transition to Practice Model) while two control groups maintained their usual onboarding processes, consisting of established programs with a preceptorship or simple orientation procedure. Although all three groups revealed improved competence based on the overall competence tool with no statistical significance between intervention and control groups, Spector et al. (2015) found nurses in the control group using an unstructured program experienced more errors and negative safety practices, lower competence, increased stress, decreased job satisfaction, and decreased retention. Spector et al.'s (2015) finding relative to the use of a formalized program during a nurse's transition to a new nursing setting was consistent with the studies of Missen et al. (2014) and Innes and Calleja (2018).

The Emergency Setting

The development and implementation of a program facilitating the transition process of RNs new to the emergency setting influenced competence. Loiseau, Kitchen, and Edgar (2003) developed a 4-month structured training program, including classroom lectures and preceptorship, for 18 nurses in the ED at a Canadian hospital in which four nurses participated in the program at one time. The program's intent was for new nurses to provide safe, efficient, and competent nursing in this type of setting with an expectation of managing a 4- to 6-patient assignment at the end of the program. Loiseau et al. (2003) used the student self-efficacy questionnaire to measure the self-efficacy of new nurses based on

their performance, revealing nurses perceived themselves to be confident in fulfilling tasks. The nurses' preceptors and educators assessed their competence and indicated they were competent and safe, and staff felt confident working with them.

Considering the research occurring in the United States, Patterson, Bayley, Burnell, and Rhoads (2010) studied 18 nurses in an ED training program at a hospital in Pennsylvania to explore nurses' perceptions of the program and emergency nursing after a 6-month structured training, including classroom instruction and preceptorship. Patterson et al. (2010) interviewed and surveyed nurses about their experiences in the program and their first jobs as nurses. They found nurses viewed themselves as competent individuals in the novice level following the structured program. Fourteen nurses completing the survey believed they were ready for their roles despite the stressful workload. Patterson et al.'s (2010) finding relative to the impact of a structured training program on competence was consistent with Loiseau et al.'s (2003) study.

Winslow, Almarode, Cottingham, Lowry, and Walker (2009) piloted a 6-month structured training program for three new nurses in the ED at a hospital in Virginia, including lecture and preceptorship, to build critical thinking and professional practice skills. Winslow et al. (2009) found nurses believed they were ready to provide safe and quality nursing after completing the program, a finding consistent with the studies of Loiseau et al. (2003) and Patterson et al. (2010) on the outcomes of structured training programs. Although the study's sample was small, Winslow et al. (2009) noted the program's replication after the pilot study and could be as successful in a larger organization or an academic facility.

In another United States study in the ED at a hospital in New York, Wolf (2005) studied five nurses participating in a 16-week structured program, including classroom, laboratory, and clinical experiences, to facilitate competence development. These nurses, who possessed experience in nursing settings other than the ED, should perform nursing responsibilities in a 6-patient assignment after completing the program. Upon evaluation of the structured program, Wolf (2005) found nurses perceived they could independently perform responsibilities comfortably and competently after their training, and the department believed they were ready clinically and theoretically. This finding is consistent with other studies already discussed investigating the outcomes of structured training programs during nurses' transition process. The department staff members' perceptions of the nurses' increased preparation, ability, and competence during the transition support Loiseau et al.'s (2003) finding relative to staff members' confidence when working with newly transitioned nurses.

Salonen et al. (2007) argued the overall level of competence for the emergency setting was the lowest when compared to intensive care and high dependency settings. Although preceptorship programs influenced the level of competence, these programs were unique to the setting in which a nurse's transition took place, making the identification of the program's direct impact to nurse competence a challenge. Salonen et al. (2007) suggested the learning environment influenced the level of competence beyond the implementation of structured programs and recommended the development of nurse-preceptor relationship programs and corresponding studies to evaluate the impact on competence.

The Process of Transitioning Into New Nursing Settings

Kinghorn et al. (2017) reviewed 10 studies, mostly qualitative designs, on nurses transitioning into new nursing settings and identified three emerging themes: support, professional development, and emotional impact. In the professional development theme, Kinghorn et al. (2017) found transitioning nurses with former experience questioned their ability to perform their roles, felt overwhelmed with the transition itself, felt "deskilled" (p. 4230), and lacked confidence in transferring prior knowledge and skills into a new setting, such as the critical care setting.

Winters (2016) utilized a grounded theory method to explore and describe the transition process for becoming an ED nurse at a hospital in the United States among seven nurses with experience levels ranging from 1 to 17 years. Using an interview approach, Winters (2016) found five phases nurses encountered during their process, called seeking status, including joining the troops, working in the trenches, passing the muster, earning stripes, and looking ahead. The initial two phases focused on rationalizing the transition to be an emergency nurse and adapting to a new and unfamiliar setting, respectively. In the third phase, passing the mutter, nurses "realized that during their transition from new nurse or 'recruit' to emergency nurse, they were again novices despite any prior nursing knowledge or experience they may have had" (Winters, 2016, p. 416). Kinghorn et al. (2017) and Winters (2016) shared a similar finding in their discussions relative to nurses' impressions during their transition from one setting to another. As nurses entered new and unfamiliar settings to practice nursing, they were novices and former experts.

The studies of Kinghorn et al. (2017) and Winters (2016) referred to Benner's (1982) model relative to competence development along a continuum. Winters (2016) indicated

the central element during the third phase of the transition process was competence development. Considering the remaining phases of this process, earning stripes and looking ahead, Winters (2016) described these phases as moments transitioning nurses characterized nursing in the ED and considered their loyalty for remaining in the department, respectively. Consistent with other studies already discussed surrounding structured programs during the transition process for nurses entering new settings, Winters (2016) recommended the use of transition to practice programs for improvements in competence and confidence.

In another grounded theory approach, Reising (2002) studied 10 nurses in the critical care setting across multiple hospitals in Indiana to explore the socialization process of nurses new to this setting. Socialization was "the process by which persons acquire the knowledge, skills, and dispositions that make them more or less able members of their society" (Reising, 2002, p. 19). Reising (2002) identified a 5-phase process nurses experienced during their socialization process into the critical care setting, including the prodrome, welcome to the unit, disengagement/testing, on my own, and reconciliation. Like Winters's (2016) process for seeking status in the ED, the prodrome and welcome to the unit phases centered on a nurse's reason for entering the critical care setting and initial impression of being in a new and unfamiliar setting. However, Winters's (2016) study described the second phase using phrases, such as "working in the trenches," "boot camp," "understanding the hierarchy," and "paying dues" (p. 416). In contrast, Reising (2002) described the second phase using phrases, such as "being nurtured" (p. 21). In the third phase of the socialization process, disengagement/testing, Reising (2002) indicated the focus was on the nurse's ability to implement nursing independently, testing their

confidence. This finding was consistent with Kinghorn et al.'s (2017) finding relative to confidence level, and aligned with Winters's (2016) third phase, passing the mutter, which focused on competence development. Reising (2002) described the fourth phase, on my own, being the shift in which nurses made appropriate decisions based on the whole patient, and the fifth phase, reconciliation, being the point in which nurses sought validation of their experience and acceptance. This final stage contrasted Winters's (2016) finding relative to nurses contemplating between remaining in the ED or leaving the ED. Considering similarities and differences between Reising's (2002) and Winters's (2016) grounded theories on the transition process for nurses into new and unfamiliar settings, they both identified a formal process during the transition structured as a program or orientation. Both studies referred to Benner's (1982) novice to expert nurse model and competence development.

Key Argument

In response the hiring of newly licensed and inexperienced RNs with no or minimal experience in a more refined nursing setting, such as the ED, their nurse competence needs investigation and measurement. These nurses require additional knowledge and skills beyond their formal preparation. Developed competence can sustain safe and quality nursing.

In current quantitative research on nurse competence, such as self-assessment of nurses' levels of competence, limited studies exist in critical care settings in the United States (O'Leary, 2012). This limitation in the literature warrants the need to investigate and measure the nurse competence of RNs working in the ED setting at a public hospital in the San Francisco Bay Area. Several studies in various nursing settings support the use and effectiveness of the NCS to investigate and measure nurse competence.

Flinkman et al. (2016) reviewed several studies using the NCS across a variety of nursing settings in different countries, and each study's findings under their review varied due to contextual factors, such as education, environment, and subsequent training. Flinkman et al. (2016) recommended investigating nurse competence in larger samples, different settings, including multi-setting, and other countries, including multi-country, to better understand nurse competence and further support the validity and internal consistency of the NCS.

Future Research

The synthesis of the literature surrounding the measurement of nurse competence offers many recommendations for future study. Some notable suggestions in the existing research include investigating the relationship between competence and nursing outcomes; considering studies in different nursing settings, including other countries, to achieve generalizability; utilizing other methods of competence validation in addition to self-reported approaches; increasing the transfer of knowledge and skills between nurses; exploring other factors, such as motivation, orientation, and environment; using the NCS for performance appraisals; and developing preceptorship practices.

Other opportunities for future research surround investigating the use of transition to practice programs, such as programs in critical care settings, larger organizations, and academic healthcare facilities; short and intensive programs; and the program's impact towards job satisfaction, confidence levels, and turnover rates in other countries outside the United States.

Another area for future research focuses on the transition processes of nurses into new settings, including investigating the perceptions of preceptors in addition to the

perceptions of new nurses during the socialization process; examining the socialization process across multiple settings; considering the socialization process in later experiences; exploring the theories of transitional shock and organizational socialization as these theories relate to the nursing transition process; studying factors influencing a nurse's adjustment to a new and unfamiliar setting; and evaluating the implementation of longer orientations, preceptors, and management trainings.

Chapter Summary

This chapter briefly introduced the impact of the shortage of RNs on the nursing profession and urged further knowledge, skill advancement, and competence development for safe and quality nursing for patients. The problem in the nursing profession and gap in research supports the need for this study to investigate nurse competence. This study's purpose and research questions clearly articulated to investigate experience and competence. This chapter explained Benner's (1982) novice to expert nurse model and nurse competence. This sections in this chapter reviewed the existing literature on the measurement of nurse competence relative to the influence of experience and Benner's (1982) model and the existing literature on transitioning to new settings of nursing practice relative to the transition to practice programs, transition to the emergency setting, and RNs' transition processes. The identified problem, existing literature, and recommendation to use a valid and reliable method for investigating and measuring nurse competence in other settings infrequently studied presented as the key argument to justify the significance of this study. This chapter offered suggestions and recommendations for future research opportunities specific to the measurement of nurse competence, transition to practice programs, and transition processes of nurses into new settings.

CHAPTER 3: METHODOLOGY

The shortage of registered nurses (RNs) in the workforce enables newly licensed and inexperienced RNs to enter a new and unfamiliar nursing setting, such as the emergency department (ED), requiring additional knowledge and skills to function at the capacity in their roles and provide safe and quality nursing. In current quantitative research on nurse competence, such the self-assessment of nurses' levels of competence, limited studies exist in critical care settings in the United States (O'Leary, 2012). This limitation in the research literature warrants the need to investigate and measure the nurse competence of RNs working in the ED setting at a public hospital in the San Francisco Bay Area.

Research Questions

With the hypothesis that increased length of experience in key skill areas relates to increased nurse competence, four questions guided this study:

1. What area(s) possessed the lowest level of competence for the study sample?
2. What area(s) possessed the highest level of competence for the study sample?
3. What was the relationship between the frequency of using clinical skills and level of competence?
4. What was the relationship between the background factors, including the length of nursing experience and number of hours worked, and level of competence?

This chapter discusses this study's quantitative nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey to describe and investigate a nonrandomized sample of RNs working in the ED at a public hospital in the San Francisco Bay Area. The following sections discuss the description of this study's

data collection process and statistical analysis, the researcher's position and involvement, and this study's reliability and validity, ethical considerations, and limitations.

Research Approach

Johnson and Christensen (2014) suggested experimental research was the strongest approach when studying a cause-and-effect relationship between an independent variable and a dependent variable. Since this study's purpose was to describe the sample of RNs working in the ED at a public hospital in the San Francisco Bay Area while investigating how the frequency of using clinical skills and background factors, including experience in the form of the number of months of experience and number of hours worked, impacted RNs' levels of competence, this study did not manipulate variables or require a randomized control trial. A nonexperimental research approach was appropriate for this study and implemented using research questions and hypotheses, variable selection, data collection, data analysis, and interpretation of results.

Instrumental Case Study

Researchers define case study on the premise of being a methodology or not. Thomas (2015) argued a case study "is defined not so much by the methods that you are using to do the study, but the edges you put around the case" (as cited in Creswell & Poth, 2018, p. 96). In Johnson and Christensen's (2014) description of a case study research design, they explained the instrumental case study involved selecting a case, understanding the case, learning more about an idea or phenomenon, and making conclusions beyond the case. Considering this study's purpose to describe this study's sample and investigate the nurse competence of RNs working in the ED at this study's setting, this study implemented an instrumental case study. This type of case study allowed the researcher to focus on an

issue and raise and depict the issue's significance using a case (Creswell & Poth, 2018). This study conducted case study research using the procedure Creswell and Poth (2018) outlined: determining the appropriateness of a case approach for the study, identifying the intent of the study and its case, developing procedures for data collection, specifying the analysis approach, and reporting the case study and lessons learned.

Cross-Sectional Survey

The survey design in the quantitative research realm enabled the researcher to describe the population completing the administered questionnaire, and this design involved collecting data; analyzing data to reveal trends, answer research questions, and test the hypothesis; and interpreting data and connecting it back to the existing research (Creswell, 2012). Johnson and Christensen (2014) described survey design as a nonexperimental research to understand "the characteristics of a population based on the sample data" (p. 249) through questionnaires and interviews. When compared to an experimental research, a survey research excluded the treatment groups, manipulation of conditions, and the explanation of cause and effect. A survey research described trends, correlated variables, and gained knowledge about a population (Creswell, 2012). With survey research being suitable for this study, this study implemented a cross-sectional survey design. This survey design could collect data at one point in time with the advantage of obtaining data relative to the current attitudes and other relevant information in a short duration, such as during the data collection period (Creswell, 2012). This study conducts a cross-sectional survey research using the procedure Creswell (2012) outlined: deciding if a survey was best design for the study; identifying research questions or a hypothesis; identifying the population, sampling frame, and sample; determining the survey design and data collection procedures;

developing or locating an instrument; administering the instrument; analyzing data to address research questions or the hypothesis; and writing the report.

Appropriateness of Research

The quantitative nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey generated additional knowledge in the field of nursing, especially for nurse educators. This study attempted to narrow the gap in the existing literature relative to the measurement of nurse competence in the ED in the United States. The characteristics of the selected research design, approaches, and method closely aligned with this study's purpose of describing the sample of RNs in the ED setting while investigating nurse competence, research questions specific to describing and relating variables, and methodology of administering a questionnaire to a target population at this study's setting. This study's meaningful data added to the current nursing research investigating nurse competence, and this study's practicality offered implications and recommendations for research and practice to positively impact the profession of nursing.

Methodology

Context

This study took place in a public hospital located in the San Francisco Bay Area. This hospital functions as a government-operated facility with recognition for specialized care, including trauma, stroke, cardiac, rehabilitation, and burn services. In the ED, over 100 RNs with varying cultural backgrounds, personality traits, experience length, and educational levels work to care for patients continuously throughout a 24-hour period. This hospital is a teaching facility for many schools generating healthcare professionals in the surrounding area and throughout the United States. Patients of diverse socioeconomic and

cultural backgrounds enrich practical experiences. A formalized training program occurs multiple times throughout the year in highly desired specialties, such as emergency and critical care settings, for newly hired RNs and inexperienced RNs from outside of the organization and those who transferred from another nursing unit in the organization. The ED offers comprehensive services to patients, reducing the transfer of patients to another ED for higher level of care services. The ED healthcare team consists of doctors, nurses, technicians, nursing assistants, and clerks. Other support services in the ED, including social work, phlebotomy, and radiology services, assist in streamlining the workflow of the ED and ensure efficiency for patients with acute conditions requiring immediate resources and medical attention.

Site Access

The Institutional Review Board (IRB) at University of the Pacific and the study's setting managed granting access to the ED for this study. The researcher presented this study's proposal to both IRBs and later obtained approval for studying RNs in the organization. The ED was known for participating in numerous quality improvement projects and research studies of internal and external investigators, resulting in no hesitation from the department when this study initiated.

Benefit to Site and Participants

This study generated meaningful data to positively impact nursing research, patient outcomes, the nursing profession, and the healthcare organization, and this impact could benefit the ED and participating RNs. This study's findings provided a baseline understanding of nurse competence specific to RNs working in this setting. This fundamental approach to better understand nurse competence in this setting could

encourage future opportunities for research to further investigate nurse competence and suggest opportunities to support RNs. These opportunities, which benefit this setting at nursing, department, and organization levels, could include acquiring data, initiating quality improvement projects, piloting programs, and developing and modifying policies and procedures and protocols. Understanding the nurse competence of RNs working in this setting could improve patient outcomes, department efficiency, and staff retention. Additional benefits to this setting and participants could include identifying areas to better support RNs; gaps in knowledge and skill; and microsystem problems related to systems, workflows, and processes.

Design and Structure

The design and structure of this study were the combination of an instrumental case study and a cross-sectional survey since this study's aim was to describe a specific sample population and investigate the nurse competence of RNs working in the ED at a public hospital in the San Francisco Bay Area. A valid and reliable questionnaire collected data, statistical testing analyzed data, and data interpretation answered this study's research questions.

Methods

Data Collection Tool

An Internet-based SurveyMonkey questionnaire with two parts collected data. Part I of the questionnaire integrated Meretoja, Isoaho, and Leino-Kilpi's (2004) nurse competence scale (NCS) (see Appendix A). The publishing company granted permission to implement the NCS in this study (see Appendix B). Part II of the questionnaire obtained the participant's background information (see Appendix C).

This study implemented the NSC to measure the level of competence for each RN. Meretoja, Isoaho, and Leino-Kilpi (2004) suggested the NCS was useful in indicating the different levels of nurse competence. The scale consisted of 73 closed-ended clinical indicators divided into seven competence areas, such as helping role (seven items), teaching-coaching (16 items), diagnostic functions (seven items), managing situations (eight items), therapeutic interventions (10 items), ensuring quality (six items), and work role (19 items). For each item on the NCS, participants provided two responses. The first response used a visual analog scale (VAS) (i.e., 0-100) to indicate the level of competence for the stated clinical indicator. For the VAS, a 0 indicated very low self-assessed competence and a 100 indicated very high self-assessed competence. Four different competence groups corresponding to the VAS score existed (e.g., 0-25= low competence, 26-50= quite good competence, 51-75= good competence, and 76-100= very good competence). The second response used a 4-point scale to indicate the frequency of using the stated clinical indicator (i.e., not applicable in my work, used very seldom, used occasionally, and used very often in my work). The use of the NCS to collect data for this study measured the RN's level of competence for each item, or clinical indicator, and their frequency of using the specified skill in practice. Aside from the 73 items in the NCS, participants responded to questions identifying the number of months working as an RN, number of months working as an RN in the ED setting, number of hours working every 2 weeks, highest level of nursing education completed, and completion of a formalized critical care or emergency training program, including outside the organization. Responses to these questions provided background information about the RNs.

The dependent, or outcome, variable in this study was the level of competence for each clinical indicator, and this variable was quantitative and possessed a ratio level of measurement starting at a zero point and ranking in a specific order with equal intervals between numbers on the scale of 0-100. The independent, or predictor, variables in this study were the frequency of using the clinical indicator and responses for the months of experience, both as an RN and an ED RN, hours worked, highest nursing degree, and completion of a formalized training program. The variables of the frequency of using the clinical indicator and highest degree were quantitative and possessed an ordinal level of measurement since they ranked in a specific order, such as least to most frequent and associate to doctorate degree, respectively. The variables of the months of experience and hours worked were quantitative and possessed a ratio level of measurement since they started at a zero point and ranked in a specific order with equal intervals between items on a scale. The variable of completing a formalized training program was categorical and possessed a nominal scale of measurement since this variable used words to classify people. This study selected these variables based on this study's aim to describe a specific sample population and investigate relationships using quantitative nonexperimental research design with the combination of an instrumental case study and a cross-sectional survey. Data analysis described and related these variables obtained from the 73-item scale and background questions.

Description of Participants

Registered Nurses

The population for this study was RNs working in the ED at a public hospital in the San Francisco Bay Area in California.

Selection Criteria

A nonrandomized sampling method using convenience and purposive sampling acquired RNs who were voluntary and available and met the criteria the researcher established (Creswell, 2012; Johnson & Christensen, 2014). An eligible participant for this study was an RN working in the ED at this study's setting. RNs working outside the ED in this study's setting were not eligible to participate in this study.

The researcher emailed all ED RNs an introductory message providing a brief background about this study to acquire participants (see Appendix D). The message included the current problem of practice, this study's connection to the problem, and the impact of RNs participating in this study relative to their nursing professional development in their workplace settings. The introductory message provided a URL to access an Internet-based questionnaire in the SurveyMonkey platform. The number of study participants depended on the number of RNs accessing, completing, and submitting the questionnaire. An important consideration for this study was the sample size since it affected the strength of this study. The sample size was a limitation since the maximum number of potential participants for this study was approximately 110.

Data Collection

All ED RNs were potential participants with access to the Internet-based questionnaire. An informed consent form was the initial page prior to the start of the questionnaire (see Appendix E). The questionnaire, containing completion instructions, and could take approximately 30 minutes to complete at the time and place most convenient for the participant. Each participant's responses to items on the questionnaire offered meaningful information to address this study's purpose, research questions, and objective of

describing a specific sample population and investigating the nurse competence of RNs working in the ED at this setting. Each participant's submission of the Internet-based questionnaire remained anonymous since the data collection tool did not obtain names, identifiers, or other private information. Once the deadline for accessing, completing, and submitting the questionnaire occurred, the researcher deactivated the link to the questionnaire and utilized SurveyMonkey services to convert data into a compatible file type for statistical analysis. A password-protected data storage and processor electronic device stored data files.

Data Analysis

The analysis of quantitative data acquired from the questionnaire to describe the sample population and relate independent and dependent variables involved the process Creswell (2012) outlined: identifying response rate and response bias, analyzing data descriptively to identify general trends, and writing the report presenting descriptive results or using advanced statistics report.

