

THE IMPACT OF RESIDENCY PROGRAMS ON CLINICAL DECISION-MAKING
AND LEADERSHIP SKILLS AMONG NEW SAUDI GRADUATE NURSES

by

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DEDICATION

It is with humble gratitude that I dedicate this dissertation to my mother, Huda Mohammed Al-Hussain, who told me “if anyone can do it you can!” She raised me to believe that I can achieve whatever I want in life with hard work and effort. This dissertation is also dedicated to my beloved kids, Haima and Fawaz, who had to patiently wait countless hours while I worked throughout my doctoral program and dissertation. Being by my side motivating, encouraging, providing unending support, cheering, and being loveable and patient gave me the strength and helped me to accomplish my goal. Thank you for believing in me.

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ABSTRACT

THE IMPACT OF RESIDENCY PROGRAMS ON CLINICAL DECISION-MAKING AND LEADERSHIP SKILLS AMONG NEW SAUDI GRADUATE NURSES

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Saudi Arabia is challenged by a nursing shortage as are several other countries. Due to the intense working environment, increasing patient acuity, and complex technologies, health care settings create challenges for new graduate nurses. Thus, health care institutions have adopted residency programs to help new graduate nurses to become fully competent and transition from student nurses to independent practicing nurses and bedside leaders. Nurse residency programs are reported to have proven beneficial and positive effects on new graduate nurses.

The purpose of this exploratory, descriptive study was to assess the impact of residency programs on the clinical decision-making and leadership skills of new Saudi graduate nurses who had completed a residency program within 1 week to 3 months of the time this study was conducted, and new Saudi graduate nurses who did not participate in residency programs. The conceptual framework that guided this study was Benner's Novice to Expert model.

A convenience sample of $n = 98$ new graduate nurses was collected from three hospitals in Saudi Arabia. A self-administered questionnaire was used to collect data. Clinical decision-making skills were measured using Clinical Decision Making in Nursing Scale and clinical leadership skills were measured using the Clinical Leadership Survey. An independent t -test, bivariate association, and multiple linear regression analysis were utilized to test hypotheses concerning different groups.

The findings revealed a significant difference between the residency program group and the nonresidency program group in clinical decision-making ($t = 23.25, p = 0.000$) and leadership skills ($t = 10.48, p = 0.000$). However, there were no significant differences in the average number of clinical decision-making and leadership skills based on the length of their residency program (6 months vs. 12 months). In addition, a moderate positive correlation was found between overall grade point average (GPA) and total clinical decision-making scores ($r = 0.365, p = 0.000$), and overall GPA and total clinical leadership skills ($r = 0.440, p = 0.000$). The clinical decision-making regression model explained 86.9% of the variance in total clinical decision making by the differences in age, overall GPA, and enrollment in a residency program. In addition, the clinical leadership skills regression model explained 60.6% of variance in total clinical leadership skills by the differences in age, overall GPA, total clinical decision-making scores, and enrollment in a residency program.

This study is one of the first such studies that examined the impact of residency programs on clinical decision-making and leadership skills' of new Saudi graduate nurses who completed a residency program. The findings of this study indicate that there is a

need to implement more residency programs in hospitals of Saudi Arabia. It is imperative that nurse managers and policy makers in Saudi Arabia consider these findings to improve nurses' clinical decision-making and leadership skills, which will in turn improve patient care.

CHAPTER 1. THE PROBLEM

On a daily basis in hospital settings, nurses are continually faced with demands to make imperative clinical decisions, and these decisions have an impact on the patients' health outcomes. In this era of high-acuity patients, clinical decision-making skills are imperative for professional nurses to possess (Baldwin, 2007). In fact, they are the "cornerstone skill[s] for nurses" (Baxter & Boblin, 2008, p. 345). As health care is becoming increasingly complex, nurses are required to depend on their clinical decision-making skills which are guided by the most recent science, research, and evidence-based methods to maintain patient safety and obtain positive outcomes (Siew Eng, Mohamad, Ismail, & Zain, 2011). In addition, patient outcomes are significantly influenced by the effectiveness of the clinical decision-making process nurses perform (White, 2003). In short, nurses' clinical decision-making is a complex process that affects the quality of care provided, and patient safety (Gillespie, 2010). Clinical decision-making is critical to promoting high-quality patient care. Thus, it is crucial that nurses are aware of the result of their clinical decisions.

Nurses' clinical decision-making development is vital to providing safe patient care (Lunney, 2009). Quality improvement has become the main focus of agencies accrediting health care organizations. In fact, "health care providers can only provide quality-based care when they have sufficient intelligence and critical thinking

competencies to use existing knowledge to provide health care services” (Lunney, 2009, p.5). Hence, registered nurses have a fundamental role in making effective clinical decisions (Lunney, 2009). These clinical decision-making skills will allow the nurse to provide safe and competent care. However, studies have shown that new graduates struggle to transfer knowledge and theory to practice (Clarke & Aiken, 2003; del Bueno, 2005), lack clinical decision-making skills (Gerrish, 2000; Ulrich et al., 2010) and clinical leadership skills (Berkow, Virkstis, Stewart, & Conway, 2008). Further, evidence has shown that new graduate nurses make numerous errors when faced with clinical decision making in the first years of a nursing career (Saintsing, Gibson, & Pennington, 2011). Therefore, understanding nurses’ decision making is crucial. In addition, comprehending how nurses make decisions is a requirement to improve learning and development of decision-making skills in nursing education and practice.

Moreover, nursing literature has shown the effectiveness of leadership in a nursing role on patient outcomes (Carney, 2006; Dunham & Fisher, 1990; Greenfield, 2007; Hewison & Griffiths, 2004; Sullivan & Garland, 2010). Studies conducted on nursing leadership have demonstrated a positive relationship with patient safety (Tregunno et al., 2009), lower turnover rates (Gelinas & Bohen, 2000), positive outcomes for organizations, and patients (Wong & Cummings, 2007). Yet, in nursing literature, usually nursing leadership is connected to nurse executives. In fact, nursing leadership is less often linked to bedside nursing practice. Leadership is not only a function of management, but it should be encompassed in the professional nursing role and practice. It is a vital component of the nursing profession; in reality, all nurses’ roles are leadership

roles (Curtis, de Vries, & Sheerin, 2011). Leadership can be developed and implemented at bedside; it is not merely linked to administrators and high-level managers. Thus, it is crucial that nurses who provide direct patient care acquire clinical leadership skills. This will allow nurses to direct and support patients and health care teams when providing care (Patrick, Laschinger, Wong, & Finnegan, 2011).

Clinical leadership skills focus on patients and health care teams compared to nurse executive leadership. Therefore, when new graduate nurses enter the workforce, it is essential for them to perform as leaders by advocating for patients, communicating with the health care team and patients and their families, providing assistance to others, and consulting with patients and/or patients' families regarding the most effective treatment. However, there is incongruity between undergraduate nursing education and the transition of knowledge to practice (Curtis et al., 2011), as nursing students are not always adequately prepared for the nursing leadership role during their nursing education, which impacts their leadership role in practice (Berkow et al., 2008; Heller et al., 2004).

New graduate nurses should incorporate leadership essentials while developing competency in their profession. In fact, the nursing profession is very autonomous where it requires nurses to make decisions and take responsibility for their actions (Wade, 1999). Nurses are at the first level of decision making, and permitting them independence in this area will help them to form the foundation of leadership in nursing role. It is therefore critical for new graduates to develop leadership skills from the beginning of their professional careers (Dyess & Sherman, 2011). "A leader must be an effective trustworthy advocate that inspires courageous action by using 2-way communication to

interpret needs of all included in the environment” (Dyess & Sherman, 2011, p. 320).

Along with the increasing patient acuity, nursing shortages, and complex technologies, the current health care settings create leadership challenges for new graduate nurses who want to meet the expectations stated in the 2011 Institute of Medicine (IOM) report (Dyess & Sherman, 2011).

New graduate nurses in particular are faced with demands to assume clinical leadership responsibilities in providing bedside care. According to the IOM’s (2011) *The Future of Nursing: Leading Change, Advancing Health* report, it is vital that nurses are capable of leading committees, interprofessional teams, hospitals, and health care systems (Dyess & Sherman, 2009). However, according to Heller et al. (2004), nurses are not adequately prepared for leadership in a clinician role by their nursing education programs. Regardless, nurses must be able to lead the delivery of patient care services including those provided by care team members. Equipping new graduates with the leadership skills to influence their practice environments and improve patient safety at the beginning of nursing practice is critical. In fact, new graduate leadership development needs to begin in the first year of practice to help new graduate nurses understand and influence their practice environments in order to improve the quality of care provided to patients by the care team.

It is also essential that new graduate nurses acquire clinical leadership skills to provide patients with safe care (Patrick et al., 2011), and clinical decision-making skills are critical for professional nurses to possess. The professional nurse should have the knowledge and skills to provide care. Further, the nurse should apply the knowledge and

skills by handling critical situations when providing care to patients. The nurse will use critical thinking as a tool to guide the decision made to perform the skill or the action, which is an example of a clinical leadership skill (Tregunno et al., 2009).

Benner's Novice to Expert framework presents the stages that nurses go through when they assume their professional role: "experience-based skill acquisition is safer and quicker when it rests upon a sound education base" (1984, p. xix). This model enhances the need for strong nurse residency programs to prepare new graduate nurses to be competent practitioners. This model offers nursing researchers, educators, and administrators guidelines for knowledge and skill development of new graduate nurses in the clinical area. Further, the progress of new graduate nurses through Benner's skills acquisition model has been explained as a continuously developing process from novice to expert as the development of new graduate nurses' clinical decision-making and leadership skills is embedded in the Novice to Expert framework. Knowledge and skills are developed simultaneously with the process of developing practice. This model provides validation for examining the development of clinical decision-making and leadership skills in new graduate nurses within the first six to 12 months of practice. Hence, hospitals have adapted nursing residency programs to help new graduates to develop clinical decision making and leadership practice in the nurse role, and many other skills. They also help new graduate nurses navigate from the novice stage to advanced beginner stage in their early professional development at work.

As the population ages and health care professional shortages come and go, retaining nurses becomes crucial to maintaining an adequate nursing workforce (Olson-

Sitki, Wendler, & Forbes, 2012). Hospitals are challenged to help the new graduate nurses transition in a way that will develop proficiency, promote satisfaction, improve retention (Scott, Engelke, & Swanson, 2008), and maintain patient safety. Thus, there is a need for an effective residency program for new graduate nurses (Spector & Echternacht, 2010) to fully prepare them with nursing skills such as clinical decision-making and leadership skills to provide safe and effective care. In fact, 12 years ago the Joint Commission recommended developing standardized transition programs for newly licensed nurses (Joint Commission, 2002). More recently, the IOM recommended that state boards of nursing, accrediting bodies, the federal government, and health care organizations implement nurse residency programs to support new graduate nurses in the transition process (IOM, 2011). In the United States, numerous national transition-to-practice programs have been developed (Williams, Goode, Krsek, Bednash, & Lynn, 2007). These transition programs for new graduate nurses may also be called internship, fellowship, preceptorship, mentorship, post-baccalaureate residency program and/or residency programs. Regardless of the name, these programs have emerged as a mechanism to support new graduate nurses as they assume their professional role (Olson-Sitki et al., 2012).

Even though such residency programs are widely supported and advocated, there are few studies that measure the impact of residency programs on new graduate nurses' clinical decision-making and leadership skills. Extant studies have found that new nurses' clinical decision-making and leadership skills have improved compared to the baseline throughout the period of the residency program (Anderson, Linden, Allen, & Gibbs,

2009; Goode, Lynn, Krsek, & Bednash, 2009; Halfer, Graf, & Sullivan, 2008; Kowalski & Cross, 2010).

Previous nursing research in the United States has examined the impact of residency programs on new graduates' clinical leadership skills only; none have studied both outcomes, that is, clinical decision-making and leadership skills. More importantly, there are no such studies in Saudi Arabia. Therefore, studying the impact of residency programs on new Saudi graduate nurses' clinical decision-making and leadership skills is necessary.

Problem Statement

It is widely believed by nurse educators and managers that there is a gap between nursing education and practice where the new graduate nurses' clinical decision-making and leadership skills do not meet work needs. This makes it difficult for new graduate nurses to transition along with the ever-changing, complex, fast-paced health care system. According to Benner (1984), a nurse's practice evolves from novice to expert as knowledge and skills are acquired and applied in practice. Nurse residency programs are reported to have proven beneficial and positive effects on new graduate nurses (Goode et al., 2009; IOM, 2011; National Council of State Boards of Nursing, 2009; Olson-Sitki et al., 2012; Robert Wood Johnson Foundation, 2011; Ulrich et al., 2010; University HealthSystem Consortium, 2006). Thus, health care institutions have adapted residency programs to help new graduate nurses to become fully competent and transition from a student nurse to an independent practicing nurse and a bedside leader (AL-Dossary, Kitsantas, & Maddox, 2014). Yet there is a wide variation in how these institutions

address the residency programs in terms of content and process. International research indicates that new graduates worldwide fall short in clinical decision-making and leadership skills and in what is needed to assure the quality and safety of patient care. In fact, this shortfall is still considered a challenge in determining realistic expectations of the impact of residency programs on new graduate nurses. Moreover, there is no objective evidence to support whether such findings are generalizable to Saudi Arabia.

Need for the Study

The new graduates' professional success is impacted by their ability to put knowledge into practice. Therefore, many health care institutions have adopted residency programs to help new graduate nurses transition and become fully competent, independent practicing nurses and bedside leaders. There has been no research conducted regarding the value and the impact of residency programs on both clinical decision-making and clinical leadership skills on new graduate nurses internationally, and specifically in Saudi Arabia.

In Saudi Arabia, there is a need to understand how to improve new graduate nurses' transition from student role to practitioner, especially how residency programs influence this transition with regard to clinical decision-making and leadership skills. This study sought to narrow that knowledge gap. It contributed to nursing knowledge in that there has been no study conducted in Saudi Arabia to explore the impact of residency programs on new graduate Saudi nurses' clinical decision-making and leadership skills, and such research is urgently needed to help improve the nursing residency programs in Saudi Arabia. This study may provide information to inform practical decisions of nurse

educators and nurse administrators about new graduate nurse preparation and role transition support in Saudi Arabia. Lastly, this information is particularly useful to Saudi Arabia where residency programs are still developing.

Purpose of the Study

The purpose of this exploratory, descriptive study was to assess the impact of residency programs on clinical decision-making and leadership skills of new Saudi graduate nurses who have completed a residency program within one week to three months of the time this study was conducted and new Saudi graduate nurses who did not participate in residency programs.

Research Questions

The following research questions informed this study.

1. Do new Saudi graduate nurses participating in residency programs differ significantly in clinical decision-making and leadership skills at the end of the residency program, compared to new Saudi graduate nurses not participating in residency programs?
- 2a. Are there any significant differences in the average number of clinical decision-making and leadership skills by age, marital status, overall grade point average (GPA), and area of clinical practice among residents?
- 2b. Are there any significant differences in the average number of clinical decision-making and leadership skills by age, marital status, overall GPA, and area of clinical practice among orientees?

3. Among residents, are there any significant differences in the average number of clinical decision-making and leadership skills based on the length of their residency program?
- 4a. Do significant correlations exist between age, overall GPA, total clinical decision-making scores, and total clinical leadership skills, for the entire sample?
- 4b. Do significant correlations exist between age, overall GPA, total clinical decision-making scores, and total clinical leadership skills among residents and orientees separately?
- 4c. Do age, overall GPA, and enrollment in a residency program predict clinical decision making for the entire sample?
- 4d. Do age, overall GPA, total clinical decision-making scores, and enrollment in a residency program predict clinical leadership skills for the entire sample?

Definition of Study Variables

A number of variables were used in this research. Table 1 details both their conceptual and operational definitions.

Table 1

Conceptual and Operational Definitions of Study Variables

Dependent Variables	Conceptual Definition	Operational Definition
Clinical Decision Making	“A conscious cognitive impression of how one goes about making decisions” (Jenkins, 1985, p. 242).	<p>Perception of the Saudi residents’ and orientees’ decision making in this study was measured by using the Jenkins Clinical Decision-Making in Nursing Scale (CDMNS) (Jenkins, 1985). The CDMNS consists of 40 items viewed as essential cognitive skills for professional nurses. It is measured on a 5-point Likert-type scale which requires respondents to answer from “always” (5) to “never” (1) (Appendix B). The scale has four subscales:</p> <ul style="list-style-type: none"> ▪ Search for alternatives and options domain; ▪ Canvassing of objectives and values domain; ▪ Evaluation and reevaluation of consequences domain; and ▪ Search for information and unbiased assimilation of new information domain. <p>A composite variable for each subscale was created. These composite variables were summed to represent the total score of the clinical decision making with a potential score range of 40-200. Higher scores indicate higher decision-making ability. (For more information about the dependent variable clinical decision making, see Appendix E.)</p>
Clinical Leadership	“Staff nurse behaviors that provide direction and support to clients and the health care team in the delivery of patient care” (Patrick et al., 2011, p.450). Clinical leadership skills in the practitioner role include managing resources such as supplies and services for best patient care and collaborating with the interdisciplinary team.	<p>The Saudi residents’ and orientees’ clinical leadership skills were measured using the Clinical Leadership Survey (Patrick et al., 2011). The instrument has 15 items on a 5-point Likert scale which requires respondents to answer from “Almost never” (1) to “Almost always” (5). The scale has five leadership practices: clinical expertise, effective communication, collaboration, coordination, and interpersonal understanding). The scale also includes a global clinical leadership scale composed of two items (Appendix C). A composite variable for each leadership practice was created; these composite variables represent the total score of the clinical leadership with a potential range of 15-75. A higher value represents more frequent use of the clinical leadership behavior. (For more information about the dependent variable Clinical Leadership, see Appendix E.)</p>

Independent Variables	Conceptual Definition	Operational Definition
Nurse Residency Program (NRPGM)	A Nurse Residency Program is “a joint partnership between academia and practice that is learner focused, [and where the] postgraduate experience [is] designed to support the development of competency in nursing practice. The role of the academic partner is to aid in the development of the theoretical framework and conduct the research-based program evaluation, whereas the role of the practice partner is to actualize and guide the program itself” (Herdrich & Lindsay, 2006, p.55).	The Nurse Residency Program is a postgraduate experience designed to support nursing practice proficiency development. It is designed to assist Saudi nurses to transition from academia to practice. This variable was measured by asking the new Saudi graduate nurse the following question: Are you enrolled in a NRP? Yes/No (Yes=1, No=0). If yes, could you please state the residency program hospital and location?
Residency Program Group (RP)	This group consisted of new Saudi graduate nurses exposed to residency programs, that is, residents.	The questionnaires was coded with Residency Group and the variable was measured by asking: Are you enrolled in a residency program? Yes/No (Yes=1, No=0).
Non-Residency Program Group (NRP)	This group consisted of new Saudi graduate nurses not exposed to residency programs, that is, orientees.	The questionnaires were coded with Non-Residency Group and the variable was measured by asking: Are you enrolled in a residency program? Yes/No (Yes=1, No=0).
Covariates	Conceptual Definition	Operational Definition
Demographic Characteristics	Demographics are current statistical characteristics of a population	
Age	The length of time that an individual has lived.	Age was self-reported in years (continuous variable).
Marital Status	An individual’s marital status is whether the person is single, married, divorced, or widowed.	Marital status was measured by asking: What is your marital status? 1-single, 2-married, 3-divorced,4-widowed
Nursing Degree	The type of program from which the new nurse graduated.	This variable was measured by asking: Which of the following nursing programs did you graduate from? 1-Diploma 2-Baccalaureate (traditional) 3-Baccalaureate (accelerated program) 4-Master’s
Grade Point Average (GPA)	GPA is a simple point system to average a student’s overall grades in a university.	This variable was measured by asking: What was your overall GPA when you graduated? (Self-reported GPA, potential range 2.0-5.0).

