

Spring 3-11-2013

The Ties that Bind: the Relationships between and among Registered Nurses' Clinical Experience, Clinical Decision-making Processes, and Nursing Practice Issues Related to Physical Restraint Use with Attitudes Toward the Use of Physical Restraints in the Critical Care Environment

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PROCESSES, AND NURSING PRACTICE ISSUES RELATED TO PHYSICAL
RESTRAINT USE WITH ATTITUDES TOWARD THE USE OF PHYSICAL
RESTRAINTS IN THE CRITICAL CARE ENVIRONMENT

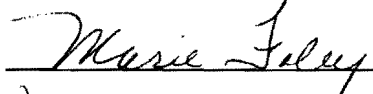
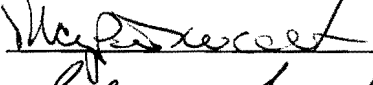
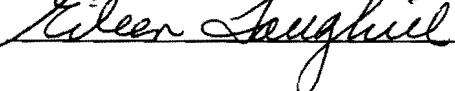
BY

KRISTI STINSON

Dissertation Committee

Dr. Marie Foley, Chair
Dr. Eileen Toughill
Dr. Mary Patricia Wall

Approved by the Dissertation Committee

	Date <u>3/11/13</u>
	Date <u>3-11-2013</u>
	Date <u>3-11-2013</u>

Submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in Nursing
Seton Hall University
2013

Acknowledgements

I wish to express my deepest appreciation to several people without whom I would not have completed this PhD journey. I would like to thank my dissertation chair, Dr. Marie Foley, for her unwavering guidance and encouragement through every turn in the road. I appreciate all of the faith you had in me and your generosity of wisdom. I consider it an honor to have worked with you. I would like to thank my committee members, Dr. Eileen Toughill and Dr. Mary Patricia Wall, for their time and input. Thank you for sharing your expertise with me.

Thank you to Dr. Ronald Pannone and Dr. S. Martin Edwards for their statistical guidance. You both helped to clarify a sometimes murky statistical world to this statistical novice. Thank you to Dr. Theodora Sirota for opening the door to the possibility of online data collection. I appreciate all of your help. A big thank you to Will Gayeski who managed to retrieve the crashed hard drive on my computer at a very crucial time. You averted a potential catastrophic crisis for which I am eternally grateful.

Thank you to the Robert Wood Johnson Foundation for their generous support of my doctoral studies.

Thank you to my wonderful family - Mom, Susan, Amy, Mike and Courtenay - for their support, love and encouragement in the completion of this dissertation and my graduate program. And finally, thank you to my loving husband Mike and our children, Abby, Sam and Molly – you are my everything and I am a much better person because of all of you.

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ABSTRACT

The purpose of this descriptive correlational study was to examine the relationships between and among registered nurses' clinical experience, clinical decision-making processes, nursing practice issues with physical restraint use, and attitudes regarding physical restraint use in the critical care environment. The participants were 413 primarily white (91%), critical care nurses ranging in age from 19 to 68 ($M=45.56$) from across the United States. Participants were classified as experts based on Benner's (2001) classifications, in both experience in nursing in general (88%) and in critical care (82%) in particular. Participants were recruited through the American Association of Critical Care Nurses (AACN) and completed two online surveys (Jenkins' Clinical Decision Making in Nursing Scale (CDMNS) and The Physical Restraint Questionnaire – the Nursing Practice Issues with PR Use and Attitudes Toward PR Use subsections) via Survey Monkey™.

The results indicate that there is no strong correlation to explain any variance between attitudes toward PR use in critical care and clinical experience in nursing in general, clinical experience in critical care, clinical decision making, and nursing practice issues with PR use. This sample of nurses' mean scores on the CDMNS were higher than noted in previous research. A moderate correlation was found between clinical decision making processes and nursing practice issues with physical restraint use. There were no differences found in any of the Benner stages of clinical experience. Nurses at all of Benner's level from novice through expert had no

significant differences in their attitudes toward PR use. Nurses with more clinical experience were more likely to have been taught content about PR use in their basic RN nursing curriculum than those with less clinical experience.

The results of this study suggest that there is a need to include education related to PR use in current nursing curricula which can lead to better clinical decisions and improved overall patient care related to PR use in critical care environments.

Chapter I

INTRODUCTION

Introduction

Decision making is an essential process of human nature (Noone, 2002; Tanner, 2006). Clinical decision making (CDM) is a phenomenon that is fundamental to healthcare practice. While CDM impacts the entire spectrum of healthcare practitioners, nurses, as frontline clinicians, are faced with important clinical decisions on a daily basis (Dowding & Thompson, 2003; Harbison, 2001; Muir, 2004; Ramezani-Badr, Nasrabadi, Yekta, & Taleghani, 2009). The overall goal of clinical decision making is to provide the highest quality patient care based on the available resources. Knowing the factors that influence the CDM process increases the likelihood of providing high quality safe patient care. When providing care, nurses are accountable to their patients, the profession, and the organizations for which they work; therefore, it is imperative that there be an understanding of the mechanisms involved in reliable CDM (Muir, 2004).

Clinical decision making is defined as the thought process of choosing alternatives in providing care to patients involving both diagnostic reasoning and clinical judgment (Banning, 2008; Florin, Ehrenberg, & Ehnfors, 2008; Hicks, 2001; Thompson & Dowding, 2002). It involves managing a variety of information from varied sources in order to make a clinical judgment. In CDM, nurses must accurately assess and identify deviations from a normal clinical picture of health or illness and

make a decision based on the data presented (Cranley, Doran, Tourangeau, Kushniruk, & Nagle, 2009; Silverthorne, 2008). This complicated process can mean the difference between life and death for patients (Aitken, 2003; Gillespie & Paterson, 2009). The underlying processes involved in making decisions are multifaceted and often not easily observable (Hicks, Merritt & Elstein, 2003).

The application of physical restraints (PR) in critical care is based on nurses' clinical decision making in each individual patient situation. Due to the frequency of invasive procedures and the use of mechanical ventilation, PR use in the critical care environment is more likely than other hospital units (Hine, 2007; Hofso & Coyer, 2007; Minnick, Mion, Johnson, Catrambone, & Leipzig, 2007; Mion, 2009). A physical restraint is defined as "any manual method, physical or mechanical device, equipment, or material attached or adjacent to the patient's body that the individual cannot easily remove; a manual device which restricts freedom of movement or normal access to one's body" (Centers for Medicare and Medicaid Services, 2007, p.2). Although intended to protect patients, physical restraint use can have direct negative patient outcomes. These may include physical effects such as pressure ulcers, fractures, burns, strangulation, and even death (Evans, Wood & Lambert, 2003; Hine, 2007; Minnick et al., 2007) as well as psychological effects such as isolation, anxiety, and depression (Martin & Mathisen, 2005). Despite the known risks and complications of use, nurses in critical care units continue to use physical restraints. At least 27,000 people are physically restrained in U.S. hospitals each day - with the majority of use (56%) confined to the ICUs (Minnick et al., 2007).