Dividing the number of submitted questionnaires by the number of possible participants calculated the response rate. Illustrations displayed descriptive statistics to appropriately present data, including frequency tables, measures of central tendency, and contingency tables. Frequency tables tallied frequencies for the level of competence (e.g., low, quite good, good, and very good) for each clinical indicator and background factors (e.g., months as RN, months as ED RN, working hours, nursing degree, and formalized training). Measures of central tendency computed the mode, median, and mean for the level of competence and frequency of use for each competence area. Contingency tables showed cross tabulations between the independent variable (e.g., frequency of using the

clinical indicator) and dependent variable (e.g., level of competence) for each clinical indicator. Nonparametric correlation statistics investigated relationships for independent and dependent variables using Statistical Package for Social Sciences (SPSS), including Kendall's tau-b and Spearman's rho tests (Field, 2012). This study's research questions guided the type of data analysis selected in SPSS. Descriptive and nonparametric correlation statistics based on data generated from the questionnaire achieved answers to research questions.

Research Position and Involvement

Researcher Position

Considering Herr and Anderson's (2005) labels of positionality, the researcher for this study assumed the position of insider collaborating with other insiders. The researcher, an insider, was an RN in this study's setting with familiarity of the ED and functioned as an ED RN prior to and during this study. The researcher possessed pre-existing knowledge about nurse competence theory and experience in nurse competence assessment. The researcher investigated the nurse competence of RNs working in this ED in response to the gap in nursing research using the method already discussed. Other insiders were ED RNs, or the participants of this study, providing meaningful information through the data collection tool. These RNs possessed levels of competence, and their responses to the questionnaire produced data for analysis, interpretation, and association to the research questions. Implementing this study with the researcher position of insiders collaborating with other insiders could encourage collaboration, facilitate change, and impact the organization at personal, professional, and institutional levels (Herr & Anderson, 2005). The researcher position of insider was the most appropriate for a quantitative

nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey since the researcher worked as an RN in this study's setting; understood the theoretical aspect of nurse competence; assisted in competency class sessions in this study's setting; mentored newly licensed, inexperienced, and experienced RNs hired into this setting; and assessed nurse competence in the capacity of a nurse educator in an academic setting. ED RNs, or other insiders, possessed varying levels of competence, and the researcher desired to investigate this information. As the researcher carried out this study with other insiders, findings were more meaningful and practical when achieving a baseline understanding of the nurse competence of RNs in this study's setting.

Researcher Involvement

Rossman and Rallis (2003) discussed researcher involvement relative to the degree of the researcher's involvement with participants. For this study, the researcher involvement was immersion and co-participation. The researcher was engaged and active in this study's setting since the researcher was familiar with the ED (e.g., processes, activities, languages, norms, cultures, and people), understood the theory of nurse competence, and possessed experience as a nurse educator. Referring to Rossman and Rallis (2003), the researcher's portrayal of involvement for this study included an overt role and a full explanation. With an overt role and a full disclosure for this study, the researcher desired participants to know this study's detail. Although the researcher provided participants detailed information regarding this study, they remained unaware of participants included in this study. Withholding participant information sustained confidentiality and anonymity unless participants spoke to each other, voiding confidentiality and anonymity. Maintaining transparency with participants was essential, so they were aware of what occurred during

and after this study since it could impact them in the short-term and long-term. Ensuring transparency addressed the participant's attitude and mindset of "what's in it for me?" Disclosing as much information without violating confidentiality, anonymity, and participants' rights was the most appropriate and effective approach to achieve transparency. The researcher communicated this study to participants and was mindful of limitations and boundaries relative to the type of information shared. The goal was to acquire and sustain the participant's trust without jeopardizing any aspect of this study, so both the researcher and participant recognized this study's significance to establish reciprocity. Reciprocity, as Rossman and Rallis (2003) described, is a "2-way street" (p. 160) for "mutual benefit in human interaction" (p. 159). Transparency was crucial, and the researcher informed participants and raised awareness of this study's progression during their enquiry.

Reliability and Validity

The development of the NCS supported the reliability and validity of data since this study's questionnaire integrated the items of the scale to collect data on nurse competence.

Reliability

Meretoja, Isoaho, and Leino-Kilpi (2004) tested the NCS for internal consistency, suggesting the test's consistency when measuring a specific concept (Johnson & Christensen, 2014). Using Cronbach's α, Meretoja, Isoaho, and Leino-Kilpi (2004) found the correlation coefficient of the NCS ranging between 0.79 to 0.91, and this number should be at least 0.70 to indicate test items interrelate (Johnson & Christensen, 2014).

Data obtained from participants comprised this study's findings, and the researcher assumed each participant's responses were authentic and accurate. With data collected on

the questionnaire stemming from self-reported information participants were willing to share with the researcher, this collection method was a limitation for the data's reliability. Meretoja, Isoaho, and Leino-Kilpi (2004) identified the "physical and emotional state of the respondent and the situation in which the [scale] is administered" (p. 130) as factors affecting the consistency of the NCS.

Validity

Meretoja, Isoaho, and Leino-Kilpi (2004) achieved validity for the NCS based on content validity, construct validity, and concurrent validity. Content validity is when the content in the test relates to the content measured (Creswell, 2012), which Meretoja, Isoaho, and Leino-Kilpi (2004) found during the development of the NCS. This development process included the review of the relevant literature on nurse competence, incorporation of a theoretical framework, feedback from a group of experts, product modification based on feedback, and serial pilot testing. Construct validity is how the study accurately represents the concept (Johnson & Christensen, 2014). Using an empirical study, Meretoja, Leino-Kilpi, and Kaira (2004) distributed over 500 NCS questionnaires to nurses in various departments at a hospital and then analyzed data using statistical testing for descriptive statistics, correlation, linear regression, and factor analysis on nearly all questionnaires to indicate the NCS's construct validity. Concurrent validity is when a new test instrument and an existing test instrument collect data at the same time (Field, 2012). Meretoja, Isoaho, and Leino-Kilpi (2004) suggested concurrent validity of the NCS during the test against a reliable, valid, and highly recognized tool for measuring nurse performance, such as the 6D Scale.

With Meretoja, Isoaho, and Leino-Kilpi's (2004) finding indicating the NCS is more effective in identifying nurse competence, they suggested testing the scale in various clinical settings based on the scale's reliability and validity.

Ethical Considerations

Ethical considerations for this study focused on areas Johnson and Christensen (2014) suggested, including consent, freedom to withdraw, protection from mental and physical harm, confidentiality, anonymity, and privacy. Prior to obtaining data from participants, this study developed an informed consent to offer a contractual agreement between the researcher and participants. This agreement informed participants about this study, such as the minimal threat to participants' psychological and sociological well-being, short-term and long-term benefits for them, protection of their privacy, and voluntary participation with the ability to withdraw from completing and submitting the questionnaire after they access it. This study presented minimal risks to inflict psychological and sociological harm to participants, such as the experiences of emotions and disclosure of their levels of competence, respectively. The questionnaire did not request information leading to the easy identification of participants, such as their names and other identifiers or private information. This study sustained confidentiality through the nondisclosure of participants and their responses to other individuals inside and outside of this study. Voluntary participation with the freedom to withdraw ensured a non-pressure approach from the researcher to participants. The researcher assured participants of the absence of repercussions in the event they chose to withdraw and not submit the questionnaire, and the informed consent stated this assurance.

No threats to participants' rights existed in this study since it provided the informed consent to participants prior to their access of the questionnaire. This consent served as a contract between the participant and the researcher to state the protection of anonymity, confidentiality, and privacy; health risks; and termination of voluntary participation. This study used information obtained from participants only to assist in answering this study's research questions and fulfilling the intended purpose. This study did not collect a signed copy of a printed informed consent from participants to sustain confidentiality and anonymity. With the informed consent being the initial page prior to the start of Internet-based questionnaire, the participant's decision to complete and submit the questionnaire represented a form of consent. This action indicated they understood the information in the informed consent and agreed to participate in this study. Participants could request a copy of the informed consent from the researcher.

This study used the SurveyMonkey service to access submitted questionnaires for the sole purpose of creating an electronic file compatible for statistical analysis. A password-protected data storage and processing electronic device safeguarded the data's security for files produced during the data analysis. Data deletion and destruction of files created for the statistical analysis will occur upon completion of this study.

Submission of this study's proposal to the IRB ensured ethical considerations for this study, which involved a legal review "to make judgments regarding the ethical appropriateness of the proposed research and ensure that research protocols are explained to research participants and any risks of harm are reasonable in relation to the hoped-for benefits" (Johnson & Christensen, 2014, p. 143). This study's proposal included the elements Johnson and Christensen (2014) referenced, such as the purpose of research,

relevant background and rationale for the research, participant population, experimental design and methodology, any incentives offered, risks and benefits to participants and precautions needed, and privacy and confidentiality. Considering this study's characteristics, this study achieved an exempt status and did not require a full review from the IRBs of University of the Pacific and this study's setting.

Limitations

The limitations of this study included self-reported data, response bias, small sample size, and inability to generalize findings. The use of a questionnaire to obtain self-reported data from participants raised a concern for response bias in which participants could underestimate or overestimate their nurse competence. This possible response bias was a limitation in the data collection process and presented a future research opportunity using a mixed-method study design, such as the inclusion of participant interviews following the completion of a self-reported questionnaire. This alternative methodology could address the issue with self-reported information and response bias and offer triangulation. This study's population consisted of approximately 110 ED RNs to include in this study, but the use of convenience and purposive sampling was a limitation in this study's methodology since findings from a small sample size were not generalizable. This limitation warrants additional research in the form of similar or replicated studies with larger sample sizes and different ED settings.

Chapter Summary

This chapter discussed this study's quantitative nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey to describe and investigate a nonrandomized sample of RNs working in the ED at a public hospital in

the San Francisco Bay Area. This sections in this chapter discussed the description of this study's data collection process and statistical analysis, researcher's position and involvement, and this study's reliability and validity, ethical considerations, and limitations.

CHAPTER 4: RESULTS

In response to limited studies existing in critical care settings in the United States (O'Leary, 2012), this study completed the investigation and measurement of the nurse competence of registered nurses (RNs) working in the emergency department (ED) setting at a public hospital in the San Francisco Bay Area. This study conducted a quantitative nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey and acquired data to describe the sample of RNs in the ED setting while investigating how the frequency of using clinical skills and background factors, including experience in the form of the number of months of experience and number of hours worked, impacted RNs' levels of competence.

Research Questions

With the hypothesis that increased length of experience in key skill areas relates to increased nurse competence, four questions guided this study:

1. What area(s) possessed the lowest level of competence for the study sample?
2. What area(s) possessed the highest level of competence for the study sample?
3. What was the relationship between the frequency of using clinical skills and level of competence?
4. What was the relationship between the background factors, including the level of competence and number of hours worked, and level of competence?

This chapter discusses this study's data analysis and results. The following sections present the analysis and results from Part I and II of the questionnaire. Part I included the level of competence for each clinical indicator and overarching competence area (e.g., helping role, teaching-coaching, diagnostic functions, managing situations, therapeutic

interventions, ensuring quality, and work role) and frequency of using clinical skills. Part II included background factors. The results of the questionnaire link back this study's research questions.

Data Analysis

Dividing the number of submitted questionnaires by the number of possible participants calculated the response rate for this study, which was 19%. This study exported data from the SurveyMonkey Internet-based questionnaire into a Microsoft Excel file, containing quantitative and categorical data. For data analysis, this study developed and imported two datasets into the Statistical Package for Social Sciences (SPSS) platform. The first dataset was the exported file from SurveyMonkey and modified to include an additional column for each item of the nurse competence scale (NCS) categorizing participants' self-assessed levels of competence into the competence groups of low, quite good, good, and very good based on numerical data (i.e., 0-25= low, 26-50= quite good, 51-75= good, and 76-100= very good). An IF function in the Microsoft Excel platform transformed the numerical value into a competence group displayed in the new column. The first dataset produced frequency tables and contingency tables when performing descriptive statistics. The second dataset file contained the same data as the first dataset in numerical form, such as the competence group, frequency of using the clinical indicator, and background factors. For the competence group, low, quite good, good, and very good competence became a ratio level of measurement value of 0, 1, 2, and 3, respectively. For the frequency of using the clinical indicator, not applicable, used very seldom, used occasionally, and used very often in my work was became an ordinal level of measurement value of 0, 1, 2, and 3, respectively. For background factors, each factor, depending on the

number of items for each background variable, became a ratio level of measurement value of 0, 1, 2, 3… The second dataset computed the statistical testing of central tendency (i.e., descriptive statistics) and nonparametric correlation statistics. Two computations for the level of competence variable generated a mean for the overall level of competence across the 73 clinical indicators and several means for the level of competence specific to each of the seven different competence areas. Similar computations for the frequency of use variable generated a median and several medians since this variable was an ordinal level of measurement instead of a ratio level of measurement.

Illustrations displayed descriptive statistics to appropriately present data, including frequency tables, measures of central tendency, and contingency tables. Frequency tables tallied frequencies for the level of competence (e.g., low, quite good, good, and very good) for each clinical indicator and background factors (e.g., months as RN, months as ED RN, working hours, nursing degree, and formalized training). Measures of central tendency computed the mode, median, and mean for the level of competence and frequency of use for each competence area. Contingency tables showed cross tabulations between the independent variable (e.g., frequency of using the clinical indicator) and dependent variable (e.g., level of competence) for each clinical indicator. Nonparametric correlation statistics investigated relationships for independent and dependent variables using SPSS, including Kendall's tau-b and Spearman's rho tests (Field, 2012). This study's research questions guided the type of data analysis selected in SPSS. Descriptive and nonparametric correlation statistics based on data generated from the 21 participants responding to the questionnaire achieved answers to research questions.

Part I: Level of Competence and Frequency of Using a Clinical Indicator

Participants' responses to each item in Part I of the questionnaire created two types of data, such as the level of competence and frequency of use for the clinical indicator listed in the statement. The level of competence was the dependent variable, and the frequency of use was the independent variable. SPSS performed descriptive statistics to describe the level of competence for this study's sample of RNs in the ED setting. Several frequency tables presented the different levels of competence for each clinical indicator and identified the clinical indictor(s) with the highest level of competence and lowest level of competence (see Appendix F). Central tendency statistical testing for the mean level of competence for each competence area revealed the area(s) with the highest level of competence and lowest level of competence as presented in Table 1. These data analyses answered Research Questions 1 and 2.

Table 1
Central Tendency for Level of Competence for Each Competence Area

Competence Area	N		Mean	Median	Mode	Sum
	Valid	Missing				
Helping role	21	0	2.4286	2.5714	3.00	51.00
Teaching-coaching	21	0	2.4583	2.5625	3.00	51.63
Diagnostic functions	20	1	2.4357	2.6429	3.00	48.71
Managing situations	20	1	2.6125	2.6875	3.00	52.25
Therapeutic interventions	20	1	2.2794	2.4000	3.00	45.59
Ensuring quality	21	0	1.9921	2.1667	3.00	41.83
Work role	21	0	2.4663	2.5789	3.00	51.79

Note. Low level of competence= 0; quite good competence= 1; good competence= 2; very good competence= 3.

Research Question 1: What Area(s) Possessed the Lowest Level of Competence for the Study Sample

Table 1 presents means for the level of competence for each competence area, and the area with the lowest mean value indicated the lowest level of competence for this study's sample. The mean level of competence for ensuring quality was 1.9921 (n=21), suggesting this competence area possessed the lowest level of competence. Further analysis of this competence area revealed the clinical indicator with the lowest level of competence. Eleven participants rated their level of competence as "low" (i.e., self-assessed rating of 0-25) for "making proposals concerning further development and research" as shown in Table 2. Fifty-five percent of participants (n=20) rated their level of competence as "low" for this clinical indicator, belonging to the competence area with the lowest mean level of competence when compared to the other six areas.

Table 2
Sample Distribution for Clinical Indicator of Making Proposals Concerning Further Development and Research

Level of Competence		N	Percent	Valid Percent	Cumulative Percent
Valid	good	1	4.8	5.0	5.0
	low	11	52.4	55.0	60.0
	quite good	1	4.8	5.0	65.0
	very good	7	33.3	35.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

Note. Variables listed in alphabetical order and not in ordinal sequence.

Research Question 2: What Area(s) Possessed the Highest Level of Competence for the Study Sample

Table 1 presents means for the level of competence for each competence area, and the area with the highest mean value indicated the highest level of competence for this study's sample. The mean level of competence for managing situations was 2.6125 (n=20), suggesting this competence area possessed the highest level of competence. Further analysis of this competence area revealed the clinical indicator with the highest level of competence. Twenty participants rated their level of competence as "very good" (i.e., self-assessed rating of 76-100) for "prioritizing my activities flexibly according to changing situations" as shown in Table 3. One hundred percent of participants (n=20) rated their level of competence as "very good" for this clinical indicator, belonging to the competence area with the highest mean level of competence when compared to the other six areas.

Table 3
Sample Distribution for Clinical Indicator of Prioritizing My Activities Flexibly According to Changing Situations

Level of Competence		N	Percent	Valid Percent	Cumulative Percent
Valid	very good	20	95.2	100.0	100.0
Missing		1	4.8		
Total		21	100.0		

Note. Variables listed in alphabetical order and not in ordinal sequence.

Research Question 3: What Was the Relationship Between the Frequency of Using Clinical Skills and Level of Competence

Central tendency statistical testing for the median frequency of use for each competence area revealed areas used most frequently and least frequently as presented in

Table 4. A cross tabulation analysis for level of competence and frequency of use variables generated contingency tables to illustrate the frequency distribution between independent and dependent variables for each clinical indicator (see Appendix G).

Table 4
Central Tendency for Frequency of Use for Each Competence Area

Competence Area	N		Median	Mode
	Valid	Missing		
Helping role	21	0	3.0000	3.00
Teaching-coaching	21	0	3.0000	3.00
Diagnostic functions	20	1	2.5000	3.00
Managing situations	20	1	3.0000	3.00
Therapeutic interventions	20	1	2.0000	2.00
Ensuring Quality	21	0	1.5000	1.00[a]
Work role	21	0	3.0000	3.00

Note. Not applicable in my work= 0; used very seldom= 1; used occasionally= 2; used very often in my work= 3.
[a]. Multiple modes exist. The smallest value is shown

Table 4 shows the median frequency of use for each competence area, and during the review of this table with data from Table 1 on the mean level of competence for each competence area, an association existed between median values and mean values. The median frequency of use value for ensuring quality was 1.5 (n=21), and the mean level of competence value for this competence area was 1.9921 (n=21). A low-ranking frequency of use existed with a low-rating level of competence. In another example, the median frequency of use value for helping role, teaching-coaching, managing situations, and work role were 3.0 (n=21, n=21, n=20, n=21, respectively), and the mean level of competence for these competence areas are 2.4286 (n=21), 2.4583 (n=21), 2.6125 (n=20), and 2.4663 (n=21), respectively. A high-ranking frequency of use existed with a high-rating level of competence.

SPSS computed a nonparametric statistical test for bivariate correlations twice for different analyses using Kendall's tau-b and Spearman's rho to investigate the relationship between frequency of use and level of competence variables. The first test used overall frequency of use median and overall level of competence mean variables, and the second test used median frequency of use and mean level of competence variables for each competence. Under the 2-tailed, or non-directional hypothesis, test of significance with the use of bootstrapping and a confidence interval of 95%, the statistical analysis provided the answer to Research Question 3. Bootstrapping was a "technique from which the sampling distribution of a statistic is estimated by taking repeated samples (with replacement) from the data set (in effect, treating the data as a population from which smaller samples are taken) … From this, confidence intervals and significant tests can be computed" (Field, 2012, p. 871).

Table 5
Correlations of Overall Frequency of Use and Overall Level of Competence

					Level of Competence (mean)
Kendall's tau_b	Frequency of Use (median)	Correlation Coefficient			.496**
		Sig. (2-tailed)			0.009
		N			21
		Bootstrap[c]	Bias		0.000
			Std. Error		0.139
			95% Confidence Interval	Lower	0.205
				Upper	0.733
Spearman's rho	Frequency of Use (median)	Correlation Coefficient			.585**
		Sig. (2-tailed)			0.005
		N			21
		Bootstrap[c]	Bias		-0.010
			Std. Error		0.161
			95% Confidence Interval	Lower	0.231
				Upper	0.849

**. Correlation is significant at the 0.01 level (2-tailed).
[c]. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Variables selected for the first nonparametric statistical test for bivariate correlations were the overall frequency of use median and the overall level of competence mean as displayed in Table 5. For Kendall's tau-b, a relationship existed between the frequency of using a clinical skill and level of competence. The correlation coefficient was 0.496 with a confidence interval (CI) of [0.205, 0.733]. The CI did not cross zero, and the significant value of 0.009 was <0.01, suggesting a statistically significant positive relationship existed. For Spearman's rho, a relationship existed between the frequency of using a clinical skill and level of competence. The correlation coefficient was 0.585 with a CI of [0.231, 0.849]. The CI did not cross zero, and the significant value of 0.005 was <0.01, suggesting a statistically significant positive relationship existed.

The second nonparametric statistical test for bivariate correlations using Kendall's tau-b and Spearman's rho further investigated the relationship between frequency of use and level of competence variables. Variables selected for this test were the median frequency of use and the mean level of competence for each competence area (see Appendix H). For Kendall's tau-b, a relationship existed between the frequency of using a clinical skill and level of competence for four competence areas:

1. Helping role (correlation coefficient = 0.425 CI [0.048, 0.717]),
2. Teaching-coaching (correlation coefficient = 0.501 CI [0.114, 0.821]),
3. Diagnostic functions (correlation coefficient = 0.467 CI [0.056, 0.754]), and
4. Ensuring quality (correlation coefficient = 0.404 CI [0.059, 0.682]).

The CIs did not cross zero, and the significant values for helping role, diagnostic functions, and ensuring quality were <0.05 while the value for teaching-coaching was <0.01. This information suggested a statistically significant positive relationship existed for these

competence areas. For Spearman's rho, a relationship existed between the frequency of using a clinical skill and level of competence for four competence areas:

1. Helping role (correlation coefficient = 0.485 CI [0.049, 0.822]),
2. Teaching-coaching (correlation coefficient = 0.561 CI [0.100, 0.905]),
3. Diagnostic functions (correlation coefficient = 0.528 CI [0.063, 0.832]), and
4. Ensuring quality (correlation coefficient = 0.477 CI [0.075, 0.775]).

The CIs did not cross zero, and the significant values were <0.05, suggesting a statistically significant positive relationship existed for these competence areas.

Part II: Participant Background Information and Level of Competence

Participants responded to five questions related to background information, and their responses generated data specific to the number of months working as an RN, number of months working as an RN in the ED, number of hours worked every 2 weeks, highest level of nursing education completed, and completion of a formalized critical care and/or ED training program. Each question reflected each background factor, and the responses to these questions produced independent variables analyzed in the SPSS platform. SPSS performed descriptive statistics to describe these characteristics for this study's sample. A frequency table for each background factor presented the distribution of this study's sample (see Appendix I). Tables 6, 7, and 8 illustrates the most frequent length of nursing experience as an RN and an ED RN and number of hours worked. These data analyses described this study's sample.