Area of Clinical Practice	Practice area pertained to the different areas of specialty that characterized where the new nurse has practiced (Chumbler, Geller, & Weier, 2000).	This variable was measured by asking the Saudi residents and orientees the following question: What is the clinical area you are working in now? Medical, surgical, OB/GYN, pediatric, ICU, CCU, oncology, and others _____ (please specify).
Length of the Residency Program	The number of months of the residency program in which the new graduate nurse is enrolled.	This variable was measured by asking: How long is your entire residency program? (Self-reported in months.)
Orientation	The residency program incorporates the hospital orientation, department orientation, and adds content and activities that facilitate the acquisition of skills needed for the role of the professional nurse in addition to the technical and clinical skills.	This variable was measured by asking: Does your residency program have an orientation? Yes/No (Yes=1, No=0). If yes, for how long? (In weeks.)
Didactic Direct Instructions Held as Part of the Residency Program	These are supplemental classes that are part of the residency program which are designed to promote the new graduate nurses' critical thinking, clinical decision-making, and leadership skills.	This variable was measured by asking: Does the residency program that you attended offer supplemental classes? Yes/No (Yes=1, No=0). If yes, what is your perception of the supplemental classes held in the residency program that you attended with regard to improving your professional development, on a scale of 1 - 5? (1-no improvement, 2-little improvement, 3-moderate improvement, 4-moderately significant improvement, 5-significant improvement)
Resident	The resident is a newly graduated registered nurse who is placed in a structured program to assist in transiting to practice. The nurse is guided by a preceptor through the entire residency (Kowalski & Cross, 2010; Baltimore, 2004).	This variable was measured by asking: Are you enrolled in a residency program? Yes/No (Yes=1, No=0).
Orientees	An orientee is a new graduate nurse employed at a health care organization who is exposed to a 2-week standard orientation.	This variable was measured by asking: Are you enrolled in a residency program? Yes/No (Yes=1, No=0).

Assumptions

One assumption of this study was that participants provided the researcher with objective responses regarding their perceptions of their clinical decision-making and leadership skills. Further, it was assumed the Jenkins (1985) Clinical Decision-Making in Nursing Scale (CDMNS) would provide significant data related to perceptions of new graduate nurses' clinical decision-making skills, and that the Clinical Leadership Survey (CLS) (Patrick et al., 2011) would provide significant data related to perceptions of new graduate nurses' clinical leadership skills. In addition, the instruments used in this study were assumed to be valid and reliable. It was further assumed that the Jenkins (1985) CDMNS and the CLS (Patrick et al., 2011) were valid and reliable measures to operationalize the components of Benner's Novice to expert framework, that is, Novice to Advanced Beginner with the participating new Saudi nurse graduates.

Limitations

The limitations of this study included the number of participants available for recruitment; thus the researcher cannot generalize the results, as the number of participants in this study cannot support the study findings. The convenience sample was a source of bias as the sample was not representative of the entire population. Further, the unique and highly specialized nature of Saudi health sectors and its hospitals affects the generalizability of the results. Another limitation of this study was self-report measures, as the new graduate nurses may have perceived themselves wrongly. They might have considered that they are excellent decision makers and bedside leaders, although they were actually not, and vice versa. Or they may not have had an accurate perception of

their clinical decision-making and leadership skills, which could have influenced participants' responses to some extent. Time was another limitation for this study, as the design might not capture the conceptual framework, and/or the within groups and between groups difference, within the given timeframe.

Significance of the Study

This is the first known study to explore the impact of residency programs on new Saudi graduate nurses' clinical decision-making and leadership skills in a nursing role. Hence, this study has significant potential to contribute to the nursing body of knowledge. This study will also help to develop the design, framework, and instruments that can be used in future research studies conducted in an international setting such as Saudi Arabia.

Because research on the impact of residency programs on new graduate nurses' skills is urgently needed in Saudi Arabia, the findings of this study are expected to help improve nursing residency programs in Saudi Arabia that exist, and to help develop new residency programs in hospitals that do not have them. In addition, it might provide information to help ease the transition of new graduates from education to practice. This study may also be an important area of research for health care administrators and nursing educators to note when designing strategies to improve the work environment and educational practices.

Chapter Summary

The development of nurses' clinical decision making is fundamental to provide safe and competent care. It is also essential that nurses are able to lead patient care in

health care settings that are becoming more complex. Therefore, equipping new graduates with leadership skills to influence their practice environments and improve patient safety at the beginning of nursing practice is also critical. Nurses are not always adequately prepared for leadership in the clinician role during their nursing education programs. Nursing literature shows that new graduate nurses are often inadequately prepared to enter practice (Beecroft, Kunzman, Taylor, Devenis, & Guzek, 2004). This gap between nursing education and practice where the clinical decision-making and leadership skills demands are not met means there is an urgent need for this study as there is practice variation between new nurse graduates and the expectation of a practicing nurse. Further, some health care institutions have adapted residency programs to assist the new graduate nurse in transition and to become fully competent from a student nurse to an independent practicing nurse and a bedside leader (AL-Dossary et al., 2014).

This chapter introduced the problem and described how this study might contribute to the knowledge of nursing because no study has examined the impact of the residency program on new Saudi graduate nurses' clinical decision-making and leadership skills. This study's results may provide information to help ease the transition of new graduates from education to practice, as well as have important implications for nursing administration, education, and practice. The purpose of the study, research questions, definition of the terms, need for the study, and statement of the problem were discussed. Assumptions and limitations, and the significance of the study, were provided. The following chapter reviews this study's literature.

CHAPTER 2. REVIEW OF THE LITERATURE

The literature review to support this study is divided into six sections. The first section discusses the conceptual framework of the study, followed by the nursing profession in the United States and in Saudi Arabia. The third section covers new graduate nurses' transition into practice, residency programs and their characteristics, orientation, and preceptors. The fourth section discusses the clinical decision models and examines factors influencing decision-making, and the fifth section examines the five practices of the exemplary leadership model and clinical leadership in nursing. Finally, this chapter discusses the extant research which supports this study.

A review of the literature was conducted to assess and evaluate the state of the science in the specific area of interest, particularly the impact of residency programs on new graduate nurses' clinical decision-making and leadership skills. An electronic search was conducted between 1980 to 2013 using databases of the scientific literature in Medline, PubMed, Cochrane EPOC, Cumulative Index to Nursing and Allied Health Literature database guide (CINAHL), and PsychInfo. The search terms used were decision-making, clinical decision-making, nursing, new nurse, new graduate, new graduate nurse, clinical leadership, leadership, residency programs, residency, internship, preceptorship, fellowship, post-baccalaureate program and Saudi Arabia. A literature search was conducted to identify primary published studies with data on clinical decision

making, clinical leadership, new graduate nurses, and residency programs. All peer-reviewed journal articles that related to the impact of residency programs on new graduate nurses' clinical decision-making and leadership skills that were published in English were examined. A total of 145 articles and two dissertations were included.

Few studies measured the impact of residency programs on new graduate nurses' clinical decision-making and leadership skills (Anderson et al., 2009; Goode et al., 2009; Halfer et al., 2008; Kowalski & Cross, 2010). It is essential that the new graduate nurse acquire clinical decision-making and leadership skills to provide patients with safe and competent care (Gillespie, 2010; Patrick et al., 2011), however, there is no study that explored the impact of residency programs on new Saudi graduate nurses' clinical decision-making and leadership skills. The aim of this literature review is to evaluate what is already known about residency programs and their impact on new graduate nurses' clinical decision-making and leadership skills. In addition, the review identified gaps in the literature related to the phenomenon of residency programs' impact on new graduate nurses' clinical decision-making and leadership skills. The literature was later used to interpret the findings of this study.

Conceptual Framework

The theoretical framework that guided this study is Patricia Benner's Novice to Expert Model (1984). Benner argued that "experience-based skill acquisition is safer and quicker when it rests upon a sound education base" (1984, p. xix). This articulates the need for strong nursing educational and residency programs upon which nurses can build their skills.

Benner's model was developed using the Dreyfus Model of Skill Acquisition (Dreyfus & Dreyfus, 1980), which identified five levels of competence in general skills acquisition: novice, competent, proficient, expert, and master. Benner's novice-to-expert model has five stages of skill acquisition and development specific to clinical nursing: novice, advanced beginner, competent, proficient, and expert. In the novice stage, the new graduate nurses learn through instruction, as the novice nurses have no experience in the environment in which they are expected to perform and practice. The novices have no experience in nursing, and have difficulty assessing and prioritizing patients' information. This is applicable to new graduate nurses who enter the workforce immediately after graduation.

When nurses move to the next stage of Benner's model, advanced beginner, they can demonstrate a marginally acceptable performance. At this level, nurses are aware of the meaning of a critical situation; however, they may not be able to comprehend or anticipate the care needed and are not able to apply clinical decision-making and leadership skills. By the end of the residency program the experience that the new graduate nurses were exposed to has helped them to develop and grasp aspects of the situation, but they will still have trouble with the larger picture or perspective. Yet, they are able to demonstrate adequate performance.

In the competence stage, individuals classify, arrange, and prioritize their actions. Competent nurses begin to see their actions through long-range planning (Benner, 1984). Additionally, competent nurses are able to decide which aspects of a clinical situation are considered to be significant, serious, and critical. This practice stage necessitates

planning, considering, analyzing, and prioritizing the actions to be taken (Fero, Witsberger, Wesmiller, Zullo, & Hoffman, 2009). Thus, the nurses in this stage start developing some mastery of the clinical situation through time management and organization of tasks. According to Benner (1984), it takes the nurse two to three years of experience to reach this stage.

Proficiency is the following stage in the Benner model. The nurses at this stage can organize, recognize, and comprehend problem situations; however, they still need critical thinking to come to decisions. In fact, nurses begin to perceive the meaning of a clinical situation through previous experience, and frequently alter plans upon the response to the situation or to the decision that they made (Fero et al., 2009). In this stage, the nurses start to look at clinical situations as a whole, as they now have the background information they need to grasp the changing importance of a situation.

Finally, in the expert stage, the nurses get to a position where they comprehend the clinical tasks and the decision that should be made. Expert nurses act naturally without clearly stating that they are making decisions and solving problems. At this stage, nurses have an intuitive grasp of a critical clinical situation and comprehend what is needed to make specific decisions (Benner, 1984). Benner's model of skill acquisition assumes that clinical decision-making and leadership abilities will increase as a result of experience and intuition. When nurses reach the expert level in practice, they apply intuition, which acts as a valid component in decision making and leadership practice. Benner (1984) demonstrates how the inexperienced or novice nurse will use procedures and guidelines to make decisions, but as the nurse gains experience, decision making

becomes intuitive. According to a later study by Benner (2001), novice nurses need specific rules to guide their actions.

This current study, then, examined the transition of new Saudi graduate nurses from the novice level to the fully functional advanced beginner level at the end of the residency program, and the program's impact on new graduate nurses' clinical decision-making and leadership skills. Developing new graduate nurses' clinical decision-making and leadership skills is embedded in Benner's Novice to Expert framework: It occurs simultaneously with the process of developing practice. Thus, this model provides validation for examining the development of clinical decision-making and leadership skills in new Saudi graduate nurses who have completed a residency program within one week to three months. In essence, hospitals have adapted nursing residency programs to help new graduates develop clinical decision making and leadership practice, and many other skills. In addition, these residency programs help new graduate nurses transition from the novice stage to the advanced beginner stage.

The characteristics of residency programs might have a relationship with the new graduate nurse's clinical decision-making and leadership skills, as it offers additional support during the transition phase from being a student nurse to an independent practicing nurse and a bedside leader. The residency programs start with a 2-week orientation, which includes an introduction to policy, guidelines, rules, and regulations of the hospital; intravenous therapy education and practice; infection control; hospital computer systems and programs; and a Basic Life Support course. The orientation in the residency programs incorporates the hospital orientation, department orientation, and

adds content and activities that facilitate the acquisition of skills needed for the role of the professional nurse, in addition to the required technical and clinical skills for the new graduate nurse. Further, throughout the residency programs, the new graduate nurses are introduced to policies and procedures that guide patient care. This is the phase where they start to strengthen their procedural skills and develop time management, critical thinking, decision-making, and leadership skills. Having a strong base in those skills gives the new nurses confidence upon entering practice.

A preceptor is allocated for each new graduate nurse to constantly help guide him or her, provide clinical instruction, and lead by example. These preceptors focus on professional growth needs of the new graduate nurse and do not teach technical skills needed to provide care. Additionally, the residency programs include didactic direct instructions that promote the new graduate nurse's critical thinking, clinical decision-making, and leadership skills, which help with the professional growth of the new graduate nurse in that they meet developmental needs specific to the transition period between novice and advanced beginner. The residency program is an invaluable instructional tool used to help develop the nursing skills of new graduate nurses.

Thus, the new graduate nurse develops critical thinking ability, clinical decision-making skills, and leadership skills while enrolled in the residency program. This can be evaluated by assessing the new graduate nurse's ability to ask questions, analyze, synthesize, and interpret information. New graduate nurses must learn how to be clinical decision makers and leaders by being able to choose from different alternative courses of action, as well as to plan and prioritize patient care. The new graduate nurses also need to

learn how to be an advocate for patients; to communicate with the health care team, patients, and their families; to deliver information; as well as to delegate tasks appropriately, negotiate, provide assistance to others, and consult with the patient, and/or the patients' families regarding the most effective way to administer treatments.

The conceptual model for this study (Figure 1) was developed based on Benner's Novice to Expert Conceptual Model (1984).

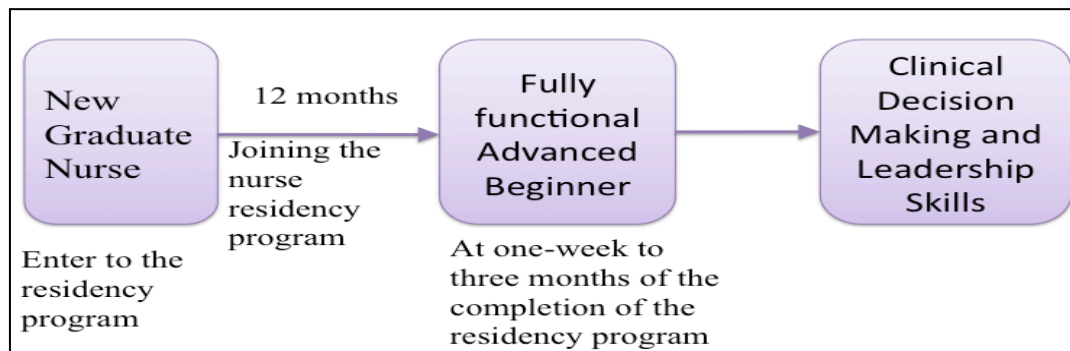


Figure 1. The conceptual model for this study.

The Discipline of Nursing

Nursing in the United States

There is a critical nursing shortage globally (AL-Dossary, Vail, & Macfarlane, 2012; Aldossary, While, & Barriball, 2008; Almalki, FitzGerald, & Clark, 2011; American Association of Colleges of Nursing [AACN], 2008; Bureau of Labor Statistics, 2008). In the United States (US), according to the Bureau of Labor Statistics, registered nurses' employment is expected to grow by 26% from 2010 to 2020 as a result of numerous factors such as technological innovations and improvement, the increased focus on preventative care, and the aging baby-boomer population who will demand

more health care services as they live longer and lead active lives (Bureau of Labor Statistics, 2012). However, Buerhaus, Staiger, and Auerbach (2008) stated that the US would experience a shortage of more than 500,000 registered nurses by the year 2025. Additionally, according to the Bureau of Labor Statistics' *Occupational Outlook Handbook* (2011), by the year 2018 there will be a need for more nurses to replace the positions that the experienced nurses will leave when they retire; thus, there will be a need to fill 581,500 registered nurses' positions. A Robert Wood Johnson Foundation and IOM (2010) report states that the current nursing shortage is not just viewed as a workforce issue: It is a quality-of-care issue as nurses deliver the majority of direct patient care. Registered nurses (RNs) comprise 80% of professionals in the health care system, representing 2.6 million jobs in the US (Bureau of Labor Statistics, 2011).

Along with this expected critical nursing shortage, new graduate nurses are entering the workforce and are expected to fill these positions (Goode et al., 2009). However, these new graduates are not adequately prepared for practice (Beecroft et al., 2004; Smith & Crawford, 2002). Therefore, health care organizations will face a problem that needs to be addressed: The majority of their nurses will be recent graduates and will not have enough experience to guide the bedside practice. Implementing nurse residency programs will help to address the proficiency gap that will occur as a result of retiring expert nurses and hiring new graduates who will enter the workforce and practice at the bedside (Orsolini-Hain & Malone, 2007).

Policy makers need to recognize that by 2020, there will be a need for an estimated additional 285,000 nurses (Benner, Sutphen, Leonard, & Day, 2010).

Additionally, the nursing shortage will worsen since the proportion of the population over age 65 will increase from 12.7% in 2000 to 20% by 2030 as approximately 78 million baby boomers reach the age of 65, which will increase the demand for care provided by nurses (Kovner & Kickman, 2011). New graduate nurses must be competent in nursing practice; moreover, to meet educational and employer standards and most importantly to prepare graduate nurses for entry-level practice, there is a need for enhanced understanding of the impact of residency programs on new graduate nurses' clinical decision-making and clinical leadership skills.

These statistics show the severe shortage of nurses in the US; as health care is becoming increasingly complex, nurses have to depend on their clinical decision-making and leadership skills that are guided by the most recent science, research, and evidence-based methods to maintain patient safety and obtain positive outcomes (Siew Eng et al., 2011; Taylor, 2008). The nursing role has also progressed from a task-oriented job to that of a skilled professional, so the profession of nursing necessitates cognitive and relational skills (Krumwiede, 2010). Consequently, nurses must be able to meet the demands of the health care that is becoming increasingly complex, and the technological innovations and complexity that are required when providing care to patients (Bucknall, 2003). According to Fero et al. (2009) around 25% of the novice nurses in their study had inadequate critical thinking and clinical decision-making abilities. Additionally, nursing literature reports that new graduate nurses are concerned about meeting the demands of increasingly complex and ever changing health care systems (Gerrish, 2000; Heslop, McIntyre, & Ives, 2001; Utley-Smith, 2004).

According to the National Council of State Boards of Nursing (NCSBN), new graduate nurses provide nursing care to severely ill patients and more than 40% of these nurses' report making medication errors (NCSBN, 2012). In addition, between 49% and 53% of new graduate nurses are involved in errors in nursing care (Smith & Crawford, 2003). Further, approximately 30% of newly graduated registered nurses who were surveyed using the Performance Base Development Systems (PBDS) demonstrated only entry-level competence in critical thinking (del Bueno, 2005). Evidence shows that new graduate nurses lack the minimum competence required for nursing practice. For example, according to Heller et al. (2004), nurses are not adequately prepared for the role of leader during their nursing education programs. Therefore, there is a gap between nursing education and practice where the clinical decision-making and leadership demands are not met. This gap can possibly be filled by professional training programs such as residency, fellowship, preceptorship, and/or internship programs (Curtis et al., 2011).

A qualitative study by Mallory, Konradi, Campbell, and Redding (2003) found that novice nurses lack confidence, the ability to connect with people, the ability to cope, and even lack basic miscellaneous clinical skills. They also found that these nurses have difficulty in prioritizing, have a lack of organization skills, and have an inability to see the whole patient. Similarly, another qualitative study found that novice nurses lack clinical knowledge, confidence, and critical thinking ability to make decisions (Casey, Fink, Krugman, & Propst, 2004).