Data show that physical restraint applications are initiated by nurses, not physicians (Choi & Song, 2003; Happ, 2000; Whitman, Kim, Davidson, Wolf, & Wang, 2002). According to Hine (2007), the initiation and maintenance of physical restraint devices is “almost exclusively a nursing responsibility” (p.8). Patients’ clinical status and medical acuity had less of an influence on physicians’ likelihood to order physical restraints than the working relationship with the nurse and the nurse’s request for the physical restraint order (Mion et al., 2010). Previous clinical exposure and experience with physical restraints may influence the nurse’s decision to request an order for restraints (Choi & Song, 2003). Nurses’ overall levels of clinical experience are considered to influence the clinical decision making process (Benner, 2001) and are expected to have a role in the decision to utilize physical restraints.

Problem

Since there can be both positive and negative outcomes for patients associated with the use of PRs, there is a need to better understand the clinical decision making processes of nurses when utilizing physical restraints in environments where use rates are high such as critical care units. Therefore, there is a need to assess the relationships between and among registered nurses’ clinical experience, clinical decision making processes, and nursing practice issues with physical restraint use and attitudes toward using physical restraints in the critical care environment.

Research Question

What are the relationships between and among registered nurses’ clinical experience, clinical decision making processes, and nursing practice issues related to

physical restraint use with attitudes toward the use of physical restraints in the critical care environment?

Definitions of Variables

Clinical experience was conceptually defined as the number of years a registered nurse has been working in the same clinical environment (Benner, 2001). Clinical experience was operationally defined as the number of years the registered nurse has worked in nursing in general, or any care setting, and in the critical care environment. Critical care environments include the intensive care environment (ICU), coronary care unit (CCU), and post anesthesia care unit (PACU). For this study, a *novice* was defined as any nurse who is new to the critical care environment, whether that is the newly graduated nurse coming directly from school to the critical care environment, or a nurse with experience in a different clinical setting but new to the critical care environment. The *novice* nurse worked in the critical care environment for six months or less. The *advanced beginner* was the registered nurse who worked in the critical care environment for seven months to one year. The *competent* nurse was the registered nurse who worked in the critical care environment for greater than one to three years, and the *proficient* nurse was the registered nurse who worked in the critical care environment for greater than three years to five years. The *expert* nurse was the registered nurse who has been in critical care greater than five years, all consistent with Benner's stages (Benner, 2001).

Clinical decision making (CDM) was conceptually defined as a process of discriminative thinking patterns and critical thinking with varying influences that

nurses undertake when making judgments about the care they provide to patients (Banning, 2008; Benner, 2001; Cioffi, 1998). For this study, CDM was operationalized as the score obtained on the Clinical Decision Making in Nursing Scale (CDMNS) created by Dr. Helen Jenkins in 1985 (Appendix C).

Nursing practice issues with physical restraint use was conceptually defined as a registered nurse's actions while caring for patients who are restrained (Janelli et al., 1991). Nursing practice issues was operationalized as the registered nurses' scores on the Nursing Practice Issues subsection of the Physical Restraint Questionnaire (Appendix D).

Attitudes toward the use of physical restraints was conceptually defined as the nurse's feelings about using physical restraints and how the nurse feels about caring for patients who are restrained (Janelli, Scherer, Kanski, & Neary 1991). Attitudes toward the use of physical restraints was operationalized as the registered nurses' scores on the Attitudes Regarding Physical Restraint Use subsection of the Physical Restraint Questionnaire created by Dr. Linda Janelli in 1991 (Appendix B). Attitudes toward the use of physical restraints was the dependent variable for the study.

Delimitations, Inclusion Criteria

This study was limited to registered nurses currently employed in a critical care environment (intensive care unit, coronary care unit, post anesthesia care unit) in the United States. Participants must have had professional experience with physically

restrained patient(s) at some point during the last month, be able to read and write in English and have access to the Internet.

Theoretical Framework

The theoretical framework of this study was based on Benner's From Novice to Expert model (Benner, 2001; Benner, 2004; Benner, Kyriakidis, & Stannard, 2011). Patricia Benner (2001) developed an intuitive, humanistic decision making model that described five levels or stages of skill acquisition in nursing clinical knowledge: novice, advanced beginner, competent, proficient, and expert. The five levels reflect changes in three general aspects of skilled performance and decision making: 1) a move from reliance on abstract principles to the use of past concrete experiences, 2) a change from viewing a situation in multiple fragments to seeing a more holistic picture, and 3) a movement from detached observer to active performer (Benner, 2001). Each level is characterized by increased reliance on past clinical experience. The five stages are: *novice* (less than six months clinical experience); *advanced beginner* (six to twelve months clinical experience), *competent* (one to three years clinical experience), *proficient* (four to five years clinical experience), and *expert* (over five years clinical experience). When making the decision to utilize physical restraints, novice nurses will look to the hospital or unit protocols to assist with decision making; the advanced beginner will look to the preceptor to guide the decision of justifying physical restraint use; the competent nurse will base his or her decision for physical restraint use on previous real-life clinical experience. Proficient nurses will decide whether or not physical restraint use is necessary very quickly and

move forward with that decision and expert nurses will look at a given clinical situation and will apply a physical restraint or not without conscious thought as to need. No one needs to guide the expert nurse in this decision.

A key component of Benner's work that can be used as a guide when examining the decision to utilize physical restraints is the development of intuitive judgment. There are six key concepts to intuitive judgment: *pattern recognition* (perceptual ability to recognize relationships without pre-specifying the components of the situation), *similarity recognition* (ability to identify problems based on previous similar or dissimilar situations), *commonsense understanding* (ability to see the subtle nuances of a situation), *skilled know-how* (decision making ability based on embodied intelligence), *sense of salience* (knowing which events and observations are more important), and *deliberative rationality* (way to clarify perspective by considering more than the given situation; considering the "whole picture"). There are differences that can be seen in the capacities and capabilities of nurses in their decision making in these six areas depending on where in the five stages of skill acquisition they are (Benner, 2001).

Benner's work provides a theoretical structure upon which to view application of nursing knowledge to the clinical decision making process. She describes how the novice nurse will use procedures and guidelines to guide decision making; but, as the nurse gains a wealth of experience, the decision making becomes more intuitive. While timely and accurate decision making is a universal expectation, it is the expert nurse who is able to do this on an intuitive, holistic level. Being able to step back and

view the patient as a whole, instead of as a series of tasks, is part of the progression of CDM (Benner, 2001).

Experience is paramount when looking at the clinical decision making process (Benner, 2001; Benner, 2004; Benner, Tanner, & Chesla, 1996). Nursing practice issues and attitudes, or what nurses actually do and think about when providing patient care, are influenced by the amount of clinical experience of the provider (Benner, 2001). Experience and intuition, education, and environment all influence the overall decision making process and the knowledge acquired during this process. Experience, however, remains the ultimate contributor when making clinical decisions (Benner, 2001). Therefore, Benner's theory is appropriate to guide this descriptive correlational study which will examine the relationship of clinical experience and practice issues to nursing attitudes during the clinical decision making process of utilizing physical restraints in the critical care environment.

Significance of the Study

With changes in healthcare delivery, increased patient acuity, greater workloads, and increased accountability in practitioners' decisions, it is vital to better understand how nurses make clinical decisions and what factors influence them (Gillespie & Paterson, 2009). Patients in acute care settings are sicker and require experienced nurses who will provide the highest levels of quality care (Hoffman, Donoghue, & Duffield, 2004). This is particularly true in critical care. In this environment, decisions, such as the decision to use physical restraints, are made

frequently and quickly and a delay in the decision-making process can be a matter of life or death.