Research Question 4: What Was the Relationship Between the Background Factors, Including the Length of Nursing Experience and Number of Hours Worked, and Level of Competence

Tables 6 and 7 illustrates the frequency of responses for the length of nursing experience working as an RN, including work outside of the ED setting, and working as an ED RN, respectively. At the time of responding to the questionnaire, 76.2% of participants (n=21) worked as RNs for at least 60 months, and 71.4% of participants (n=21) worked as ED RNs for at least 60 months. This length of nursing experience possessed the highest frequency in comparison to the shorter length of nursing experience response choices.

Table 6
Sample Distribution for Months Working as a Registered Nurse

Number of Months		N	Percent	Valid Percent	Cumulative Percent
Valid	12-23 months	1	4.8	4.8	4.8
	24-35 months	2	9.5	9.5	14.3
	36-47 months	1	4.8	4.8	19.0
	48-59 months	1	4.8	4.8	23.8
	60 or more months	16	76.2	76.2	100.0
	Total	21	100.0	100.0	

Table 7
Sample Distribution for Months Working as a Registered Nurse in an Emergency Department Setting

Number of Months		N	Percent	Valid Percent	Cumulative Percent
Valid	12-23 months	1	4.8	4.8	4.8
	24-35 months	3	14.3	14.3	19.0
	36-47 months	2	9.5	9.5	28.6
	60 or more months	15	71.4	71.4	100.0
	Total	21	100.0	100.0	

Table 8 illustrates the frequency of responses for the number of hours worked in a 2-week period. At the time of responding to the questionnaire, 66.7% of participants (n=21) worked at least 65 hours every 2 weeks. This number of hours worked possessed the highest frequency in comparison to the shorter number of hours response choices.

Table 8
Sample Distribution for Hours Worked Every 2 Weeks

Number of Hours		N	Percent	Valid Percent	Cumulative Percent
Valid	33-48 hours	7	33.3	33.3	33.3
	65 or more hours	14	66.7	66.7	100.0
	Total	21	100.0	100.0	

SPSS performed a nonparametric statistical test for bivariate correlations 3 times for different analyses using Kendall's tau-b and Spearman's rho to investigate the relationship between background factor and level of competence variables. The first test used background factor and overall level of competence mean variables, the second test used background factor and mean level of competence variables for each competence area, and the third test used background factor and level of competence variables for each clinical indicator. Under the 2-tailed test of significance with the use of bootstrapping and a confidence interval of 95%, the statistical analysis provided the answer to Research Question 4.

Variables selected for the first nonparametric statistical test for bivariate correlations were each background factor and the overall level of competence mean (see Appendix J). For Kendall's tau-b and Spearman's rho, no statistically significant relationship existed

between each background factor and the overall level of competence mean. The significant value for each background variable was >0.01.

The second nonparametric statistical test for bivariate correlations using Kendall's tau-b and Spearman's rho further investigated the relationship between background factor and level of competence variables. Variables selected for this test were each background factor and the mean level of competence for each competence area (see Appendix K). For Kendall's tau-b, a relationship existed between the months of experience as an RN and level of competence for the managing situations competence area (correlation coefficient = 0.386 CI of [0.084, 0.710]). The CI did not cross zero, and the significant value was <0.05, suggesting a statistically significant positive relationship existed. A relationship existed between the months of experience as an ED RN and level of competence for two competence areas: Managing situations (correlation coefficient = 0.516 CI [0.067, 0.763]) and therapeutic interventions (correlation coefficient = 0.402 CI [0.000, 0.651]). The CIs did not cross zero, and the significant value for managing situations was <0.01 while the value for therapeutic interventions was <0.05. This information suggested a statistically significant positive relationship existed for these competence areas. No statistically significant relationship existed between the number of hours worked and mean level of competence for any competence area.

For Spearman's rho, a relationship existed between the months of experience as an RN and level of competence for the managing situations competence area (correlation coefficient = 0.456 CI of [0.096, 0.800]). The CI did not cross zero, and the significant value was <0.05, suggesting a statistically significant positive relationship existed. A relationship existed between the months of experience as an ED RN and level of

competence for two competence areas: Managing situations (correlation coefficient = 0.623 CI [0.095, 0.850]) and therapeutic intervention (correlation coefficient = 0.513 CI [0.000, 0.778]). The CIs did not cross zero, and the significant value for managing situations was <0.01 while the value for therapeutic interventions was <0.05. This information suggested a statistically significant positive relationship existed for these competence areas. No statistically significant relationship existed between the number of hours worked and mean level of competence for any competence area.

The third nonparametric statistical test for bivariate correlations using Kendall's tau-b and Spearman's rho further investigated the relationship between background factor and level of competence variables. Variables selected for this test were each background factor and the level of competence for each clinical indicator (see Appendix L). Kendall's tau-b revealed statistically significant relationships for 30 clinical indicators:

- Six clinical indicators correlated with the variable for the months of experience as an RN,
- Eighteen clinical indicators correlated with the variable for the months of experience as an ED RN,
- One clinical indicator correlated with the variable for number of hours worked,
- Three clinical indicators correlated with the variable for highest level of nursing education, and
- Two clinical indicators correlated with the variable for completing a formalized training program.

Spearman's rho revealed statistically significant relationships for 38 clinical indicators:

- Nine clinical indicators correlated with the variable for the months of experience as an RN,
- Twenty clinical indicators correlated with the variable for the months of experience as an ED RN,

- One clinical indicator correlated with the variable for number of hours worked,
- Four clinical indicators correlated with the variable for highest level of nursing education, and
- Four clinical indicators correlated with the variable for completing a formalized training program.

Overall, the correlation analysis revealed a statistically significant positive relationship existed between experience as an ED RN and the level of competence for several clinical indicators, in which most were for the competence areas of managing situations and work role. A statistically significant relationship existed between the number of hours worked and level of competence for one clinical indicator, "arranging debriefing sessions for the care team when needed," for the managing situations competence area.

Chapter Summary

This chapter discusses this study's data analysis and results. The sections in this chapter presented the analysis and results from Part I and II of the questionnaire. Part I included the level of competence for each clinical indicator and overarching competence area and frequency of using clinical skills. Part II included background factors. The results of the questionnaire linked back this study's research questions.

CHAPTER 5: CONCLUSION

With registered nurses (RNs) working in the emergency department (ED) striving to provide safe and quality nursing to patients, the competence of these RNs, developed from their skills, knowledge, and experience for this specialized setting, is crucial. Given the limited studies existing in the current quantitative research on nurse competence, such as self-assessment of nurses' levels of competence, in critical care settings in the United States (O'Leary, 2012), the need to investigate and measure the nurse competence of RNs working in the ED setting at a public hospital in the San Francisco Bay Area was noteworthy. This study completed a quantitative nonexperimental research design using the combination of an instrumental case study and a cross-sectional survey and revealed findings to describe the sample of RNs in the ED setting while investigating how the frequency of using clinical skills and background factors, including experience in the form of number of months of experience and number of hours worked, impacted RNs' levels of competence. Descriptive and nonparametric correlation statistics in the Statistical Package for Social Scientists (SPSS) platform analyzed data to convey this study's findings.

This chapter connects this study's findings back to the existing research and this study's research questions and purpose. The following sections discuss the strengths and limitations of this study's methodology and present implications and recommendations for practice and suggestions for future research generated from this study.

Discussion

Research Question 1: What Area(s) Possessed the Lowest Level of Competence for the Study Group

The lowest competence area for this study's sample was ensuring quality as displayed in Table 1 in Chapter 4. Further analysis revealed the specific clinical indicator of "making proposals concerning further development and research" possessed the lowest competence for this competence area among participants.

This study compared this study's finding to the research findings on nurse competence of Meretoja, Leino-Kilpi, and Kaira (2004), Meretoja et al. (2015), Numminen et al. (2013), O'Leary (2012), and Salonen et al. (2007). Meretoja, Leino-Kilpi, and Kaira (2004), Meretoja et al. (2015), Numminen et al. (2013), and Salonen et al. (2007) found the least competent category was ensuring quality in their studies, whereas O'Leary (2012) found the least competence category was therapeutic interventions. This study's finding on the lowest competence area of ensuring quality is consistent with studies cited above despite this study's small sample size of 21.

Research Question 2: What Area(s) Possessed the Highest Level of Competence for the Study Sample

The highest competence area for this study's sample was managing situations as displayed in Table 1 in Chapter 4. Further analysis revealed the specific clinical indicator of "prioritizing my activities flexibly according to changing situations" possessed the highest competence for this competence area among participants.

This study compared this study's finding to the research findings on nurse competence of Meretoja, Isoaho, and Leino-Kilpi (2004), Meretoja, Leino-Kilpi, and Kaira

(2004), Meretoja et al. (2015), Numminen et al. (2013), O'Leary (2012), and Salonen et al. (2007). Meretoja, Leino-Kilpi, and Kaira (2004) and O'Leary (2012) found the most competent category was managing situations in their studies, whereas Meretoja et al. (2015) and Numminen et al. (2013) found the most competent category was helping role in their studies. Salonen et al. (2007) found the most competent categories were helping role and managing situations in their study. This study's finding on the highest competence area of managing situations is consistent with few studies cited above despite this study's small sample size of 21.

Research Question 3: What Was the Relationship Between the Frequency of Using Clinical Skills and Level of Competence

Based on the nonparametric statistical test for bivariate correlations using Kendall's tau-b and Spearman's rho, a statistically significant positive relationship existed between the overall frequency of use median and overall level of competence mean as displayed in Table 5 in Chapter 4. In an identical test using different variables, a statistically significant positive relationship existed between the median frequency of use and mean level of competence for four of the seven competence areas: Helping role, teaching-coaching, diagnostic functions, and ensuring quality (see Appendix H).

This study compared this study's finding to the research findings on nurse competence of Flinkman et al. (2016), Meretoja, Leino-Kilpi, and Kaira (2004), Meretoja et al. (2015), Numminen et al. (2013), O'Leary (2012), and Salonen et al. (2007). Flinkman et al. (2016) found the frequency of use and level of competence variables to be statistically significant in several studies they reviewed and reported a higher level of competence with a higher frequency of using the clinical indicator. Meretoja, Leino-Kilpi, and Kaira (2004)

found the self-assessed level of competence increased as the usage of the clinical indicator increased for all competence areas. Meretoja et al. (2015) found a significant positive correlation between the level of competence and frequency of using the clinical indicator for all competence areas for all three cohorts they studied. Numminen et al. (2013) found a statistically significant positive correlation between the level of competence and frequency of using the clinical indicator for all competence areas. O'Leary (2012) found the self-assessed level of competence increased with the frequency of using the clinical indicator for all competence areas, except for ensuring quality. Salonen et al. (2007) found the self-assessed level of competence increased with the frequency of using the clinical indicator for all competence areas, except for teaching-coaching. This study's finding of a statistically significant positive relationship between frequency of using the clinical indicator and level of competence variables is consistent with the studies cited above despite this study's small sample size of 21.

Research Question 4: What Was the Relationship Between the Background Factors, Including the Length of Nursing Experience and Number of Hours Worked, and Level of Competence

As illustrated in Tables 6 and 7 in Chapter 4, the most frequent length of nursing experience for this study's sample was 60 or more months for both overall experience as an RN and experience as an ED RN. For this study's sample of 21, 81% and 71.4% of participants possessed 4 or more years of overall RN experience and RN experience in the ED setting, respectively.

This study compared this study's finding to research findings on nurse competence of Meretoja, Leino-Kilpi, and Kaira (2004), Meretoja et al. (2015), Numminen et al. (2013),

O'Leary (2012), Salonen et al. (2007), and Salonen et al. (2007). Meretoja, Leino-Kilpi, and Kaira (2004) found the mean of years as an RN and mean of years as an RN in the current work setting were 11.1 (n=498) and 7.7 (n=498), respectively, for their study sample of 498. Meretoja et al. (2015) found the years of work experience in healthcare was 4 or more years for approximately 84% for their study sample of 2,052 nurses. Numminen et al. (2013) found the years of work experience in health care and in the current work setting were 4 or more years in approximately 83% (n=2,051) and 56% (n=2,015), respectively, for their study sample of 2,083. O'Leary (2012) found the average years of overall RN experience and RN experience in the current specialty setting were 15 and 9.7, respectively, for the study sample of 101. Salonen et al. (2007) found the number of years as an RN in health care and in the current unit were 5 (n=147) and 1.6 (n=146), respectively, for their study sample of at least 146. This study's findings on the length of experience for both overall RN experience and RN experience in the ED setting are similar overall to studies cited above despite this study's small sample size of 21.

As illustrated in Table 8 in Chapter 4, the most frequent number of working hours for this study's sample was 65 or more hours. During the review of the current research investigating nurse competence as presented in Chapter 2, no study investigated a variable specific to the number of hours worked during a 2-week period. This study found 66.7% of participants (n=21) worked a full time equivalent (FTE) of at least 0.9, or 72 hours every 2 weeks. The remaining work hour FTE options for this study were 0.8, 0.6, and 0.5, all being less than 65 hours in a 2-week period.

Based on the nonparametric statistical test for bivariate correlations using Kendall's tau-b and Spearman's rho, no statistically significant relationship existed between the

background factors and overall level of competence mean (see Appendix J). An identical test using different variables revealed a statistically significant positive relationship between the months of experience as an RN and mean level of competence for the competence area of managing situations (see Appendix K). In this same test, a statistically significant positive relationship existed between the months of experience as an ED RN and mean level of competence for the competence areas of managing situations and therapeutic interventions (see Appendix K). No statistically significant relationship existed between the number of hours worked and mean level of competence for any competence area (see Appendix K).

This study compared this study's finding to the research findings on nurse competence of Flinkman et al. (2016), Meretoja, Leino-Kilpi, and Kaira (2004), Meretoja et al. (2015), Numminen et al. (2013), O'Leary (2012), and Salonen et al. (2007). Flinkman et al. (2016) found the sociodemographic variables and level of competence to be correlated at statistically significant levels in several studies they reviewed, such as higher education and length of work experience. Meretoja, Leino-Kilpi, and Kaira (2004) found statistically significant correlations between the level of competence and demographic variables included in this study, such as years in the current setting and years as an RN. Meretoja et al. (2015) found a significant positive correlation between the level of competence and demographic variables included in this study, such as the length of work experience in health care and length of experience in the current work unit, for all three cohorts they studied. Numminen et al. (2013) found a statistically significant positive correlation between the level of competence and demographic variables included in this study, such as work experience in health care and work experience in the current unit. O'Leary (2012)

found a statistically significant positive correlation between nursing experience and total nurse competence score (NCS) score. Salonen et al. (2007) found a statistically significant positive correlation between current work experience and self-assessed level of competence. Although no statistically significant relationship existed between the length of nursing experience and overall level of competence in this study, this study's findings of a statistically significant positive relationship between the length of nursing experience, both as an RN and an ED RN, and level of competence mean for at least one competence area are similar to studies cited above despite this study's small sample size of 21.

In another nonparametric statistical test of bivariate correlations using Kendall's tau-b and Spearman's rho, several statistically significant relationships existed between the background factors specific to the length of nursing experience, both as an RN and an ED RN, and level of competence for each clinical indicator (see Appendix L). The variable for months as an RN significantly correlated with 10 clinical indicators for Kendall's tau-b and nine for Spearman's rho. The variable for months as an ED RN significantly correlated with 18 clinical indicators for Kendall's tau-b and 20 for Spearman's rho. Most of these indicators were for the competence areas of managing situations and work role. A statistically significant relationship existed between the number of hours worked and level of competence for one clinical indicator for the managing situations competence area (see Appendix L). Kendall's tau-b and Spearman's rho revealed the number of hours worked correlated with "arranging debriefing sessions for the care team when needed."

Strengths

The strengths of this study focus on its purpose, research questions, selected methodology, and data collection tool. This study's purpose was to describe and investigate

a sample of RNs working in the ED setting at a San Francisco Bay Area hospital in response to an identified gap in the current research on nurse competence in ED settings. Research questions discussed above address this study's purpose of describing and investigating most and least competent areas and the length of RN and ED RN experience specific to this study's sample. Answers to these questions revealed meaningful information about this study's sample, bringing forth implications and recommendations for practice and suggestions for further research to support the nursing profession.

This study's methodology aligned with this study's purpose and research questions using the combination of an instrumental case study and a cross-sectional survey design. This study design was an appropriate approach for responding to the literature gap based on a distinct sample in a specific setting during a defined period. Flinkman et al. (2016) observed a similar cross-sectional design in 27 of the 30 studies they reviewed in their systematic and psychometric review of the NCS. The data collection tool for this study was Meretoja, Isoaho, and Leino-Kilpi's (2004) NCS, a valid and reliable tool used in other similar studies identified in Chapter 2.

Limitations

As mentioned in Chapter 3, the limitations of this study included self-reported data, response bias, small sample size, and inability to generalize findings. The use of questionnaires to obtain self-reported data from participants raised a concern for response bias in which participants could underestimate or overestimate their nurse competence. This possible response bias was a limitation in the data collection process.

This study's population consisted of approximately 110 ED RNs to potentially include in this study, but the use of convenience and purposive sampling produced a sample

size of 21, or a response rate of 19%. The 5-week data collection period, from April 2019 until May 2019, produced 21 participants. This study submitted an extension for the data collection period to the Institutional Review Board (IRB) at University of the Pacific in June 2019 and approved in July 2019. This study submitted the same request to the IRB of this setting, which they granted immediately. This study conducted a second round of data collection for a 5-week period, from July 2019 until August 2019, which resulted in no additional participants (see Appendix M). The sampling method for this study was a limitation in this study's methodology since the number of participants was small, and findings from a small sample size are not generalizable. However, as discussed above, the findings of this limited study echo the findings of several other research studies with much larger sample sizes.

Implications and Recommendations for Practice

Nurse Competence

Benner's (1982) novice to expert nurse theory was the grounds for nurse competence and served as the framework guiding this study. Since nurse competence impacts safe and quality nursing, building skills, knowledge, and experience is crucial for new nurses entering the profession and for inexperienced nurses transitioning to a new setting of practice. At the scholarly level, ongoing research on nurse competence can reveal innovative approaches to enhance the development of competence, such as high-fidelity simulation to bridge didactic learning and clinical learning more effectively.

At the site level, referring to evidence-based practices and implementing such approaches can reveal better alternatives and improve the development of nurse competence for nurses in the early stages of Benner's (1982) model. Although this study's findings are

consistent with the current research, revealing increased competence with increased experience and usage of clinical skills, the low areas of competence resulting from the low frequency of use, such as ensuring quality, need attention. Competence areas in which low volume and high risk exist need to employ innovative and evidence-based approaches to increase the level of competence for RNs.

Nurse Competence Assessment

The NCS assessed nurse competence for this study with a purpose and methodology like the existing research. The investigation of nurse competence using a quantitative approach, such as the combination of an instrumental case study and a cross-sectional survey design, generated meaningful information for this study's participants and setting. Studies investigating variables impacting the level of competence in different settings can yield similar benefits for nursing practice. At the scholarly level, ongoing investigation of nurse competence using qualitative and/or mixed-method approaches can provide more details regarding the phenomenon of achieving competence and an authentic meaning of competence based on individuals sharing their stories.

At the site level, assessing levels of competence of nursing staff can improve understanding of current skillsets in the department or organization and present opportunities to build on strengths and support areas for growth based on assessment results.

This study's findings demonstrate this study's meaningfulness and reveal managing situations as a strong competence area and ensuring quality as an area for improvement in this study's setting. Considering the clinical indicators for each of the seven competence

areas can assist in developing the curriculum for annual professional development and competency validation sessions for RNs.

Transitioning to a New Setting of Nursing Practice

In this study's setting, a formalized critical care/ED training program pre-existed and was an independent variable during the investigation of the nurse competence of RNs. The transition to a new setting of nursing practice for a newly licensed RN or inexperienced RN requires competence development in a specialized setting, such as the ED. Advancing the RN's knowledge and skillset using structured transition to practice programs assists in their development beyond nurse competence, including the socialization process during the process of transitioning. At the scholarly level, the inclusion of a formalized training program as an independent variable in ongoing research can offer meaningful information when studying nurse competence development, nurse competence achievement, and nurse competence assessment. Research surrounding the transition to a new setting of nursing practice, with emphasis on the socialization process, can reveal approaches to better support newly hired RNs during their initial year.

At the site level, considering an evidence-based transition to practice program and implementing it can impact newly hired RNs beyond nurse competence development and achievement in their new nursing practice settings. The focus can be on selecting an effective curriculum addressing the onboarding process, knowledge and skill advancement process, and socialization process to sustain retention and reduce attrition. Although this study's findings did not reveal a statistically significant correlation between the completion of a formalized training program and mean level of competence, both overall and for each competence area, the development of a structured transition for newly licensed and

inexperienced RNs entering a specialty, such as the ED, can positively impact their professional development.

Suggestions for Future Research

The limitations of this study surrounding the self-reported data, response bias, small sample size, and inability to generalize findings justifies the need for continued research investigating and measuring nurse competence in the ED setting. A mixed-method study design, such as the inclusion of participant interviews following the completion of a self-reported questionnaire, can address the issue with self-reported information and response bias and offer triangulation. A similar or replicated quantitative study design conducted in the ED setting in different facilities or in a region of several facilities can address the small sample size and generate a larger sample size to generalize findings. When conducting a similar or replicated study, obtaining the mean visual analog scale (VAS) score for each competence area and clinical indicator needs to be considered since this study's data analysis focused on the mean level of competence group (e.g., low, quite good, good, and very good) instead of the self-assessed rating (e.g., 0-100). Much of the existing research on nurse competence analyzes nurse competence data using mean VAS scores, and this study strongly encourages considering this same approach.

Chapter Summary

This chapter connected this study's findings back to the existing research, including the conceptual framework and this study's research questions and purpose. The sections in this chapter addressed the strengths and limitations of this study's methodology, such as the number of participants, and offered implications and recommendations for practice and suggestions for future research generated from this study.

REFERENCES

Benner, P. (1982). From novice to expert. *The American Journal of Nursing, 82*(3), 402-407.

Committee on Quality of Health Care in America and Institute of Medicine. (2000). Errors in health care: A leading cause of death and injury. In L. T. Kohn, J. M. Corrigan, & M.S. Donaldson (Eds.), *To err is human building a safer health system* (pp. 26-48). Washington, DC: National Academies Press.

Creswell, J. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. (4th ed). Upper Saddle River, NJ: Pearson.

Creswell, J., & Poth, C. (2018). *Qualitative inquiry & research design choosing among five approaches*. (4th ed.). Thousand Oaks, CA: SAGE Publications.