Nurses who are ineffectively or poorly prepared are at higher risks of committing serious errors as they start to practice. Significantly, patient safety can be directly affected by the nurses' capability to make clinical decisions (IOM, 2004). According to Buerhaus et al. (2005), nurses are required to have the ability to recognize patients' condition changes, perform independent nursing interventions, anticipate orders, and prioritize. These actions require critical thinking ability, advanced problem-solving skills, the ability to communicate clearly, and clinical decision-making and leadership skills (NACNEP, 1996). The inability of a nurse to set priorities, and to work effectively and efficiently, may delay patient treatment in a critical situation which could result in serious life-threatening consequences (Redfern, Norman, Calman, Watson, & Murrells, 2002).

Nursing in Saudi Arabia

The profession of nursing in Saudi Arabia has advanced in many areas such as education, manpower, and practice. Yet, Saudi Arabia is challenged by a nursing shortage as are many other countries. The severe shortage of Saudi nurses is accompanied by high turnover rates. In fact, most of the nurses are expatriates, as nurses come from over 40 different countries, including the United Kingdom, Ireland, and the US (Aboul-Enein 2002; AL-Dossary et al., 2012; Aldossary et al., 2008, Almalki et al., 2011). According to the Ministry of Health (MOH) (2008) statistics, the total number of nurses in all Saudi health care sectors is approximately 101, 298; however, Saudi nurses comprise only 29.1% of the total nursing workforce. This number increased from 9% in 1996 to 21.5% in 2002 and 29.1% in 2008 (Almalki et al., 2011). Although these numbers show the

growth of the number of Saudi nurses in the recent years, it still is not enough to meet Saudi Arabia's actual demand.

Table 2

Nursing Personnel in the Health Care Sectors of Saudi Arabia

Sector	Number	Saudis (%)	Non-Saudis (%)
Ministry of Health	55,429	24,689 (44.5%)	30,740 (55.5%)
Other Government Facilities	23,536	3,908 (16.6%)	19,628 (83.4%)
Private Sector	22,333	909 (04.1%)	21,424 (95.9%)
Total	101,298	29,506 (29.1%)	71,792 (70.9%)

Note. Data from *Health Statistical Yearbook* by Ministry of Health, 2008, Riyadh.

The MOH provides the health care in Saudi Arabia. The nursing manpower in the MOH is 55,429, yet only 44.5% are Saudis (MOH, 2008) (Table 2). Additionally, according to the Saudi Council for Health Specialties in 2006, the total number of positions that needs to be filled by Saudi nationals in the nursing profession was 53,563 (as cited in Abu-Zinadah, 2006). Thus, Saudi Arabia is faced with the same problem as the US, and its health care organizations need to address this problem by implementing nurse residency programs to help improve the new graduate Saudi nurses' competencies, which may in turn reduce the turnover rate and improve patient care.

Nursing Education in Saudi Arabia

In 1958, the first Health Institute Program in Riyadh was initiated by the collaboration of the MOH and the World Health Organization. There were only 15 Saudi male students enrolled; they had elementary school preparation and were admitted to a 1-year program. Two more Health Institute Programs were later initiated in Riyadh and Jeddah city that enrolled Saudi females (Tumulty, 2001). Graduates of these Health

Institute Programs worked as nurses' aides (Miller-Rosser et al., 2006). The MOH then extended these programs to 3 years and established more institutes, but these institutes would only recruit students with middle school preparation (Miller-Rosser et al., 2006). In 1990, a total of 17 Health Institutes offered nursing education for females and 16 for males. In addition, colleges were established in 1992 to improve the training level of Saudi nurses who are prepared at the high school level (Abu-Zinadah, 2006). Graduates of these two programs were awarded a Diploma in Nursing and classified as technical nurses (Saudi Commission for Health Specialties, 2007).

In 1976, the Saudi Ministry of Higher Education established the first nursing Baccalaureate program, a Bachelor of Science in Nursing (BScN), in Riyadh. Two more BScN programs were initiated at King Abdulaziz University in Jeddah in 1977 and at King Faisal University in Dammam in 1987 (Tumulty, 2001). The first Master of Science in Nursing in Saudi Arabia was introduced in Riyadh at King Saud University in 1987; nurses are awarded a MSN and classified as specialists (Saudi Commission for Health Specialties, 2007).

New Graduate Nurse Transition Into Practice

In the US and internationally, the intense working environment, increasing patient acuity, nursing shortages, and complex technologies, health care settings create challenges for new graduate nurses. Health care needs are becoming increasingly complex and technology is expanding to accommodate patients' needs (Taylor, 2008), which requires the new graduate nurse to possess clinical decision-making and leadership skills. Although approximately 90% of nurse education leaders in the US believe that

new nurse graduates are adequately prepared to enter the workforce and practice, 90% of nurse leaders in the hospital setting disagree (Berkow, Virkstis, Stewart, & Conway, 2009). The Bureau of Labor Statistics reports that registered nurses' employment is expected to grow by 26% from 2010 to 2020. In fact, 10% of the nursing workforce in hospital settings is composed of new graduate nurses, and this number is expected to increase as a result of the aging nurses reaching retirement (Berkow et al., 2008; Bureau of Labor Statistics, 2011). Anecdotally there are similar beliefs in Saudi Arabia, yet no research has been conducted. Therefore, this study is important in providing evidence to support these beliefs.

Although the first year of employment of a new graduate nurse is identified as one of the most stressful times in a nurse's career (Delaney, 2003; Manias, Aitken, & Dunning, 2004), it is expected that the new nurse graduate perform at levels consistent with experienced nurses, along with learning the clinical setting policies and procedures (Johnstone, Kanitsaki, & Currie, 2008). The new graduate nurse's role changes from being a student nurse where the objectives, guidelines, and responsibilities are clearly defined, and where support and assistance is provided, to becoming an independent professional nurse. This transition process can be very stressful, overwhelming, frustrating, and even devastating (Yoder-Wise, 2007). However, according to Yoder-Wise, there are five strategies to support the new graduate role of transition which are to "strengthen internal resources; assess the organization's resources, culture, and group dynamics; negotiate the role; grow with a mentor; and develop management knowledge and skills" (2007, p.524).

Terrill defines transition as “a process or period in which something undergoes a change and passes from one state, stage, form or activity to another” (2007, p. 1). According to Thrysoe, Hounsgaard, Dohn, and Wagner (2011), new graduate nurses often depict the transition from being a student nurse to being an independent professional nurse as a stressful experience resulting from a heavy workload without peer support. This is also due to the new graduate nurse’s lack of ability to translate theoretical knowledge to hands-on practical skills that will be applied in the clinical setting. In fact, numerous studies have stated that the first three months of nursing practice for new graduate nurses is the most stressful time (Bowles & Candela, 2005; Delaney, 2003; Godinez, Schweiger, Gruver, & Rayan, 1999; Halfer & Graf, 2006; Uhlman, 2002). Therefore, new graduate nurses will recognize immediately in the first three months that there is a gap between their nursing education and the actual nursing profession in clinical settings (Godinez et al., 1999; Goode et al., 2009). At this point, the new graduate nurses will require a significant amount of support and preceptorship to assure that they become more confident in their knowledge, skills, and competency. Thus, the use of residency programs is significant in the transition process.

The gap between education and practice has negative consequences on the new graduate nurse such as stress, burnout, and potentially increased turnover. In addition, this gap can impact patient care. According to Aiken, Clarke, Sloane, Sochalski, and Silber (2002), the increased number of patients assigned to a nurse might increase the risk that the new graduate nurse will result in failure to rescue. A more striking statistic is that adding one more patient per registered nurse workload will increase the odds of failure-

to-rescue by 7% (Altier & Krsek, 2006). The transition experience for the new graduate nurse is described as the “experience of moving from the known role of a student to the relatively less familiar role of professionally practicing nurse” (Duchscher, 2009, p.1105); also, the transition can be associated with a reality shock over the “apparent contrast between the relationships, roles, responsibilities, knowledge and performance expectations required within the more familiar academic environment to those required in the professional practice setting” (p. 1105). The new graduate’s journey from education to practice is often overwhelming and devastating. This is an extremely stressful period for new graduates, with high levels of stress from the inability of new nurses to properly transition from education into practice (NCSBN, 2012; Oermann & Garvin, 2002; Shintaku, 2004). A major source of stress involves the need to make complex and ever-changing decisions about patients’ conditions (Manias et al., 2004). That is why residency programs are crucial in helping new graduate nurses in the first year ease the transition to practice.

Kramer’s Transition Shock

In nursing literature, Kramer (1974) first reported the concept of reality shock, also called transition shock. According to Kramer, a transition shock occurs to the new graduate nurse as the nurse navigates from being a student nurse to becoming an independent professional practice nurse, and defined reality shock as “the reactions of new workers when they find themselves in a work situation for which they have spent several years preparing, for which they thought they were going to be prepared, and then suddenly find they are not” (1974, p. 7). The concept describes the transition process that

a new graduate goes through, from being a nursing student to a practice nurse, and the conflict between the nursing roles and the reality of the clinical setting. Further, Kramer stated that this reality shock could lead the new graduate nurse not to show up for duty, or leave her or his job. This reality shock can impact graduate nurses during the first 12 to 18 months of their careers for three reasons: first, as the new graduate nurse's role changes from a student nurse to a professional nurse in the clinical setting (Kramer, 1974); second, the new graduate nurse does not receive feedback on her or his performance; and finally, the new graduate nurse is not able to integrate into the culture of the clinical setting. Thus, in the first year of practice the new graduate nurse clearly needs support and guidance to cope with the new role, stressors, and passing through reality shock (Fink, Krugman, Casey, & Goode, 2008; Symes et al., 2005). The existence of transition shock reinforces and emphasizes the need for and significance of residency programs and how they will help new graduate nurses adjust, cope, adopt, and develop their clinical decision-making and leadership skills in the first year of practice (Newhouse, Hoffman, & Hairston, 2007; Pine & Tart, 2007; Salt, Cummings, & Profetto-McGrath, 2008).

According to Kramer (1974), there are four phases of reality shock the new graduate nurse goes through in the transition from student nurse to professional nurse: honeymoon, shock, recovery, and resolution. The first phase is honeymoon, where the new graduate nurse just graduated and is enthusiastic about being a professional nurse and is excited about his or her role. The new graduate nurse depicts the nursing profession as a great world. The second phase is shock and rejection; the new graduate

nurse in this phase is starting to see an inconsistency between what was learned in school and the real world. There is incongruence in the system of values in the clinical setting the nurse works at and the roles and values that the nurse was taught at school. Thus, new graduate nurses will assume that nursing is not what they expected, and they will feel irritated, anxious, depressed, and may have sleeping problems which are symptoms of burnout. The third phase is recovery, where the new graduate nurse recovers and regains his or her perceptions about nursing. During this phase, most of the burnout symptoms will decrease or disappear. The new graduate nurse will start to look at the nursing profession and situations in an objective manner. Finally, the last phase is the resolution, where the nurse starts to cope and adjust effectively, or the nurse can reject the nursing role. At this time, the symptoms of burnout might worsen.

Turnover

In nursing literature there are concerns about new graduate nurses' high turnover rates (Scott et al., 2008) and poor technical competencies which have urged the development of nursing residency programs (Johnson & Cleary, 2006). According to Goode et al. (2009), nurse residency programs are crucial to help new graduate nurses transition into their first job in an acute care hospital. In fact, additional competencies, skills, and knowledge above and beyond those obtained in nursing educational programs are needed for a new graduate to successfully transition to the professional practice role (Hillman & Foster, 2011). Thus, new graduate nurse residency programs have grown significantly within the past seven years in the US (Kowalski & Cross, 2010).

Early in their career, the first positions that new graduate nurses take are known to shape their perceptions of nursing roles, professional growth, job satisfaction, and commitment (Anderson et al., 2009). Numerous studies have shown that new graduate nurse turnover ranges from 35% to 60% in the first year of employment, resulting in severe financial loss to health care institutions (Fink et al., 2008; Halfer & Graf, 2006; Halfer et al., 2008; Krsek, 2011). If a nurse leaves the job in the first year, it costs the health care institution approximately \$40,000 (Halfer & Graf, 2006). Further, it will cost the health care setting 75% to 125% of the average annual salary of an organization's nurses (Pine & Tart, 2007). Thus, turnover is a problem that health care settings need to address to avoid bearing these high expenses. Introducing nurse residency programs can solve this problem, as evidence shows that it has decreased new graduate nurse turnover, and has improved their competency and confidence (Valdez, 2008). Further, Ulrich et al. (2010) reported that turnover has decreased from 7% during the first 12 months of employment to 4.3% in 2009 as a result of implementing nursing residency programs. A prospective, longitudinal study ($n=316$) was conducted in the US by Altier and Krsek (2006) to examine the effect of a 1-year residency program on new graduate nurses' job satisfaction and retention at six academic medical centers. The study found that turnover among new graduate nurses within their first year of employment had decreased by 9.8%, showing that the residency program was in fact effective. In addition, Hillman and Foster (2011) reported in their study that after implementing a transition program for the hired new graduate nurses, retention increased to 72.5% from 50% five years earlier. In addition, an 18-week Versant nursing residency program decreased the new graduate

nurse turnover rates, and improved nurses' competencies, job satisfaction, and self-confidence; as a result, retention rates were about 90% (Kowalski & Cross, 2010).

Institutional Approach Applied to Ease New Graduate Nurses'

Transition

In the nursing profession, the transition period for new graduate nurses between graduation and the first year has been an issue for many years (Fink et al., 2008). Nurse residency programs support new graduate nurses, ease the transition period, and help with skill acquisition. Nurse residency programs have helped to increase recruitment, improve retention, and/or increase commitment to the organization, and have led to the satisfaction of new graduate nurses (Joint Commission on Accreditation of Healthcare Organizations, 2002; Olson-Sitki et al., 2012). The IOM report (2011) *The Future of Nursing: Leading Change, Advancing Health* emphasized the need to establish residency programs for new graduate nurses at clinical settings, and highlighted the advantages of developing these programs.

In fact, the literature reports that implementing residency programs in clinical settings will provide advantages to new graduate nurses, organizations, and patients. Residency programs will equip new graduate nurses with the skills needed to navigate the complex health settings. Such programs are an opportunity to support the new graduate nurse's transition to practice and to develop proficiency. Residency evaluations show improvement in leadership and communication skills and decreases in stress and turnover (Robert Wood Johnson Foundation, 2011). Residency programs are designed to offer the new graduate nurses learning opportunities and clinical preceptorship (Halfer et al.,

2008). They improve nurses' job performance and satisfaction, and enhance patient safety. Although the Joint Commission did not specify the length of the residency program for new graduate nurses, they gave a definition for the residency period as follows: "planned, comprehensive periods of time during which nursing graduates can acquire the knowledge and skills to deliver safe, quality care that meets defined (organizational or professional society) standards of practice" (IOM, 2010, p. 5).

The length of the nurse residency program varied in the literature from less than 1 month to 18 months (Halfer & Graf, 2006; Owens et al., 2001; Rush, Adamack, Gordon, Lilly, & Janke, 2013). A 12-month residency program was the most common (Altier & Krsek, 2006; Beecroft, Kunzman, & Krozek, 2001; Pine & Tart, 2007). Evidence suggests that longer residency programs resulted in better retention, confidence, competencies, skill acquisition, and new graduate satisfaction (Rush et al., 2013; Scott et al., 2008). Williams, Goode, Krsek, Bednash, and Lynn evaluated the length of the residency program and stated that "internships or residencies that terminate before one year may not provide sufficient time for new graduates to establish equilibrium in the clinical environment and may leave new graduates 'on their own' at an especially difficult time" (2007, p. 364). In addition, Krcmer (1991) stated that an individual needs at least 1 year to master a job due to the health care culture emphasis on specialization, technology, and perfectionist standards. It is also recommended that the ideal length of the residency program for new graduate nurses is 9 months so that they can be supported through the difficult transition process.

Nurse Residency Programs

In nursing literature, residency programs were first reported in the 1980s (Altier & Krsek, 2006). According to Fink et al., (2008), numerous hospitals have developed residency programs for new graduate nurses due to the impending expertise gap and the need to assist new graduate nurses in their transition to practice (AACN, 2002). Herdrich and Lindsay defined a residency program as

a joint partnership between academia and practice that is learner focused, [and where the] postgraduate experience [is] designed to support the development of competency in nursing practice. The role of the academic partner is to aid in the development of the theoretical framework and conduct the research-based program evaluation, whereas the role of the practice partner is to actualize and guide the program itself. (2006, p. 55)

Herdrich and Lindsay emphasized that the partnership formed in the residency programs is critical for the transition from education to practice. Further, they stated that extending the orientation time in a residency program promotes the learning experience for new nurse graduates.

According to the National League for Nursing (1983), residency programs are formal contracts between the new graduate nurse and the employer, describing and defining activities. Thus, residency programs are an opportunity for the new graduate nurse to gain experience and professional development (AACN, 2002). Altier and Krsek (2006) indicated that nurse residency programs contribute significantly to the success of the new graduate nurse as they are designed to provide the new graduate nurse with

additional support, mentoring, and guidance as they transition into practice. Further, nurse residency programs provide the novice and the advanced beginner nurse with a supportive, protective, and nurturing environment to develop critical thinking, clinical decision-making, problem solving, and leadership skills (Altier & Krsek, 2006).

According to Valdez (2008), nurse residency programs improved new graduate nurses' competencies and self-confidence and decreased the turnover rate. Further, evidence has shown that nurse residency programs have improved the new graduate nurses' commitment to the nursing profession, and have increased the overall retention of new graduate nurses (Altier & Krsek, 2006; AACN, 2002; Currie, Vierke, & Greer, 2000; Fink et al., 2008; Hunter, Pollman, & Moore, 1990; Kasprisin & Young, 1985; Scott et al., 2008). According to Benner, Tanner, and Chesla (2009) many health care facilities have developed clinical programs to assist the new graduate nurse into a practice role in the hospitals. Hartshorn (1992) conducted a survey on new graduate nurses in critical care and enrolled in a preceptorship program. This study proposed that these types of programs should include a minimum of 60 hours of theory and three to four months of clinical practice with preceptors to improve the nurses' transition process.

The residency programs are developed to improve new graduates' skills, confidence, and experience in promoting their transition into the nursing workforce. According to the NCSBN (2009), the transition programs reduced turnover in that first year of practice, and promoted professional growth of the new graduate such as hands-on nursing skills, clinical decision-making and leadership skills, satisfaction, and retention (Scott et al., 2008). In fact, nurse residency programs expand the traditional orientation

and consist of planned experiences that enable the new graduate nurse to understand his or her scope of practice in the nursing profession. These residency programs often extend the regular period of orientation up to a year in length (Olson-Sitki et al., 2012). The new graduate residency programs have numerous advantages to new graduates, health care organizations, and patients (Krozek, 2008). They improve new graduate core competencies, skills, and increase self-confidence (Blanzola, Lindeman, & King, 2004). Further, the residency programs offer new graduate nurses guidance and support to cope with the stressors in the first year of practice (Fink et al., 2008; Symes et al., 2005). Residency programs also increase new graduate retention (Newhouse et al., 2007; Pine & Tart, 2007; Salt et al., 2008).