Reported restraint prevalence rates in the United States range from 6% to 25% in acute care settings (Fogel, Berkman, & Merkel, 2009; Minnick et al., 2007); however, there is limited information related to numbers of patients who are physically restrained in the critical care environment. One study (Martin & Mathisen, 2005) reports use of physical restraints to be between 13 to 50%. Fiscal costs related to physical restraint use are not specifically mentioned, yet there is an economic burden associated in terms of the need for increased staff time for those in physical restraints as well as the need for prevention of injury to patients (Fogel, Berkman & Merkel, 2009; Health Care Financing Administration, 2006; Lane & Harrington, 2011). Thus, the decision to restrain patients in critical care is not one to be taken lightly and is a situation that needs to be given careful consideration and study in today's health care environment.

Nurses are the key decision makers in the application of physical restraints (Choi & Song, 2003; Langley, Schmollgruber, & Egan, 2011; Whitman et al., 2002). The most common reason in critical care for PR use is to prevent the removal of invasive tubes and devices such as endotracheal tubes (Happ, 2000; Choi & Song, 2003; Huang, Chuang, & Chiang, 2009; McCabe, Alvarez, McNulty, & Fitzpatrick, 2011). However, it is not an automatic procedure to restrain a critically ill patient simply to maintain treatment modalities. In actual practice, it is known that many patients can sustain all necessary interventions without physical restraints. No current

research exists to support why the decision is made to restrain some patients in critical care and why others are not restrained. Most of the research related to PR use in the critical care environment has been conducted internationally which renders generalization to American critical care settings difficult as the care and attitudes regarding PR use in other countries can vary from that in the United States (Benbenbishty, Adam, & Endacott, 2010; Choi & Song, 2003; Huang, Chuang, & Chiang, 2009; Martin & Mathisen, 2005; Yeh et al., 2004). Therefore, further research examining the relationships between and among nurses' clinical experience, CDM processes, practice issues and attitudes toward the use of physical restraints in the critical care environment will contribute to nursing knowledge and patient care concerns on this topic.

Chapter II

REVIEW OF LITERATURE

Introduction

This chapter will provide an overview of Patricia Benner's Theory of Novice to Expert (Benner, 2001) and an accounting of the history of the research using her theory to date. It will provide a definition of clinical experience and clinical decision making (CDM) available in current literature, and provide an overview of the current research examining the factors related to the CDM process. The research on the nursing attitudes and practice issues with physical restraint use in the hospital and critical care environment will be presented.

A literature search was conducted to determine the defining attributes of the research variables. Searches were conducted in the databases of Cumulated Index for Nursing and Allied Health (CINAHL), Proquest, LexisNexus Academic, Medline, the Science Citation Index, and Google Scholar using the search key terms "clinical experience", "clinical decision making", "decision making/judgment", "concept or theory", "Patricia Benner", "clinical reasoning", "nursing practice domain of clinical decision making", "the Clinical Decision Making in Nursing Scale", "physical restraint", "physical restraint use" and "physical restraint use in critical care." Primary source materials of nursing research and theory reports in English, peer-reviewed journals between the years of 1998 and 2012 were examined. Works greater than fifteen years from the time of the original literature search were considered to be

outdated by this researcher and, therefore, not used. Reference citations from articles were manually searched to locate additional studies. Seminal works from earlier dates were included. Research studies were selected based on inclusion of the key terms.

Benner's Novice to Expert Theory

Patricia Benner (2001) developed a practice-based model of nursing knowledge and skill acquisition based on her own early clinical and research work. Originally developed by Hubert and Stuart Dreyfus (1986) to identify the nature of skill acquisition that chess players and airline pilots pass through as they develop expertise in their position, Benner adapted the model to nursing (Benner, 2001).

Benner discusses five levels of skill and knowledge acquisition that nurses will navigate when developing their practice and knowledge base. Knowledge is developed pragmatically through practice and the understanding of the clinical experience. "There is a distinction between the level of skilled performance that can be achieved through principles and theory learned in a classroom and the context-dependent judgment and skill that can be acquired only in real situations" (Benner, 2001, p. 21). The following are the five levels of skill and knowledge acquisition as described by Benner (2001).

Stage One - Novice – A novice has no experience in the situation in which he/she is expected to perform. Novice nurses can be new graduates entering the nursing profession or nurses entering a new clinical area where they have little to no experience (less than six months) with that particular patient population or environment. The novice is taught about situations in terms of objective attributes such

as weight, temperature, intake and output. The novice uses context-free rules to guide actions. Novice nurses must use universal rules and protocols to guide their behavior and decision-making process since there is no available experience upon which to draw conclusions. According to Benner (2001), the novice nurse makes judgments based on didactic theory with limited practice in clinical situations.

Stage Two – Advanced Beginner - Advanced beginners have worked in the clinical setting for six to twelve months. They know the rules and do not deviate from them. They can demonstrate marginally acceptable performances but still need mentoring and support in the clinical setting. There is some real-life experience upon which to access recurring meaningful situational components. Based upon previous experience, principles are beginning to be formed to guide nursing action. Advanced beginners operate on general guidelines and are only beginning to perceive recurrent meaningful patterns in clinical practice. These nurses need support in the clinical setting. Advanced beginners often still work under the guidance of a preceptor (Benner, 2001).

Stage Three – Competent - Competent nurses have worked in the clinical setting for one to three years. They have acquired some situational experience and can manage work efficiently and appropriately. Competent nurses are able to use resources and to deliberately plan the intended care for their patients. There is a conscious, deliberate quality to planning of care that is characteristic of this skill level. Competent nurses are conscious of their work and view their actions in terms of long-term goals or plans. These plans establish a perspective based on analytic

contemplation of the problem (Benner, 2001). The competent nurse lacks the speed and flexibility of decision-making and problem solving of the proficient nurse but does feel a sense of mastery with coping and managing many clinical situations (Benner, 2001).

Stage Four – Proficient – Proficient describes nurses who have generally worked in a clinical environment for four to five years. They perceive the situation as a whole rather than in terms of aspects or parts. There is a higher level of efficiency and confidence in assessment and problem solving. There is a consideration of situational meaning when setting long-term goals. Proficient nurses go beyond the immediate. They have learned from experience what to expect in a given situation and understand the manner in which plans need to be modified in response to these events. Proficient nurses are able to quickly identify an accurate decision based on the ability to recognize patterns from previous experience (Benner, 2001).

Stage Five -Expert – Expert nurses have worked in a clinical environment for over five years. They have a wealth of previous experience allowing for a complete understanding of the clinical picture. There is no longer reliance on analytic principles, such as rules or guidelines, to connect the understanding of the situation to an appropriate action. There is no decomposition of the situation into discrete elements. Experts immediately focus on a specific problem and are fluid, flexible, and highly proficient in thoughts and decision-making. Expertise develops when the nurse tests and refines propositions and principles based on previous situations. Expert nurses have an intuitive grasp of a situation. They do not use linear analysis to understand yet

can quickly identify relevant information to make a knowledgeable clinical decision (Benner, 2001).