Definition of Emergency Medicine. (2001, April). Retrieved March 31, 2020, from https://www.acep.org/patient-care/policy-statements/definition-of-emergency-medicine/

Definition of Nursing Terms. (n.d.). Retrieved March 31, 2020, from https://www.ncsbn.org/nursing-terms.htm

Dickerson, P., & Chappell, K. (2016). Principles of evaluating nursing competence. *Talent Development*, *70*(2), 44-48.

Evans, L., & Kohl, D. (2004). Mission impossible? Educating an emergency nurse. *Journal of Emergency Nursing, 40*(3), 253-256. doi:10.1016/j.jen.2013.03.004

Fact Sheet #22: Hours Worked Under the Fair Labor Standards Act (FLSA). (2008, July). Retrieved March 31, 2020, from https://www.dol.gov/agencies/whd/fact-sheets/22-flsa-hours-worked

Field, A. (2012). *Discovering statistics using IBM SPSS statistics,* (4th ed.). London: SAGE Publications.

Flinkman, M., Leino-Kilpi, H., Numminen, O., Jeon, Y., Kuokkanen, L., & Meretoja, R. (2016). Nurse competence scale: A systematic and psychometric review. *Journal of Advanced Nursing, 73*(5), 1035-1050. doi:10.1111/jan.13183

Herr, K., & Anderson, G. L. (2005). *The action research dissertation: A guide for students and faculty*. Thousand Oaks, CA: SAGE Publications.

Innes, T., & Calleja, P. (2018). Transition support for new graduate and novice nurses in critical care settings: An integrative review of the literature. *Nurse Education in Practice, 30*, 62-72. doi:10.1016/j.nepr.2018.03.001

Johnson, R. B., & Christensen, L. (2014). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). Los Angeles, CA: Sage.

Kinghorn, G. R., Halcomb, E. J., Froggatt, T., & Thomas, S. D. M. (2017). Transitioning into new clinical areas of practice: An integrative review of the literature. *Journal of Clinical Nursing, 26*(23), 4223-4233. doi:10.1111/jocn.14008

Loiseau, D., Kitchen, K., & Edgar, L. (2003). A comprehensive ED orientation for new graduates in the emergency department: The 4-year experience of one Canadian teaching hospital. *Journal of Emergency Nursing: JEN: Official Publication of the Emergency Department Nurses Association, 29*(6), 522-527.

Meretoja, R., Isoaho, H, & Leino-Kilpi, H. (2004). Nurse competence scale: development and psychometric testing. *Journal of Advanced Nursing, 47*(2), 124-133.

Meretoja, R., Leino-Kilpi, H., & Kaira, A. (2004). Comparison of nurse competence in different hospital work environments. *Journal of Nursing Management, 12*(5), 329-336. doi:10.1111/j.1365-2834.2004.00422.x

Meretoja, R., Numminen, O., Isoaho, H., & Leino-Kilpi, H. (2015). Nurse competence between three generational nurse cohorts: A cross-sectional study. *International Journal of Nursing Practice, 21*(4), 350-358.

Missen, K., McKenna, L., & Beauchamp, A. (2014). Satisfaction of newly graduated nurses enrolled in transition-to-practice programmes in their first year of employment: A systematic review. *Journal of Advanced Nursing, 70*(11), 2419-2433. doi:10.1111/jan.12464

Numminen, O., Meretoja, R., Isoaho, H., & Leino-Kilpi, H. (2013). Professional competence of practising nurses. *Journal of Clinical Nursing, 22*(9-10), 1411-1423. doi:10.1111/j.1365-2702.2012.04334.x

Nursing Scope of Practice: American Nurses Association. (n.d.). Retrieved March 31, 2020, from https://www.nursingworld.org/practice-policy/scope-of-practice/

O'Leary, J. (2012). Comparison of self-assessed competence and experience among critical care nurses. *Journal of Nursing Management, 20*(5), 607-614. doi:10.1111/j.1365-2834.2012.01394.x

Patterson, B., Bayley, E. W., Burnell, K., & Rhoads, J. (2010). Orientation to emergency nursing: Perceptions of new graduate nurses. *JEN: Journal of Emergency Nursing, 36*(3), 203-211. doi:10.1016/j.jen.2009.07.006

Reising, D. L. (2002). Early socialization of new critical care nurses. *American Journal of Critical Care, 11*(1), 19-26.

Rossman, G. B., & Rallis, S. F. (2003). *Learning in the field: An introduction to qualitative research* (2nd ed.). Thousand Oaks, CA: SAGE.

Salonen, A. H., Kaunonen, M., Meretoja, R., & Tarkka, M. (2007). Competence profiles of recently registered nurses working in intensive and emergency settings. *Journal of Nursing Management, 15*(8), 792-800. doi:10.1111/j.1365-2934.2007.00768.x

Smith, S. A. (2012). Nurse competence: A concept analysis. *International Journal of Nursing Knowledge, 23*(3), 172-182. doi:10.1111/j.2047-3095.2012.01225.x

Spector, N., Blegen, M. A., Silvestre, J., Barnsteiner, J., Lynn, M. R., Ulrich, B., . . . Alexander, M. (2015). Transition to practice study in hospital settings. *Dakota Nurse Connection, 13*(2), 8-28.

Takase, M. (2013). The relationship between the levels of nurses' competence and the length of their clinical experience: A tentative model for nursing competence development. *Journal of Clinical Nursing, 22*(9-10), 1400-1410. doi:10.1111/j.1365-2702.2012.04239.x

Winslow, S., Almarode, M., Cottingham, S., Lowry, K., & Walker, K. (2009). New graduates in the emergency department: Could you, would you, should you? *JEN: Journal of Emergency Nursing, 35*(6), 521-524. doi:10.1016/j.jen.2008.12.016

Winters, N. (2016). Seeking status: The process of becoming and remaining an emergency nurse. *JEN: Journal of Emergency Nursing, 42*(5), 412-419. doi:10.1016/j.jen.2015.10.023

Wolf, L. (2005). An ED orientation/fellowship: An experiment in process-oriented training and learning to think like an emergency nurse. *Journal of Emergency Nursing: JEN: Official Publication of the Emergency Department Nurses Association, 31*(3), 298-301.

APPENDIX A: NURSE COMPETENCE QUESTIONNAIRE PART I

Preview & Test

EXIT

Measuring Nurse Competence in the Emergency Department

Part I. Nurse Competence Scale (NCS).

Directions:

1. Rate the **level of competence** for each item using a 0 to 100 scale. *(0 for very low level and 100 for very high level)*
2. Select the **frequency** in which individual items are actually used in clinical practice. *(not applicable in my work, used very seldom, used occasionally, used very often in my work)*

OK

Helping role

	Level of Competence	Frequency of Use
1. Planning patient care according to individual needs		
2. Supporting patients' coping strategies		
3. Evaluating critically own philosophy in nursing		
4. Modifying the care plan according to individual needs		
5. Utilizing nursing research findings in relationships with patients		
6. Developing the treatment culture of my unit		
7. Decision-making guided by ethical values		

Teaching-coaching

	Level of Competence	Frequency of Use
8. Mapping out patient education needs carefully		
9. Finding optimal timing for patient education		
10. Mastering the content of patient education		
11. Providing individualized patient education		
12. Co-ordinating patient education		
13. Able to recognize family members' needs for guidance		
14. Acting autonomously in guiding family members		
15. Taking student nurse's level of skill acquisition into account in mentoring		
16. Supporting student nurses in attaining goals		
17. Evaluating patient education outcome together with patient		
18. Evaluating patient education outcomes with family		
19. Evaluating patient education outcome with care team		
20. Taking active steps to maintain and improve my professional skills		

21. Developing patient education in my unit		
22. Developing orientation programmes for new nurses in my unit		
23. Coaching others in duties within my responsibility area		

Diagnostic functions

	Level of Competence	Frequency of Use
24. Analysing patient's well-being from many perspectives		
25. Able to identify patient's need for emotional support		
26. Able to identify family members' need for emotional support		
27. Arranging expert help for patient when needed		
28. Coaching other staff members in patient observation skills		
29. Coaching other staff members in use of diagnostic equipment		
30. Developing documentation of patient care		

Managing situations

	Level of Competence	Frequency of Use
31. Able to recognize situations posing a threat to life early		
32. Prioritizing my activities flexibly according to changing situations		
33. Acting appropriately in life-threatening situations		
34. Arranging debriefing sessions for the care team when needed		
35. Coaching other team members in mastering rapidly changing situations		
36. Planning care consistently with resources available		
37. Keeping nursing care equipment in good condition		
38. Promoting flexible team co-operation in rapidly changing situations		

Therapeutic interventions

	Level of Competence	Frequency of Use
39. Planning own activities flexibly according to clinical situation		
40. Making decisions concerning patient care taking the particular situation into account		
41. Co-ordinating multidisciplinary team's nursing activities		
42. Coaching the care team in performance of nursing interventions		
43. Updating written guidelines for care		
44. Providing consultation for the care team		

45. Utilizing research findings in nursing interventions		
46. Evaluating systematically patient care outcomes		
47. Incorporating relevant knowledge to provide optimal care		
48. Contributing to further development of multidisciplinary clinical paths		

Ensuring quality

	Level of Competence	Frequency of Use
49. Committed to my organization's care philosophy		
50. Able to identify areas in patient care needing further development and research		
51. Evaluating critically my unit's care philosophy		
52. Evaluating systematically patients' satisfaction with care		
53. Utilizing research findings in further development of patient care		
54. Making proposals concerning further development and research		

Work role

	Level of Competence	Frequency of Use
55. Able to recognize colleagues' need for support and help		
56. Aware of the limits of my own resources		
57. Professional identity serves as resource in nursing		
58. Acting responsibly in terms of limited financial resources		
59. Familiar with my organization's policy concerning division of labour and co-ordination of duties		
60. Co-ordinating student nurse mentoring in the unit		
61. Mentoring novices and advanced beginners		
62. Providing expertise for the care team		
63. Acting autonomously		
64. Guiding staff members to duties corresponding to their skill levels		
65. Incorporating new knowledge to optimize patient care		
66. Ensuring smooth flow of care in the unit by delegating tasks		
67. Taking care of myself in terms of not depleting my mental and physical resources		
68. Utilizing information technology in my work		
69. Co-ordinating patient's overall care		
70. Orchestrating the		

APPENDIX B: PERMISSION TO USE NURSE COMPETENCE SCALE

Dear Matt:

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A copy of the scale can be found within the article in which it published via Wiley Online Library.

Thank you,

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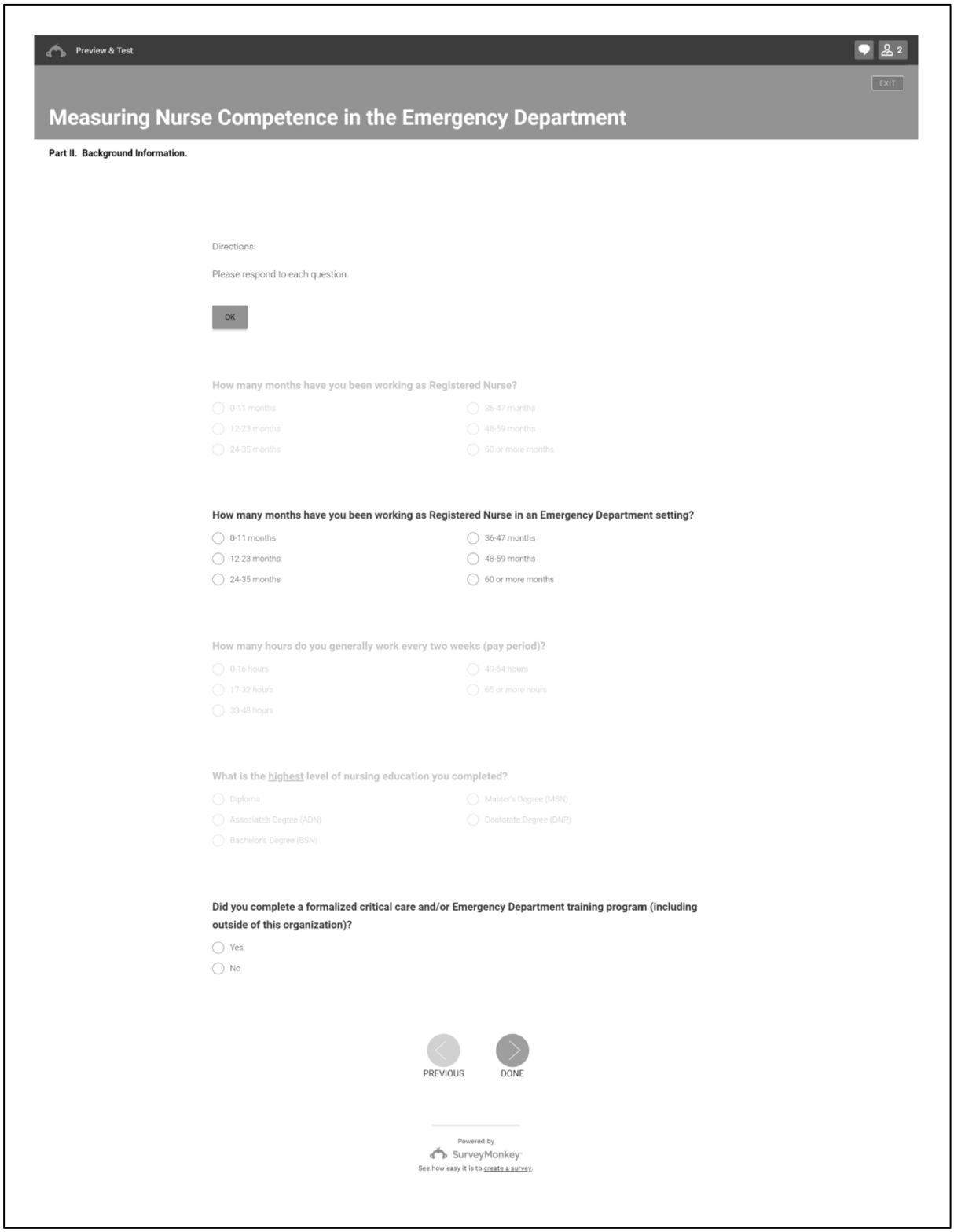
APPENDIX C: NURSE COMPETENCE QUESTIONNAIRE PART II



Preview & Test

EXIT

Measuring Nurse Competence in the Emergency Department

Part II. Background Information.

Directions:

Please respond to each question.

OK

How many months have you been working as Registered Nurse?

- 0-11 months
- 12-23 months
- 24-35 months
- 36-47 months
- 48-59 months
- 60 or more months

How many months have you been working as Registered Nurse in an Emergency Department setting?

- 0-11 months
- 12-23 months
- 24-35 months
- 36-47 months
- 48-59 months
- 60 or more months

How many hours do you generally work every two weeks (pay period)?

- 0-16 hours
- 17-32 hours
- 33-48 hours
- 49-64 hours
- 65 or more hours

What is the highest level of nursing education you completed?

- Diploma
- Associate's Degree (ADN)
- Bachelor's Degree (BSN)
- Master's Degree (MSN)
- Doctorate Degree (DNP)

Did you complete a formalized critical care and/or Emergency Department training program (including outside of this organization)?

- Yes
- No

PREVIOUS DONE

Powered by SurveyMonkey

See how easy it is to create a survey.

APPENDIX D: INTRODUCTION MESSAGE

Dear ED RN,

I am conducting a doctoral dissertation study on nurse competence title **Measuring Nurse Competence in the Emergency Department**, specific to our ED. I am seeking your participation in this study.

With nurses providing care to millions of hospitalized people each year as a result of illness or injury, health care errors were ranked among the top 10 leading causes of death in the US. The Institute of Medicine revealed 44,000-98,000 patients die due to a medical error each year.

Nurse competence impacts safe and quality nursing, and there are several research studies investigating this topic by measuring it among groups of nurses in various nursing care settings. However, the current research shows limited studies in the ED setting and within the United States, so my study will address this limitation while providing a baseline understanding of nurse competence of RNs in our ED.

An Internet-based questionnaire using SurveyMonkey will be used to collect self-assessed for the level of competence and the frequency of use for specific clinical indicators in different competence areas. You can access, complete, and submit the questionnaire anywhere at any time using the URL listed below. The questionnaire should take about 30 minutes to complete. An informed consent will be the initial page prior to the questionnaire to disclose the details regarding your participation. Your input will be collected anonymously and stored confidentially.

https://

The deadline to access the questionnaire is: **May 31, 2019**.

The benefits of this study, which may reasonably be expected to result, focus on providing a baseline understanding of nurse competence among 100+ RNs working in our ED and identifying opportunities to better support the RNs, close gaps in knowledge and skill, and address microsystem problems related to systems, workflows, and processes.

If you have any questions regarding this study, feel free to contact me at

Thank you for your time.

Kind regards,

Matthew Lojo, MSN, RN-BC, CNL

APPENDIX E: INFORMED CONSENT

Preview & Test

EXIT

Measuring Nurse Competence in the Emergency Department

Informed Consent

CONSENT TO PARTICIPATE IN A RESEARCH STUDY

TITLE OF THE RESEARCH STUDY: Measuring Nurse Competence in the Emergency Department

CONCISE SUMMARY

Under an approved doctoral dissertation study to investigate and measure nurse competence of Registered Nurses (RNs) in the Emergency Department (ED), self-assessed data will be collected using SurveyMonkey to obtain a baseline understanding of nurse competence among the RNs working in the ED.

The Internet-based questionnaire is composed of two parts and should take about 30 minutes to complete. For Part I, there are 73 items in which you will be instructed to (1) rate the level of competence for each item using a 0 to 100 scale and (2) select the frequency in which individual items are actually used in clinical practice. For Part II, there are five questions to collect background information to be included in the data analysis. All your responses are completely anonymous and confidential.

The psychological and sociological risks associated with this study are minimal, which include experiencing emotions and disclosing level of competence as you complete the questionnaire.

The benefits, which may reasonably be expected to result from this study, focus on providing a baseline understanding of nurse competence among 100+ RNs working in our ED and identifying opportunities to better support the RNs, close gaps in knowledge and skill, and address microsystem problems related to systems, workflows, and processes.

Your participation is entirely voluntary, and if at any time you choose to no longer participate after accessing the questionnaire, feel free to exit the questionnaire. You will not be penalized or lose benefits if you refuse to participate or decide to stop completing the questionnaire.

Completion and submission of the questionnaire will establish your consent to participate. You may request a copy of this consent for your records. If you have any questions regarding this study, feel free to contact the principal investigator at

Thank you for your participation.

INVITATION TO PARTICIPATE: You are invited to participate in this research study. The following information is provided to help you decide whether or not to participate. **PLEASE READ THIS CONSENT FORM CAREFULLY.** If you have any questions, please do not hesitate to ask.

This consent form may contain words you do not understand. Please ask the study principal investigator to explain any words or information you do not clearly understand.

WHY HAVE YOU BEEN SELECTED TO PARTICIPATE? You are a Registered Nurse (RN) working in the Emergency Department (ED).

WHY IS THIS STUDY BEING DONE? The purpose of this study is to obtain a baseline understanding of nurse competence among the RNs working in the ED.

WHAT IS INVOLVED IN THE STUDY? An Internet-based questionnaire through SurveyMonkey will be used to collect self-assessed data for the level of competence and the frequency of use for specific clinical indicators in different competence areas. Based on a scale, the level of competence will be described as *low* (0-25), *quite good* (25-50), *good* (50-75), and *very good* (75-100). The frequency of use will be identified from *not applicable* to *very often*.

The questionnaire is composed of two parts. For Part I, there are 73 items in which you will be instructed to (1) rate the level of competence for each item using a 0 to 100 scale and (2) select the frequency in which individual items are actually used in clinical practice. For Part II, there are five questions to collect background information to be included in the data analysis.

The questionnaire should take about 30 minutes to complete and may be completed in a place at your discretion.

WHAT ARE THE RISKS AND/OR POTENTIAL DISCOMFORTS OF THE STUDY? The psychological and sociological risks associated with this study are minimal, which include experiencing emotions and disclosing your level of competence as you complete the questionnaire.

ARE THERE POTENTIAL BENEFITS TO PARTICIPATING IN THE STUDY? Yes, the benefits, which may reasonably be expected to result from this study, focus on providing a baseline understanding of nurse competence among 100+ RNs working in our ED and identifying opportunities to better support the RNs, close gaps in knowledge and skill, and address microsystem problems related to systems, workflows, and processes.

ARE THERE POTENTIAL BENEFITS TO SOCIETY FROM THIS STUDY? Yes, the benefits include producing data, initiating quality improvement projects, proposing pilot programs, influencing departmental and organizational policy and procedure and protocols, and developing opportunities for subsequent research to further explore nurse competence in different nursing areas and healthcare organizations.

WHAT ALTERNATIVES ARE THERE TO PARTICIPATING IN THE STUDY? There are no alternatives to participating in the study.

OK

WHAT ARE THE COSTS FOR ME TO PARTICIPATE? There are no costs for you to participate.

WILL I RECEIVE ANY COMPENSATION FOR PARTICIPATING? No compensation or reimbursement will be offered.

CAN I DECLINE TO PARTICIPATE OR WITHDRAW FROM PARTICIPATING? Your participation in this research is voluntary, and if at any time may affect your willingness to continue participating, you will be informed immediately.

CAN I BE TERMINATED FROM THE STUDY? You may be removed from the study without your consent if the study is cancelled.

WHO WILL HAVE ACCESS TO RESULTS FROM THE STUDY?
The study principal investigator anticipates publishing the results of the study when it is complete, but this is not guaranteed. No identifying information will be included in any publications.

WHOM DO I CALL IF I HAVE ANY QUESTIONS? If you have any questions, please do not hesitate to ask the principal investigator listed on the last page of this consent form.

The Research and Human Subjects Review Committee of has reviewed this study and will review any concerns or complaints you may have regarding your participation in the study or questions you may have about your rights as a research subject. This Committee is concerned with protecting people who volunteer to participate in research studies. The Committee may be reached by calling the office from 9:00 a.m. to 5:00 p.m., Monday through Friday at or by writing to the Research Committee,

ACCEPTANCE OF INFORMED CONSENT: You are voluntarily making a decision about whether or not to participate in this research study. If you would like to participate, please begin completing the questionnaire. Your completion and submission of the questionnaire indicates you have decided to participate having read and understood the information presented. You may request a copy of the consent to keep. Thank you for your interest in the study.