Residency programs provide new graduate nurses with guidance and support through mentoring and expanding their experience in managing complex and changing patient conditions, failure to rescue, and in numerous nursing specialty areas such as oncology, critical care, obstetrics and gynecology, and hemodialysis (University HealthSystem Consortium and AACN, 2007). According to the Canadian Institute for Health Information (CIHI) (2012), residency programs have been implemented in many practice settings, with acute care being the dominant setting where new graduates are working. Also according to the CIHI, residency programs vary by program components such as educational content and approach, type of preceptorships, mentorships, and unit-specific orientation. They also differ by program length and the number and type of clinical rotations (Rush et al., 2013).

Nursing Orientation

Orientation to a clinical setting is crucial as it facilitates the transition process of new graduate nurses. The NCSBN defined orientation as

The process of introducing staff to the philosophy, goals, policies, procedures, role expectations, and other factors needed to function in a specific work setting.

Orientation takes place for both new employees and when changes in nurses' roles, responsibilities, and practice settings occur. (2009, p.1)

According to Scott et al. (2008), orientation plays a critical role in the satisfaction and retention of the new graduate nurse. Currently, however, orientation to acute care nursing settings specifically is more complex than in the past, due to higher patient acuity and the presence more advanced technology (Contino, 2002). Meyer and Meyer (2000) noted that if the new graduate nurses were introduced to an effective orientation program, it could improve the retention rate of those nurses.

Further, Dracup and Morris (2007) stated that residency programs will improve the quality and safety of care provided to patients, and lower the financial cost that results from high turnover rates. Evidence has shown that nurse residency programs have significantly improved the new graduates' ability to organize, prioritize, communicate, develop leadership skills, and increase their competency and confidence (University HealthSystem Consortium, 2006; Valdez, 2008). The previous review of the literature regarding residency programs shows the significance of such programs and demonstrates that health care organizations should adapt these programs to improve the quality of care provided within these organizations.

Preceptor Role's Influence on New Graduate Nurses' Transition

Process

A preceptor is an experienced registered nurse who is always available for the new graduate nurse to help guide him or her, provide one-to-one clinical instruction, assist in setting priorities, and lead by example. The preceptor helps the new graduate nurse navigate through the health care system while enrolled in a residency program. Further, the preceptor ensures that the new graduate nurse moves through the developmental stages from novice to advanced beginner as described by Benner (1984). A preceptor is also defined as a “registered nurse who supports, guides, teaches, and coaches another in their designated area of practice for a specified period of time” (Young & Paterson, 2007, p. 575). Gordon (2000) stated that a preceptor is an individual that is assigned by the hiring institution; it is usually an experienced nurse that is assigned to a new graduate nurse. Usually preceptors are paired with the new graduate nurse for a specified period of time.

The presence of an experienced and trained preceptor in nurse residency programs is crucial, as it will impact the success of the residents in the program. According to Dyess and Sherman (2009), the constant presence of preceptors with residents has improved their satisfaction and decreased frustration. The preceptor helps the new graduate nurse to transition to the new role through the stages of skill acquisition (Baltimore, 2004). Research has shown the presence of the preceptor will increase the new graduate nurse's confidence in his or her leadership and communication skills, and improve job satisfaction (Benner et al., 2009). However, for this to happen, there should

be well-developed preceptor training programs to improve the ability of preceptors, to familiarize them with different learning styles of learners, and to help them in the transition process as well (Myers et al., 2010). It is crucial to develop such programs to support preceptors to increase their own self-confidence and understanding of their roles (Hyrkas & Shoemaker, 2007). These programs can be composed of principles of teaching–learning, effective communication, delegation and accountability, teamwork, patient-centered care, and quality and safety (NCSBN, 2010).

Clinical Decision Making

Clinical Decision-Making Models

Clinical decision making is a critical element of the nursing profession; however, it is a complex process (Torunn Bjørk & Hamilton, 2011). Nurses are required to make accurate clinical decisions congruent with patients' diagnoses. Further, the quality of care provided to patients is affected by the nurses' ability to make efficient clinical decisions (White, 2003). According to O'Neill, Dluhy, and Chin (2005), in order for nurses to make clinical decisions, they need to be knowledgeable in many significant aspects of nursing, have access to trustworthy information sources, extract from new information the elements that are applicable to determine and solve the problem, work in a supportive atmosphere, and have freedom to make the right decision. Further, the phenomenon of clinical decision making regularly utilizes the stages of nursing process: assessing, diagnosis, planning, implementing, and evaluating in order to make effective clinical decisions (Badr, Nasrabadi, Yekta, & Taleghani, 2009).

The topic of nursing decision making has been studied using a wide range of methods and from different theoretical perspectives (Bucknall, 2000; King & Appleton, 1997). In fact, studies focusing on clinical decision making were reported as early as 1966 in nursing literature (White, 2003). However, there is no clear definition of the term “decision making” in nursing literature. In 1997, Nararyan and Corcoran-Perry defined decision-making behavior as a person–task interaction; that is, an interaction between a decision maker and a decision-making task. According to Higuchi and Donald clinical decision making is “a problem-solving activity that focuses on defining patient problems and selecting appropriate treatment interventions” (2002, p.145). Thompson and Dowding (2002) defined clinical decision making as choosing between alternatives.

Moreover, in addition to no clear definition of the term, there is no agreement about the terminology that is used when discussing the phenomenon of decision making in nursing. The following terms were found to be used interchangeably in nursing literature over the past five decades: “clinical decision-making” (Lauri et al., 1998; Luker & Kenrick, 1992; Torunn Bjørk & Hamilton, 2011; Weinstein & Fineberg, 1980; Wright & Macadam, 1979), “clinical judgment” (Benner & Tanner, 1987; Elstein, 1976; Feinstein, 1967; Itano, 1989), “clinical inference” (Hammond, 1964; Hammond, Kelly, Schneider, & Vancini, 1966), “diagnostic clinical human reasoning” (Evans, 1990; Grobe, Drew, & Fonteyn, 1991; Mayer & Revlin, 1978), and “medical human problem-solving” (Elstein, Shulman, & Sprafka, 1978; Newell & Simon, 1972). In fact, according to DeGraaff (1989), there is “terminological chaos” where these different terms are used interchangeably (Tanner, 2006).

There are also numerous models of decision-making in nursing literature, such as the normative, prescriptive, and descriptive. These models fall into two distinct theoretical classes: the systematic-positivist and the intuitive-humanist. In the field of nursing until the 1980s, the main explanatory models on clinical decision making were the ones depicting decision making as a hypotheticalo-deductive rational process adopted from cognitive psychology, known as the information-processing model (Thompson, 1999). The information-processing model is more often used in the medical arena and is characterized by a scientific approach to making decisions (Joseph & Patel, 1990). Analytical decision-making theory has also dominated nursing research within the systematic-positivist stance. This theory proposes that rational analytical thinking precedes action where the analysis is a systematic process, that is, step-by-step with the logical use of guidelines to be followed to reach to a decision (Banning, 2008; Hammond, 1996).

A normative decision-making model was developed by Janis and Mann in 1977, known as the Conflict Theory Model of Decision-Making. According to Janis and Mann (1977), although the ultimate decision makers have confidence in their ability to develop and implement a plan of action to produce a desired outcome, they will still experience a moderate level of stress in decision making. The Conflict Model of Decision-Making proposes what decision makers must do to adjust to decisional conflict caused by the task environment. The individual who will make the decision, to the best of his or her ability and within his or her information processing capabilities:

1. thoroughly canvasses a wide range of alternative courses of action;

2. surveys the full range of objectives to be fulfilled and the values implicated by the choice;
3. carefully weighs whatever she/he knows about the costs and risks of the negative consequences, as well as the positive consequences, that could flow from each alternative;
4. intensively searches for new information relevant to further evaluation of the alternatives;
5. correctly assimilates and takes account of any new information or expert judgment to which he or she is exposed, even when the information or judgment does not support the course of action she/he initially prefers;
6. re-examines the positive and negative consequences of all known alternatives, including those originally regarded as unacceptable before making a final choice; and
7. makes detailed provisions for implementing or executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize. (Janis & Mann, 1977, p. 11)

The Conflict Theory Model of Decision-Making illustrates the relationship between stress, decisional conflict, and the quality of the decision making. It has five basic patterns described by Janis and Mann (1977): unconflicted inertia, unconflicted change, defensive avoidance, hypervigilance, and vigilance; these form the basis of the Conflict Theory Model of Decision-Making (Balneaves & Long, 1999).

Unconflicted change is the first coping pattern in the Conflict Theory Model of Decision-Making. It arises from the appraisal of the decisional conflict and the risks involved by the decision maker. This occurs when the decision makers ask themselves the following question: “Are there serious risks if I don't change?” If the answer is “no,” this results in a continuation of the decision maker’s original course of action and the failure to search for alternatives. However, if the decision-makers’ response is “yes” when appraising a situation, a search for additional alternatives will follow because change is required. Further, the decision maker is required to ask the following question: “Are the risks serious if I do change?” and if the decision maker does not appraise serious risks to be associated with the most salient alternative, that is, if the answer is “no,” then unconflicted change will occur. This is the second coping pattern of the Conflict Theory Model of Decision-Making. This coping pattern results in the acceptance of a plan of action without a systematic evaluation of the consequences. The third coping strategy is defensive avoidance, which occurs when all decisional options pose an unacceptable level of risk and the decision maker is hoping to find a more suitable choice. As a consequence, the decision maker postpones, fails to complete a systematic search for options, and engages in wishful rationalizations to minimize the possible negative outcomes or even shifts the responsibility to someone else. However, if a decision maker presumes that better solutions are, in fact, available, then the search for new information and the evaluation of alternatives will continue.

Hypervigilance will occur if the decision maker realizes that there is an insufficient amount of time to complete a systematic search for alternatives.

Hypervigilance happens as a result of the decision maker feeling panicked and/or pressured to make a quick decision. These first four patterns are considered counterproductive and often result in decision-making errors (Krumwiede, 2010). Vigilance is the last coping pattern that enables the decision maker to make an informed, unbiased decision. Vigilance occurs when a decision maker is able to complete a systematic search and evaluation of all alternatives without being hurried or limited by unacceptable options. According to Balneaves and Long (1999), vigilance allows the decision maker to achieve a high quality of decision making, which helps to overcome the limitations of the previous four coping patterns.

In the nursing profession, clinical decision making involves utilizing the nursing process (May, Edell, Butell, Doughty, & Langford, 1999). The nursing process is an example of the prescriptive model which is associated with guidelines or algorithms designed to enhance specific decision tasks (Standing, 2010). According to the American Nurses Association (ANA) (2009), the nursing process is composed of five standards: assessment, diagnosis, planning, implementation, and evaluation. Assessment is a systematic, dynamic way to collect and analyze objective and subjective data about a patient. It is, in fact, the first step in delivering nursing care (ANA, 2012). The diagnosis is the nurse's clinical judgment about the client's response to actual or potential health conditions; it is a statement indicating a patient's health conditions. After assessing the patient and making a nursing diagnosis, the nurse plans the intervention by setting measurable and achievable short- and long-range goals for this patient. According to the care plan made, the nurse will start to carry out the planned care, that is, implementation.

The final standard is evaluation, which is a continuous process of evaluating patients' response to care provided. "The nursing process is a discipline-specific deductive-reasoning model for decision-making" (Krumwiede, 2010, p. 25). Yet there are concerns about developing care plans using the nursing process by nursing faculty, including whether they are actually teaching decision-making skills (Higuchi & Donald, 2002; Lauri & Salanter, 2002). In fact, it has been revealed that the nursing process slowed down the ability of nursing students to think critically (Jones & Brown, 1991).

Tanner's (2006) model also describes the clinical judgment process utilized by nurses. This model proposes that the clinical judgment process is based on four aspects: First, noticing, which is a function of the nurse's expectations of the situation where the nurse develops an initial grasp of the situation based on knowledge of the population of patients, past experience, textbooks, and contextualizing the situation to the individual patient condition. The second aspect of this model is interpreting: The nurse will start to make meaning of the data to decide on the course of action that is appropriate to the particular situation. The third aspect is responding, where the nurse applies critical thinking skills and strategies to determine the appropriate action to take and its expected outcomes. The fourth aspect of Tanner's model is reflection which is composed of two components: reflection-in-action and reflection-on-action. According to Tanner, reflection-in- action refers to "nurses' ability to 'read' the patient—how he or she is responding to the nursing intervention—and adjust the interventions based on that assessment" (2006, p. 209). Further, reflection-on-action is when the nurse reflects on the situation and appreciates the lessons learned from the experience, which will contribute

to his or her ongoing clinical knowledge development and the nurse's capacity for clinical judgment in future situations. This model delineates nurses' thinking processes when engaged in complex, unpredictable clinical situations that require decision making.

On the other hand, the descriptive models are evaluated regarding their empirical adequacy in supporting assumptions made about decision making processes (Standing, 2010). An example of a descriptive model is Benner's Novice to Expert Framework (1984), mentioned in detail previously in this chapter. Furthermore, models of clinical decision making in nursing have included the diagnosis process and diagnostic reasoning (Higuchi & Donald, 2002). These models have contributed to the understanding of the concept of clinical decision making and its characteristics; however, these models are limited to describing the thinking process in the professional setting.

Nursing Clinical Decision-Making

According to Gillespie (2010), decision making is a systematic process that involves critical thinking to identify problems, and to provide safe and effective patient care. Tanner, Padrick, Westfall, and Putzier (1987) also define clinical decision making as a complex process where nurses determine the type of information they collect, recognize problems according to the cues identified during information collection, and decide upon appropriate interventions to address those problems. This definition indicates that nurses are able to think systematically, to notice, recognize, and address patients' problems. Furthermore, Standing defines clinical decision-making as

a complex process involving information processing, critical thinking, evaluating evidence, applying relevant knowledge, problem-solving skills, reflection, and

clinical judgment to select the best course of action which optimizes a patient's health and minimizes any potential harm. The role of the clinical decision maker in nursing is, therefore, to be professionally accountable for accurately assessing patients' needs using appropriate sources of information, and planning nursing interventions that address problems and which they are competent to perform.

(2007, p. 266)

According to the AACN (2008), the second essential of nursing education, decision making, is a key leadership skill. Furthermore, Jenkins (1985) states that clinical decision making is the essence of safe nursing care.

In the nursing literature a wide range of theoretical approaches and methods have been used in research on nursing decision making (Hamers, Huijer Abu Saad, & Halfens, 1994). Although most of this research was conducted in the United States, there was contradiction in the results of these studies (Baumann & Bourbonnais, 1982; Baumann & Deber, 1989; Benner et al., 1992; Pardue, 1987; Thompson & Sutton, 1985). In addition, according to Lauri and Salanterä (2002), nursing literature regarding decision making is disconnected; samples of studies are modest, and there is a limited number of studies comparing different nursing fields. Therefore, there is a need for further studies on decision making in nursing, with adequate sample sizes, to measure the clinical decision making of new nursing graduates.

Additionally, there is a gap in literature relating to the study of clinical decision-making experiences in Saudi Arabian hospitals. Although a vast body of knowledge exists globally regarding nurses' clinical decision making (Gillespie & Peterson, 2009;

Higuchi & Donald, 2002; Hoffman, Aitken, & Duffield, 2009; Jenkins, 1985; Torunn Bjørk & Hamilton, 2011), there has been significantly less attention given to studying the impact of residency programs on Saudi new graduate nurses' clinical decision-making skills.

Factors Influencing the Decision-Making Process

In nursing, numerous factors influence the decision-making process. These factors are interrelated to the problem task, and the information processing system and/or the decision maker. The problem task refers to the complexity of the task, which will impact the decision-making process (Corcoran, 1986; Hamers et al., 1994). If the task is complex then the decision-making process is going to be difficult, which might influence the likelihood of an inaccurate decision. The determinants of task complexity include the following:

- The number of cues provided to the decision maker. The more cues represented, the more complex the task will be; however, the more irrelevant information to relevant cues can increase the number of errors made by the decision maker (Gordon, 1980).
- The greater the dependability of the available cues, the fewer the number of cues needed and the less the cognitive strain.
- The greater the redundancy, the easier the task.
- The more the cues overlap in differential diagnoses, the more complex the task will be.

- The more irreducible the uncertainty, the more complex the task will be (Tanner, 1984).

As noted above, the other factor that can influence the decision-making process is the characteristics of the information-processing system and/or of the decision maker. Clinical decision making is influenced by experience and knowledge (Hamers et al., 1994; Jenkins, 1985). In fact, Baker (2001) concluded that knowledge and experience play an important role in the effectiveness of clinical decision making, and O’Rielly (1993) stated that experience and knowledge are two major factors affecting decision making. According to Hagbaghery, Salsali, and Ahmadi (2004), competent decision making requires integrating knowledge, skills, and experience and also a close relationship to patients to create a deep “understanding of the clinical picture” or “seeing the big picture” (p.7).

In addition, numerous studies have shown that experience influenced the decision-making process (Benner, 1984; Hoffman, Donoghue, & Duffield, 2004; Watson, 1994). Experience is what differentiates the expert from the novice. According to Benner, experts act naturally without clearly stating that they are making decisions and solving problems (1984). In fact, Benner’s (1984) theory states that the novice-to-expert model assumes decision-making abilities will increase as a result of experience and intuition. When the nurse reaches the expert level in practice, she or he applies intuition, which acts as a valid component in the decision-making practice. Benner (1984) demonstrates how the inexperienced or novice nurse will use procedures and guidelines to make decisions, but as the nurse gains experience, decision making becomes intuitive. According to Fero

et al. (2009), nurses with more experience were better able to make clinical decisions; however, the new graduates did not meet expectations. McCaughan, Thompson, Cullum, Sheldon, and Raynor (2005) conducted a study to examine nurses' and nurse practitioners' use of research information when making clinical decisions, and found that experience was most used compared to the use of research information. Bakalis and Watson (2005) also found that the number of years of nursing experience positively correlates with decision making: Nurses who had more experience made more clinical decisions. Further, Bucknall (2000) found that years of experience impacted nurses' decision making.

Knowledge is also a major factor that influences the decision-making process, as it is a necessary condition for all stages in decision making. According to Carnevali, "One cannot diagnose what one does not recognize or understand" (1984, p. 32). In fact, such lack of knowledge leads to incomplete and incorrect plans (diagnosis and interventions) (Corcoran, 1986). Knowledge can also differentiate a novice nurse from an expert nurse (Larkin, McDermott, Simon, & Simon, 1980; Tanner, 1984). In 2004, Casey et al.'s qualitative study found that novice nurses lacked knowledge, critical thinking, and confidence to make clinical decisions. Their study indicated that the deficiencies that these nurses had in knowledge and skills were caused by difficulties during transition from education to practice. In order for nurses to carry out their role effectively, they must have knowledge and use effective decision-making processes when managing patients. However, novice nurses experience difficulties in assessing patients, planning care for patients, and implementing and evaluating the care provided (Manias et al.,

2004). In a correlational study to obtain factors that impact clinical decision-making skills, Hoffman, Donoghue, et al. (2004) found that there is a relationship between education level, experience, area of clinical practice, role value, and frequency of decision making. Further, a study conducted in Korea by Shin (1998) compared senior nursing students enrolled in associate degree programs ($n = 119$) and baccalaureate programs ($n = 115$) on measures of critical thinking ability and clinical decision-making skills. This study found that baccalaureate students scored significantly higher ($p < 0.001$) compared to associate degree students on clinical decision making.

Furthermore, age is assumed to effect nurses' clinical decision-making. Hoffman, Duffield, and Donoghue (2004) found a weak but statistically significant relationship between age and clinical decision-making ($r = 0.223, p < 0.05$). Torunn Bjørk and Hamilton (2011) found in their study that age was significantly associated with clinical decision making. However, the nursing literature is inconsistent regarding findings about the relationship between age and the nurses' clinical decision-making. According to Schutzenhofer and Musser (1996), age has a positive influence on clinical decision making in some studies, and a negative effect in others. Thus, there is a need to further investigate this factor.