The meaning of experience is integral to Benner's work. According to Benner (2001), experience is not the simple passage of time or longevity in a position, but rather, results in thoughtful understanding and appreciation of theory based on exposure to multi layered interactions and situations. It is an active process of refining and changing previous thoughts and ideas when confronted with actual situations. Concrete experience provides learning about the exceptions and shades of meaning in a situation.

Benner (2001) describes experience as a process of knowing through repeated exposure to situations that leads to a refinement of earlier thoughts and ideas. Nurses' experiences are described and analyzed by the nurses themselves and provide a knowledge base on which to reflect and to use in the development of their own practice. Experience over time is mandatory in order to develop expertise in clinical decision making. When engaged in CDM, the expert nurse may make decisions as a result of an intuitive thought process that is based on accumulated expertise. The essence of intuition is the recognition of previously experienced patterns and the detection of subtle clinical changes. It is an understanding without rationale. It is closely linked to tacit knowledge, a term used to describe the knowledge that professionals use but find difficult to articulate. Tacit knowledge emerges from experience and becomes intuitive as practitioners act without necessarily being consciously aware of the knowledge they have and the reason they are making

decisions. The expert nurse acts intuitively, based on vast amounts of experience that leads to “knowing how.” When engaged in clinical decision making, the expert nurse may intuit the best way to handle a situation, but not be able to explain this CDM process logically (Benner, 2001; Benner, Hughes, & Sutphen, 2008).

Since Benner first published her theory in 1984, the concept of intuition has remained controversial and contentious. An initial response to this word can be that it refers to a nurse who predominantly relies upon unrelated conjectures during nursing practice (Lyneham, Parkison, & Denholm, 2009). However, Benner posits that the concept of intuition should imply expert practice, a nurse who has progressed through developmental stages involving experience, education and evidence-based practice (Benner, 2001).

Lyneham, Parkison, and Denholm (2008) examined Benner’s theory in their qualitative phenomenological study of emergency room nurses ($N = 14$). The aim of their study was to examine the experiences and intuitive decision making processes of emergency room nurses in the fifth stage of Benner’s hierarchy, expert nursing. Participants worked in the emergency setting for a minimum of five years, consistent with Benner’s definition of an expert (Benner, 2001). Data were collected through an extensive interview process, to assess how the nurses made their decisions and the factors that influenced the decisions they made. Analysis of the data revealed that all participants used experience and intuition which were central to their clinical practice and decision making. Higher level decision making occurred when “knowledge and experience in nursing work become entwined in our professional being” (Lyneham,

Parkison, & Denholm, 2008, p. 383). Consistent with Benner's theory (2001), these nurses were able to use their previous experience to guide them in their clinical contexts, making decisions and processing information on both conscious and unconscious levels.

King and Clark (2002) conducted a large scale qualitative study ($N = 61$) in England examining four of Benner's stages of skill acquisition (advanced beginner through expert). The aim of the study was to explore and identify nurses' clinical expertise in surgical and intensive care settings through their postoperative patient assessments. Data were collected through observation and interview. Two major processes of clinical decision making were identified: analytical thinking in which nurses consciously considered information when reaching decisions and intuitive awareness that occurred without any conscious effort. Analytical and intuitive elements were found in nurses' clinical decision making at all stages from advanced beginner to expert. However, the difference between expert and non-expert decision-making was not based in the presence or absence of intuition; but rather, in the expert's ability to use intuition more skillfully and effectively. Intuitive awareness became more predominant and effective with increased levels of clinical experience.

Komaratat and Oumtanee (2009) studied the concept of mentorship to see if working with an experienced nurse would improve the level of nursing competency in novice nurses ($N = 19$). Using Benner's theory as a framework, the researchers conducted a one group, quasi-experimental study to examine the skill and competency levels of newly graduated nurses (novices) who participated in a mentorship program.

Competency was measured using the Nursing Competence Scale (Taechaveerakorn & Oumtanee, 2008) which focused on four main areas: nursing care, human relationship and communication, decision making and problem-solving, and quality development and assurance. This instrument was reported to be reliable (Cronbach's alpha = .96). The scale was administered three times: before the mentorship experience, one month after the mentorship experience began, and at the completion of the mentorship after the mentor and novice had worked together for one month. Nursing competency of the novice nurses was significantly higher after the mentorship program ($z = -3.83, p < .05$). This meant that the novice nurses' performance competencies improved after working closely with more experienced nurses through a designated mentorship. To further validate these results, a control group could be used in future research to truly show the effects of a mentorship program (compare competency of those who participate in mentorship program with those who do not). While this study was conducted with a small sample and thus lacks generalizability, the results did support Benner's theory on the role of clinical experience and its influence on novice nurses.

The available research examining Benner's theory (2001) supports her belief that clinical experience is paramount in the development of nurses' clinical decision making skills (Benner, 2001; King & Clark, 2002; Komaratat & Oumtanee, 2009; Lyneham, Parkison & Denholm, 2008). Both clinical experience and working with experienced colleagues bring analytic and intuitive elements that enable nurses to make clinical decisions more easily and skillfully. However, existing work has not been conducted on large samples using quantitative methods; therefore, quantitative

studies using Benner's work as a framework will directly decrease this existing gap and contribute to the body of knowledge.

Clinical Experience and Clinical Decision Making

Discussion and research about the concepts of clinical experience and clinical decision making are intertwined in the literature (Andersson, Omberg & Svedlund, 2006; Bucknall, 2000; Bucknall, 2003; Dowding, Spilsbury, Thompson, Brownlow, & Pattenden, 2009; Ebright, Patterson, Chalko, & Render, 2003; Ferrario, 2003; Hoffman, Aitken, & Duffield, 2009; Hoffman, Donoghue, & Duffield, 2004; Lauri et al., 2001; Offredy, 1998; Ramezani-Badr et al., 2009; Ritter, 2003; Traynor, Boland, & Buus, 2010a; Traynor, Boland, & Buss, 2010b). Clinical experience, along with intuition, is often discussed as the main influence on the overall decision making process. Experienced practitioners are able to make rapid decisions based on "like situations" (Bond & Cooper, 2006, p.1024) while intuition is the basic "knowing" of the patient and being able to decide what to do based on a "gut feeling" related to previous exposure to similar clinical situations.

Offredy (1998) conducted a qualitative study of nurse practitioners ($N = 20$), using observation and interviews examining decisions made in their daily work. The cognitive processes of these experts did not fit neatly into any one single approach. There was no one single way to describe their decision making process yet intuition and experience were involved in the majority of their decisions. The nurse practitioners used their ability to recognize patterns in clinical situations to fit with previously seen patterns. Their experience level was relevant to the speed and

accuracy of the CDM process with intuition and tacit nursing knowledge given as the reason for going “beyond the information given” (Offredy, 1998, p. 996).

Ritter (2003) found similar results in her qualitative examination of nurse practitioners’ (NPs) diagnostic reasoning patterns ($N = 10$). Using the think aloud technique for analysis, she found that NPs used multiple models in their decision making processes, including the Information Processing Model (Newell & Simon, 1972), a model based on gathering available and relevant data to make a decision, as well as the Experiential Learning Model (Benner & Wrubel, 1982), one based in skilled know-how. Intuition was found to be a prominent factor in the ultimate decision. While neither model alone fully encompassed or described all of the components of the CDM process, experience was a basis for most of the decisions made by the NPs. Skilled know-how and pattern recognition were used in the decisions made by nearly all participants (99% of responses).