IDENTIFICATION OF STUDY INVESTIGATOR

Principal Investigator: Matthew Lojo, MSN, RN-BC, CNL, Doctoral Student, University of the Pacific,

NEXT

DESKTOP TABLET PHONE

APPENDIX F: SAMPLE DISTRIBUTION FOR LEVEL OF COMPETENCE FOR EACH CLINICAL INDICATOR

Sample Distribution for Level of Competence for Each Clinical Indicator

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
1. Planning patient care according to individual needs					
	good	2	9.5	9.5	9.5
Valid	very good	19	90.5	90.5	100.0
	Total	21	100.0	100.0	
2. Supporting patients' coping strategies					
	good	3	14.3	14.3	14.3
Valid	quite good	3	14.3	14.3	28.6
	very good	15	71.4	71.4	100.0
	Total	21	100.0	100.0	
3. Evaluating critically own philosophy in nursing					
	good	1	4.8	4.8	4.8
	low	1	4.8	4.8	9.5
Valid	quite good	8	38.1	38.1	47.6
	very good	11	52.4	52.4	100.0
	Total	21	100.0	100.0	
4. Modifying the care plan according to individual needs					
	good	4	19.0	19.0	19.0
	low	1	4.8	4.8	23.8
Valid	quite good	1	4.8	4.8	28.6
	very good	15	71.4	71.4	100.0
	Total	21	100.0	100.0	
5. Utilizing nursing research findings in relationships with patients					
	good	3	14.3	14.3	14.3
	low	4	19.0	19.0	33.3
Valid	quite good	2	9.5	9.5	42.9
	very good	12	57.1	57.1	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
6. Developing the treatment culture of my unit					
	good	2	9.5	9.5	9.5
	low	3	14.3	14.3	23.8
Valid	quite good	5	23.8	23.8	47.6
	very good	11	52.4	52.4	100.0
	Total	21	100.0	100.0	
7. Decision-making guided by ethical values					
	good	2	9.5	9.5	9.5
Valid	quite good	1	4.8	4.8	14.3
	very good	18	85.7	85.7	100.0
	Total	21	100.0	100.0	
8. Mapping out patient education needs carefully					
	good	5	23.8	23.8	23.8
Valid	quite good	2	9.5	9.5	33.3
	very good	14	66.7	66.7	100.0
	Total	21	100.0	100.0	
9. Finding optimal timing for patient education					
	good	6	28.6	28.6	28.6
Valid	quite good	2	9.5	9.5	38.1
	very good	13	61.9	61.9	100.0
	Total	21	100.0	100.0	
10. Mastering the content of patient education					
	good	5	23.8	23.8	23.8
Valid	quite good	2	9.5	9.5	33.3
	very good	14	66.7	66.7	100.0
	Total	21	100.0	100.0	
11. Providing individualized patient education					
	good	7	33.3	33.3	33.3
Valid	very good	14	66.7	66.7	100.0
	Total	21	100.0	100.0	
12. Co-ordinating patient education					
	good	2	9.5	9.5	9.5
	low	2	9.5	9.5	19.0
Valid	quite good	4	19.0	19.0	38.1
	very good	13	61.9	61.9	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
13. Able to recognize family members' needs for guidance					
Valid	good	6	28.6	28.6	28.6
	quite good	1	4.8	4.8	33.3
	very good	14	66.7	66.7	100.0
	Total	21	100.0	100.0	
14. Acting autonomously in guiding family members					
Valid	good	4	19.0	19.0	19.0
	quite good	1	4.8	4.8	23.8
	very good	16	76.2	76.2	100.0
	Total	21	100.0	100.0	
15. Taking student nurse's level of skill acquisition into account in mentoring					
Valid	good	3	14.3	14.3	14.3
	low	1	4.8	4.8	19.0
	quite good	2	9.5	9.5	28.6
	very good	15	71.4	71.4	100.0
	Total	21	100.0	100.0	
16. Supporting student nurses in attaining goals					
Valid	good	3	14.3	14.3	14.3
	low	1	4.8	4.8	19.0
	quite good	1	4.8	4.8	23.8
	very good	16	76.2	76.2	100.0
	Total	21	100.0	100.0	
17. Evaluating patient education outcome together with patient					
Valid	good	5	23.8	23.8	23.8
	low	1	4.8	4.8	28.6
	quite good	2	9.5	9.5	38.1
	very good	13	61.9	61.9	100.0
	Total	21	100.0	100.0	
18. Evaluating patient education outcomes with family					
Valid	good	5	23.8	23.8	23.8
	low	1	4.8	4.8	28.6
	quite good	3	14.3	14.3	42.9
	very good	12	57.1	57.1	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
19. Evaluating patient education outcome with care team					
	good	3	14.3	14.3	14.3
	low	2	9.5	9.5	23.8
Valid	quite good	3	14.3	14.3	38.1
	very good	13	61.9	61.9	100.0
	Total	21	100.0	100.0	
20. Taking active steps to maintain and improve my professional skills					
	good	3	14.3	14.3	14.3
Valid	very good	18	85.7	85.7	100.0
	Total	21	100.0	100.0	
21. Developing patient education in my unit					
	good	2	9.5	10.5	10.5
	low	4	19.0	21.1	31.6
Valid	quite good	6	28.6	31.6	63.2
	very good	7	33.3	36.8	100.0
	Total	19	90.5	100.0	
Missing		2	9.5		
Total		21	100.0		
22. Developing orientation programmes for new nurses in my unit					
	good	3	14.3	15.0	15.0
	low	4	19.0	20.0	35.0
Valid	quite good	3	14.3	15.0	50.0
	very good	10	47.6	50.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
23. Coaching others in duties within my responsibility area					
	good	2	9.5	9.5	9.5
Valid	quite good	3	14.3	14.3	23.8
	very good	16	76.2	76.2	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
24. Analysing patient's well-being from many perspectives					
	good	2	9.5	10.0	10.0
	low	1	4.8	5.0	15.0
Valid	quite good	2	9.5	10.0	25.0
	very good	15	71.4	75.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
25. Able to identify patient's need for emotional support					
	good	3	14.3	15.0	15.0
	low	1	4.8	5.0	20.0
Valid	quite good	1	4.8	5.0	25.0
	very good	15	71.4	75.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
26. Able to identify family members' need for emotional support					
	good	3	14.3	15.0	15.0
	low	1	4.8	5.0	20.0
Valid	quite good	2	9.5	10.0	30.0
	very good	14	66.7	70.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
27. Arranging expert help for patient when needed					
	good	2	9.5	10.0	10.0
Valid	quite good	2	9.5	10.0	20.0
	very good	16	76.2	80.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
28. Coaching other staff members in patient observation skills					
	good	2	9.5	10.0	10.0
	low	3	14.3	15.0	25.0
Valid	quite good	3	14.3	15.0	40.0
	very good	12	57.1	60.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
29. Coaching other staff members in use of diagnostic equipment					
	good	3	14.3	15.0	15.0
	low	3	14.3	15.0	30.0
Valid	quite good	2	9.5	10.0	40.0
	very good	12	57.1	60.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
30. Developing documentation of patient care					
	good	3	14.3	15.8	15.8
	low	1	4.8	5.3	21.1
Valid	quite good	2	9.5	10.5	31.6
	very good	13	61.9	68.4	100.0
	Total	19	90.5	100.0	
Missing		2	9.5		
Total		21	100.0		
31. Able to recognize situations posing a threat to life early					
	good	2	9.5	10.0	10.0
Valid	very good	18	85.7	90.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
32. Prioritizing my activities flexibly according to changing situations					
Valid	very good	20	95.2	100.0	100.0
Missing		1	4.8		
Total		21	100.0		
33. Acting appropriately in life-threatening situations					
	good	2	9.5	10.0	10.0
Valid	very good	18	85.7	90.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
34. Arranging debriefing sessions for the care team when needed					
Valid	low	5	23.8	26.3	26.3
	quite good	7	33.3	36.8	63.2
	very good	7	33.3	36.8	100.0
	Total	19	90.5	100.0	
Missing		2	9.5		
Total		21	100.0		
35. Coaching other team members in mastering rapidly changing situations					
Valid	good	2	9.5	10.0	10.0
	low	3	14.3	15.0	25.0
	quite good	1	4.8	5.0	30.0
	very good	14	66.7	70.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
36. Planning care consistently with resources available					
Valid	good	6	28.6	30.0	30.0
	very good	14	66.7	70.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
37. Keeping nursing care equipment in good condition					
Valid	good	3	14.3	15.0	15.0
	quite good	2	9.5	10.0	25.0
	very good	15	71.4	75.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
38. Promoting flexible team co-operation in rapidly changing situations					
Valid	good	1	4.8	5.0	5.0
	quite good	1	4.8	5.0	10.0
	very good	18	85.7	90.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
39. Planning own activities flexibly according to clinical situation					
	good	2	9.5	10.0	10.0
Valid	very good	18	85.7	90.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
40. Making decisions concerning patient care taking the particular situation into account					
	good	3	14.3	15.0	15.0
Valid	very good	17	81.0	85.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
41. Co-ordinating multidisciplinary team's nursing activities					
	good	3	14.3	15.0	15.0
	low	1	4.8	5.0	20.0
Valid	very good	16	76.2	80.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
42. Coaching the care team in performance of nursing interventions					
	good	2	9.5	10.5	10.5
	low	4	19.0	21.1	31.6
Valid	quite good	1	4.8	5.3	36.8
	very good	12	57.1	63.2	100.0
	Total	19	90.5	100.0	
Missing		2	9.5		
Total		21	100.0		
43. Updating written guidelines for care					
	good	2	9.5	10.5	10.5
	low	8	38.1	42.1	52.6
Valid	quite good	2	9.5	10.5	63.2
	very good	7	33.3	36.8	100.0
	Total	19	90.5	100.0	
Missing		2	9.5		
Total		21	100.0		

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
44. Providing consultation for the care team					
	good	3	14.3	15.8	15.8
	low	5	23.8	26.3	42.1
Valid	quite good	2	9.5	10.5	52.6
	very good	9	42.9	47.4	100.0
	Total	19	90.5	100.0	
Missing		2	9.5		
Total		21	100.0		
45. Utilizing research findings in nursing interventions					
	good	4	19.0	20.0	20.0
	low	1	4.8	5.0	25.0
Valid	quite good	4	19.0	20.0	45.0
	very good	11	52.4	55.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
46. Evaluating systematically patient care outcomes					
	good	4	19.0	20.0	20.0
	low	3	14.3	15.0	35.0
Valid	quite good	1	4.8	5.0	40.0
	very good	12	57.1	60.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
47. Incorporating relevant knowledge to provide optimal care					
	good	1	4.8	5.0	5.0
Valid	quite good	1	4.8	5.0	10.0
	very good	18	85.7	90.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
48. Contributing to further development of multidisciplinary clinical paths					
	good	1	4.8	5.6	5.6
	low	9	42.9	50.0	55.6
Valid	quite good	2	9.5	11.1	66.7
	very good	6	28.6	33.3	100.0
	Total	18	85.7	100.0	
Missing		3	14.3		
Total		21	100.0		
49. Committed to my organization's care philosophy					
	good	2	9.5	9.5	9.5
Valid	quite good	2	9.5	9.5	19.0
	very good	17	81.0	81.0	100.0
	Total	21	100.0	100.0	
50. Able to identify areas in patient care needing further development and research					
	good	5	23.8	23.8	23.8
	low	1	4.8	4.8	28.6
Valid	quite good	5	23.8	23.8	52.4
	very good	10	47.6	47.6	100.0
	Total	21	100.0	100.0	
51. Evaluating critically my unit's care philosophy					
	good	3	14.3	14.3	14.3
	low	4	19.0	19.0	33.3
Valid	quite good	2	9.5	9.5	42.9
	very good	12	57.1	57.1	100.0
	Total	21	100.0	100.0	
52. Evaluating systematically patients' satisfaction with care					
	good	2	9.5	9.5	9.5
	low	5	23.8	23.8	33.3
Valid	quite good	4	19.0	19.0	52.4
	very good	10	47.6	47.6	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
53. Utilizing research findings in further development of patient care					
	good	2	9.5	9.5	9.5
	low	3	14.3	14.3	23.8
Valid	quite good	6	28.6	28.6	52.4
	very good	10	47.6	47.6	100.0
	Total	21	100.0	100.0	
54. Making proposals concerning further development and research					
	good	1	4.8	5.0	5.0
	low	11	52.4	55.0	60.0
Valid	quite good	1	4.8	5.0	65.0
	very good	7	33.3	35.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
55. Able to recognize colleagues' need for support and help					
	good	3	14.3	14.3	14.3
Valid	very good	18	85.7	85.7	100.0
	Total	21	100.0	100.0	
56. Aware of the limits of my own resources					
	good	2	9.5	9.5	9.5
Valid	very good	19	90.5	90.5	100.0
	Total	21	100.0	100.0	
57. Professional identity serves as resource in nursing					
	good	3	14.3	15.0	15.0
	low	2	9.5	10.0	25.0
Valid	quite good	1	4.8	5.0	30.0
	very good	14	66.7	70.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
58. Acting responsibly in terms of limited financial resources					
	good	5	23.8	23.8	23.8
Valid	quite good	3	14.3	14.3	38.1
	very good	13	61.9	61.9	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
59. Familiar with my organization's policy concerning division of labour and co-ordination of duties					
	good	2	9.5	9.5	9.5
	low	2	9.5	9.5	19.0
Valid	quite good	2	9.5	9.5	28.6
	very good	15	71.4	71.4	100.0
	Total	21	100.0	100.0	
60. Co-ordinating student nurse mentoring in the unit					
	good	2	9.5	10.0	10.0
	low	7	33.3	35.0	45.0
Valid	quite good	1	4.8	5.0	50.0
	very good	10	47.6	50.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
61. Mentoring novices and advanced beginners					
	good	2	9.5	9.5	9.5
	low	3	14.3	14.3	23.8
Valid	quite good	1	4.8	4.8	28.6
	very good	15	71.4	71.4	100.0
	Total	21	100.0	100.0	
62. Providing expertise for the care team					
	good	6	28.6	28.6	28.6
Valid	low	2	9.5	9.5	38.1
	very good	13	61.9	61.9	100.0
	Total	21	100.0	100.0	
63. Acting autonomously					
	good	1	4.8	4.8	4.8
	low	1	4.8	4.8	9.5
Valid	quite good	2	9.5	9.5	19.0
	very good	17	81.0	81.0	100.0
	Total	21	100.0	100.0	

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
64. Guiding staff members to duties corresponding to their skill levels					
	good	2	9.5	10.0	10.0
	low	1	4.8	5.0	15.0
Valid	quite good	1	4.8	5.0	20.0
	very good	16	76.2	80.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
65. Incorporating new knowledge to optimize patient care					
	good	4	19.0	20.0	20.0
Valid	quite good	1	4.8	5.0	25.0
	very good	15	71.4	75.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
66. Ensuring smooth flow of care in the unit by delegating tasks					
	good	3	14.3	15.0	15.0
Valid	quite good	2	9.5	10.0	25.0
	very good	15	71.4	75.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
67. Taking care of myself in terms of not depleting my mental and physical resources					
	good	5	23.8	23.8	23.8
	low	1	4.8	4.8	28.6
Valid	quite good	4	19.0	19.0	47.6
	very good	11	52.4	52.4	100.0
	Total	21	100.0	100.0	
68. Utilizing information technology in my work					
	good	3	14.3	15.0	15.0
Valid	quite good	1	4.8	5.0	20.0
	very good	16	76.2	80.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

	Level of Competence	N	Percent	Valid Percent	Cumulative Percent
69. Co-ordinating patient's overall care					
Valid	good	2	9.5	10.0	10.0
	quite good	1	4.8	5.0	15.0
	very good	17	81.0	85.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
70. Orchestrating the whole situation when needed					
Valid	low	2	9.5	10.0	10.0
	quite good	3	14.3	15.0	25.0
	very good	15	71.4	75.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
71. Giving feedback to colleagues in a constructive way					
Valid	good	2	9.5	10.0	10.0
	low	2	9.5	10.0	20.0
	quite good	5	23.8	25.0	45.0
	very good	11	52.4	55.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
72. Developing patient care in multidisciplinary teams					
Valid	good	5	23.8	25.0	25.0
	low	4	19.0	20.0	45.0
	quite good	1	4.8	5.0	50.0
	very good	10	47.6	50.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		
73. Developing work environment					
Valid	good	4	19.0	20.0	20.0
	low	5	23.8	25.0	45.0
	quite good	1	4.8	5.0	50.0
	very good	10	47.6	50.0	100.0
	Total	20	95.2	100.0	
Missing		1	4.8		
Total		21	100.0		

Note. Variables listed in alphabetical order and not in ordinal sequence.

APPENDIX G: CROSS TABULATION ANALYSIS OF LEVEL OF COMPETENCE AND FREQUENCY OF USE FOR EACH CLINICAL INDICATOR

Cross Tabulations Analysis of Level of Competence and Frequency of Use for Each Clinical Indicator

		Level of Competence				Total
		good	low	quite good	very good	
1. Planning patient care according to individual needs						
Frequency of Use	used very often in my work	2	0	0	18	20
	used very seldom	0	0	0	1	1
Total		2	0	0	19	21
2. Supporting patients' coping strategies						
	used occasionally	1	0	1	3	5
Frequency of Use	used very often in my work	2	0	1	12	15
	used very seldom	0	0	1	0	1
Total		3	0	3	15	21
3. Evaluating critically own philosophy in nursing						
	not applicable in my work	0	1	0	0	1
Frequency of Use	used occasionally	1	0	4	3	8
	used very often in my work	0	0	0	6	6
	used very seldom	0	0	4	1	5
Total		1	1	8	10	20
4. Modifying the care plan according to individual needs						
	used occasionally	3	0	1	2	6
Frequency of Use	used very often in my work	1	0	0	13	14
	used very seldom	0	1	0	0	1
Total		4	1	1	15	21
5. Utilizing nursing research findings in relationships with patients						
	used occasionally	1	3	0	4	8
Frequency of Use	used very often in my work	0	0	0	5	5
	used very seldom	2	1	2	3	8
Total		3	4	2	12	21

		Level of Competence				Total
		good	low	quite good	very good	
6. Developing the treatment culture of my unit						
Frequency of Use	not applicable in my work	0	1	0	0	1
	used occasionally	1	0	3	3	7
	used very often in my work	0	0	0	7	7
	used very seldom	1	2	2	1	6
Total		2	3	5	11	21
7. Decision-making guided by ethical values						
Frequency of Use	used occasionally	1	0	0	2	3
	used very often in my work	1	0	0	16	17
	used very seldom	0	0	1	0	1
Total		2	0	1	18	21
8. Mapping out patient education needs carefully						
Frequency of Use	used occasionally	1	0	2	2	5
	used very often in my work	3	0	0	11	14
	used very seldom	1	0	0	1	2
Total		5	0	2	14	21
9. Finding optimal timing for patient education						
Frequency of Use	used occasionally	3	0	2	0	5
	used very often in my work	3	0	0	12	15
	used very seldom	0	0	0	1	1
Total		6	0	2	13	21
10. Mastering the content of patient education						
Frequency of Use	used occasionally	2	0	1	1	4
	used very often in my work	2	0	1	12	15
	used very seldom	1	0	0	1	2
Total		5	0	2	14	21
11. Providing individualized patient education						
Frequency of Use	used occasionally	1	0	3	0	4
	used very often in my work	5	0	11	0	16
	used very seldom	1	0	0	0	1
Total		7	0	14	0	21

		Level of Competence				Total
		good	low	quite good	very good	
12. Co-ordinating patient education						
Frequency of Use	not applicable in my work	0	1	0	0	1
	used occasionally	1	0	4	0	5
	used very often in my work	0	0	0	11	11
	used very seldom	1	1	0	2	4
Total		2	2	4	13	21
13. Able to recognize family members' needs for guidance						
Frequency of Use	used occasionally	4	0	1	4	9
	used very often in my work	2	0	0	10	12
Total		6	0	1	14	21
14. Acting autonomously in guiding family members						
Frequency of Use	used occasionally	3	0	0	2	5
	used very often in my work	1	0	0	13	14
	used very seldom	0	0	1	1	2
Total		4	0	1	16	21
15. Taking student nurse's level of skill acquisition into account in mentoring						
Frequency of Use	used occasionally	1	0	1	5	7
	used very often in my work	1	0	0	8	9
	used very seldom	0	1	1	2	4
Total		2	1	2	15	20
16. Supporting student nurses in attaining goals						
Frequency of Use	used occasionally	1	0	1	8	10
	used very often in my work	0	0	0	8	8
	used very seldom	2	1	0	0	3
Total		3	1	1	16	21
17. Evaluating patient education outcome together with patient						
Frequency of Use	not applicable in my work	0	0	0	1	1
	used occasionally	4	0	1	4	9
	used very often in my work	1	0	0	8	9
	used very seldom	0	1	1	0	2
Total		5	1	2	13	21

		Level of Competence				Total
		good	low	quite good	very good	
18. Evaluating patient education outcomes with family						
Frequency of Use	not applicable in my work	0	0	0	1	1
	used occasionally	1	0	2	5	8
	used very often in my work	3	0	0	5	8
	used very seldom	1	1	1	1	4
Total		5	1	3	12	21
19. Evaluating patient education outcome with care team						
Frequency of Use	not applicable in my work	0	0	0	1	1
	used occasionally	1	0	1	2	4
	used very often in my work	1	0	0	7	8
	used very seldom	1	2	2	3	8
Total		3	2	3	13	21
20. Taking active steps to maintain and improve my professional skills						
Frequency of Use	used occasionally	2	0	0	2	4
	used very often in my work	1	0	0	16	17
Total		3	0	0	18	21
21. Developing patient education in my unit						
Frequency of Use	not applicable in my work	0	1	0	0	1
	used occasionally	1	0	0	0	1
	used very often in my work	0	0	1	3	4
	used very seldom	1	3	5	4	13
Total		2	4	6	7	19
22. Developing orientation programmes for new nurses in my unit						
Frequency of Use	not applicable in my work	0	3	0	0	3
	used occasionally	0	0	0	3	3
	used very often in my work	0	0	0	4	4
	used very seldom	3	1	3	3	10
Total		3	4	3	10	20
23. Coaching others in duties within my responsibility area						
Frequency of Use	used occasionally	1	0	2	5	8
	used very often in my work	0	0	0	9	9
	used very seldom	1	0	1	2	4
Total		2	0	3	16	21