Marital status is also considered to effect nurses' clinical decision making. Siew Eng et al. (2011) found that married nurses scored significantly higher than unmarried nurses utilizing Clinical Decision Making in Nursing Scale (CDMNS). Several studies (Coombs et al., 2007; Higuchi & Donald, 2002; Moeti, van Niekerk, & van Velden, 2004; Neilson & Lauder, 2008; Oermann & Garvin, 2002) have shown an overall

increase in grade point average (GPA) had an impact on the nurses' clinical decision making. Siew Eng et al. (2011) found that nurses with a higher GPA scored significantly higher than nurses with a lower GPA using CDMNS.

Nursing research has examined the effect of clinical specialty on a nurses' clinical decision-making. Adams, Bond, and Hale (1997) looked to see if there were differences in nurses' clinical decision making based on their area of clinical specialty; they found that there were differences between nurses on medical and surgical units. Further, Chumbler et al. (2000) explored the following predictors: area of clinical practice, patients treated according to clinical guidelines, tenure as a nurse practitioner, primary practice location in a multispecialty group practice, number of physicians at the primary practice location, and primary practice location in a hospital/facility-based practice and found them to be significant predictors for clinical decision making. In addition, they found an association between area of clinical practice and clinical decision making. Torunn Bjørk and Hamilton (2011) found that area of clinical practice was significantly associated with clinical decision making. Similarly, Hoffman, Duffield, et al. (2004) found a significant negative relationship between area of clinical practice (medical vs. surgical units) and clinical decision making ($r = -0.309, p < 0.01$); medical nurses participated more in clinical decision making compared to surgical nurses. Moreover, Bucknall and Thomas (1996) found differences in clinical decision making among nurses in critical care and mental health units. However, the nursing literature has contradictory results with regard to the relationship between area of clinical practice and nurses' clinical decision-making. Rhodes (1985) found that there were no differences in clinical

decision making among nurses in different areas of clinical practice. More importantly, there has been little research in Saudi Arabia about similarities or differences in the area of clinical practice and the effect on clinical decision-making. Thus, there is a need for further studies to understand the effect of clinical specialty on clinical decision making.

Gaining a better understanding of nurses' clinical decision-making processes is crucial as it impacts the nurse and the employing health care organizations, both of which affect patients' safety (Buckingham & Adams, 2000). In addition, in today's clinical practice with the continuous implementation of evidence-based care, the need to comprehend decision making in nursing has increased (Cader, Campbell, & Watson, 2004). In fact, better understanding of nurses' clinical decision-making process may improve their clinical effectiveness because nurses can learn to merge the elements of the decision-making process to correctly predict patient outcomes and reevaluate imprecise decisions.

The Clinical Decision-Making in Nursing Scale in Research

According to Jenkins (as cited in Girot, 2000), as of that time more than 90 studies had used the CDMNS, which this current study used to measure new graduate nurses' clinical decision-making skills. Girot's (2000) study to evaluate individuals' critical thinking and their perception of clinical decision-making skills at four different levels of the academic process used the Watson-Glaser Critical Thinking Appraisal (WGCTA) and CDMNS. A convenience sample of nursing students ($n = 82$) was used in this study. No relationship was found regarding individuals' critical thinking and their perception of clinical decision-making skills. Girot (2000) argued that the academic

process is essential and more important to nursing practice than experience, although more experienced graduates scored higher in the section on searching for alternatives or options. Furthermore, a quasi-experimental study conducted by Branch (2000) compared senior nursing students' pre-/post-clinical critical thinking and clinical decision-making skills. Two types of clinical instruction were used in the study. The study reported a significant positive correlation between the traditional and preceptor groups' post-clinical decision-making skills ($r = 0.874, p = .000$).

Bowles (2000) studied the relationship between critical thinking and clinical judgment abilities. The CDMNS was used to assess clinical judgment and the California Critical Thinking Skills Test (CCTST) was used to assess critical thinking skills. The study was composed of nursing students ($n = 65$) in two baccalaureate nursing programs and reported that 4% of the variance in CDMNS was attributed to CCTST. The results of Bowles' study showed that only inductive reasoning and inference were significant predictors of clinical judgment. There was no correlation found in relation to demographics, students' GPA, age, number of years in college, and clinical decision making.

Leadership

On a daily basis, nurses engage in numerous leadership roles, so it is crucial that nurses develop an effective leadership role to deliver high-quality care and ensure patient safety (Frankel, 2008). Thus, the concept of leadership is significant to the nursing practice. Nursing leadership research was conducted in the past six decades of the 20th century and continues to be a current phenomenon (Bass & Bass, 2008). A plethora

of literature discusses leadership in nursing (Austin et al., 2003; Hawkins & Thornton, 2002; Oliver, 2006). Oliver noted that “the word ‘leader’ has developed from the root meaning of a path, road or course of a ship at sea: according to Adair (1997) it is a ‘journey word’” (2006, p.39). Avolio, Walumbwa, and Weber (2009) reported in their integrative review of the literature that the current research in the leadership field is taking a more holistic view of leadership, examining the occurrence of the process of leadership, and examining leadership in numerous ways. Despite the efforts of researchers to study, identify, define, and evaluate the phenomenon of leadership, the concept is still complex with many leadership theories supporting a variety of perspectives relating to leadership characteristics, behaviors, and correlations.

The Five Practices of Exemplary Leadership Model

In 1995, Kouzes and Posner developed the Five Practices of Exemplary Leadership Model; according to them, leadership is “The art of mobilizing others to want to struggle for shared aspirations” (1995, p. 30). This model suggests that leadership is not about personality or a position, but is instead a collection of practices and behaviors. The practices provide the leader with guidance and support to achieve his or her accomplishments or to get outstanding tasks done (Kouzes & Posner, 1995). In fact, individuals are not born with leadership skills. Instead, these skills are learned from observed behavior, in which, with practice, the individual can learn to excel. By so doing, she or he can become an effective leader and make a difference. This model includes five essential leadership practices: Challenging the Process, Inspiring Shared Vision, Enabling Others to Act, Modeling the Way, and Encouraging the Heart (Kouzes & Posner,

2002)—the key components of the phenomenon of leadership. According to Kouzes and Posner (1995), each of the five leadership practices is linked to specific observable behaviors that successful leaders consistently use (Patrick et al., 2011), and are applicable to practice behaviors of registered nurses at bedside.

Kouzes and Posner (1995) explain that the first leadership practice is Challenging the Process, referring to the core behaviors of searching for opportunities for change, creating new ideas or recognizing and supporting new ideas, and experimenting and taking risks to improve practice and thinking innovatively. Next, Inspiring a Shared Vision refers to sharing one's vision through positive communication, sharing a common purpose, and enlisting the support of others in order to promote commitment to a shared future they seek to create. Enabling Others to Act is the third leadership practice, which refers to promoting collaboration, building trust, and strengthening others by giving them the tools to solve problems. Modeling the Way is a visible leadership practice, as the leader sets an example, clarifies values, and makes a plan—that is, leads by example. In order for a leader to model the way, the leader needs to have a philosophy, set high standards, and plan the way objectives should be achieved to make the organization distinctive. Finally, Encouraging the Heart refers to encouraging and motivating others to achieve the set objectives by providing feedback, recognizing contributions, and celebrating accomplishments (Kouzes & Posner, 1995).

Kouzes and Posner's (1995) model resulted in the Leadership Practices Inventory (LPI), a questionnaire that includes 30 items, six for each of the Five Practices of Exemplary Leadership practice. It takes approximately 10 to 20 minutes to complete this

questionnaire. The leader and observers chosen by the leader complete this tool. The leader selects five to ten other people to complete the LPI Observer, who states the frequency with which they perceive the leader engages in each behavior. Thus, this tool measures the leadership behaviors of leaders.

Kouzes and Posner's (1995) model of leadership formed the basis for Patrick et al.'s (2011) model of clinical leadership, Clinical Leadership Survey (CLS) used in this current study to measure new graduate nurses' leadership skills, as the instrument's purpose is to measure bedside nurses' clinical leadership skill. This tool is composed of five leadership practices. Clinical expertise and interpersonal understanding are clinical leadership characteristics coherent with the leadership practice "Challenging the Process" of Kouzes and Posner's model (1995). The behaviors that registered nurses would embrace are using their knowledge and experience to ask questions and challenge the situation, and critically reflect on the outcome for the benefit of the patient (Patrick et al., 2011). Thus, these nurses will demonstrate clinical leadership at bedside by providing patients with high-quality care. Further, effective communication and collaboration are clinical leadership characteristics coherent with the leadership practice "Inspiring a Shared Vision" of Kouzes and Posner's model (1995). The registered nurses would clearly communicate with other health care team members about the assessments that they have conducted on their patients, including their concerns as well as patients' perspectives. In fact, this may inspire a more comprehensive approach to patient care, which might improve the quality of care provided. In addition, clarifying clinical information to patients and their families allows patients to understand their illnesses and

the treatment choices they have (Patrick et al., 2011). Collaboration, effective communication, and interpersonal understanding are clinical leadership characteristics coherent with the leadership practice “Enabling Others to Act” of Kouzes and Posner’s model (1995). The manners that registered nurses would embrace are clearly articulating patient information to other health team members in order to achieve planned objectives of patient care, and to inspire and empower team members to accomplish comprehensive care. Further, the registered nurse establishes a therapeutic relationship based on patient trust between the nurse and the patient through interpersonal understanding (Patrick et al., 2011).

Interpersonal understanding, collaboration, and coordination are clinical leadership characteristics coherent with the leadership practice “Modeling the Way” of Kouzes and Posner’s model (1995). This occurs when registered nurses make sure that they understand the health care team members’ and patients’ concerns and can recognize the patients’ perspectives. The nurses are role models for health care team members and patients (Patrick et al., 2011). Lastly, according to Patrick et al. (2011), registered nurses’ behaviors at the clinical level that create supportive relationships through interpersonal understanding, collaboration, clearly communicating, and providing positive feedback to health care team members, patients, and their families are clinical leadership characteristics coherent with the leadership practice “Encouraging the Heart” of Kouzes and Posner’s model (1995). Patrick et al. (2011, p. 452) aligned Kouzes and Posner’s leadership practice behaviors with clinical leadership attributes as detailed in Table 3.

Table 3

Kouzes and Posner's Leadership Practice Behaviors Aligned With Clinical Leadership Attributes

Posner and Kouzes' Leadership Behaviors	Patrick et al.'s Clinical Leadership Behaviors
<u>Challenging the Process</u>	
Continuous learning	Clinical expertise
Question the status quo	Clinical expertise
Debrief failures and successes	Interpersonal understanding
<u>Inspiring a Shared Vision</u>	
Setting vision or purpose	Effective communication Collaboration
Finding a common ground	Effective communication Collaboration
<u>Enabling Others to Act</u>	
Sharing information and resources	Collaboration
Building trusting relationships	Effective communication Interpersonal understanding
<u>Modeling the Way</u>	
Creating shared values	Interpersonal understanding
Achieving small wins	Collaboration, coordination
<u>Encouraging the Heart</u>	
Creating supportive relationships	Interpersonal understanding Effective communication
Recognizing contributions	Interpersonal understanding Collaboration

Note. Adapted from *Developing and Testing a New Measure of Staff Nurse Clinical Leadership: The Clinical Leadership Survey*, by A. Patrick, H. K. Laschinger, C. Wong, and J. Finegan, J. 2011, *Journal of Nursing Management*, 19, 449-460.

Nursing Clinical Leadership

Nursing clinical leadership at the patient bedside is a new area of research (Patrick et al., 2011). There is, in fact, an increased interest in clinical leadership from clinical settings as a result of the IOM's report (2004), which discussed the fragmented care systems that may impact patient safety and also discussed how nurses play a key role in maintaining patients' safety. In addition, this report stated that nurses are instrumental

in providing effective communication between health care members and assuring patient care continuity. According to O'Connor, "effective communication is central to the demonstration of leadership in clinical setting" (2006, p. 235). Clinical leadership skills focus on patients and health care teams rather than nurse executive leadership. According to Patrick et al., clinical leadership is defined as

staff nurse behaviors that provide direction and support to clients and the health care team in the delivery of patient care. A clinical leader is a registered nurse who influences and coordinates patients, families and health care team colleagues for the purpose of integrating the care they provide to achieve positive patient outcomes. (2011, p. 450)

Thus, it can be said that every registered nurse is a clinical leader—particularly clinical nurses at the bedside (Erickson & Ditomassi, 2005). However, in nursing literature, the concept of clinical leadership is usually associated with nurse executives and formal leadership roles. In fact, nursing leadership is rarely linked to bedside nursing practice leaders (AL-Dossary et al., 2014).

Cook defined a clinical leader as "a nurse directly involved in providing clinical care that continuously improves care through influencing others" (2001, p. 39).

According to Harper, a clinical leader is "one who possesses clinical expertise in a specialty practice area and who uses interpersonal skills to enable nurses and other health care providers to deliver quality patient care" (1995, p. 81). Clinical leaders are experts in their field, effective communicators, empowered decision makers, clinically knowledgeable and competent, provide a vision, support others, provide guidance to

patients and their families, and drive change by providing high-quality care (Lett, 2002).

Further, Stanley defined a clinical leader as

a clinician who is an expert in [her or his] field, and who, because they are approachable, effective communicators and empowered, are able to act as a role model, motivating others by matching their values and beliefs about nursing and care to their practice. (2006, p. 111)

All of these definitions show that clinical leadership can be at the bedside and clearly does not need to be linked or limited to management or senior levels.

Thus, in this current study, the concept of clinical leadership relates to nursing professional activities which provide direct care at bedside, which differs from much of the known nursing leadership research. Clinical leadership is illustrated by the nurse leader's actions at the bedside by applying nursing skills during practice within the therapeutic nurse–patient relationship and between health care team members. The nurses are, in fact, accountable for the patients they look after, so it is crucial for nurses to perform constant observation and assessment of patients to set priorities, and work effectively and efficiently in order to recognize any critical situation which might necessitate the nurse to monitor the patient closely. Nurses must also make clinical decisions about a required intervention; or, if needed, communicate with other health care team members for assistance, support, or guidance; or call the primary health care provider.

Hence, it is essential that bedside nurses acquire leadership skills to improve patient outcomes and safety through the care provided. In fact, bedside nurse leaders

should possess a number of leadership skills. They should be effective communicators, positive clinical role models, and empowered decision makers, using evidence-based research to make clinical decisions. They should also be clinically competent and clinically knowledgeable, displaying values and beliefs through actions, and by asking questions about patient care plans and interventions that may impact the patient safety; that is, they should be their patients' advocates (Patrick et al., 2011; Stanley & Sherratt, 2010).

Numerous factors contribute to nursing clinical leadership skills such as nurse characteristics, previous leadership experiences, and education. Evidence shows that age is positively related to leadership skills. Patrick (2010) found that age had a weak but significant correlation with clinical leadership skills ($r = 0.14, p < 0.01$). However, the nursing literature had contradictory results with regard to the relationship between age and clinical leadership skills. Some studies proposed that there is no relationship between age and clinical leadership skills and others stated that a relationship does exist (Kouzes & Posner, 2002; Manning, 2002; Patrick, 2010). Further, the studies that reported that age was positively related to leadership skills stated that older nurses had better clinical leadership skills (Cummings et al., 2008; Curtis et al., 2011).

Evidence shows that education and academic achievements have positive effects on clinical leadership skills (Burns, 2009; Cummings et al., 2008; Curtis et al., 2011). In 2001, a survey was conducted to examine chief nursing officers' preferences of hiring nurses with a baccalaureate degree compared to a diploma degree. Seventy-two percent of these directors stated that there are differences in practice between baccalaureate-

prepared nurses compared to nurses with a diploma degree, as the former have better clinical leadership skills (Goode et al., 2001). In addition, Wood (1998) studied the factors that influence leadership skills and how they interact to facilitate the development of leadership skills and expertise among nurses. Wood reported that personal life factors such as marital status significantly influenced the development of nurses' leadership skills. Another study found that demographic data (marital status, race, and type of nursing degree) significantly affected nurses' leadership (Kleinman, 2004). However, this integrative literature review found that there is a gap related to the factors that influence nurses' leadership skills, therefore, there is a need for more research in this area.

In addition, Cowin and Hengstberger-Sims (2005) reported that it is unrealistic to expect new nurse graduates to be ready for practice because it normally takes six months or longer for them to adapt, develop confidence, and begin to independently apply what they have learned. Thus, residency programs can offer the new graduate nurses experiences that will allow them to incorporate essential leadership skills into their clinician role.

The Effect of Nursing Residency Programs on New Graduate Nurses' Clinical Decision-Making and Leadership Skills

Dyess and Sherman (2011) conducted a 5-year longitudinal study in the U.S. with four cohorts of new nurse graduates ($n = 109$) who had completed a ten-month program called the Novice Nurse Leadership Initiative (NNLI). The NNLI program started in 2006 and is a practice education program designed to support the new nurse graduates' transition from theory to practice in the first year. One of the outcomes that was measured

in this study was change in the Student Leadership Practice Inventory scores. The new nurse graduates' scores improved ($p < 0.005$) after attending the NNLI program, except for the subscale "enabling others to act." The overall post-LPI scores for the NNLI subjects increased by 8.1% ($p = 0.004$).

Roud, Giddings, and Koziol-McLain (2005) conducted a longitudinal study to compare self-reported changes in both frequency and quality of performance of nursing behaviors in new nurse graduates ($n = 33$) enrolled in a 1-year entry to practice program in a large Aotearoa/New Zealand metropolitan hospital. The study surveyed new graduate nurses at two points in time (Seven weeks after beginning the program, and seven months after beginning the program) using a modified version of the Six-Dimension Scale of Nursing Performance. The study reported significant increases in the frequency of new graduate nurses' performance of leadership ($p = 0.002$) seven weeks after beginning the program, and seven months after beginning the program. The study found no significant difference in quality of leadership behavior as measured by before- and after-program participation ($p = 0.063$). This study employed a small sample, representing an important limitation to generalizability of the findings.

A Canadian study by Bérubé et al. (2012) developed a 1-year nursing residency program to facilitate the safe integration of new graduate nurses into critical care and its outcomes. This study found a 46% increase in the recruitment rate of newly graduated nurses compared to the period of time before implementing the residency program. Furthermore, the retention rate increased by 26%. According to Bérubé et al. (2012), nursing residency programs may contribute to meeting the needs of new graduate nurses

to integrate them into high-acuity settings and to improve the quality of care provided in such settings. Similarly, a study conducted in United Arab Emirates by Nematollahi and Isaac (2012) found that the residency program helped inexperienced nurses with their transition to practice, thus improving their retention. An Australian study reported findings from a study of a nurse residency program that was developed by a university and three mental health services. The program was developed to help new graduate nurses in the transition process from new graduate to beginning nurse (McCloughen & O'Brien, 2005). This study found the residency programs to be important in helping new graduate nurses transition into professional roles and contributed to retaining new nurses in mental health settings.

The Nurse Residency Program of University HealthSystem Consortium and the American Association of Colleges of Nursing (UHC/AACN), with approximately 16,000 nurses, has been shown to be an effective model for addressing new graduate nurses' transition needs and promoting high-quality care by providing professional support. In addition, it has shown improvement in the new graduate nurses' communication and leadership skills (Krsek & McElroy, 2009).