While the studies of Offredy (1998) and Ritter (2003) look at nurse practitioners rather than registered nurses, the results are relevant to this current research when discussing the influence of experience versus education. Nurse practitioners can be novices in their own right when they are new to the nurse practitioner role.

Traynor, Boland, & Buus (2010a) used three qualitative focus groups ($N = 26$) to study the clinical decision making process of registered nurses in London, England. Participants were asked to talk about influences on their decision making with focused questioning used to generate discussion. Both experience and intuition (referred to as

indeterminate, tacit knowledge) influenced the CDM process with personal experience prevailing as the final arbiter of decision making. Experience was used as a reference point for the nurses and often led to the nurses modifying or ignoring clinical guidelines and protocols.

The work of Hoffman, Donoghue, and Duffield (2004) found different results when looking at the roles of experience and education with CDM. Their correlational study looked at the contextual factors that influence nurses' clinical decision making to determine any potential relationships between educational level, experience, area of practice, occupational orientation (value to role) and age. A convenience sample of registered nurses in one Australian hospital ($N = 96$) completed two survey instruments (Rhodes, 1985) to measure role values and clinical decision making. There were no significant relationships found between experience and decision-making ($r = 0.02, p = 0.83$) and education and decision making ($r = 0.045, p = 0.70$). Professional occupational orientation, or nurses' perceptions of the value of their role, accounted for the greatest variability in clinical decision making.

Ramezani-Badr et al. (2009) interviewed critical care nurses ($N=14$) in a qualitative study examining the reasoning strategies and clinical decision making processes used by Iranian critical care nurses. They found nurses used different reasoning and decision-making strategies to evaluate patients' problems and to plan appropriate care for the patients. Three main themes emerged: intuition, recognizing similar situations, and hypothesis testing. Intuition was considered a "gut feeling" (Ramezani-Badr et al., 2009) when nurses deliberately recognized similar situations

from the past and compared them with the present situations in order to make proper clinical decisions. Previous clinical experience was used by nurses when they found the symptoms from one patient corresponded to what they had in their minds.

According to the researchers, some nurses generated hypotheses after assessing and examining the patients and tested these hypotheses to determine the main problem and appropriate care (Ramezani-Badr et al., 2009).

Ferrario's (2003) quantitative work looked at clinical decision making processes and thought patterns of nurses working in the emergency room ($N = 219$). Consistent with Benner's (2001) definition of novice and expert nurses, Ferrario grouped nurses as experienced (five or more years of emergency room work) and inexperienced (less than five years of experience). Using a 16-item questionnaire called the Clinical Inference Vignettes for Community Health Nurses (O'Neill, 1992) that was modified for use with emergency room nurses (internal consistency reliability coefficient = .82), it was found that experienced nurses used the heuristic, trial-and-error approach – mental short cuts based on prior experience – as the primary method of decision making, more so than the inexperienced nurses ($\chi^2 = 3.98$, $df = 1$, $p = .046$). These findings support Benner's (2001) model and the role of clinical experience.

Dowding, Spilsbury, Thompson, Brownlow & Pattenden (2009) studied a specific group of critical care nurses, those working with heart failure patients, ($N = 18$), in their qualitative study of clinical decision making through observations and interviews. Their study examined the types of decisions made by these nurses and the

involved processes and factors in the real-life and real-time decision making in pharmacological management of their palliative care patients. Medication titration decisions were found to be conducted through a combination of intuition and analysis. Peer support with decision making was utilized in palliative care situations reflecting a team approach to the CDM process when faced with a potentially difficult, life or death decision related to medication administration.

The qualitative work of Andersson, Omberg, and Svedlund (2006), examined nurses working in an emergency room (ER) in Sweden ($N = 19$). Their aim was to describe how nurses perform triage when patients enter the ER and the factors considered when prioritizing patient care. All participants had more than 6-months experience in performing triage and specialty training for emergency situations and therefore would be considered as advanced beginners and higher in Benner's model (2001). Triage nurses have a key position in the ER as their decisions directly influence further treatment and care. Each participant was individually observed and interviewed when carrying out triage work based on a participant observation model. Using content analysis of the data, it was found that the ER nurse's most important function was to correctly prioritize patients and care within a limited amount of time. Experience, knowledge, and intuition were the three dominant themes. Researchers found "sixth sense" (Andersson et al., 2006, p. 142) as a predominant factor in nurses' decision making and prioritization skills, a natural feeling that occurs when assessing a patient's condition. The external work environment was always a factor in the ultimate

decision but it was this “sixth sense”, this instinctive method of thinking and acting, which occurred in most decisions (Andersson et al., 2006).

Pretz and Folse (2011) examined the role of intuition in decision making and its possible relationship with experience level. Six different survey instruments were administered electronically to a sample of registered nurses ($n = 145$) and nursing students enrolled in a Bachelor’s of Science in Nursing program at a private, Midwestern university ($n = 30$). The unnamed survey instruments measured experience levels and various intuition-based self-perception scales. All instruments were noted as being reliable (Cronbach’s alpha > 0.750 for all scales). The results showed that the preference for using intuition in decision making increased with levels of nursing experience (Wilk’s Lambda = 0.48, $F(44, 526.08) = 2.57$, $p < 0.001$) for both nurses and nursing students.

Hoffman, Aitken, and Duffield’s qualitative work (2009) examined the ways both novice ($N = 4$) and expert nurses ($N = 8$) working in an ICU used cues, or patient assessment data, during decision making while caring for postoperative patients. Different than Benner’s classifications, novice nurses had no more than two years experience working in nursing. Expert nurses had more than three years nursing experience and more than six months experience in their current unit. They found expert nurses were more proactive in collecting relevant cues and anticipating problems that may help identify patient problems. The expert nurses planned ahead in the care for their patients, anticipating what might happen and collecting cues in anticipation of problems. The accurate detection by nurses of cues that may indicate a

change in patient status is a vital aspect of clinical decision making, particularly in critical care (Hoffman et al., 2009).

Bucknall (2003) found that clinical decision making is a reflection of the clinical landscape. Her qualitative work utilized naturalistic observations and semi-structured interviews of critical care nurses in private, public and rural hospitals ($N = 18$). The country of study origin was not identified. Three main environmental themes affecting the CDM landscape emerged: patient situation, available resources, and interpersonal relationships. The location for this study was critical care as the researchers felt that this setting was unique due to the urgency for decision making in a life or death situation. While nurses' experience level was shown to be an important variable, environmental factors were found to be the main influences on the CDM process. The physical layout and available equipment in the unit directly affected the nurses' clinical decision making. Less equipment added more stress. Staffing resources and nursing staff ratio also affected the CDM process. All the nurses ($N = 18$) thought that decisions were more difficult to make when there were fewer experienced nurses on duty.