		Level of Competence				Total
		good	low	quite good	very good	
24. Analysing patient's well-being from many perspectives						
	used occasionally	0	1	1	4	6
Frequency of Use	used very often in my work	2	0	0	11	13
	used very seldom	0	0	1	0	1
Total		2	1	2	15	20
25. Able to identify patient's need for emotional support						
Frequency of Use	used occasionally	0	0	1	3	4
	used very often in my work	3	1	0	12	16
Total		3	1	1	15	20
26. Able to identify family members' need for emotional support						
	used occasionally	2	0	2	5	9
Frequency of Use	used very often in my work	1	0	0	9	10
	used very seldom	0	1	0	0	1
Total		3	1	2	14	20
27. Arranging expert help for patient when needed						
	used occasionally	2	0	1	7	10
Frequency of Use	used very often in my work	0	0	0	9	9
	used very seldom	0	0	1	0	1
Total		2	0	2	16	20
28. Coaching other staff members in patient observation skills						
	used occasionally	2	0	3	4	9
Frequency of Use	used very often in my work	0	0	0	7	7
	used very seldom	0	3	0	1	4
Total		2	3	3	12	20
29. Coaching other staff members in use of diagnostic equipment						
	not applicable in my work	0	1	0	0	1
Frequency of Use	used occasionally	3	0	0	3	6
	used very often in my work	0	0	0	8	8
	used very seldom	0	2	2	1	5
Total		3	3	2	12	20

		Level of Competence				Total
		good	low	quite good	very good	
30. Developing documentation of patient care						
Frequency of Use	not applicable in my work	1	0	0	2	3
	used occasionally	1	0	0	1	2
	used very often in my work	0	0	0	10	10
	used very seldom	1	1	2	0	4
Total		3	1	2	13	19
31. Able to recognize situations posing a threat to life early						
Frequency of Use	used occasionally	1	0	0	0	1
	used very often in my work	1	0	0	17	18
	used very seldom	0	0	0	1	1
Total		2	0	0	18	20
32. Prioritizing my activities flexibly according to changing situations						
Frequency of Use	used very often in my work	0	0	0	20	20
Total		0	0	0	20	20
33. Acting appropriately in life-threatening situations						
Frequency of Use	used occasionally	1	0	0	1	2
	used very often in my work	1	0	0	17	18
Total		2	0	0	18	20
34. Arranging debriefing sessions for the care team when needed						
Frequency of Use	not applicable in my work	1	0	0	0	1
	used occasionally	1	0	2	2	5
	used very often in my work	0	0	0	1	1
	used very seldom	3	0	5	4	12
Total		5	0	7	7	19
35. Coaching other team members in mastering rapidly changing situations						
Frequency of Use	used occasionally	2	0	0	8	10
	used very often in my work	0	1	0	5	6
	used very seldom	0	2	1	1	4
Total		2	3	1	14	20

		Level of Competence				Total
		good	low	quite good	very good	
36. Planning care consistently with resources available						
	used occasionally	4	0	0	3	7
Frequency of Use	used very often in my work	2	0	0	10	12
	used very seldom	0	0	0	1	1
Total		6	0	0	14	20
37. Keeping nursing care equipment in good condition						
	used occasionally	2	0	0	0	2
Frequency of Use	used very often in my work	1	0	0	14	15
	used very seldom	0	0	2	1	3
Total		3	0	2	15	20
38. Promoting flexible team co-operation in rapidly changing situations						
Frequency of Use	used occasionally	0	0	1	2	3
	used very often in my work	1	0	0	16	17
Total		1	0	1	18	20
39. Planning own activities flexibly according to clinical situation						
Frequency of Use	used occasionally	1	0	0	3	4
	used very often in my work	1	0	0	15	16
Total		2	0	0	18	20
40. Making decisions concerning patient care taking the particular situation into account						
Frequency of Use	used occasionally	1	0	0	1	2
	used very often in my work	2	0	0	16	18
Total		3	0	0	17	20
41. Co-ordinating multidisciplinary team's nursing activities						
	used occasionally	3	0	0	3	6
Frequency of Use	used very often in my work	0	0	0	11	11
	used very seldom	0	1	0	2	3
Total		3	1	0	16	20

		Level of Competence				Total
		good	low	quite good	very good	
42. Coaching the care team in performance of nursing interventions						
Frequency of Use	not applicable in my work	0	1	0	0	1
	used occasionally	2	0	0	4	6
	used very often in my work	0	0	0	5	5
	used very seldom	0	2	1	3	6
Total		2	3	1	12	18
43. Updating written guidelines for care						
Frequency of Use	not applicable in my work	0	5	0	2	7
	used very seldom	2	3	2	5	12
Total		2	8	2	7	19
44. Providing consultation for the care team						
Frequency of Use	not applicable in my work	1	3	0	0	4
	used occasionally	1	0	0	2	3
	used very often in my work	0	0	0	3	3
	used very seldom	1	2	2	4	9
Total		3	5	2	9	19
45. Utilizing research findings in nursing interventions						
Frequency of Use	used occasionally	3	0	2	5	10
	used very often in my work	0	0	0	2	2
	used very seldom	1	1	2	4	8
Total		4	1	4	11	20
46. Evaluating systematically patient care outcomes						
Frequency of Use	not applicable in my work	0	0	0	1	1
	used occasionally	2	0	1	4	7
	used very often in my work	1	0	0	6	7
	used very seldom	1	3	0	1	5
Total		4	3	1	12	20
47. Incorporating relevant knowledge to provide optimal care						
Frequency of Use	used occasionally	0	0	0	2	2
	used very often in my work	1	0	0	14	15
	used very seldom	0	0	1	1	2
Total		1	0	1	17	19

		Level of Competence				Total
		good	low	quite good	very good	
48. Contributing to further development of multidisciplinary clinical paths						
Frequency of Use	not applicable in my work	0	3	0	0	3
	used occasionally	1	0	0	3	4
	used very often in my work	0	0	0	1	1
	used very seldom	0	6	2	2	10
Total		1	9	2	6	18
49. Committed to my organization's care philosophy						
Frequency of Use	used occasionally	1	0	0	1	2
	used very often in my work	0	0	0	16	16
	used very seldom	1	0	2	0	3
Total		2	0	2	17	21
50. Able to identify areas in patient care needing further development and research						
Frequency of Use	used occasionally	4	0	2	1	7
	used very often in my work	0	0	0	3	3
	used very seldom	1	1	3	6	11
Total		5	1	5	10	21
51. Evaluating critically my unit's care philosophy						
Frequency of Use	not applicable in my work	0	2	0	0	2
	used occasionally	2	0	1	4	7
	used very often in my work	0	0	0	2	2
	used very seldom	1	2	1	5	9
Total		3	4	2	11	20
52. Evaluating systematically patients' satisfaction with care						
Frequency of Use	not applicable in my work	0	2	0	1	3
	used occasionally	0	0	0	2	2
	used very often in my work	2	0	0	5	7
	used very seldom	0	3	4	2	9
Total		2	5	4	10	21
53. Utilizing research findings in further development of patient care						
Frequency of Use	not applicable in my work	0	1	0	0	1
	used occasionally	2	0	1	4	7
	used very often in my work	0	0	0	3	3
	used very seldom	0	2	5	3	10
Total		2	3	6	10	21

		Level of Competence				Total
		good	low	quite good	very good	
54. Making proposals concerning further development and research						
Frequency of Use	not applicable in my work	0	3	0	0	3
	used occasionally	0	0	0	2	2
	used very often in my work	0	0	0	1	1
	used very seldom	1	8	1	4	14
Total		1	11	1	7	20
55. Able to recognize colleagues' need for support and help						
Frequency of Use	used occasionally	1	0	0	2	3
	used very often in my work	2	0	0	16	18
Total		3	0	0	18	21
56. Aware of the limits of my own resources						
Frequency of Use	used very often in my work	2	0	0	19	21
Total		2	0	0	19	21
57. Professional identity serves as resource in nursing						
Frequency of Use	used occasionally	1	0	1	2	4
	used very often in my work	1	0	0	11	12
	used very seldom	1	2	0	1	4
Total		3	2	1	14	20
58. Acting responsibly in terms of limited financial resources						
Frequency of Use	used occasionally	3	0	0	3	6
	used very often in my work	2	0	1	9	12
	used very seldom	0	0	2	1	3
Total		5	0	3	13	21
59. Familiar with my organization's policy concerning division of labour and co-ordination of duties						
Frequency of Use	used occasionally	2	0	1	6	9
	used very often in my work	0	1	0	8	9
	used very seldom	0	1	1	1	3
Total		2	2	2	15	21
60. Co-ordinating student nurse mentoring in the unit						
Frequency of Use	not applicable in my work	0	1	0	0	1
	used occasionally	1	0	0	2	3
	used very often in my work	0	0	0	6	6
	used very seldom	1	6	1	2	10
Total		2	7	1	10	20

		Level of Competence				Total
		good	low	quite good	very good	
61. Mentoring novices and advanced beginners						
	used occasionally	1	1	0	8	10
Frequency of Use	used very often in my work	1	0	0	6	7
	used very seldom	0	2	1	1	4
Total		2	3	1	15	21
62. Providing expertise for the care team						
	used occasionally	5	0	0	4	9
Frequency of Use	used very often in my work	1	0	0	8	9
	used very seldom	0	2	0	1	3
Total		6	2	0	13	21
63. Acting autonomously						
	not applicable in my work	0	1	0	0	1
Frequency of Use	used occasionally	1	0	2	0	3
	used very often in my work	0	0	0	17	17
Total		1	1	2	17	21
64. Guiding staff members to duties corresponding to their skill levels						
	used occasionally	1	0	0	8	9
Frequency of Use	used very often in my work	1	0	1	8	10
	used very seldom	0	1	0	0	1
Total		2	1	1	16	20
65. Incorporating new knowledge to optimize patient care						
	used occasionally	3	0	0	7	10
Frequency of Use	used very often in my work	1	0	0	8	9
	used very seldom	0	0	1	0	1
Total		4	0	1	15	20
66. Ensuring smooth flow of care in the unit by delegating tasks						
Frequency of Use	used occasionally	1	0	2	3	6
	used very often in my work	2	0	0	12	14
Total		3	0	2	15	20

		Level of Competence				Total
		good	low	quite good	very good	
67. Taking care of myself in terms of not depleting my mental and physical resources						
	used occasionally	2	0	2	2	6
Frequency of Use	used very often in my work	3	1	1	9	14
	used very seldom	0	0	1	0	1
Total		5	1	4	11	21
68. Utilizing information technology in my work						
	used occasionally	2	0	0	2	4
Frequency of Use	used very often in my work	1	0	0	14	15
	used very seldom	0	0	1	0	1
Total		3	0	1	16	20
69. Co-ordinating patient's overall care						
	used occasionally	0	0	0	3	3
Frequency of Use	used very often in my work	2	0	0	14	16
	used very seldom	0	0	1	0	1
Total		2	0	1	17	20
70. Orchestrating the whole situation when needed						
	not applicable in my work	2	0	0	0	2
Frequency of Use	used occasionally	0	0	2	0	2
	used very often in my work	0	0	0	13	13
	used very seldom	0	0	1	2	3
Total		2	0	3	15	20
71. Giving feedback to colleagues in a constructive way						
	used occasionally	1	1	2	6	10
Frequency of Use	used very often in my work	1	1	0	4	6
	used very seldom	0	0	3	1	4
Total		2	2	5	11	20
72. Developing patient care in multidisciplinary teams						
	not applicable in my work	0	2	0	0	2
Frequency of Use	used occasionally	5	0	0	0	5
	used very often in my work	0	0	0	9	9
	used very seldom	0	2	1	1	4
Total		5	4	1	10	20

		Level of Competence				Total
		good	low	quite good	very good	
73. Developing work environment						
Frequency of Use	not applicable in my work	0	2	0	0	2
	used occasionally	2	0	1	3	6
	used very often in my work	2	0	0	6	8
	used very seldom	0	3	0	1	4
Total		4	5	1	10	20

Note. Variables listed in alphabetical order and not in ordinal sequence.

APPENDIX H: CORRELATIONS OF FREQUENCY OF USE AND LEVEL OF COMPETENCE FOR EACH COMPETENCE AREA

Correlations of Frequency of Use and Level of Competence for Each Competence Area

					(mean level of competence)						
					Helping role	Teaching-coaching	Diagnostic functions	Managing situations	Therapeutic interventions	Ensuring quality	Work role
Kendall's tau_b	Helping role (median frequency of use)	Correlation Coefficient			.425*	0.142	0.091	0.000	0.216	0.347	0.191
		Sig. (2-tailed)			0.032	0.469	0.646	1.000	0.269	0.084	0.335
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.001	-0.003	-0.008	-0.010	-0.004	-0.002	-0.002
			Std. Error		0.175	0.185	0.218	0.191	0.180	0.181	0.182
			95% Confidence Interval	Lower	0.048	-0.222	-0.354	-0.395	-0.168	-0.026	-0.164
				Upper	0.717	0.498	0.524	0.343	0.555	0.683	0.536
	Teaching-coaching (median frequency of use)	Correlation Coefficient			.458*	.501**	0.131	0.109	0.220	0.236	0.307
		Sig. (2-tailed)			0.019	0.009	0.503	0.577	0.250	0.231	0.115
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		0.006	0.005	0.000	-0.004	-0.001	0.006	0.004
			Std. Error		0.189	0.185	0.209	0.211	0.213	0.218	0.200
			95% Confidence Interval	Lower	0.084	0.114	-0.281	-0.303	-0.214	-0.198	-0.109
				Upper	0.786	0.821	0.526	0.514	0.629	0.658	0.666
	Diagnostic functions (median frequency of use)	Correlation Coefficient			0.309	0.267	.467*	0.369	0.332	0.336	0.318
		Sig. (2-tailed)			0.120	0.174	0.019	0.063	0.089	0.094	0.109
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.004	-0.008	-0.005	-0.005	-0.007	-0.007	-0.009
			Std. Error		0.172	0.183	0.176	0.173	0.165	0.156	0.178
			95% Confidence Interval	Lower	-0.078	-0.109	0.056	-0.009	-0.023	-0.008	-0.063
				Upper	0.619	0.628	0.754	0.681	0.638	0.615	0.630
	Managing situations (median frequency of use)	Correlation Coefficient			0.173	0.149	0.183	0.194	0.222	0.208	0.206
		Sig. (2-tailed)			0.387	0.450	0.358	0.331	0.258	0.302	0.300
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-.007[d]	-.009[d]	-.005[d]	-.004[d]	-.008[d]	-.009[d]	-.006[d]
			Std. Error		.231[d]	.210[d]	.228[d]	.226[d]	.232[d]	.239[d]	.216[d]
			95% Confidence Interval	Lower	-.350[d]	-.343[d]	-.332[d]	-.332[d]	-.342[d]	-.356[d]	-.321[d]
				Upper	.558[d]	.492[d]	.559[d]	.556[d]	.573[d]	.593[d]	.555[d]
	Therapeutic interventions (median frequency of use)	Correlation Coefficient			0.058	0.120	0.160	0.134	0.275	0.123	0.154
		Sig. (2-tailed)			0.755	0.512	0.386	0.467	0.129	0.508	0.402
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.004	0.000	-0.003	-0.005	-0.003	-0.002	0.005
			Std. Error		0.197	0.173	0.213	0.202	0.194	0.218	0.185
			95% Confidence Interval	Lower	-0.330	-0.202	-0.285	-0.287	-0.129	-0.285	-0.197
				Upper	0.447	0.461	0.552	0.509	0.631	0.567	0.536

					(mean level of competence)						
					Helping role	Teaching-coaching	Diagnostic functions	Managing situations	Therapeutic interventions	Ensuring quality	Work role
	Ensuring quality (median frequency of use)	Correlation Coefficient			0.199	0.126	-0.051	-0.013	0.214	.404*	-0.116
		Sig. (2-tailed)			0.282	0.489	0.781	0.945	0.240	0.031	0.529
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		0.005	-0.003	-0.007	-0.007	0.000	-0.001	-0.001
			Std. Error		0.162	0.195	0.194	0.164	0.159	0.165	0.159
			95% Confidence Interval	Lower	-0.112	-0.280	-0.446	-0.367	-0.105	0.059	-0.401
				Upper	0.510	0.495	0.313	0.291	0.513	0.682	0.210
	Work role (median frequency of use)	Correlation Coefficient			-0.015	0.052	0.316	0.218	0.096	-0.061	0.363
		Sig. (2-tailed)			0.940	0.791	0.112	0.272	0.624	0.761	0.067
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.015	-0.010	-0.005	-0.001	-0.007	-0.011	-0.007
			Std. Error		0.213	0.197	0.186	0.202	0.223	0.214	0.185
			95% Confidence Interval	Lower	-0.416	-0.341	-0.072	-0.183	-0.382	-0.492	-0.030
				Upper	0.384	0.404	0.653	0.584	0.489	0.352	0.687
Spearman's rho	Helping role (median frequency of use)	Correlation Coefficient			.485*	0.170	0.099	0.008	0.260	0.391	0.226
		Sig. (2-tailed)			0.030	0.474	0.679	0.974	0.269	0.088	0.338
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.007	-0.008	-0.011	-0.011	-0.010	-0.006	-0.008
			Std. Error		0.197	0.214	0.247	0.221	0.210	0.202	0.211
			95% Confidence Interval	Lower	0.049	-0.261	-0.404	-0.453	-0.186	-0.030	-0.188
				Upper	0.822	0.572	0.594	0.410	0.658	0.764	0.619
	Teaching-coaching (median frequency of use)	Correlation Coefficient			.533*	.561*	0.154	0.113	0.274	0.291	0.352
		Sig. (2-tailed)			0.016	0.010	0.517	0.634	0.243	0.213	0.128
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.005	-0.004	-0.005	-0.006	-0.011	-0.004	-0.002
			Std. Error		0.215	0.212	0.241	0.237	0.239	0.241	0.224
			95% Confidence Interval	Lower	0.077	0.100	-0.321	-0.362	-0.218	-0.194	-0.109
				Upper	0.873	0.905	0.592	0.569	0.717	0.738	0.741
	Diagnostic functions (median frequency of use)	Correlation Coefficient			0.357	0.338	.528*	0.429	0.393	0.396	0.386
		Sig. (2-tailed)			0.122	0.145	0.017	0.059	0.086	0.084	0.093
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.011	-0.021	-0.012	-0.012	-0.016	-0.015	-0.018
			Std. Error		0.198	0.209	0.194	0.194	0.190	0.178	0.205
			95% Confidence Interval	Lower	-0.088	-0.105	0.063	-0.009	-0.026	-0.009	-0.062
				Upper	0.703	0.715	0.832	0.759	0.728	0.707	0.714
	Managing situations (median frequency of use)	Correlation Coefficient			0.207	0.180	0.220	0.233	0.271	0.247	0.246
		Sig. (2-tailed)			0.382	0.447	0.352	0.324	0.248	0.294	0.296
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-.013[d]	-.015[d]	-.010[d]	-.010[d]	-.016[d]	-.015[d]	-.012[d]
			Std. Error		.259[d]	.238[d]	.256[d]	.254[d]	.264[d]	.265[d]	.242[d]
				Lower	-.388[d]	-.386[d]	-.362[d]	-.362[d]	-.386[d]	-.391[d]	-.360[d]

				(mean level of competence)						
				Helping role	Teaching-coaching	Diagnostic functions	Managing situations	Therapeutic interventions	Ensuring quality	Work role
		95% Confidence Interval	Upper	.630[d]	.553[d]	.631[d]	.627[d]	.655[d]	.666[d]	.633[d]
Therapeutic interventions (median frequency of use)	Correlation Coefficient			0.074	0.143	0.195	0.189	0.337	0.130	0.180
	Sig. (2-tailed)			0.757	0.547	0.409	0.426	0.146	0.586	0.447
	N			20	20	20	20	20	20	20
	Bootstrap[c]	Bias		-0.007	-0.003	-0.007	-0.013	-0.011	-0.004	0.001
		Std. Error		0.236	0.216	0.250	0.245	0.227	0.252	0.224
		95% Confidence Interval	Lower	-0.389	-0.268	-0.346	-0.346	-0.144	-0.345	-0.246
			Upper	0.540	0.549	0.639	0.617	0.732	0.626	0.630
Ensuring quality (median frequency of use)	Correlation Coefficient			0.269	0.146	-0.061	-0.034	0.292	.477*	-0.136
	Sig. (2-tailed)			0.252	0.539	0.799	0.886	0.212	0.033	0.566
	N			20	20	20	20	20	20	20
	Bootstrap[c]	Bias		-0.003	-0.006	-0.006	-0.005	-0.010	-0.008	0.000
		Std. Error		0.198	0.239	0.234	0.207	0.199	0.190	0.202
		95% Confidence Interval	Lower	-0.139	-0.344	-0.520	-0.462	-0.142	0.075	-0.487
			Upper	0.617	0.591	0.398	0.358	0.631	0.775	0.282
Work role (median frequency of use)	Correlation Coefficient			-0.017	0.063	0.363	0.239	0.114	-0.074	0.402
	Sig. (2-tailed)			0.942	0.791	0.116	0.311	0.631	0.757	0.079
	N			20	20	20	20	20	20	20
	Bootstrap[c]	Bias		-0.016	-0.013	-0.012	-0.004	-0.009	-0.010	-0.013
		Std. Error		0.236	0.234	0.210	0.225	0.253	0.235	0.209
		95% Confidence Interval	Lower	-0.463	-0.408	-0.092	-0.215	-0.415	-0.540	-0.037
			Upper	0.430	0.477	0.736	0.664	0.554	0.382	0.773

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

[c]. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

[d]. Based on 957 samples

APPENDIX I: SAMPLE DISTRIBUTION FOR BACKGROUND FACTORS

Sample Distribution for Background Factors

		N	Percent	Valid Percent	Cumulative Percent
Months working as a Registered Nurse					
Valid	12-23 months	1	4.8	4.8	4.8
	24-35 months	2	9.5	9.5	14.3
	36-47 months	1	4.8	4.8	19.0
	48-59 months	1	4.8	4.8	23.8
	60 or more months	16	76.2	76.2	100.0
	Total	21	100.0	100.0	
Months working as a Registered Nurse in an Emergency Department setting					
Valid	12-23 months	1	4.8	4.8	4.8
	24-35 months	3	14.3	14.3	19.0
	36-47 months	2	9.5	9.5	28.6
	60 or more months	15	71.4	71.4	100.0
	Total	21	100.0	100.0	
Hours worked every two weeks					
Valid	33-48 hours	7	33.3	33.3	33.3
	65 or more hours	14	66.7	66.7	100.0
	Total	21	100.0	100.0	
Highest level of education completed					
Valid	Associate's Degree (ADN)	5	23.8	23.8	23.8
	Bachelor's Degree (BSN)	10	47.6	47.6	71.4
	Diploma	1	4.8	4.8	76.2
	Master's Degree (MSN)	5	23.8	23.8	100.0
	Total	21	100.0	100.0	
Completion of a formalized critical care and/or Emergency Department training program					
Valid	No	3	14.3	14.3	14.3
	Yes	18	85.7	85.7	100.0
	Total	21	100.0	100.0	