Goode et al. (2009) reported the outcomes of nursing residents ($n = 655$) at three separate times (upon hiring, at six months, and at one-year program completion) using four instruments: the Casey-Fink Graduate Nurse Experience Survey, the Gerber Control Over Nursing Practice Scale, the McCloskey Mueller Registered Nurse Job Satisfaction Scale, and a Program Evaluation Scale developed by the research team. The study found statistically significant increases over the three time periods in the new graduate nurses'

overall confidence in their skills ($p = 0.000$), their ability to organize and prioritize their work ($p = 0.000$), and being comfortable communicating with team members, patients, and families and in providing clinical leadership on their units ($p = 0.000$). Another study conducted in the U.S. by Kowalski and Cross (2010) reported initial findings of new graduate nurses ($n = 55$) enrolled in a one-year residency program at two hospitals in Las Vegas. The study found that the new graduate nurses' clinical competencies and critical thinking improved over time (at three, six, eight weeks and three, six, eight months) ($p < 0.001$), and improved communication/leadership skills over time (at three months ($n = 37$) and at 12 months ($n = 14$)) ($p = 0.022$). The limitation of this study is the sample size.

Williams et al. (2007) documented the outcomes of the one-year post-baccalaureate residency program developed and implemented by the University HealthSystem Consortium and the AACN. The data from two cohorts of residents ($n = 679$, Alpha residents, $n = 486$; Beta residents, $n = 193$) in 12 sites across the U.S. was analyzed at different times: at entry into the program, at six months, and at one year, using three instruments (the Casey-Fink Graduate Nurse Experience Survey, the Gerber's Control Over Nursing Practice Scale, and the McCloskey Mueller Satisfaction Scale). The results show an improvement in outcomes comparing new graduate nurses' total score from entry to the program and exit. The residents' ability to organize, prioritize, and communicate, as well as leadership skills for both cohorts improved significantly.

Furthermore, evidence has shown that the residency program improved the new nurses' professional growth, such as their ability to organize and prioritize when managing the care of multiple patients and when making decisions about clinical

priorities (Brassler, 1993; Casey et al., 2004; Lowry, Timms, & Underwood, 2000; Oermann & Moffitt-Wolf, 1997). According to Bratt (2009), the residency program designed by the Wisconsin Center for nursing had the ability to ease the transition for the new graduate nurse to a professional nursing role. Nurse managers in this study stated that new graduate nurses enrolled in the residency program had improved in many aspects such as critical thinking, engagement in evidence-based care, increased awareness and use of organizational resources, leadership skills, and clinical decision making, and they were quickly involved in leadership training programs.

Bratt, Baernholdt, and Pruszynski (2012) conducted a study to compare rural and urban nurse residency program participants' personal and job characteristics and perceptions of decision making, job satisfaction, job stress, nursing performance, and organizational commitment over time. The study found that rural nurses at the end of the program scored significantly higher in job satisfaction and had lower job stress compared with urban nurses. The rural nurses' perceptions about their clinical decision-making skills were also significantly higher compared to urban nurses'. The rural nurses' clinical decision-making mean scores at end of the residency program (12 months, T3) were significantly higher than midpoint (six months, T2) of the program (T2 $M = 142.1$, T3 $M = 143.9$, $p < 0.05$) and job satisfaction (T2 $M = 78.4$; T3 $M = 81.2$, $p < 0.001$).

Bratt and Felzer (2011) examined newly licensed nurses' perceptions of their decision-making abilities, quality of nursing performance, job satisfaction, job stress, and organizational commitment enrolled in a 12-month new graduate nurse residency

program. Clinical decision-making scores were significantly higher ($F(2,154) = 6.91, p = 0.001$) at 12 months compared to six months.

Internship programs are similar to residency programs. A quasi-experimental study conducted at a U.S. Navy hospital reported the outcomes of a nurse internship program (Blanzola et al., 2004) by comparing an experimental group ($n = 8$) to a control group ($n = 10$). The study found that the experimental group scored significantly higher compared to the control group on organizational core competencies. In fact, these nurses were more comfortable with their leadership and management roles as a result of being in a residency program. The limitation of this study is the extremely small sample size. Similarly, DeSimone (1999) found that an internship program for nurses improved new graduate nurses' perceptions of leadership skills for nurses in the program. Each nurse enrolled in the internship program was assigned to a preceptor who provided the new graduate nurse with clinical expertise for patient care management. In this study, perceptions of leadership competencies were measured using the Leadership Performance Competence Profile. The study found that the perceptions of leadership competencies improved in all areas measured.

Hillman and Foster (2011) conducted a study to identify the benefits and key elements of a new graduate residency program. In this study, nurse managers reported that new graduate nurses who graduated from the residency program were more at ease with staff, management, and themselves. In fact, they were equipped for daily challenges, and had a better understanding of the patients' condition and needs. The Nursing Executive Center (2002) of the Advisory Board conducted a survey on new graduate

nurses ($n = 121$) at both teaching and nonteaching hospital settings which showed that 77% of new graduate nurses were committed to developing a professional career in nursing. However, this study stated that the clinical nurse starts to assume a leadership role as a fully functional team member two years after being hired (Nursing Executive Center, 2002).

A study conducted at two Wisconsin health care systems created a definition of and identified the essential components for a nurse residency program. This study reported that there were improvements in the residents' ($n = 5$ in the Medical-Surgical units, Cardiac/Critical Care $n = 5$ first cohort, $n = 4$ second cohort) professional nursing behaviors and leadership skills at six and 12 months compared to baseline, using the Six-Dimensional Scale (Herdrich & Lindsay, 2006). However, this study had a modest sample size, thus, statistical significance cannot be claimed and findings cannot be generalized.

Halfer and Graf (2006) studied a cohort of new graduate nurses ($n = 84$). The study used the Halfer-Graf Job/Work Environment Satisfaction Survey to measure the new graduate nurses' perceptions at different times (three, six, 12, and 18 months) of employment. The study found that residents were satisfied with their overall experience in transitioning to their first professional position, and reported a significant improvement over 18 months in understanding leadership expectations ($p < 0.05$), ability to manage job tasks ($p < 0.01$), and awareness of development opportunities ($p < 0.01$). A later study was conducted by Halfer et al. (2008) at a 270-bed Midwestern Magnet designated pediatric medical center; this study implemented a pediatric nurse internship program

based on Halfer and Graf's (2006) earlier research to mentor and retain new graduate nurses in the first year of practice. The study compared two cohort groups: new graduate nurses in the preimplementation group hired between September 2001 and August 2002 ($n = 84$), and new graduate nurses in the postimplementation group hired between September 2003 and August 2005 ($n = 212$). In this study, the Halfer-Graf Job/Work Environment Satisfaction Survey was used to measure the new graduate nurses' perceptions at different points in time. The study found that the outcomes that improved significantly over time were (a) understanding leadership expectations (from baseline to 18 months ($p < 0.0001$)), (b) ability to manage the demands of the job (increased from baseline to six months ($p < 0.0001$)), and (c) input used to address unit issues (increased over time ($p < 0.005$)). In 2009 another study used the Halfer-Graf Job/Work Environment Nursing Satisfaction Survey to measure job satisfaction and engagement perceptions of new nurses after completing an Interactive Nurse Residency (Anderson et al., 2009). This study used a mixed-methods design to compare residents' ($n = 90$) perceived job satisfaction and employee engagement after completing the residency program, and tested the reliability and validity of the Halfer-Graf Job/Work Environment Nursing Satisfaction Survey. The study found that the new graduate nurses who completed the one-year residency program had improved perception about their ability to perform their job, identify resources, understand performance expectations, accomplish work tasks, and manage the demands of the job effectively.

Need for this Study

The concerns about the practice readiness of new graduates (Council of University Teaching Hospitals, 2001) are not new; however, the assumption remains indefinable. New graduate nurses need knowledge and competencies above and beyond those developed in nursing schools. Along with the ever-changing complex health care systems, new graduate nurses need to be able to apply their clinical decision-making and leadership skills, and to move knowledge to practice (University HealthSystem Consortium, 2006). Thus, there is a need for an effective residency program for new graduate nurses (Spector & Echternacht, 2010) to fully prepare new graduate nurses to provide safe, competent, and effective patient care. New graduate nurses have inadequate clinical experience, which creates numerous issues in the workplace because they have not developed the clinical decision-making and leadership skills of experienced nurses. New graduate nurses may not be able to recognize early signs of patient deterioration; consequently, they may not be able to take action and care for the patient during the early signs of the disease. Unfortunately, this could increase the morbidity and mortality of patients among new graduate nurses (Orsolini-Hain & Malone, 2007). Thus, there is a problem with practice variation between new nurse graduates and the expectations of practicing nurses. Health care institutions have adapted residency programs to provide a transition to assist new graduate nurses in becoming fully competent from student nurses to professionals and become independent practicing nurses and bedside leaders.

There is no study that examined both the clinical decision-making and clinical leadership skills of new graduate nurses at the same time. Also, there is no research on

the impact of residency programs on new Saudi nurse graduates' clinical decision-making and clinical leadership skills in Saudi Arabia. In fact, this is the first known study to explore the impact of residency programs on new Saudi nurse graduates' clinical decision-making and clinical leadership skills.

A vast body of knowledge exists globally regarding nurses' clinical decision making (Gillespie & Peterson, 2009; Higuchi & Donald, 2002; Hoffman et al., 2009; Jenkins, 1985; Torunn Bjørk & Hamilton, 2011), nursing leadership (Carney, 2006; Dunham & Fisher, 1990; Greenfield, 2007; Hewison & Griffiths, 2004; Sullivan & Garland, 2010), and nursing residency programs that include mentorships, internships, and continuing education programs for new graduate nurses to improve their professional progress (Anderson et al., 2009; Goode et al., 2009; Halfer et al., 2008; Kowalski & Cross, 2010). Considerable attention has been given in nursing literature to the transition of new graduate nurses from being student nurses to independent practice nurses. In addition, evidence has demonstrated that nurse residency programs for new graduate nurses are crucial as they improved nurses' skills, clinical competence, confidence, retention, and satisfaction.

However, after this integrated review of literature, it is clear the actual transition of clinical learning about these nurses has not been studied enough (Benner et al., 2009) as clear gaps exist in the literature. Most of the studies were conducted in the U.S. and were done to assess the effectiveness of residency program on nurses' retention, turnover, and satisfaction. The nursing literature only modestly studied the effects of residency

programs on new graduate nurses' decision-making and leadership skills (Benner et al., 2009).

The majority of published studies on nurse residency programs assessed how these programs have impacted either clinical leadership skills only, job satisfaction only, or nurse retention and turnover. There was no study that assessed the impact of residency programs on new Saudi graduate nurses' both clinical decision-making and leadership skills who had completed a residency program within one week to three months.

Chapter Summary

The intent of this study was to determine the effectiveness of nurse residency programs on new Saudi graduate nurses' clinical decision-making and clinical leadership skills who had completed a residency program within one week to three months. In addition, this research studied the implications of how residency programs improved the new graduate nurses' transition process by providing a safe and competent workplace. This study has the potential to make a contribution to nursing knowledge, as this is the first study that explored the impact of residency programs on new graduate nurses' clinical decision-making and clinical leadership skills in Saudi Arabia.

This chapter has outlined existing research on nursing residency programs and their impact on new graduate nurses. Further, a detailed literature review of new graduate nurses' transition process into practice was provided. The conceptual framework of the study was also discussed, as well as clinical decision models and factors influencing decision-making. The Five Practices of Exemplary Leadership model and clinical leadership in nursing were also examined. Finally, this chapter discussed previous

research which demonstrates a gap in the literature which provides theoretical support for the need for this study. The next chapter presents the methods that were utilized in this study.

CHAPTER 3. METHODS

The purpose of this chapter is to describe the research design and methods utilized for this study. The population of interest, sample, survey instruments, data collection procedures, data analysis plan, ethical considerations, and the limitations of the study are also discussed.

Study Purpose

The purpose of this exploratory, descriptive study was to assess the impact of residency programs on clinical decision-making and leadership skills of new Saudi graduate nurses who had completed a residency program within one week to three months of the time this study was conducted and new Saudi graduate nurses who did not participate in residency programs.

Research Questions

1. Do new Saudi graduate nurses participating in residency programs differ significantly in clinical decision-making and leadership skills at the end of the residency program, compared to new Saudi graduate nurses not participating in residency programs?
- 2a. Are there any significant differences in the average number of clinical decision-making and leadership skills by age, marital status, overall GPA, and area of clinical practice among residents?

- 2b. Are there any significant differences in the average number of clinical decision-making and leadership skills by age, marital status, overall GPA, and area of clinical practice among orientees?
3. Among residents, are there any significant differences in the average number of clinical decision-making and leadership skills based on the length of their residency program?
- 4a. Do significant correlations exist between age, overall GPA, total clinical decision-making scores, and total clinical leadership skills for the entire sample?
- 4b. Do significant correlations exist between age, overall GPA, total clinical decision-making scores, and total clinical leadership skills among residents and orientees separately?
- 4c. Do age, overall GPA, and enrollment in a residency program predict clinical decision-making for the entire sample?
- 4d. Do age, overall GPA, total clinical decision-making scores, and enrollment in a residency program predict clinical leadership skills for the entire sample?

Research Design

This study employed an exploratory, cross-sectional study design to explore the impact of residency programs on new Saudi graduate nurses' clinical decision-making and leadership skills who had completed a residency program compared to those who did not. Further analyses were conducted to determine differences in clinical decision-making and leadership skills based on nurses' demographic characteristics and length of

residency programs. The cross-sectional research design was chosen because the data was collected from participants at one point in time. The researcher anticipated generating hypotheses from this exploratory study to inform future research studies designed on a larger scale to examine similar topics.

Population and Sample

The target population for this study was all nurses in the Specialist Hospitals and University Hospitals in Saudi Arabia. The sample of this study included new Saudi graduates who had graduated from a Saudi nursing school with a baccalaureate degree, and had completed a residency program within one week to three months of the time of the study. It also included nurses who did not participate in a residency program. This study took place at Saudi Arabian Specialist Hospitals I and II for the Residency Program (RP) group. The Nonresidency Program (NRP) group was recruited from Hospital III in Saudi Arabia.

Sampling Method

The sampling method was a convenience sample of new graduate nurses. All residents (100%) who had completed a residency program in the Specialist hospitals within one week to three months from the time the present study was conducted were invited to participate; new Saudi graduate nurses not participating in residency programs who had worked for 1 year were also invited to participate. Overall, this represented a sample of all new graduate nurses in those health care organizations during the year 2013-2014.

The inclusion criteria for the new graduate nurses were as follows: the participants must have been Saudi citizens, graduated from a Saudi university, and completed a residency program within one week to three months, as well as Saudi nurses who had worked for one year in a hospital that did not have a residency program. Furthermore, they must have agreed to participate in the study, and were able to read and write in English. Exclusion criteria were: new graduates who had completed a residency program within more than three months, Saudi nurses who worked in a hospital that did not have a residency program for more than one year, new graduates who graduated from non-Saudi nursing universities, and nurses who could not read and/or write in English.

A sample was drawn from hospital lists of all hospital new graduates, that is, residents and orientees. The lists were provided to the researcher by the hospitals' administration. The sample frame included the following: nurse's name, age, contact information, and date of hiring and/or enrollment in the residency program. The researcher recruited the newly graduated nurses who met the study criteria within the sample frame.

Setting

The setting was multisite as the participants were recruited from three different hospitals in Saudi Arabia. The two sites that had residency programs from which RP participants were recruited were chosen by a purposive sample, as these hospitals were located in a geographical area near the researcher. The hospital from which NRP participants were recruited was chosen by a convenience sample to approximate a

representative sample for new Saudi graduate nurses. The RP were selected from Hospitals I and II, and the NRP were selected from Hospital III.

Sample Size

The sample size for this study was calculated using the software G*Power (G*Power, 2013) and recommendations on power analysis by Cohen's work on sample size considerations (Cohen, 1992). Based on Cohen's power analysis recommendations (1992), a power of 0.80 and a level of significance of 0.05 were considered. Also, a medium effect size, Cohen's $d = 0.5$, was appropriate for this study given previous nursing research (Melnyk & Morrison-Beedy, 2012; Polit & Beck, 2012; Roud et al., 2005). Based on these criteria, a recommended minimum total sample size for the study was $n = 128$ yielding a minimum sample size per group (two-tailed hypothesis) of $n = 64$ (G*Power, 2013). The data collection was cross-sectional as the data were collected from participants at one point in time using a paper and pencil method. This study started in November 2013 and the data collection stopped at the end of March 2014.

Strategies used to increase participation and improve response rate were face-to-face recruitment, friendliness, persistence, and assurances of confidentiality. In addition, participants were offered to receive a brief summary of the study results. All research subjects who completed the questionnaires were given an appreciation gift for their participation in this study of a Starbucks gift card valued at \$15 (or 56.25 S.R.).

The Nurse Residency Program in the Current Study

The nurse residency program is a postgraduate experience that is designed to support nursing practice proficiency development. It is designed to assist the Saudi nurse

to transition from academia to practice. The nursing residency programs in Saudi Arabia are six to 12-month programs. The residency program in this study started with a two-week orientation and included an introduction to policy, guidelines, rules and regulations of the hospital, intravenous therapy education and practice, infection control, hospital computer systems and programs, and Basic Life Support courses. The general orientation followed for two weeks, and included a general overview of the nursing mission, vision, and policies and procedures. The following week was an individualized, unit-based, clinical and professional orientation.

The nurse residency program provides the traditional orientation program for new graduate nurses, and an extended orientation program. The orientation in the residency program incorporated the hospital orientation, department orientation, and added content and activities that facilitated the acquisition of skills needed for the role of the professional nurse, in addition to the technical and clinical skills for the new graduate nurse. Furthermore, the nurse residency program was designed to support and educate new graduate nurses beyond routine hospital orientation. Thus, throughout the residency program, the new graduate nurses were introduced to policies and procedures that guided patient care. Additionally, the residency program included didactic direct instructions that promoted the new graduate nurse's critical thinking skills, clinical decision making, leadership skills, and the ability to use outcome data to promote patient safety. The nursing residency program focused on residents' leadership abilities, patient outcomes, and the nursing professional role.

Moreover, a preceptor was allocated for each resident in RP to constantly help guide, provide clinical instruction, and lead by example. These preceptors focused on professional growth needs of the new graduate nurse and did not teach them technical skills needed to provide care. Thus, the preceptor guided the development of residents throughout the entire program, as progress was assessed on a weekly basis. The program's goal was to facilitate the new graduate nurse's transition from being a novice nurse toward an advanced beginner nurse in the hospital setting.

The new graduate nurse in NRP, the orientee nurse, maintained his or her usual work habits and did not participate in the residency programs. He or she only received the traditional two-week hospital orientation that included introduction to policy, guidelines, rules and regulations of the hospital, intravenous therapy education and practice, infection control, hospital computer systems and programs, and a Basic Life Support course. The orientee nurse had a head nurse who worked in the same unit. The head nurse was a professional nurse with an overall responsibility to supervise the administrative and clinical aspects of nursing care.

Pilot Studies

Two pilot studies were conducted for this research. The first pilot study assessed the two instruments' face validity. This was done by utilizing an expert panel of five Saudi nurse educators in the United States with more than five years of experience to review both of the Clinical Decision Making in Nursing Scale (CDMNS), and Clinical Leadership Skills (CLS) instruments. The content experts rated each item in each questionnaire with a specification matrix provided by the researcher. The rating was

based on representativeness to assess readability, clarity, and understanding of the content and appropriateness to the Saudi culture. This was also done to assure that the instruments used in this study were good translations of the constructs, that is, clinical decision making and clinical leadership (Appendix F). It demonstrated that the two instruments were clear, concise, and easy to read and comprehend. The instruments were also examined for their use in a different culture to assess for any culturally sensitive terms, words, or phrases. The examination showed that both instruments were appropriate to be used in the Saudi Arabian culture. Additionally, the tools showed that both instruments captured both constructs, clinical decision making and leadership.