Ebright et al. (2003) concurred that the complexity and demands of the work environment are not only contributors to patient safety, but they directly influence the actual work and decisions being made. The purpose of their research was to increase the understanding of registered nurses' work complexity in an acute care setting. The researchers used participant observation and interviews to examine a small but diverse sample ($N = 8$) utilizing a method created by the researchers called the Critical

Decision Method (Ebright et al., 2003). This method is a technique that allows users to elicit information from a recognized expert about situations that may be difficult to articulate. Eight patterns were identified that related to the complexity of RN work including: disjointed supply sources, missing or nonfunctioning supplies and equipment, repetitive travel, interruptions, waiting for systems/processes, difficulty in accessing resources to continue care, breakdown in communication, and breakdown in communication processes or mediums. All of these patterns were directly related to the clinical environment. For example, instead of focusing on patient assessment and individual patient care and treatment, participants spent a great deal of valuable time traveling around the unit searching for needed supplies or repeating tasks that had been interrupted (Ebright et al., 2003).

Bucknall (2000) conducted a qualitative study using a naturalistic design to accurately capture the decision making process of critical care nurses ($N = 18$). She observed the participants in routine clinical practice for a minimum of two hours followed by a semi-structured interview within 24 hours. Interview questions included information about the participants' age, levels of experience, education, and critical care experience. Findings indicated that the types of decisions made by critical care nurses in clinical practice were broadly the same for all participants. These types of decisions included communication decisions, intervention decisions, and assessment and treatment evaluation decisions. However, specific decision activities varied depending on experience and location. More experienced nurses communicated their decisions more effectively. Also, there were some differences noted in decision

making between those nurses working at rural hospitals, private urban hospitals, and public urban hospitals which may have been partially attributed to the differences in the physical layout of the critical care units. The public hospital separated nurses in closed rooms whereas the other hospitals had a more open layout; thus, communication decisions were more easily relayed in these facilities.

In a larger study, Lauri et al. (2001) surveyed registered nurses working in geriatric wards ($N = 236$) and acute medical-surgical units ($N = 223$) in five different countries: Canada, Finland, Sweden, Switzerland, and the United States (U.S.). The purpose was to identify the cognitive and decision making processes used by the participants and associated demographic variables. Although not specified by name, a 56-item questionnaire was utilized. This instrument was developed based on analytical and intuitive decision making processes with reported reliability coefficients for three subscales with alpha ranging from .85 to .90. The most frequently indicated factors in defining patients' problems in the CDM process across all countries and in both types of units were medical diagnosis (82%), knowledge received in basic nursing education (74%), knowledge about patient (62%), and cooperation (60%). The least important factors were the use of literature (31%), knowledge of relevant legislation (20%), and the patients' earlier experiences in the health care system (16%). Findings showed that both the clinical setting and country of practice affected the CDM process. Participants in different countries used different decision-making models. The use of an intuitive based decision making model was strongest in Canada and the U.S. and weakest in Sweden ($\chi^2 = 75.78$, $df = 8$, $p < 0.0001$). An analytic based decision making model

was used in the US but without statistical significance. The results showed that both intuitive thought and analytic thought are used globally in decision-making but to varying degrees. The researchers attributed differences in decision-making to culture and everyday practices in the workplace.

The majority of the reviewed research on clinical experience and clinical decision making has been conducted using qualitative methods (Andersson, Omberg, & Svedlund, 2006; Bucknall, 2000; Bucknall, 2003; Dowding et al., 2009; Ebright et al., 2003; Hoffman, Aitken, & Duffield, 2009; King & Clark, 2002; Lyneham, Parkison, & Denholm, 2008; Offredy, 1998; Ritter, 2003; Ramezani-Badr et al., 2009; Traynor, Boland, & Buus, 2010a). The few quantitative studies (Ferrario, 2003; Hoffman, Donoghue, & Duffield, 2004; Lauri et al., 2001) that were conducted utilized varying instruments on small samples and in varying cultural environments, thus making generalizability difficult. However, most studies were consistent in identified themes. The most commonly identified theme was that clinical experience was the most frequent indicator of CDM. These gaps in the current literature support the need for the proposed study to quantitatively examine the relationships between and among clinical experience and nursing clinical decision making processes with physical restraint use.

Physical Restraints

The use of physical restraints (PRs) has been a common and controversial practice occurring in medicine and nursing for many years (Edwards et al., 2006, Minnick et al., 2007). There is no exact or precise definition of physical restraint that

is universally accepted but most definitions contain similar content. According to the Centers for Medicare and Medicaid Service (CMS, 2007), a physical restraint is defined as “any manual method, physical or mechanical device, equipment, or material attached or adjacent to the patient’s body that the individual cannot easily remove; a manual device which restricts freedom of movement or normal access to one’s body” (CMS, 2007, p.2) A physical restraint restricts someone’s liberty or prevents him/her from doing something he/she wants to do (Hine, 2007).

There is considerable variation in the frequency of physical restraint use in acute care settings provided in the literature with reported restraint prevalence rates in the United States ranging from 6% to 25 % in acute care settings (Fogel, Berkman, & Merkel, 2009). International PR use has been reported to be 7% to 22% in the acute care setting (Park & Hsiao-Chen Tang, 2007). Minnick et al. (2007) found rates of use to be higher with at least 27,000 people physically restrained in U.S. hospitals each day, the majority of use (56%) confined to the ICUs. Physical restraint is one technique utilized in critical care areas to facilitate maintenance of invasive monitoring and therapy and to reduce treatment interference (Hofso & Coyer, 2007; Hine, 2007). Physical restraint use in the critical care environment is more likely than other hospital units due to frequency of invasive procedures and the use of mechanical ventilation (Chang, Wang, & Chao, 2008; Hine, 2007; Hofso & Coyer, 2007; Minnick et al., 2006).

International work shows rate of use to be between 39.1% and 69.9% in intensive care units (Huang, Chuang, & Chiang, 2009). Martin and Mathisen (2005)

found physical restraint use in intensive care units in the United States as well as internationally to be reported at rates of 13% to 50% and found that the efficacy of use to prevent falls and treatment interference is not well documented.

The cost of using physical restraints in the critical care environment is unknown. While there is no existing research on the cost of PR use in the critical care environment, work in other acute care settings has shown that physical restraint use is associated with a higher consumption of healthcare resources (Frazer, Riker, & Prato, 2001; Health Care Financing Administration, 2008).

Nursing Practice Issues with Physical Restraints

The predominant reason for use of PR in the intensive care environment is to prevent the disruption of treatment and removal of invasive tubes and devices (Choi & Song, 2003; Happ, 2000; Hine, 2007; Huang, Chuang, & Chiang, 2009). The intensive care environment itself can cause agitation and added stress by the presence of mechanical ventilation, multiple invasive procedures, fear, pain, anxiety, sensory overload, and disruption to sleep cycles (Hine, 2007), thus increasing the likelihood of using physical restraints.

Physical restraint use in acute care settings has been associated with a variety of injuries. These injuries include pressure ulcers and nosocomial infections (Evans, Wood, & Lambert, 2003; Shorr et al., 2002) as well as bruising, lacerations, nerve injury, and strangulation (Langley et al., 2011; Martin & Mathisen, 2005). Bladder and bowel incontinence, decreased cognitive ability and awareness, mobility problems, and increased disorientation have also been associated with physical restraint use

(Evans, Wood, & Lambert, 2003). Patients in PRs have reported becoming physically uncomfortable with feelings of demoralization, isolation and loss of freedom (Martin & Mathisen, 2005). Yet, despite these known potential complications, physical restraint use in critical care environments continues both internationally and in the United States.