APPENDIX J: CORRELATIONS OF BACKGROUND FACTORS AND OVERALL LEVEL OF COMPETENCE

Correlations of Background Factors and Overall Level of Competence

					Level of Competence (mean)
Kendall's tau_b	Months RN	Correlation Coefficient			0.201
		Sig. (2-tailed)			0.269
		N			21
		Bootstrap[c]	Bias		-.007[d]
			Std. Error		.197[d]
			95% Confidence Interval	Lower	-.233[d]
				Upper	.556[d]
	Months EDRN	Correlation Coefficient			0.329
		Sig. (2-tailed)			0.071
		N			21
		Bootstrap[c]	Bias		-0.005
			Std. Error		0.176
			95% Confidence Interval	Lower	-0.078
				Upper	0.625
	Hours worked	Correlation Coefficient			-0.114
		Sig. (2-tailed)			0.549
		N			21
		Bootstrap[c]	Bias		0.001
			Std. Error		0.186
			95% Confidence Interval	Lower	-0.472
				Upper	0.243
	Education level	Correlation Coefficient			0.210
		Sig. (2-tailed)			0.238
		N			21
		Bootstrap[c]	Bias		-0.008
			Std. Error		0.180
			95% Confidence Interval	Lower	-0.173
				Upper	0.556
	Formal training	Correlation Coefficient			0.067
		Sig. (2-tailed)			0.724
		N			21
		Bootstrap[c]	Bias		.003[e]
			Std. Error		.165[e]
			95% Confidence Interval	Lower	-.262[e]
				Upper	.371[e]

					Level of Competence (mean)
Spearman's rho	Months RN	Correlation Coefficient			0.247
		Sig. (2-tailed)			0.280
		N			21
		Bootstrap[c]	Bias		-.014[d]
			Std. Error		.231[d]
			95% Confidence Interval	Lower	-.269[d]
				Upper	.638[d]
	Months EDRN	Correlation Coefficient			0.415
		Sig. (2-tailed)			0.062
		N			21
		Bootstrap[c]	Bias		-0.016
			Std. Error		0.208
			95% Confidence Interval	Lower	-0.076
				Upper	0.741
	Hours worked	Correlation Coefficient			-0.134
		Sig. (2-tailed)			0.563
		N			21
		Bootstrap[c]	Bias		0.003
			Std. Error		0.215
			95% Confidence Interval	Lower	-0.545
				Upper	0.282
	Education level	Correlation Coefficient			0.273
		Sig. (2-tailed)			0.231
		N			21
		Bootstrap[c]	Bias		-0.017
			Std. Error		0.213
			95% Confidence Interval	Lower	-0.193
				Upper	0.647
	Formal training	Correlation Coefficient			0.079
		Sig. (2-tailed)			0.734
		N			21
		Bootstrap[c]	Bias		.002[e]
			Std. Error		.190[e]
			95% Confidence Interval	Lower	-.302[e]
				Upper	.428[e]

**. Correlation is significant at the 0.01 level (2-tailed).

[c]. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

[d]. Based on 998 samples

[e]. Based on 961 samples

[f]. Based on 959 samples

APPENDIX K: CORRELATIONS OF BACKGROUND FACTORS AND LEVEL OF COMPETENCE FOR EACH COMPETENCE AREA

Correlations of Demographic Factors and Level of Competence for Each Competence Area

					mean level of competence						
					Helping role	Teaching-coaching	Diagnostic functions	Managing situations	Therapeutic interventions	Ensuring quality	Work role
Kendall's tau_b	Months RN	Correlation Coefficient			-0.026	0.025	0.189	.386*	0.285	0.078	0.259
		Sig. (2-tailed)			0.895	0.895	0.332	0.047	0.135	0.690	0.182
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-.003[d]	-.009[d]	-.004[d]	-.006[d]	-.006[d]	-.002[d]	-.004[d]
			Std. Error		.229[d]	.209[d]	.194[d]	.204[d]	.196[d]	.184[d]	.203[d]
			95% Confidence Interval	Lower	-.462[d]	-.366[d]	-.216[d]	-.084[d]	-.149[d]	-.280[d]	-.154[d]
				Upper	.429[d]	.420[d]	.548[d]	.710[d]	.639[d]	.445[d]	.616[d]
	Months EDRN	Correlation Coefficient			0.129	0.151	0.330	.516**	.402*	0.213	0.365
		Sig. (2-tailed)			0.507	0.432	0.089	0.008	0.035	0.278	0.060
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.001	-0.007	-0.001	-0.004	-0.002	0.001	-0.004
			Std. Error		0.217	0.200	0.170	0.172	0.161	0.172	0.191
			95% Confidence Interval	Lower	-0.333	-0.252	-0.068	0.067	0.000	-0.148	-0.066
				Upper	0.542	0.533	0.596	0.763	0.651	0.534	0.713
	Hours worked	Correlation Coefficient			-0.041	-0.024	-0.148	-0.371	-0.282	-0.201	-0.207
		Sig. (2-tailed)			0.839	0.903	0.465	0.068	0.157	0.327	0.306
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.005	0.001	0.005	0.006	-0.002	-0.004	0.008
			Std. Error		0.214	0.222	0.200	0.172	0.171	0.196	0.201
			95% Confidence Interval	Lower	-0.456	-0.463	-0.527	-0.664	-0.617	-0.579	-0.557
				Upper	0.369	0.394	0.288	0.024	0.072	0.193	0.246
	Education level	Correlation Coefficient			0.173	0.143	0.035	0.214	0.237	0.190	0.188
		Sig. (2-tailed)			0.364	0.447	0.856	0.261	0.206	0.324	0.323
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.007	-0.005	-0.003	0.000	-0.004	-0.005	-0.003
			Std. Error		0.223	0.175	0.236	0.216	0.185	0.202	0.189
			95% Confidence Interval	Lower	-0.296	-0.237	-0.421	-0.229	-0.158	-0.222	-0.207
				Upper	0.575	0.454	0.471	0.632	0.576	0.578	0.538
	Formal training	Correlation Coefficient			0.044	0.206	-0.011	-0.220	-0.054	-0.011	-0.044
		Sig. (2-tailed)			0.828	0.304	0.957	0.278	0.787	0.956	0.827
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-.002[e]	.001[e]	-.001[e]	.001[e]	-.002[e]	-.007[e]	.001[e]
			Std. Error		.207[e]	.253[e]	.182[e]	.180[e]	.165[e]	.210[e]	.171[e]
			95% Confidence Interval	Lower	-.353[e]	-.337[e]	-.371[e]	-.527[e]	-.378[e]	-.394[e]	-.373[e]
				Upper	.431[e]	.606[e]	.337[e]	.171[e]	.264[e]	.390[e]	.285[e]

					mean level of competence						
					Helping role	Teaching-coaching	Diagnostic functions	Managing situations	Therapeutic interventions	Ensuring quality	Work role
Spearman's rho	Months RN	Correlation Coefficient			-0.028	0.035	0.223	.456*	0.344	0.090	0.307
		Sig. (2-tailed)			0.907	0.884	0.345	0.043	0.138	0.707	0.188
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-.003[d]	-.013[d]	-.009[d]	-.017[d]	-.015[d]	-.006[d]	-.012[d]
			Std. Error		.263[d]	.241[d]	.229[d]	.229[d]	.228[d]	.211[d]	.231[d]
			95% Confidence Interval	Lower	-.537[d]	-.429[d]	-.253[d]	-.096[d]	-.172[d]	-.331[d]	-.183[d]
				Upper	.480[d]	.493[d]	.635[d]	.800[d]	.720[d]	.498[d]	.685[d]
	Months EDRN	Correlation Coefficient			0.158	0.167	0.415	.623**	.513*	0.257	0.430
		Sig. (2-tailed)			0.505	0.481	0.069	0.003	0.021	0.274	0.058
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.004	-0.011	-0.013	-0.019	-0.018	-0.006	-0.013
			Std. Error		0.256	0.234	0.207	0.190	0.194	0.206	0.214
			95% Confidence Interval	Lower	-0.388	-0.314	-0.083	0.095	0.000	-0.182	-0.077
				Upper	0.634	0.601	0.732	0.850	0.778	0.631	0.788
	Hours worked	Correlation Coefficient			-0.047	-0.028	-0.168	-0.419	-0.325	-0.225	-0.235
		Sig. (2-tailed)			0.845	0.907	0.480	0.066	0.162	0.341	0.319
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.005	0.003	0.008	0.013	0.002	-0.002	0.013
			Std. Error		0.239	0.250	0.223	0.192	0.195	0.217	0.223
			95% Confidence Interval	Lower	-0.502	-0.508	-0.589	-0.737	-0.703	-0.643	-0.623
				Upper	0.409	0.451	0.316	0.027	0.079	0.214	0.275
	Education level	Correlation Coefficient			0.218	0.171	0.052	0.245	0.318	0.202	0.233
		Sig. (2-tailed)			0.355	0.472	0.827	0.297	0.172	0.393	0.324
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-0.013	-0.010	-0.008	-0.004	-0.016	-0.007	-0.009
			Std. Error		0.250	0.214	0.269	0.244	0.217	0.231	0.220
			95% Confidence Interval	Lower	-0.310	-0.307	-0.476	-0.270	-0.176	-0.285	-0.238
				Upper	0.655	0.546	0.532	0.708	0.690	0.647	0.625
	Formal training	Correlation Coefficient			0.050	0.236	-0.012	-0.249	-0.062	-0.013	-0.050
		Sig. (2-tailed)			0.835	0.317	0.958	0.290	0.795	0.958	0.833
		N			20	20	20	20	20	20	20
		Bootstrap[c]	Bias		-.003[e]	-.001[e]	-.001[e]	.005[e]	-.002[e]	-.007[e]	.001[e]
			Std. Error		.231[e]	.285[e]	.202[e]	.200[e]	.186[e]	.232[e]	.191[e]
			95% Confidence Interval	Lower	-.390[e]	-.364[e]	-.420[e]	-.580[e]	-.430[e]	-.435[e]	-.416[e]
				Upper	.479[e]	.694[e]	.373[e]	.185[e]	.299[e]	.428[e]	.312[e]

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

[c]. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

[d]. Based on 998 samples

[e]. Based on 961 samples

[f]. Based on 959 samples

APPENDIX L: CORRELATIONS OF BACKGROUND FACTORS AND LEVEL OF COMPETENCE

Correlations[c] of Background Factors and Level of Competence

			Months RN	Months EDRN	Hours worked	Education level	Formal training
Kendall's tau-b	1. Planning patient care according to individual needs	Correlation Coefficient	0.242	.479*	-0.236	0.147	-0.091
		Sig. (2-tailed)	0.309	0.044	0.346	0.528	0.715
		N	17	17	17	17	17
	2. Supporting patients' coping strategies	Correlation Coefficient	0.070	0.263	-0.239	0.162	0.231
		Sig. (2-tailed)	0.761	0.249	0.321	0.468	0.336
		N	17	17	17	17	17
	3. Evaluating critically own philosophy in nursing	Correlation Coefficient	-0.142	0.061	0.083	0.097	0.214
		Sig. (2-tailed)	0.532	0.788	0.728	0.663	0.370
		N	17	17	17	17	17
	4. Modifying the care plan according to individual needs	Correlation Coefficient	0.000	0.145	0.179	0.023	0.404
		Sig. (2-tailed)	1.000	0.525	0.455	0.917	0.092
		N	17	17	17	17	17
	5. Utilizing nursing research findings in relationships with patients	Correlation Coefficient	0.000	0.118	-0.080	0.375	0.104
		Sig. (2-tailed)	1.000	0.594	0.730	0.084	0.656
		N	17	17	17	17	17
	6. Developing the treatment culture of my unit	Correlation Coefficient	-0.185	-0.082	0.026	0.103	0.359
		Sig. (2-tailed)	0.405	0.713	0.910	0.637	0.125
		N	17	17	17	17	17
	7. Decision-making guided by ethical values	Correlation Coefficient	0.254	.498*	-0.292	-0.242	-0.113
		Sig. (2-tailed)	0.276	0.033	0.234	0.289	0.645
		N	17	17	17	17	17
	8. Mapping out patient education needs carefully	Correlation Coefficient	-0.075	0.043	-0.065	-0.013	.500*
		Sig. (2-tailed)	0.746	0.854	0.792	0.956	0.041
		N	17	17	17	17	17
	9. Finding optimal timing for patient education	Correlation Coefficient	0.029	0.189	-0.123	-0.167	0.475
		Sig. (2-tailed)	0.902	0.415	0.616	0.463	0.052
		N	17	17	17	17	17
	10. Mastering the content of patient education	Correlation Coefficient	-0.143	-0.041	0.368	0.095	0.475
		Sig. (2-tailed)	0.538	0.861	0.132	0.675	0.052
		N	17	17	17	17	17
	11. Providing individualized patient education	Correlation Coefficient	-0.133	-0.014	0.064	0.012	0.339
		Sig. (2-tailed)	0.574	0.953	0.799	0.958	0.176
		N	17	17	17	17	17
	12. Co-ordinating patient education	Correlation Coefficient	-0.137	-0.039	-0.132	0.195	0.427
		Sig. (2-tailed)	0.543	0.863	0.577	0.379	0.072
		N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
13. Able to recognize family members' needs for guidance	Correlation Coefficient	0.100	0.189	0.123	0.000	0.297
	Sig. (2-tailed)	0.666	0.415	0.616	1.000	0.224
	N	17	17	17	17	17
14. Acting autonomously in guiding family members	Correlation Coefficient	0.000	0.138	-0.070	0.244	-0.135
	Sig. (2-tailed)	1.000	0.552	0.776	0.285	0.582
	N	17	17	17	17	17
15. Taking student nurse's level of skill acquisition into account in mentoring	Correlation Coefficient	.677**	.682**	-0.158	0.012	-0.153
	Sig. (2-tailed)	0.003	0.003	0.512	0.956	0.525
	N	17	17	17	17	17
16. Supporting student nurses in attaining goals	Correlation Coefficient	0.441	0.446	0.079	-0.111	0.305
	Sig. (2-tailed)	0.053	0.051	0.743	0.622	0.204
	N	17	17	17	17	17
17. Evaluating patient education outcome together with patient	Correlation Coefficient	-0.154	0.000	0.090	0.070	0.436
	Sig. (2-tailed)	0.502	1.000	0.709	0.755	0.071
	N	17	17	17	17	17
18. Evaluating patient education outcomes with family	Correlation Coefficient	-0.027	0.088	0.299	-0.100	0.387
	Sig. (2-tailed)	0.907	0.698	0.210	0.654	0.106
	N	17	17	17	17	17
19. Evaluating patient education outcome with care team	Correlation Coefficient	-0.110	0.013	-0.059	0.298	-0.171
	Sig. (2-tailed)	0.627	0.954	0.804	0.179	0.472
	N	17	17	17	17	17
20. Taking active steps to maintain and improve my professional skills	Correlation Coefficient	0.111	0.299	-0.299	0.093	-0.116
	Sig. (2-tailed)	0.639	0.208	0.232	0.689	0.643
	N	17	17	17	17	17
21. Developing patient education in my unit	Correlation Coefficient	-0.024	0.000	-0.116	0.420	0.149
	Sig. (2-tailed)	0.913	1.000	0.617	0.052	0.519
	N	17	17	17	17	17
22. Developing orientation programmes for new nurses in my unit	Correlation Coefficient	0.145	0.195	-0.078	0.364	0.050
	Sig. (2-tailed)	0.509	0.376	0.736	0.092	0.828
	N	17	17	17	17	17
23. Coaching others in duties within my responsibility area	Correlation Coefficient	0.048	0.228	-0.086	0.215	-0.134
	Sig. (2-tailed)	0.834	0.323	0.723	0.343	0.582
	N	17	17	17	17	17
24. Analysing patient's well-being from many perspectives	Correlation Coefficient	0.336	.525*	-0.391	-0.012	-0.152
	Sig. (2-tailed)	0.139	0.021	0.101	0.956	0.526
	N	17	17	17	17	17
25. Able to identify patient's need for emotional support	Correlation Coefficient	0.368	.571*	-0.158	-0.172	-0.153
	Sig. (2-tailed)	0.107	0.012	0.512	0.443	0.525
	N	17	17	17	17	17
26. Able to identify family members' need for emotional support	Correlation Coefficient	0.409	.608**	-0.172	-0.134	-0.152
	Sig. (2-tailed)	0.072	0.007	0.471	0.547	0.526
	N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
27. Arranging expert help for patient when needed	Correlation Coefficient	0.048	0.228	-0.345	0.215	-0.134
	Sig. (2-tailed)	0.834	0.323	0.156	0.343	0.582
	N	17	17	17	17	17
28. Coaching other staff members in patient observation skills	Correlation Coefficient	0.208	0.393	-0.251	-0.011	-0.189
	Sig. (2-tailed)	0.352	0.078	0.286	0.961	0.422
	N	17	17	17	17	17
29. Coaching other staff members in use of diagnostic equipment	Correlation Coefficient	0.026	0.147	-0.237	0.163	-0.189
	Sig. (2-tailed)	0.907	0.509	0.314	0.458	0.422
	N	17	17	17	17	17
30. Developing documentation of patient care	Correlation Coefficient	0.055	0.052	0.088	0.126	-0.171
	Sig. (2-tailed)	0.808	0.818	0.710	0.570	0.472
	N	17	17	17	17	17
31. Able to recognize situations posing a threat to life early	Correlation Coefficient	0.242	.479*	-0.236	0.147	-0.091
	Sig. (2-tailed)	0.309	0.044	0.346	0.528	0.715
	N	17	17	17	17	17
32. Prioritizing my activities flexibly according to changing situations	Correlation Coefficient					
	Sig. (2-tailed)					
	N	17	17	17	17	17
33. Acting appropriately in life-threatening situations	Correlation Coefficient	0.242	.479*	-0.236	0.147	-0.091
	Sig. (2-tailed)	0.309	0.044	0.346	0.528	0.715
	N	17	17	17	17	17
34. Arranging debriefing sessions for the care team when needed	Correlation Coefficient	0.385	.458*	-.493*	0.259	-0.258
	Sig. (2-tailed)	0.087	0.042	0.037	0.240	0.276
	N	17	17	17	17	17
35. Coaching other team members in mastering rapidly changing situations	Correlation Coefficient	.535*	.701**	-0.441	0.115	-0.171
	Sig. (2-tailed)	0.018	0.002	0.063	0.605	0.472
	N	17	17	17	17	17
36. Planning care consistently with resources available	Correlation Coefficient	0.326	.491*	-0.207	0.012	-0.185
	Sig. (2-tailed)	0.170	0.039	0.409	0.958	0.460
	N	17	17	17	17	17
37. Keeping nursing care equipment in good condition	Correlation Coefficient	-0.133	-0.196	0.159	0.062	-0.154
	Sig. (2-tailed)	0.562	0.393	0.511	0.784	0.525
	N	17	17	17	17	17
38. Promoting flexible team co-operation in rapidly changing situations	Correlation Coefficient	.482*	0.456	-0.161	0.251	-0.063
	Sig. (2-tailed)	0.043	0.055	0.519	0.281	0.803
	N	17	17	17	17	17
39. Planning own activities flexibly according to clinical situation	Correlation Coefficient	0.242	0.208	-0.236	0.367	-0.091
	Sig. (2-tailed)	0.309	0.381	0.346	0.115	0.715
	N	17	17	17	17	17
40. Making decisions concerning patient care taking the particular situation into account	Correlation Coefficient	0.111	0.299	-0.299	0.279	-0.116
	Sig. (2-tailed)	0.639	0.208	0.232	0.231	0.643
	N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
41. Co-ordinating multidisciplinary team's nursing activities	Correlation Coefficient	0.436	0.378	-0.292	.455*	-0.113
	Sig. (2-tailed)	0.062	0.105	0.234	0.047	0.645
	N	17	17	17	17	17
42. Coaching the care team in performance of nursing interventions	Correlation Coefficient	.473*	.632**	-0.447	0.151	-0.173
	Sig. (2-tailed)	0.038	0.006	0.062	0.500	0.470
	N	17	17	17	17	17
43. Updating written guidelines for care	Correlation Coefficient	0.250	0.378	-0.375	0.240	0.026
	Sig. (2-tailed)	0.265	0.092	0.112	0.276	0.912
	N	17	17	17	17	17
44. Providing consultation for the care team	Correlation Coefficient	0.228	0.340	-0.321	0.400	0.124
	Sig. (2-tailed)	0.301	0.122	0.165	0.064	0.591
	N	17	17	17	17	17
45. Utilizing research findings in nursing interventions	Correlation Coefficient	0.215	0.323	-0.122	.464*	0.105
	Sig. (2-tailed)	0.336	0.149	0.604	0.034	0.655
	N	17	17	17	17	17
46. Evaluating systematically patient care outcomes	Correlation Coefficient	0.366	.526*	-0.365	-0.053	0.131
	Sig. (2-tailed)	0.101	0.019	0.120	0.810	0.577
	N	17	17	17	17	17
47. Incorporating relevant knowledge to provide optimal care	Correlation Coefficient	0.216	0.450	-0.232	0.126	-0.090
	Sig. (2-tailed)	0.356	0.055	0.347	0.582	0.716
	N	17	17	17	17	17
48. Contributing to further development of multidisciplinary clinical paths	Correlation Coefficient	0.170	0.284	-0.140	0.207	0.217
	Sig. (2-tailed)	0.455	0.211	0.558	0.353	0.364
	N	17	17	17	17	17
49. Committed to my organization's care philosophy	Correlation Coefficient	-0.145	0.091	-0.017	-0.255	.501*
	Sig. (2-tailed)	0.531	0.693	0.943	0.260	0.039
	N	17	17	17	17	17
50. Able to identify areas in patient care needing further development and research	Correlation Coefficient	0.230	0.367	-0.247	0.071	0.025
	Sig. (2-tailed)	0.299	0.098	0.290	0.745	0.914
	N	17	17	17	17	17
51. Evaluating critically my unit's care philosophy	Correlation Coefficient	-0.073	0.058	-0.091	-0.010	0.328
	Sig. (2-tailed)	0.741	0.794	0.694	0.963	0.157
	N	17	17	17	17	17
52. Evaluating systematically patients' satisfaction with care	Correlation Coefficient	0.099	0.246	-0.318	0.031	0.308
	Sig. (2-tailed)	0.657	0.270	0.174	0.887	0.189
	N	17	17	17	17	17
53. Utilizing research findings in further development of patient care	Correlation Coefficient	0.037	0.139	-0.066	0.347	0.127
	Sig. (2-tailed)	0.869	0.532	0.779	0.112	0.587
	N	17	17	17	17	17
54. Making proposals concerning further development and research	Correlation Coefficient	0.183	0.260	-0.112	0.436	-0.054
	Sig. (2-tailed)	0.421	0.254	0.639	0.050	0.821
	N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
55. Able to recognize colleagues' need for support and help	Correlation Coefficient	0.446	.615**	-0.299	0.279	-0.116
	Sig. (2-tailed)	0.060	0.010	0.232	0.231	0.643
	N	17	17	17	17	17
56. Aware of the limits of my own resources	Correlation Coefficient	.528*	.583*	-0.236	-0.055	-0.091
	Sig. (2-tailed)	0.026	0.014	0.346	0.813	0.715
	N	17	17	17	17	17
57. Professional identity serves as resource in nursing	Correlation Coefficient	0.041	0.234	-0.235	0.160	0.228
	Sig. (2-tailed)	0.855	0.301	0.322	0.469	0.337
	N	17	17	17	17	17
58. Acting responsibly in terms of limited financial resources	Correlation Coefficient	0.070	0.146	0.090	0.047	0.262
	Sig. (2-tailed)	0.760	0.525	0.709	0.835	0.278
	N	17	17	17	17	17
59. Familiar with my organization's policy concerning division of labour and co-ordination of duties	Correlation Coefficient	0.286	0.426	-0.132	-0.046	0.425
	Sig. (2-tailed)	0.203	0.058	0.578	0.836	0.073
	N	17	17	17	17	17
60. Co-ordinating student nurse mentoring in the unit	Correlation Coefficient	0.339	0.404	-0.067	-0.063	0.287
	Sig. (2-tailed)	0.131	0.072	0.775	0.775	0.224
	N	17	17	17	17	17
61. Mentoring novices and advanced beginners	Correlation Coefficient	.521*	.519*	-0.147	0.115	-0.171
	Sig. (2-tailed)	0.021	0.021	0.536	0.605	0.472
	N	17	17	17	17	17
62. Providing expertise for the care team	Correlation Coefficient	0.269	0.395	-0.289	0.292	-0.196
	Sig. (2-tailed)	0.239	0.084	0.230	0.193	0.416
	N	17	17	17	17	17
63. Acting autonomously	Correlation Coefficient	-0.319	-0.166	-0.051	0.013	-0.132
	Sig. (2-tailed)	0.164	0.469	0.832	0.953	0.583
	N	17	17	17	17	17
64. Guiding staff members to duties corresponding to their skill levels	Correlation Coefficient	0.145	0.103	0.019	0.288	-0.113
	Sig. (2-tailed)	0.533	0.658	0.937	0.208	0.645
	N	17	17	17	17	17
65. Incorporating new knowledge to optimize patient care	Correlation Coefficient	0.361	.527*	-0.403	0.075	-0.156
	Sig. (2-tailed)	0.120	0.023	0.099	0.741	0.523
	N	17	17	17	17	17
66. Ensuring smooth flow of care in the unit by delegating tasks	Correlation Coefficient	0.276	0.215	0.000	0.339	-0.135
	Sig. (2-tailed)	0.235	0.355	1.000	0.137	0.582
	N	17	17	17	17	17
67. Taking care of myself in terms of not depleting my mental and physical resources	Correlation Coefficient	0.405	0.396	-0.224	0.087	-0.190
	Sig. (2-tailed)	0.071	0.078	0.342	0.692	0.421
	N	17	17	17	17	17
68. Utilizing information technology in my work	Correlation Coefficient	0.276	0.430	-0.348	0.190	-0.135
	Sig. (2-tailed)	0.235	0.064	0.155	0.405	0.582
	N	17	17	17	17	17