The second pilot study was conducted to determine the level of understanding, any language or phrase difficulties, comprehension, and length of time to complete both questionnaires by potential participants. In addition, the second pilot study was performed to assess the feasibility of using both instruments in Saudi Arabian health care settings. The pilot group ($n = 25$) had similar features to those of the population that was studied. The researcher talked to all of the respondents after they answered the questionnaire, and they verified that the language of the survey was readable and easy to comprehend, as all the respondents did read and write in English. Thus, the researcher proceeded with the English format. However, as the respondents stated that some of the words in the questionnaire were difficult to understand, minor word changes were made to both instruments and some explanations were given in brackets. For example, in the CDMNS question number 18 the word “remotest” was replaced with “unlikely.” For the CLS, the word “exemplify” was replaced with “demonstrate” in question number 13. The

final version of the questionnaire was repiloted in July 2013 using a small group of 25 Saudi nurses with the intention of examining the level of understanding, any language or phrase difficulties, comprehension, and length. It took the respondents approximately 35 minutes to complete the questionnaire.

Data Collection Procedures

A face-to-face recruitment method was utilized to recruit participants. The researcher collected data by using a paper and pencil format for both groups. The data collection process started in November 2013 and ended in March 2014. Before the research study began, the researcher visited the sites and introduced herself to the potential participants and explained the study's purpose, procedures participants would be asked to engage in, and the participant selection process, and obtained participants' written consent for participating in the study. The researcher then asked each resident and the orientee to sign a consent form if he or she was willing to participate. The participants signed two copies of the consent, one for their records, and the second for the study.

Upon participants' agreement and obtaining a signed consent form (Appendix D), a paper and pencil questionnaire and envelope was hand-distributed by the researcher to each resident and orientee. The questionnaire was composed of the demographic questionnaire (Appendix A), the CDMNS (Appendix B), and the CLS (Appendix C). The survey took the participants about 35 minutes to complete and was encoded by a letter to indicate if the participant was a resident (RE) or an orientee (O). However, no personal identifiers (e.g., name) were requested. The sealed questionnaires were returned to a locked box provided by the researcher. The locked box was placed in the pantry of each

unit where the residents and orientees worked. The researcher was the only person who had access to the keys of the box. All of the questionnaires and the informed consent forms were kept separately in a locked drawer in the researcher's office at George Mason University. The researcher was the only person who had access to the keys. Data will be kept for 3 years after the completion of the study then all the data will be destroyed.

Measures

Instrumentation

Two different tools were used to collect data in this study, including the Clinical Decision-Making in Nursing Scale (CDMNS) (Jenkins, 1985), and the Clinical Leadership Survey (CLS) (Patrick, 2010). These two tools were adopted with permission.

Clinical Decision-Making in Nursing Scale. The CDMNS was developed by Jenkins to “examine decision-making as an element of the curricular process by developing a self-report measure to assess how students perceived themselves making clinical decisions” (1988, p. 33). The development of the CDMNS instrument was based on Janis and Mann's (1977) Conflict Model of Decision-Making framework. This instrument was used to measure the clinical decision-making skill variable in this study. The CDMNS is composed of four subscales: search for alternatives or options, canvassing of objectives and values, evaluation and reevaluation of consequences, and search for information and unbiased assimilation of new information. Each subscale is composed of ten items which Jenkins (1988) chose that were relevant to each of the four subscales from nursing literature.

The CDMNS items were written in simple language to avoid misunderstanding. This instrument uses a five-point Likert scale ranging from five (*always*) to one (*never*) for the nurses or nursing students to reflect upon their perceptions of their own behavior while caring for patients. Of the 40 items on the CDNMS, 22 are worded positively and 18 are worded negatively. The positive items are rated as follows:

5 = A (Always: What you consistently do every time)

4 = F (Frequently: What you usually do most of the time)

3 = O (Occasionally: What you sometimes do on occasion)

2 = S (Seldom: What you rarely do)

1 = N (Never: What you never do at any time)

The negatively written 18 items (2, 4, 6, 12, 13, 15, 19, 21, 22, 23, 24, 25, 30, 31, 32, 34, 39, and 40) were recoded and rated as:

5 = N (Never: What you never do at any time)

4 = S (Seldom: What you rarely do)

3 = O (Occasionally: What you sometimes do on occasion)

2 = F (Frequently: What you usually do most of the time)

1 = A (Always: What you consistently do every time)

The CDNMS instrument provides an overall score for each of the four subscales' scores, which are composed of ten items each, and the possible scores range from ten to 50 for each subscale. The CDNMS instrument also provides one overall score for total clinical decision making. The possible scores range from 40 to 200. The higher scores indicate

higher perceived decision making and the lower scores indicate lower perceived decision making. It takes approximately 20 minutes to complete the questionnaire (Appendix B).

In this study, the dependent variable clinical decision making was measured using the CDMNS (Jenkins, 1984). Items from the CDMNS were grouped in the following subscales or domains: search for alternatives and options (1, 3, 6, 7, 16, 22, 27, 30, 32, and 37), canvassing of objectives and values (2, 9, 10, 14, 21, 31, 33, 35, 38, and 40), evaluation and reevaluation of consequences (13, 17, 18, 23, 25, 26, 28, 29, 34, and 39), and search for information and unbiased assimilation of new information (4, 5, 8, 11, 12, 15, 19, 20, 24, and 36). A composite variable for each subscale was created. These composite variables were then summed to represent the total score of for clinical decision making which gave a potential score that ranged from 40 to 200. Higher scores indicate higher decision-making ability (Appendix E).

According to Creswell (2008), content validity refers to the extent to which the questions and scores obtained from an instrument are representative of all the questions the researcher could ask about the content. In addition, the validity of an instrument is important to determine if the researcher can draw meaningful conclusions from the scores (Creswell, 2008). The CDMNS' (Jenkins, 1985) content validity was established by utilizing a panel of five expert nurses who reviewed the questionnaire and determined its face validity by testing that the instrument measures what it was intended to measure. The experts rated each item with a specification matrix provided by Jenkins to give each item several scores. The rating was based on representativeness, sense, appropriateness,

and degree of independence from other items. All CDMNS items that received a total score of 77% or more were retained, and items which rated 70% or less were excluded.

According to Creswell (2008), reliability is the consistency of the scores of an instrument. It is crucial when collecting data from an instrument to examine its reliability. Polit and Beck (2012) reported that a widely accepted minimum standard for internal consistency is 0.70, which indicates good reliability (Nunnally, 1978). The CDMNS has an established reliability with a Cronbach's alpha of 0.83 (Waltz & Jenkins, 2001), which indicates a good reliability ($n = 111$).

Clinical Leadership Survey. The CLS is a newly developed questionnaire based on the Kouzes and Posner's model of transformational leadership. Patrick (2010) recently developed the CLS for the purpose of measuring staff nurse clinical leadership. This instrument was used to measure the clinical leadership skill variable in this study, as it measured the bedside clinical leadership skills of new Saudi graduate nurses. The CLS is composed of 15 items and five leadership practices: Clinical Expertise, Effective Communication, Collaboration, Coordination, and Interpersonal Understanding. Each leadership practice includes three items. Further, the CLS includes a global clinical leadership scale which is composed of two items. It takes approximately ten minutes to complete this questionnaire (Appendix C).

In this study, the dependent variable clinical leadership was measured using the CLS (Patrick, 2010). Items from the CLS were grouped into leadership practices as follows: Clinical Leadership Challenging the Process (1, 2, 3), Clinical Leadership Inspiring a Shared Vision (4, 5, 6), Clinical Leadership Enabling Others to Act (7, 8, 9),

Clinical Leadership Modeling the Way Statements (10, 11, 12), and Clinical Leadership Encouraging the Heart Statements (13, 14, 15). The researcher summed each subscale to obtain a composite variable score of three to 15. A composite variable for each leadership practice was created and these composite variables represented the total score for clinical leadership with a potential score range of 15 to 75. A higher value represents more frequent use of clinical leadership behavior. The scores are meant to reflect each staff nurse's perception of the frequency with which he or she demonstrates these behaviors in daily practice. The scores can be interpreted as low, moderate, or high frequency use of clinical leadership behaviors (Appendix E).

This instrument was examined for face validity within the research team. Further, a panel of six experts evaluated its content validity. According to Patrick et al. (2011), the Content Validity Index was calculated using techniques recommended by Lynn (1986) and Grant and Davis (1997). The expert panel members were asked to assess the relevance of each item using a four-point ordinal rating scale adapted from Lynn's (1986) content validity assessment scale in relation to the conceptual bases of the CLS; that is, the tool was derived from Kouzes and Posner's (1995) five leadership practices. The CLS content validity index was 85%. According to Davis (1992), this is acceptable for a new instrument.

Patrick et al. (2011) used a random sample ($n = 480$) of Canadian staff nurses working in Ontario acute care settings to assess the tool's psychometric properties. The researchers distributed the CLS with two other questionnaires, the Leadership Practices Inventory and the Conditions for Work Effectiveness Questionnaire II (CWEQ-II). The

Leadership Practices Inventory measures staff nurses' perceptions of nurse manager leadership behaviors. The overall Cronbach's alpha reported in the study was 0.97 with subscales ranging from 0.93 to 0.95. The CWEQ-II measures staff nurses' structural empowerment. The overall Cronbach's alpha reported in the study was 0.89 with subscales ranging from 0.64 to 0.85.

Participants' Demographics

Information about the participants' ages was collected in terms of years as continuous variable based on previous research such as Altier and Krsek (2006), Williams et al. (2007), and Goode et al. (2009). Marital status was measured and reported as 1 – single, 2 – married, 3 – divorced, and 4 – widowed. The nursing programs that the new Saudi graduate nurse graduated from were reported as 1 – Diploma, 2 – Baccalaureate (traditional), 3 – Baccalaureate (accelerated program), and 4 – Master's. Overall grade point average (GPA) was self-reported ranging from 2.0 to 5.0. Date of graduating from the nursing school was self-reported in months/years. The hospital at which the nurse was employed and, if applicable, enrolled in its residency program, was reported as Hospital I, II, or III. The length of the entire residency program was self-reported in months (six or 12 months). If the residency program had an orientation, the participants reported it by stating yes = 1 or no = 0. And if the answer was “yes,” the residency program had an orientation, it was reported in weeks. In addition, information was collected on whether the residency program offered supplemental classes (yes = 1, no = 0). If yes, the participants were asked to state their perception of the supplemental classes held in the residency program and how it was improving their professional

development on a scale of one to five (1 – no improvement, 2 – little improvement, 3 – moderate improvement, 4 – moderately significant improvement, and 5 – significant improvement). In addition, participants reported the clinical area in which they were working as 1 – medical, 2 – surgical, 3 – Obstetrics/Gynecology (OB/GYN), 4 – pediatrics, 5 – Intensive Care Unit (ICU), 6 – Critical Care Unit (CCU), 7 – oncology, or 8 – other, please specify (_____).

Independent Measures

Several variables were recoded in this study. The variable marital status was recoded into two categories of unmarried and married by combining the divorced and single categories into one category called unmarried, as only a few participants stated that they were divorced. Thus, the unmarried category refers to single and divorced participants. Similarly, the variable age was recoded into a categorical variable with two categories (≤ 25 , > 25). The specific age cutoff point of 25 years was chosen because the mean age of residents was 25.19 years and the distribution of the sample characteristics of the RP and NRG. The researcher also treated age as continuous variable in some of the analyses. The variable overall GPA was also recoded into a categorical variable with two categories (≤ 3.00 , > 3.00). This cutoff point was chosen because to join any residency program in Saudi Arabia the potential residents must have a minimum overall GPA of 3.00. The researcher also treated overall GPA as continuous variable in some of the analyses.

In addition, the area of clinical practice was recoded as there were only a few participants in some categories, and to make the analysis feasible. This was done because

nursing care provided to patients in individual clinical areas requires different levels of clinical decision-making and leadership skills (Bakalis & Watson, 2005) due to patient acuity and time constraints. Critical care units are very busy and crowded with frequent alarms and high technology equipment. The patient:nurse ratio is 1:1 or 2:1 depending on the patient's condition. There is continuous monitoring of patients and nurses need to make multiple decisions rapidly in highly complex environments over a short period of time to deliver expert individualized care. On the other hand, the noncritical units include patients with acute conditions where nurses provide care and treatment to patients with injuries or episodes of illness, or during recovery from surgery (Bakalis & Watson, 2005). Noncritical care services range from medical to surgical specialties and the patient:nurse ratio is 4:1 or 5:1 (National Nurses United, 2014).

Based on previous research (Adams et al., 1997; Bakalis & Watson, 2005; Bucknall & Thomas, 1996; Hoffman, Duffield, et al., 2004; Torunn Bjørk & Hamilton, 2011), area of clinical specialty affected the clinical decision-making process. Thus, the researcher combined the area of clinical practice into two categories (medical/surgical, and critical area) to examine its effect on participants' clinical decision making and clinical leadership skills. Medical, surgical, OB/GYN, pediatrics, and endoscopy were combined and called Non-critical care units (CCU). ICU, CCU, oncology, and operating room were combined and called critical care units (CCU). In addition, for the purpose of the regression model, the variables marital status and area of clinical practice were dummy coded (0 – unmarried, 1 – married; 0 – Non-CCU, 1 – CCU).

Data Analysis

The researcher made decisions about how to code the study data, including codes to use in designating missing values (99, 9999 missing). Then, the data were entered into the Statistical Package for Social Science (SPSS) version 20.0 (IBM, 2011). The researcher assigned the variables abbreviated names, and input additional information about the variables (e.g., variable labels). Further, data were cleaned to correct any errors. Thus, the data was prescreened before conducting any analysis to assess accuracy.

In addition, the researcher examined the extent of missing data, identified and assessed the effects of missing data, assessed outliers, and assessed adequacy of the fit between the data and the specific statistical test (Mertler & Vannatta, 2010). The missing data was assessed through calculating frequencies with potential effects determined by assessing means, standard deviation, kurtosis, and skewness. In addition, the researcher evaluated the missing data to assess if the missing values occurred randomly or if there was a specific pattern to the missing data using the Missing Completely at Random Test (MCAR Test). This test revealed a *p*-value of 0.363, thus, the null hypothesis was accepted that data were missing randomly. Therefore, the researcher proceeded with the analysis without replacing data, as the missing items were random and minimal per case.

In addition, the dataset was assessed for outliers using the explore function in SPSS to assess the minimum and the maximum values of each variable to see if they were within the range. Some outliers were found and they were corrected, as they were data entry errors. Furthermore, the data were evaluated for normality distribution assumption utilizing skewness, kurtosis, and Kolmogorov-Smirnov statistics and by

constructing a histogram. The skewness scores were observed for the total CDM of 0.328 and total CLS of -0.117 variables and they were approximately normally distributed.

After the data were assessed and evaluated as being accurate, for the CDMNS the researcher recoded the 18 negatively worded items. Scores for each subscale and the total score were computed based on the CDMNS scoring key. The items from the CDMNS were grouped in to four domains: search for alternatives and options (1, 3, 6, 7, 16, 22, 27, 30, 32, and 37), canvassing of objectives and values (2, 9, 10, 14, 21, 31, 33, 35, 38, and 40), evaluation and reevaluation of consequences (13, 17, 18, 23, 25, 26, 28, 29, 34, and 39), and search for information and unbiased assimilation of new information (4, 5, 8, 11, 12, 15, 19, 20, 24, and 36). Further, scores for each leadership practice and the total score were computed based on the CLS scoring key.

The researcher performed descriptive statistics to evaluate the data and sample characteristics. Descriptive statistics, including frequencies and percentages for categorical variables, were computed. Means and standard deviations for continuous variables were also computed. For the variables measured at ratio level, the researcher described the frequency, distribution (normal curve), mean, standard deviation, minimum, maximum, skewness, and kurtosis for all 40 items of the CDMNS and 15 items of the CLS instruments. The researcher performed a reliability analysis (Cronbach's alpha) for both the CDMNS and CLS instruments.

However, for the variables measured at a nominal and ordinal level, the researcher reported the frequency and percentage, such as marital status and nursing degree. In addition, *t*-tests for independent samples were conducted to assess any significant

differences in the average clinical decision-making and leadership skills based on the nurses' age, marital status, nursing program they graduated from, overall GPA, and area of clinical practice. These analyses were conducted separately for each group (residents and orientees).

Further, independent sample *t*-tests were conducted to compare if there were significant mean differences between residents in the average number of clinical decision-making and leadership skills based on their exposure to different lengths of residency programs (six or 12 months). In addition, bivariate descriptive statistics were conducted to explore the relationships among the variables. For instance, for the variables measured at the nominal/ordinal level (categorical variables), the researcher performed a cross-tabulation and any significant associations were assessed using the chi-square test statistic. For the variables measured at ratio level, the researcher performed bivariate Pearson correlations.

Multiple linear regression analysis was conducted to determine whether age, overall GPA, and enrollment in a residency program were significant predictors of total clinical decision making among nurses (residents, orientees). Additionally, another multiple linear regression analysis was conducted to determine whether age, overall GPA, total clinical decision-making scores, and enrollment in a residency program were significant predictors of clinical leadership skills among nurses (residents, orientees) in this study. Age, overall GPA, and enrollment in a residency program variables were chosen as predictors in the first model based on the correlation analysis conducted in this study; there was a significant relationship ($r = 0.365, p = 0.000$) between overall GPA

and total clinical decision-making scores. Further, studies in the nursing literature report that age, GPA, and enrollment in a residency program predict clinical decision making (AL-Dossary et al., 2014; Bratt, 2013; Bratt & Felzer, 2011, 2012; Bratt et al., 2012; Coombs et al., 2007; Higuchi & Donald, 2002; Hoffman, Duffield, et al., 2004; Moeti et al., 2004; Neilson & Lauder, 2008, Oermann & Garvin, 2002; Rush et al., 2013; Siew Eng et al., 2011; Torunn Bjørk & Hamilton, 2011).

The variables age, overall GPA, and total clinical decision-making scores, and enrollment in a residency program were chosen as predictors in the second model based on the correlation analysis conducted in this study; there were significant relationships between total clinical leadership skills and overall GPA, and total clinical leadership skills and total clinical decision-making scores (0.440, $p = 0.000$; 0.755, $p = 0.000$) respectively. Further, studies in the nursing literature state that age, overall GPA, clinical decision making, and enrollment in a residency program predict clinical leadership skills (AL-Dossary et al., 2014; AACN, 2008; Bratt, 2009, 2013; Bratt & Felzer, 2011, 2012; Bratt et al., 2012; Burns, 2009; Casey et al., 2004; Cummings et al., 2008; Curtis et al., 2011; Kowalski & Cross, 2010; Patrick, 2010; Rush et al., 2013).

Multiple linear regression analysis was also done to determine the overall fit of the two models and the relative contribution of each of the predictors to explaining the total variance. Before proceeding with this multiple regression analysis, the assumptions (normality, linearity, multicollinearity, and homoscedasticity) were assessed. The data were examined and there were no violations to the assumptions of multiple regression. Two models were constructed using the enter method selection to predict how much

variation in total clinical decision making and total clinical leadership skills could be explained by these predictors.

Major Threats to Validity

The convenience sampling method can be a source of bias as the sample is not representative of the entire population (Polit & Beck, 2012). Thus, a potential threat to the validity in this study was selection bias as randomization of participants was unfeasible (Pedhazur & Schmelkin, 1991). To prevent bias, only respondents who met the inclusion criteria in this study were selected.