Minnick, Mion, Johnson, Catrambone, & Leipzig (2007) conducted a study with the purpose of describing physical restraint rates and contexts (census, age, gender, ventilation status, type and rationale for use) in U.S. hospitals. This descriptive study was conducted in 40 randomly selected hospitals across the United States over a three year period. All units except psychiatric, emergency, operative, obstetric and long-term care were included. Observation and nurse report were used for data collection. Physical restraint prevalence was found to be 50 per 1000 patient days based on 155,412 patient days. Ventilator use was strongly related with physical restraint use ($F=261.31$, $df = 1,293$, $p < .001$). Preventing disruption of therapy or healthcare treatments was the main reason cited for physical restraint use (74.9%).

Benbenbishty, Adam, and Endacott (2010) conducted a prospective study designed to examine physical restraint use practices across European ICUs. The researchers looked at the use of physical restraints and chemical restraints during the weekend and weekdays, reasons for PR use, type of restraint used, and availability of restraint policies. Patients in thirty-four adult ICUs from nine countries participated in the study ($N = 669$ in physical restraints; 566 patients with chemical restraints).

Overall, there were 33% of patients in the ICUs were physically restrained; those who

were restrained were more likely to be ventilated ($x^2 = 87.56, p < .001$), patients who were sedated ($x^2 = 34.66, p < .001$), patients in larger units ($x^2 = 10.741, p < .005$) and patients on units where nurses were assigned to care for greater numbers of patients ($x^2 = 117.17, p < .001$). Use of physical restraint was not related to time of week (weekend vs. weekday).

Martin and Mathisen (2005) studied the relationship between patient characteristics, environment, and use of physical restraints in critical care units in Norway and the United States (U.S.). Patient observation and chart review data were collected in two Norwegian intensive care units ($N = 50$ patients) and three intensive care units in the U.S. ($N = 50$ patients). The most frequent reason given for utilizing physical restraints was interference with an invasive device. Restraints were observed 40% of the time in the U.S. whereas no restraints were observed in the Norwegian sample ($p = .001$; t value not provided). However, the nurse-to-patient ratio was more favorable in Norway. The ratio for the Norwegian sample was 1.05:1 in contrast to the 0.65:1 in the U.S. sample ($p < .001$, t value not provided). The patients were also noted to be more sedated in Norway.

Whitman et al. (2002) explored the role of the environment in a study to identify if lower staffing levels were associated with higher adverse patient outcomes. The purpose of their work was to determine the relationships between nurse staffing and specific nurse-sensitive outcomes including restraint use and physical restraint application duration in specialty units such as ICUs, CCUs, intermediate care units and medical-surgical units. A secondary analysis of prospective, observational data

from 95 patient care units across 10 U.S. adult care hospitals was conducted. A significant inverse relationship was found between restraint application duration and use in medical-surgical units with decreased staffing ($F = -.48, p < .01$). This finding indicates that there was increased physical restraint application in units when there was less staff. Thus, staffing can have an influence on nurse-sensitive processes (physical restraint use and duration of use) at the unit level.

The research on nursing practice issues related to physical restraint use found that reported reasons for use included mechanical ventilation (Benbenbishty, Adam, & Endacott, 2010; Choi & Song, 2003; Hine, 2007; Huang, Chuang, & Chiang, 2009; Minnick et al., 2007), poor staffing ratios (Whitman et al., 2002), and use of chemical sedation (Huang, Chuang, & Chiang, 2009; Martin & Mathisen, 2005). In a study examining physical restraint use in critical care environments in the U.S. and Norway (Martin & Mathisen, 2005), while there were fewer patients restrained in Norway, those patients had higher levels of sedation. The difference in cultural norms related to physical and pharmacological restraint can play a part in the nurses' clinical decision making related to PR use. Most of the existing research on PR use has been conducted internationally (Benbenbishty, Adam, & Endacott, 2010; Choi & Song, 2003; Huang, Chuang, & Chiang, 2009; Martin & Mathisen, 2005; Yeh et al., 2004) or in psychiatric units (Mion et al., 2010; Wright et al., 2005) or long term care facilities (Hantikainen & Kappeli, 2000). Therefore, there is a strong need for quantitative research examining nursing practice issues with PR use in the critical care environment such as this study, thus adding knowledge to an existing gap in the literature.

Attitudes Toward Physical Restraints

Research about physical restraint use in critical care is extremely limited and has been conducted mainly outside of the United States. In their small quantitative descriptive study ($N = 23$ physically restrained patients), Choi and Song (2003) investigated the pattern of physical restraint use in a Korean ICU with the purpose of identifying the factors that would best discriminate the times of application and removal of restraints in the same patients. They found no relationship between staffing, RN attitude, experience level, and education level with physical restraint use. No significant relationship was found between nurses' attitude and length of ICU experience ($F = 0.502, p = .607$) or education level ($F = 0.115, p = .891$). The researchers did note that in the vast majority of cases, it was the nurses who decided whether or not to restrain a patient, with a physician's verbal instruction for restraint documented in only 5.3% of the total incidents.

The role of in-service education specific to physical restraint use was explored in a quantitative study conducted by Huang, Chuang, and Chiang (2009). They examined the effectiveness of an in-service education program in improving nurses' knowledge, attitudes, and self-reported practices related to physical restraint use in two inpatient units in a Taiwanese hospital. A quasi-experimental pretest-posttest design was used and a survey instrument with three scales was administered to participants ($N = 59$ in intervention group, those who received an in-service program on physical restraint use; $N = 70$ in control group, no in-service program). The three scales were the Knowledge of Physical Restraint Use (KPRU) scale (Kuder-

Richardson = .61), the Attitudes of Physical Restraint Use ($\alpha = .66$), and the Practice of Physical Restraint Use ($\alpha = .77$), all created by Dr. Linda Janelli (1991). The low reliability ratings for these instruments are one noted limitation with this study. The scales were administered to the participants prior to and two weeks after the intervention. Mann-Whitney U tests demonstrated that there was a significant improvement in the intervention group in terms of knowledge ($z = -3.24; p = .001$), attitudes ($z = -2.71, p = .007$), and self-reported practices ($z = -1.98; p = .048$) related to physical restraint use after the in-service program intervention. However, there were no significant differences in participant attitudes toward the use of physical restraints between intervention and control groups after program completion. In this study, in-service education about physical restraints was not found to make a significant difference in use. These results may be a reflection of the country and culture where the study was conducted.