			Months RN	Months EDRN	Hours worked	Education level	Formal training
	69. Co-ordinating patient's overall care	Correlation Coefficient	0.091	0.258	-0.292	0.394	-0.113
		Sig. (2-tailed)	0.697	0.269	0.234	0.085	0.645
		N	17	17	17	17	17
	70. Orchestrating the whole situation when needed	Correlation Coefficient	0.148	0.084	-0.397	.495*	-0.154
		Sig. (2-tailed)	0.519	0.714	0.100	0.028	0.525
		N	17	17	17	17	17
	71. Giving feedback to colleagues in a constructive way	Correlation Coefficient	0.427	.558*	-0.162	0.031	0.078
		Sig. (2-tailed)	0.055	0.012	0.490	0.885	0.738
		N	17	17	17	17	17
	72. Developing patient care in multidisciplinary teams	Correlation Coefficient	0.050	0.096	-0.189	0.390	0.131
		Sig. (2-tailed)	0.821	0.669	0.420	0.075	0.577
		N	17	17	17	17	17
	73. Developing work environment	Correlation Coefficient	-0.013	0.048	-0.095	0.316	0.105
		Sig. (2-tailed)	0.955	0.831	0.687	0.149	0.655
		N	17	17	17	17	17
Spearman's rho	1. Planning patient care according to individual needs	Correlation Coefficient	0.255	.504*	-0.236	0.158	-0.091
		Sig. (2-tailed)	0.324	0.039	0.362	0.546	0.728
		N	17	17	17	17	17
	2. Supporting patients' coping strategies	Correlation Coefficient	0.082	0.288	-0.248	0.195	0.240
		Sig. (2-tailed)	0.753	0.262	0.336	0.452	0.353
		N	17	17	17	17	17
	3. Evaluating critically own philosophy in nursing	Correlation Coefficient	-0.156	0.069	0.087	0.101	0.224
		Sig. (2-tailed)	0.549	0.793	0.740	0.700	0.387
		N	17	17	17	17	17
	4. Modifying the care plan according to individual needs	Correlation Coefficient	0.000	0.155	0.187	0.027	0.422
		Sig. (2-tailed)	1.000	0.551	0.473	0.919	0.092
		N	17	17	17	17	17
	5. Utilizing nursing research findings in relationships with patients	Correlation Coefficient	-0.002	0.133	-0.086	0.448	0.111
		Sig. (2-tailed)	0.995	0.610	0.742	0.072	0.671
		N	17	17	17	17	17
	6. Developing the treatment culture of my unit	Correlation Coefficient	-0.208	-0.095	0.028	0.110	0.383
		Sig. (2-tailed)	0.422	0.717	0.914	0.675	0.129
		N	17	17	17	17	17
	7. Decision-making guided by ethical values	Correlation Coefficient	0.276	.560*	-0.298	-0.271	-0.115
		Sig. (2-tailed)	0.283	0.019	0.246	0.292	0.660
		N	17	17	17	17	17
	8. Mapping out patient education needs carefully	Correlation Coefficient	-0.085	0.045	-0.066	-0.014	.511*
		Sig. (2-tailed)	0.746	0.864	0.801	0.958	0.036
		N	17	17	17	17	17
	9. Finding optimal timing for patient education	Correlation Coefficient	0.031	0.202	-0.125	-0.184	.486*
		Sig. (2-tailed)	0.907	0.436	0.631	0.481	0.048
		N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
10. Mastering the content of patient education	Correlation Coefficient	-0.158	-0.045	0.376	0.100	.486*
	Sig. (2-tailed)	0.546	0.865	0.136	0.702	0.048
	N	17	17	17	17	17
11. Providing individualized patient education	Correlation Coefficient	-0.140	-0.015	0.064	0.013	0.339
	Sig. (2-tailed)	0.591	0.955	0.808	0.960	0.184
	N	17	17	17	17	17
12. Co-ordinating patient education	Correlation Coefficient	-0.156	-0.044	-0.139	0.212	0.450
	Sig. (2-tailed)	0.551	0.867	0.594	0.413	0.070
	N	17	17	17	17	17
13. Able to recognize family members' needs for guidance	Correlation Coefficient	0.103	0.202	0.125	0.003	0.304
	Sig. (2-tailed)	0.693	0.436	0.631	0.991	0.236
	N	17	17	17	17	17
14. Acting autonomously in guiding family members	Correlation Coefficient	-0.004	0.148	-0.071	0.259	-0.138
	Sig. (2-tailed)	0.988	0.572	0.786	0.316	0.598
	N	17	17	17	17	17
15. Taking student nurse's level of skill acquisition into account in mentoring	Correlation Coefficient	.746**	.741**	-0.164	0.006	-0.159
	Sig. (2-tailed)	0.001	0.001	0.529	0.983	0.542
	N	17	17	17	17	17
16. Supporting student nurses in attaining goals	Correlation Coefficient	.490*	.499*	0.082	-0.127	0.318
	Sig. (2-tailed)	0.046	0.042	0.754	0.626	0.214
	N	17	17	17	17	17
17. Evaluating patient education outcome together with patient	Correlation Coefficient	-0.175	-0.008	0.093	0.080	0.452
	Sig. (2-tailed)	0.501	0.977	0.722	0.759	0.069
	N	17	17	17	17	17
18. Evaluating patient education outcomes with family	Correlation Coefficient	-0.042	0.097	0.313	-0.098	0.404
	Sig. (2-tailed)	0.872	0.711	0.221	0.710	0.107
	N	17	17	17	17	17
19. Evaluating patient education outcome with care team	Correlation Coefficient	-0.118	0.015	-0.062	0.329	-0.180
	Sig. (2-tailed)	0.652	0.954	0.813	0.197	0.490
	N	17	17	17	17	17
20. Taking active steps to maintain and improve my professional skills	Correlation Coefficient	0.117	0.315	-0.299	0.100	-0.116
	Sig. (2-tailed)	0.654	0.219	0.244	0.703	0.658
	N	17	17	17	17	17
21. Developing patient education in my unit	Correlation Coefficient	-0.051	-0.008	-0.125	0.475	0.161
	Sig. (2-tailed)	0.845	0.977	0.633	0.054	0.536
	N	17	17	17	17	17
22. Developing orientation programmes for new nurses in my unit	Correlation Coefficient	0.165	0.222	-0.084	0.413	0.054
	Sig. (2-tailed)	0.526	0.393	0.748	0.099	0.836
	N	17	17	17	17	17
23. Coaching others in duties within my responsibility area	Correlation Coefficient	0.060	0.249	-0.089	0.237	-0.137
	Sig. (2-tailed)	0.818	0.335	0.735	0.359	0.599
	N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
24. Analysing patient's well-being from many perspectives	Correlation Coefficient	0.373	.593*	-0.410	-0.014	-0.159
	Sig. (2-tailed)	0.141	0.012	0.103	0.958	0.543
	N	17	17	17	17	17
25. Able to identify patient's need for emotional support	Correlation Coefficient	0.410	.641**	-0.164	-0.178	-0.159
	Sig. (2-tailed)	0.102	0.006	0.529	0.493	0.542
	N	17	17	17	17	17
26. Able to identify family members' need for emotional support	Correlation Coefficient	0.452	.671**	-0.180	-0.149	-0.159
	Sig. (2-tailed)	0.068	0.003	0.489	0.568	0.543
	N	17	17	17	17	17
27. Arranging expert help for patient when needed	Correlation Coefficient	0.060	0.249	-0.355	0.237	-0.137
	Sig. (2-tailed)	0.818	0.335	0.162	0.359	0.599
	N	17	17	17	17	17
28. Coaching other staff members in patient observation skills	Correlation Coefficient	0.226	0.452	-0.267	0.009	-0.201
	Sig. (2-tailed)	0.383	0.069	0.301	0.973	0.439
	N	17	17	17	17	17
29. Coaching other staff members in use of diagnostic equipment	Correlation Coefficient	0.015	0.164	-0.252	0.211	-0.201
	Sig. (2-tailed)	0.956	0.530	0.329	0.416	0.439
	N	17	17	17	17	17
30. Developing documentation of patient care	Correlation Coefficient	0.063	0.049	0.093	0.157	-0.180
	Sig. (2-tailed)	0.809	0.852	0.723	0.548	0.490
	N	17	17	17	17	17
31. Able to recognize situations posing a threat to life early	Correlation Coefficient	0.255	.504*	-0.236	0.158	-0.091
	Sig. (2-tailed)	0.324	0.039	0.362	0.546	0.728
	N	17	17	17	17	17
32. Prioritizing my activities flexibly according to changing situations	Correlation Coefficient					
	Sig. (2-tailed)					
	N	17	17	17	17	17
33. Acting appropriately in life-threatening situations	Correlation Coefficient	0.255	.504*	-0.236	0.158	-0.091
	Sig. (2-tailed)	0.324	0.039	0.362	0.546	0.728
	N	17	17	17	17	17
34. Arranging debriefing sessions for the care team when needed	Correlation Coefficient	0.447	.521*	-.521*	0.283	-0.273
	Sig. (2-tailed)	0.072	0.032	0.032	0.271	0.290
	N	17	17	17	17	17
35. Coaching other team members in mastering rapidly changing situations	Correlation Coefficient	.608**	.807**	-0.464	0.125	-0.180
	Sig. (2-tailed)	0.010	0.000	0.060	0.633	0.490
	N	17	17	17	17	17
36. Planning care consistently with resources available	Correlation Coefficient	0.343	.517*	-0.207	0.013	-0.185
	Sig. (2-tailed)	0.177	0.034	0.426	0.960	0.478
	N	17	17	17	17	17
37. Keeping nursing care equipment in good condition	Correlation Coefficient	-0.147	-0.215	0.164	0.057	-0.159
	Sig. (2-tailed)	0.573	0.406	0.529	0.829	0.542
	N	17	17	17	17	17

		Months RN	Months EDRN	Hours worked	Education level	Formal training
38. Promoting flexible team co-operation in rapidly changing situations	Correlation Coefficient	.507*	0.480	-0.161	0.270	-0.063
	Sig. (2-tailed)	0.038	0.051	0.536	0.295	0.812
	N	17	17	17	17	17
39. Planning own activities flexibly according to clinical situation	Correlation Coefficient	0.255	0.219	-0.236	0.394	-0.091
	Sig. (2-tailed)	0.324	0.398	0.362	0.118	0.728
	N	17	17	17	17	17
40. Making decisions concerning patient care taking the particular situation into account	Correlation Coefficient	0.117	0.315	-0.299	0.300	-0.116
	Sig. (2-tailed)	0.654	0.219	0.244	0.243	0.658
	N	17	17	17	17	17
41. Co-ordinating multidisciplinary team's nursing activities	Correlation Coefficient	.485*	0.421	-0.298	.497*	-0.115
	Sig. (2-tailed)	0.049	0.093	0.246	0.042	0.660
	N	17	17	17	17	17
42. Coaching the care team in performance of nursing interventions	Correlation Coefficient	.529*	.716**	-0.466	0.161	-0.181
	Sig. (2-tailed)	0.029	0.001	0.059	0.536	0.488
	N	17	17	17	17	17
43. Updating written guidelines for care	Correlation Coefficient	0.274	0.422	-0.397	0.278	0.027
	Sig. (2-tailed)	0.288	0.092	0.114	0.279	0.917
	N	17	17	17	17	17
44. Providing consultation for the care team	Correlation Coefficient	0.255	0.384	-0.347	0.473	0.134
	Sig. (2-tailed)	0.323	0.128	0.172	0.055	0.607
	N	17	17	17	17	17
45. Utilizing research findings in nursing interventions	Correlation Coefficient	0.231	0.372	-0.130	.543*	0.112
	Sig. (2-tailed)	0.373	0.142	0.620	0.024	0.670
	N	17	17	17	17	17
46. Evaluating systematically patient care outcomes	Correlation Coefficient	0.424	.616**	-0.389	-0.057	0.140
	Sig. (2-tailed)	0.090	0.008	0.123	0.827	0.593
	N	17	17	17	17	17
47. Incorporating relevant knowledge to provide optimal care	Correlation Coefficient	0.226	.491*	-0.235	0.143	-0.091
	Sig. (2-tailed)	0.384	0.045	0.363	0.583	0.728
	N	17	17	17	17	17
48. Contributing to further development of multidisciplinary clinical paths	Correlation Coefficient	0.182	0.311	-0.146	0.229	0.227
	Sig. (2-tailed)	0.485	0.224	0.575	0.377	0.381
	N	17	17	17	17	17
49. Committed to my organization's care philosophy	Correlation Coefficient	-0.149	0.106	-0.018	-0.288	.515*
	Sig. (2-tailed)	0.569	0.686	0.946	0.263	0.034
	N	17	17	17	17	17
50. Able to identify areas in patient care needing further development and research	Correlation Coefficient	0.245	0.414	-0.265	0.080	0.027
	Sig. (2-tailed)	0.344	0.098	0.305	0.760	0.918
	N	17	17	17	17	17
51. Evaluating critically my unit's care philosophy	Correlation Coefficient	-0.084	0.074	-0.098	-0.006	0.354
	Sig. (2-tailed)	0.750	0.779	0.707	0.981	0.163

		Months RN	Months EDRN	Hours worked	Education level	Formal training
	N	17	17	17	17	17
52. Evaluating systematically patients' satisfaction with care	Correlation Coefficient	0.135	0.308	-0.339	0.021	0.329
	Sig. (2-tailed)	0.606	0.228	0.182	0.937	0.198
	N	17	17	17	17	17
53. Utilizing research findings in further development of patient care	Correlation Coefficient	0.033	0.152	-0.070	0.409	0.136
	Sig. (2-tailed)	0.899	0.561	0.789	0.103	0.603
	N	17	17	17	17	17
54. Making proposals concerning further development and research	Correlation Coefficient	0.202	0.282	-0.117	.507*	-0.057
	Sig. (2-tailed)	0.437	0.272	0.654	0.038	0.829
	N	17	17	17	17	17
55. Able to recognize colleagues' need for support and help	Correlation Coefficient	0.469	.648**	-0.299	0.300	-0.116
	Sig. (2-tailed)	0.057	0.005	0.244	0.243	0.658
	N	17	17	17	17	17
56. Aware of the limits of my own resources	Correlation Coefficient	.555*	.613**	-0.236	-0.059	-0.091
	Sig. (2-tailed)	0.021	0.009	0.362	0.822	0.728
	N	17	17	17	17	17
57. Professional identity serves as resource in nursing	Correlation Coefficient	0.045	0.261	-0.248	0.190	0.240
	Sig. (2-tailed)	0.865	0.311	0.338	0.464	0.354
	N	17	17	17	17	17
58. Acting responsibly in terms of limited financial resources	Correlation Coefficient	0.067	0.156	0.093	0.048	0.271
	Sig. (2-tailed)	0.797	0.551	0.722	0.854	0.292
	N	17	17	17	17	17
59. Familiar with my organization's policy concerning division of labour and co-ordination of duties	Correlation Coefficient	0.316	0.459	-0.139	-0.078	0.449
	Sig. (2-tailed)	0.217	0.064	0.594	0.767	0.071
	N	17	17	17	17	17
60. Co-ordinating student nurse mentoring in the unit	Correlation Coefficient	0.375	0.430	-0.071	-0.077	0.304
	Sig. (2-tailed)	0.138	0.085	0.786	0.768	0.236
	N	17	17	17	17	17
61. Mentoring novices and advanced beginners	Correlation Coefficient	.571*	.555*	-0.155	0.125	-0.180
	Sig. (2-tailed)	0.017	0.021	0.553	0.633	0.490
	N	17	17	17	17	17
62. Providing expertise for the care team	Correlation Coefficient	0.288	0.414	-0.300	0.322	-0.203
	Sig. (2-tailed)	0.263	0.099	0.242	0.207	0.434
	N	17	17	17	17	17
63. Acting autonomously	Correlation Coefficient	-0.348	-0.181	-0.053	0.028	-0.137
	Sig. (2-tailed)	0.171	0.487	0.839	0.915	0.599
	N	17	17	17	17	17
64. Guiding staff members to duties corresponding to their skill levels	Correlation Coefficient	0.165	0.121	0.020	0.310	-0.115
	Sig. (2-tailed)	0.527	0.643	0.940	0.226	0.660
	N	17	17	17	17	17
65. Incorporating new knowledge to optimize patient care	Correlation Coefficient	0.388	.565*	-0.413	0.080	-0.160
	Sig. (2-tailed)	0.124	0.018	0.100	0.762	0.540

		Months RN	Months EDRN	Hours worked	Education level	Formal training
	N	17	17	17	17	17
66. Ensuring smooth flow of care in the unit by delegating tasks	Correlation Coefficient	0.292	0.225	0.000	0.385	-0.138
	Sig. (2-tailed)	0.256	0.384	1.000	0.127	0.598
	N	17	17	17	17	17
67. Taking care of myself in terms of not depleting my mental and physical resources	Correlation Coefficient	0.474	0.456	-0.237	0.088	-0.201
	Sig. (2-tailed)	0.055	0.066	0.359	0.736	0.439
	N	17	17	17	17	17
68. Utilizing information technology in my work	Correlation Coefficient	0.292	0.478	-0.356	0.217	-0.138
	Sig. (2-tailed)	0.256	0.052	0.161	0.403	0.598
	N	17	17	17	17	17
69. Co-ordinating patient's overall care	Correlation Coefficient	0.093	0.275	-0.298	0.421	-0.115
	Sig. (2-tailed)	0.723	0.285	0.246	0.092	0.660
	N	17	17	17	17	17
70. Orchestrating the whole situation when needed	Correlation Coefficient	0.152	0.081	-0.411	.565*	-0.159
	Sig. (2-tailed)	0.561	0.758	0.102	0.018	0.542
	N	17	17	17	17	17
71. Giving feedback to colleagues in a constructive way	Correlation Coefficient	.489*	.633**	-0.173	0.027	0.084
	Sig. (2-tailed)	0.046	0.006	0.507	0.918	0.750
	N	17	17	17	17	17
72. Developing patient care in multidisciplinary teams	Correlation Coefficient	0.078	0.114	-0.202	0.437	0.140
	Sig. (2-tailed)	0.765	0.663	0.437	0.079	0.593
	N	17	17	17	17	17
73. Developing work environment	Correlation Coefficient	-0.019	0.055	-0.101	0.364	0.112
	Sig. (2-tailed)	0.942	0.834	0.700	0.151	0.670
	N	17	17	17	17	17

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

[c]. Some or all bootstrap sample results are missing, so no bootstrap estimation has been performed for this table.

APPENDIX M: SURVEY EXTENSION MESSAGE

Dear ED RN,

Please consider participating in my study if you have not done so. With more participants involved, the study's results will be much more meaningful.

August 6, 2019 is the new deadline to participate in my doctoral dissertation study on nurse competence specific to our ED, so additional participants can be achieved.

The questionnaire can be accessed, completed, and submitted any time using this link:
https://

The questionnaire should take less than 30 minutes to complete. An informed consent will be the initial page prior to the questionnaire to disclose the details regarding your participation. Your input will be collected anonymously and stored confidentially.

The benefits of this study, which may reasonably be expected to result, focus on providing a baseline understanding of nurse competence among 100+ RNs working in our ED and identifying opportunities to better support the RNs, close gaps in knowledge and skill, and address microsystem problems related to systems, workflows, and processes.

If you have any questions regarding this study, feel free to contact me at

Thank you in advance for taking the time to support my study!

Kind regards,

Matthew Lojo, MSN, RN-BC, CNL