The self-report questionnaires were also a limitation of this study for recall bias and social desirability. This method is susceptible to bias, although confidentiality of the data collected from the self-administered questionnaires was guaranteed. Research based on questionnaires depends on voluntary cooperation of the respondents, which can lead to nurses tending to reply to the questions in a socially desirable manner. Self-awareness of the residents and the new graduate nurses was another limitation of this study, as they may have perceived themselves wrongly. In fact, they might have considered that they were excellent decision makers and bedside leaders even when they were actually not, and vice versa. They also may not have had an accurate perception of their clinical decision-making, and leadership skills, which could have influenced participants' responses to some extent.

In addition, the questionnaires used in this study were originally designed and administered to populations of nurses from countries other than Saudi Arabia and consequently may not have taken potential cultural differences into consideration. Built-

in bias was another threat to this study in that the residency program may have been considered to work if the nurse (i.e., the resident) was in favor of the residency program and vice versa.

Time was a limitation for this study, as the design might not have captured the conceptual framework, and/or the within-groups and between-groups differences within the given timeframe. Finally, the lack of a baseline in total clinical decision-making scores and total clinical leadership scores prevented the researcher from determining if the changes in these variables were related to the residency program or other variables.

Human Subject Protection

An application was submitted to the George Mason University Human Subjects Review Board (HSRB) and the HSRBs of all three hospitals in Saudi Arabia. Before the study began, the researcher visited the sites and introduced herself to the participants to explain the study purpose, procedures in which participants would be asked to engage, the participant selection process, and to obtain participants' written consent (Appendix D) for participating in the study before they completed the questionnaires. The researcher provided the questionnaires and envelopes to participants utilizing a paper and pencil method. The researcher was available to answer any questions from the participants. The sealed questionnaires were returned to a locked box in the pantry of each unit at which the residents and orientees worked, provided by the researcher. The researcher was the only person who had access to the keys of the box. All of the questionnaires and the informed consent forms were kept separately in a locked drawer at George Mason University. The researcher was the only person who had access to the keys. No personal

identification was requested, and any information that was obtained in connection with this study was and will remain confidential. The researcher is the only person who had access to the data. Data will be kept for 3 years after the completion of the study then all the data will be destroyed. The researcher maintained confidentiality of data obtained from participants and hospitals. Confidentiality is considered primary to this study. Further, there is minimal risk to human subjects in this study. The data was not be associated to a specific nurse or hospital. Potential participants were assured that their participation was voluntary and that they could withdraw from the study at any point. Upon completing the questionnaires and putting them in the provided locked box, the potential participants received an appreciation gift (a \$15 Starbucks gift card). The appreciation gifts were placed in a basket next to the locked box in the pantry, so when they returned the sealed questionnaire they picked up their Starbucks gift card.

Chapter Summary

This chapter presented the research design and methods including the sample selection and the measurement methods. Further, the data collection process, statistical methods that were used to analyze the data, and the human subjects protection were discussed. The following chapter will discuss the results of the data analysis in this study.

CHAPTER 4. RESULTS

This exploratory, descriptive study was conducted to explore the impact of residency programs on clinical decision-making (CDM) and leadership skills' (LS) of new Saudi graduate nurses who had completed a residency program within one week to three months of the time of the study (Residency Program Group (RP)) and new Saudi graduate nurses who did not participate in residency programs (Nonresidency Program Group (NRP)). The clinical decision-making and clinical leadership skills were measured using Clinical Decision-Making in Nursing Scale (CDMNS) and Clinical Leadership Survey (CLS) respectively. This chapter presents the results of the data collection and analysis utilized to explore the study's research questions.

Study Sample Characteristics

Of 128 residents and orientees invited to participate in this study, 20 declined (18 orientees and 2 residents), and 8 returned the questionnaires unfilled. The response rate for this study was 76.6% ($98/128 * 100 = 76.6\%$).

The analytical sample consisted of 98 respondents, including 43 (43.9%) residents and 55 (56.1%) orientees. Most of the respondents (98%) were females; 2% were males. The mean age of the participants was 24.7 years old ($SD = 2.71$); residents' average age was 25.2 years old ($SD = 2.75$) and the orientees had a mean age of 24.3 years old ($SD = 2.64$). Additionally, 49.5% of the participants were single, 45.4% were married, and 5.2%

were divorced. Those identified as divorced were combined into the single category, as there were only a few divorced participants to analyze. The new category was called unmarried, meaning for marital status of participants 54.6% were unmarried and 45.4% were married. The educational background reported by participants was as follows: 93.9% had done traditional baccalaureate nursing programs, and only 6.1% attended accelerated baccalaureate nursing programs. The mean of overall Grade Point Average (GPA) of participants was 3.7 ($SD = 0.58$). Residents indicated a mean overall GPA of 3.99 ($SD = 0.497$) and the orientees a mean GPA of 3.54 ($SD = 0.57$). Tables 4 and 5 present descriptive statistics for the sample and by resident and orientate participant category.

Table 4

Distribution of the Sample Characteristics

Characteristics	Sample (N = 98)		M (SD)
	n	(%)	
Residents	43	(43.9)	
Orientees	55	(56.1)	
Age			24.7 (2.71)
Age Recoded			
≤ 25	70	(71.4)	
> 25	28	(28.6)	
Gender	98	(100.0)	
Female	96	(98.0)	
Male	2	(2.0)	
Marital Status	97	(99.0)	
Single	48	(49.5)	
Married	44	(54.4)	
Divorced	5	(5.2)	
Marital Status Recoded			
Unmarried	53	(54.6)	
Married	44	(45.4)	
Nursing Program	98	(100.0)	
Traditional Baccalaureate Nursing Degree	92	(93.9)	
Accelerated Baccalaureate Nursing Degree	6	(6.1)	
Overall Grade Point Average	95	(96.9)	3.7 (0.58)
Overall Grade Point Average Recoded			
< 3.00	16	(16.3)	
> 3.01	82	(83.7)	
Length of the Residency Program	98	(100.0)	
No Residency Program	55	(56.1)	
6 Months	18	(18.4)	
12 Months	25	(25.5)	
Area of Clinical Practice	98	(100.0)	
Medical	13	(13.3)	
Surgical	12	(12.2)	
Obstetrics/Gynecology	13	(13.3)	
Pediatric	10	(10.2)	
Intensive Care Unit	20	(20.4)	
Critical Care Unit	16	(16.3)	
Oncology	3	(3.1)	
Other	11	(11.2)	
Area of Clinical Practice Recoded			
Non-Critical Care Units*	59	(60.2)	
Critical Care Units**	39	(39.8)	

*Non-Critical Care Units (Medical, Surgical, Obstetrics/Gynecology, Pediatrics, and Endoscopy).

**Critical Care Units (Intensive Care Unit, Critical Care Unit, Oncology, and Operating Room).

Table 5

Distribution of Sample Characteristics of the Resident and Orientee Nurses

Characteristics	Residents <i>n</i> = 43		Orientees <i>n</i> = 55		<i>p</i> -Value
	<i>M</i> (<i>SD</i>)	<i>n</i> (%)	<i>M</i> (<i>SD</i>)	<i>n</i> (%)	
Age	25.2 (2.75)	43 (43.9)	24.3 (2.64)	54 (55.1)	0.101
Age Recoded					0.221
≤ 25		28 (65.1)		42 (76.4)	
> 25		15 (34.9)		13 (23.6)	
Marital Status					0.038
Unmarried		28 (28.9)		25 (25.8)	
Married		14 (14.4)		30 (30.9)	
Overall GPA	3.99 (0.5)	42 (42.9)	3.54 (0.56)	53 (54.1)	0.000
Overall GPA Recoded					0.006
< 3.00		2 (4.7)		14 (25.5)	
> 3.01		41 (95.3)		41 (74.5)	
Length of the Residency Program					
No Residency Program				55 (56.1)	
6 Months		18 (18.4)			
12 Months		25 (25.5)			
Residents' Perception of Supplemental Classes Related to Professional Development					
Little improvement		2 (4.7)			
Moderate improvement		5 (11.6)			
Moderately significant improvement		11 (25.6)			
Significant improvement		25 (58.1)			
Area of Clinical Practice					0.033
Non-Critical Care Units*		31 (72.1)		28 (50.9)	
Critical Care Units**		12 (27.9)		27 (49.1)	

*Non-Critical Care Units (Medical, Surgical, Obstetrics/Gynecology, Pediatrics, and Endoscopy).

**Critical Care Units ((Intensive Care Unit, Critical Care Unit, Oncology, and Operating Room).

Of the 98 participants, 20.4% were enrolled in the residency program at Hospital I. More than 23% of respondents were enrolled in the residency program at hospital II, and 56.1% were not enrolled at a residency program but were orientees at Hospital III. In this study, the length of the residency program ranged from six to 12 months, with 18.4% of the residents enrolled in the six-month residency program, and 25.5% of the residents enrolled in the 12-month residency program. All residents had an orientation and supplemental classes in their residency program. Of these residents, 58.1% found that

supplemental classes improved their professional development significantly and 25.6% stated that these classes improved their professional development moderately.

Initially, 23.9% of participants with traditional baccalaureate degrees were interested in working on surgical units; 33.3% of participants with accelerated baccalaureate nursing degrees were interested in working at the ICU. Additionally, 29.5% of the married participants were interested in working at OB/GYN units, and 20% of the participants were interested in working on surgical units. Residents were more interested in working at the ICU (18.6%), medical (16.3%), and surgical (16.3%) units, respectively. Orientees were more interested in working at surgical (27.3%) and OB/GYN units (25.5%), respectively. However, the participants were assigned to different units than the ones they were interested in working at either the entrance to the residency program or the nursing position based on the hospital's need.

Most participants, 93.9%, had traditional baccalaureate nursing degrees. These nurses worked at ICU (19.6%), CCU (16.3%), medical (14.1%), and OB/GYN (14.1%) units, respectively. Participants with accelerated baccalaureate degrees worked at ICU (33.3%), CCU (16.7%), surgical (16.7%), and oncology units (16.7%). Most of the female participants worked at ICU and CCU (20.8%, 16.7% respectively) and 2 (100%) of the male participants worked at oncology units. Because of the distribution of participants by unit, some units were combined to support data analysis. The researcher combined the Medical, Surgical, OB/GYN, Pediatrics, and Endoscopy units into one class, Non-critical care units (CCU). ICU, CCU, Oncology, and Operating Room were combined into one class called critical care units (CCU), as there were only a few

participants in some categories and to make the analysis feasible. Most of the residents and the orientees worked at Non-CCUs (72.1% and 50.9%) respectively.

Reliability of Instruments

Creswell (2008) explains that reliability is the consistency of the scores of an instrument. Therefore, it is crucial when collecting data from an instrument to examine its reliability. Polit and Beck (2012) reported that a widely accepted minimum standard for internal consistency is $\alpha = 0.70$, which indicates a good reliability (Nunnally, 1978). The CDMNS instrument in this study established reliability with a Cronbach's alpha of $\alpha = 0.97$ ($n = 98$), with subscales ranging from 0.84 to 0.92. The subscales search for alternatives and options Cronbach's alpha was $\alpha = 0.84$, for canvassing of objectives and values was $\alpha = 0.87$, for evaluation and reevaluation of consequences was $\alpha = 0.92$, and for search for information and unbiased assimilation of new information was $\alpha = 0.87$. This indicates a good reliability for the CDMNS instrument and its subscales.

The CLS instrument showed a reliability Cronbach's alpha of $\alpha = 0.89$ ($n = 98$). Reliability analysis was done for each leadership practice (LP): The Cronbach's alpha for Clinical Expertise (LP1) was $\alpha = 0.05$, for Effective Communication (LP2) was $\alpha = 0.82$, for Collaboration (LP3) was $\alpha = 0.67$, for Coordination (LP4) was $\alpha = 0.84$, and for Interpersonal Understanding (LP5) was $\alpha = 0.79$. These results indicate good reliability for both instruments used in this study.

The total clinical decision-making mean score for the sample was 129.7 ($SD = 32.52$). The four subscales of CDMNS' mean scores were calculated separately. For domain one (Search for Alternatives and Options) the mean score was 32.4 ($SD = 7.55$),

for domain two (Canvassing of Objectives and Values) the mean score was 32.2 ($SD = 8.41$), for domain three (Evaluation and Reevaluation of Consequences) the mean score was 31.9 ($SD = 9.86$), and for domain four (Search for Information and Unbiased Assimilation of New Information) the mean score was 33.3 ($SD = 8.17$).

The total clinical leadership skills mean score for the entire sample was 53.2 ($SD = 9.75$). For each leadership practice the mean score was calculated separately. For LP1 the mean score was 9.5 ($SD = 2.11$), for LP2 the mean score was 11.5 ($SD = 2.77$), for LP3 the mean score was 11.7 ($SD = 2.26$), for LP4 the mean score was 10.9 ($SD = 2.79$), and for LP5 the mean score was 9.6 ($SD = 2.88$).

Major Findings

Research Question One

1. Do new Saudi graduate nurses participating in residency programs differ significantly in clinical decision-making and leadership skills at the end of the residency program, compared to new Saudi graduate nurses not participating in residency programs?

Table 6 presents a comparison between residents' and orientees' mean scores (SD), t -tests, and p -values for total clinical decision-making and the four subscales of CDMNS. The total clinical decision-making mean score for residents was 163.3 ($SD = 14.39$), a score that was significantly higher ($p = 0.000$) than the orientees' whose mean score was 102.7 ($SD = 9.43$). The four subscales of CDMNS' mean scores were calculated separately for each group. For domain one (Search for Alternatives and Options) the residents' mean score was 39.7 ($SD = 3.52$), significantly higher ($p = 0.000$)

than the orientees' mean score 26.5 ($SD = 3.80$). There was also a significant ($p=0.000$) difference in the mean score of domain two (Canvassing of Objectives and Values) between residents and orientees: The mean score of domain two for residents was 40.7 ($SD = 3.89$) compared to orientees' mean score of 25.4 ($SD = 3.13$). Domain three (Evaluation and Reevaluation of Consequences) showed a significant ($p=0.000$) difference in both groups, as residents' mean score was 41.8 ($SD = 4.98$) compared to orientees' mean score of 24.2 ($SD = 4.14$). Finally, the average mean score for domain four (Search for Information and Unbiased Assimilation of New Information) for residents was 41.4 ($SD = 4.50$), significantly higher ($p = 0.000$) than the mean score of orientees of 26.8 ($SD = 2.78$).

Table 6

Clinical Decision Making Among Residents and Orientees

Domains (D)	Residents ($n = 43$)		Orientees ($n = 55$)		t -test	p - Value
	M	(SD)	M	(SD)		
D1: Searching for Alternatives or Options	39.7	(3.52)	26.5	(3.80)	17.33	0.000
D 2: Canvassing of Objectives and Values	40.7	(3.89)	25.4	(3.13)	21.03	0.000
D 3: Evaluation and Reevaluation of Consequences	41.8	(4.98)	24.2	(4.14)	18.89	0.000
D 4: Searching for Information and Unbiased Assimilation of New Information	41.4	(4.50)	26.8	(2.78)	18.72	0.000
Total Average Score of Clinical Decision Making	163.3	(14.39)	102.7	(9.43)	23.25	0.000

An independent sample t -test was conducted to compare the mean differences between residents (Residency Program Group (RP)) and orientees (Nonresidency Program Group (NRP)) in their total clinical decision-making scores. (H_{01} : There are no significant mean differences between the RP and the NRP groups in their clinical

decision-making scores). A significant difference was found between the two groups ($t = 23.25, p = 0.000$).

Table 7 presents the mean scores, t -tests, and p -values for the total clinical leadership skills and five leadership practices of CLS. This was done to compare the mean differences of the five leadership practices between the RP and the NRP groups. In addition, the total clinical leadership skills mean score for residents was 61.4 ($SD = 5.21$), significantly higher ($p = 0.000$) than the orientees' mean score of 46.9 ($SD = 7.52$). For each leadership practice, the mean scores were calculated separately for each group. For LP1 the residents' mean score was 10.3 ($SD = 1.27$), significantly higher ($p = 0.000$) than the orientees' mean score of 8.8 ($SD = 2.37$). There was also a significant difference in the mean score of LP2 between residents and orientees. The mean score of LP2 for residents was 13.1 ($SD = 1.94$) compared to orientees' mean score of 10.2 ($SD = 2.70$). The residents' mean score for LP3 was 13.1 ($SD = 1.53$), which was also significantly higher ($p = 0.000$) than the orientees' mean score of 10.6 ($SD = 2.11$). The residents' average mean score for LP4 was 13.2 ($SD = 1.53$), significantly higher ($p = 0.000$) compared to the orientees' mean score of 9.2 ($SD = 2.17$). Finally, for LP5 the residents' mean score was 11.7 ($SD = 1.99$), significantly higher ($p = 0.000$) than the orientees' mean score of 7.9 ($SD = 2.35$).

Table 7

Clinical Leadership Skills Among Residents and Orientees

Leadership Practice (LP)	Resident (<i>n</i> = 43)		Orientees (<i>n</i> = 55)		<i>t</i> -test	<i>p</i> -Value
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)		
LP1: Clinical Expertise	10.3	(1.27)	8.8	(2.37)	4.18	0.000
LP2: Effective Communication	13.1	(1.94)	10.2	(2.70)	5.79	0.000
LP3: Collaboration	13.1	(1.53)	10.6	(2.11)	6.80	0.000
LP4: Coordination	13.2	(1.53)	9.2	(2.17)	10.89	0.000
LP5: Interpersonal Understanding	11.7	(1.99)	7.9	(2.35)	8.38	0.000
Total Average Score of Clinical Leadership	61.4	(5.21)	46.9	(7.52)	10.48	0.000

Furthermore, an independent sample *t*-test was conducted to compare the mean differences between the RP and the NRP groups in their total clinical leadership skills score. (H_{02} : There are no significant mean differences between the RP and NRP groups in their clinical leadership skills). This test found a significant difference between the two groups (RP, NRP) ($t = 10.48, p = 0.000$).

Research Question Two

2a. Are there any significant differences in the average number of clinical decision-making and leadership skills by age, marital status, overall GPA, and area of clinical practice among residents?

An independent sample *t*-test was conducted to compare the mean differences in total clinical decision-making score and the four domains' (D) scores for residents' age, marital status, overall GPA, and area of clinical practice. Table 8 presents the comparisons of residents' characteristics for the mean total clinical decision-making score and four domains of the CDMNS. No significant differences were found in the total clinical decision-making score and four domains scores. Although no significant differences were observed, residents over 25 years of age had an average mean score of

total clinical decision making of 164.7 ($SD = 17.06$), higher than residents younger than 25 years old whose mean score was 162.5 ($SD = 12.91$). A similar pattern was also observed for married residents whose average mean score of total clinical decision making was 167.8 ($SD = 13.83$), higher than unmarried residents' mean score of 161.7 ($SD = 14.49$). Further, the CCU residents scored higher in the average mean score of total clinical decision-making with 166.2 ($SD = 13.81$) compared to Non-CCU residents with a mean of 162.1 ($SD = 14.70$). However, as indicated above, none of these differences were statistically significant.

An independent sample t -test was used to compare the mean differences in total clinical decision-making score and four domains scores for residents who were at most 25 years old or more than 25 years old in their total clinical decision-making scores. No significant differences were found ($t = 0.46, p = 0.65$). Furthermore, no significant differences were found between residents who were unmarried and those who were married in their total clinical decision-making scores ($t = 1.27, p = 0.21$). The overall GPA for residents test was excluded, as there were only two residents with a GPA less than 3.00. No significant differences were found between CCU residents and Non-CCU residents in their total clinical decision-making scores ($t = 0.82, p = 0.42$).