In a similar study, Yeh et al (2004) studied the role of in-service education in their quasi-experimental study examining novice nurses' knowledge, perception, attitudes, and clinical practice of restraint use in Taiwanese ICUs ($N = 37$). Novice ICU nurses were defined as nurses who had worked in their current ICUs for less than one year, regardless of previous experience in other units or hospitals. Participants were given a survey instrument to complete pre- and post-intervention three days later. The instrument had four parts: Knowledge of Restraint Scale (piloted by researchers), Perception of Restraint Use Questionnaire (Strumpf & Evans, 1988) which had a Cronbach's alpha rating of .83, Attitude toward Restraint Use Questionnaire (Janelli et

al, 1991) which had a Cronbach's alpha rating of .70 and Clinical Practice of Restraint Use Questionnaire (Janelli et al, 1991) which had a Cronbach's alpha rating of .73. The intervention consisted of a four-hour restraint reduction lecture. Data were then analyzed by paired *t*-test. The results showed that after completing a PR education program, knowledge ($t = -6.04, p < .01$), perception ($t = 4.76, p < .01$) and attitude ($t = 3.93, p < .01$) toward restraint use had significantly improved. These results did not concur with those of the study by Huang, Chuang, and Chiang (2009). This study was conducted with a small sample ($N = 37$) in Taiwan and without the use of a control group so this may limit the applicability. These results may be a reflection of the country and culture where the study was conducted.

Despite the known complications and potential risks with use, this review found no research related to nurses' attitudes about physical restraint use in the critical care environment. One unpublished Master's thesis studied the relationship between nurses' age, critical care experience, education degree, and the use of physical restraints in the intensive care unit (Racey, 2006) but this did not examine nurses' attitudes. The only studies conducted in critical care environments have been done internationally where culture may be a factor related to the results found. Thus, there is a need to conduct research in the United States looking at nurses' attitudes with physical restraint use in the critical care environment.

Conclusion

The existing literature and research on nurses' clinical experience and clinical decision making processes show that there are a variety of factors involved in the

CDM process. According to Benner (2001), and others (Andersson, Omberg & Svedlund, 2006; Bakalis and Watson, 2005; Bond & Cooper, 2006; Bucknall, 2000; Bucknall, 2003; Dowding et al., 2009; Ebright et al., 2003; Ferrario, 2003; Hoffman, Aitken, and Duffield, 2009; Lauri et al., 2001; Offredy, 1998; Ramezani-Badr et al., 2009; Ritter, 2003; Traynor, Boland, & Buus, 2010a), clinical experience may be the greatest influence on nurses' clinical decision making; however, there is no clear consensus. The impact and effect of additional factors on the CDM in the critical care environment needs to be determined.

Although often associated with negative health outcomes (Evans, Wood & Lambert, 2003; Hine, 2007; Minnick et al., 2007), physical restraints are used extensively in clinical settings such as intensive care units (ICUs), coronary care units (CCUs), and post anesthesia units (PACUs). There are minimal data available to guide decisions about the need for and directions of future physical restraint quality initiatives in critical care environments. The literature found showed limitations including geographic diversity, studies done mainly outside of the United States and with small samples.

Chapter III

Methods and Procedures

Introduction

The purpose of this research study was to explore the relationships between and among registered nurses' clinical experience, clinical decision making processes, and nursing practice issues related to physical restraint use with attitudes toward physical restraint use in the critical care environment. This chapter will give an overview of the research design, population and sample, sample size and statistical power followed by a review of the recruitment of research participants and the protection of said participants. All study variables, including demographic information and research instruments, will be presented. Finally, the data collection and analysis procedures will be described.

Research Question

What are the relationships between and among registered nurses' clinical experience, clinical decision making processes, and nursing practice issues related to physical restraint use with attitudes toward the use of physical restraints in the critical care environment?

Research Design

A descriptive correlational research design was used to look at the relationships between the study variables. A descriptive correlational study design does not determine causality between variables but instead describes the strength and

extent of a relationship between those variables (Polit & Beck, 2008). Since no quantitative studies were found in the literature related to clinical experience, clinical decision making, nursing practice issues and attitudes toward PR use in critical care, this design was selected to investigate the potential relationships between these variables.

Population and Sample

The population for this study was registered nurses who were practicing in a critical care setting in the United States during the study period. A convenience sample was solicited through the American Association of Critical Care Nurses or AACN ($N = 94,000$).

There were 539 people who started the survey and 413 people who completed the survey in its entirety (76.6% completion rate).

Sample Size and Statistical Power

In order to maximize the potential for significant research results by having a large enough sample (Polit & Beck, 2008), power analysis was used to determine the needed sample size. For this study, there were five main variables: clinical experience in nursing in general, clinical experience in critical care, clinical decision making, nursing practice issues with PR use and attitudes toward physical restraint use in critical care. An a priori sample size calculator was used to determine how many subjects would be necessary to have adequate power to test the research question (Burns & Grove, 2009). With five study variables, 91 participants would be needed to

have a .80 power level with an alpha level of 0.05. Therefore, a sample of 91 was determined to be adequate for correlational analyses.

Recruitment of Research Participants

Study participants were recruited through the American Association of Critical Care Nurses (AACN). A link to the research survey (http://www.surveymonkey.com/MySurvey_EditorFull.aspx?sm=yxmGv8iyw8n9%2f9YStA5EhzDEQzpoCZFv65Nb4nx4hYU%3d) was sent in an “newsletter” to all AACN members ($N = 94,000$). There is no exact number of members who are on the newsletter mailing list or who actually receive the newsletter. Written permission was acquired from the AACN for this researcher’s survey to be sent out for four consecutive weeks within the context of the e-newsletter (Appendix A).

Protection of Research Participants

Permission to conduct this research was obtained from the Institutional Review Board (IRB) at Seton Hall University prior to any data collection. Through a letter of solicitation (Appendix B), participants were informed about the nature of the study, their right to refuse participation or to withdraw at any time, the researcher’s responsibilities, and any potential risks or benefits. Confidentiality was maintained at all times. All responses were kept anonymous to the researcher through a set function of Survey Monkey™.

Participation was completely voluntary. Participants could elect to not participate by logging off any time prior to starting the survey or at any time prior to completing the survey.

Setting

The study setting is the physical location and conditions in which data collection takes place (Polit & Beck, 2008). For this current study, all data collection was conducted online utilizing the Survey Monkey™ format. This allowed all participants to answer the questionnaire electronically at their convenience and in the location of their choosing.

Definition of Variables

There were five main study variables for this research: registered nurses' clinical experience in nursing in general, registered nurses' clinical experience in critical care, registered nurses' clinical decision making processes, registered nurses' nursing practice issues with physical restraint use in critical care, and registered nurses' attitudes toward physical restraint use in critical care. Clinical experience was operationally defined as the number of years the registered nurse had worked in nursing in general and the number of years the registered nurse had worked in critical care. Clinical decision making was operationalized as the score obtained in the Clinical Decision Making in Nursing Scale or the CDMNS (Appendix C). Attitudes toward the use of physical restraints were operationalized as the score obtained on the Attitudes Regarding Physical Restraint Use subsection of the Physical Restraint Questionnaire (Appendix D). Nursing practice issues with physical restraint use was operationalized as the score obtained on the Nursing Practice Issues subsection of the Physical Restraint Questionnaire (Appendix D).

Additional supplementary variables were elicited through the participants' demographic data (Appendix E). These included participants' age, gender, race, ethnicity, geographic area of nursing practice, type of program from which initial basic RN education was received, year completed initial RN education, highest educational credential held, total time working in nursing, total working in critical care, critical care unit where participants work, present employment status (full time, part time, per diem), shift predominantly worked, average nurse-to-patient ratio of employing facility, ranking of employment facility as categorized by the ACS ranking (Level One, Level Two, Level Three or Level Four) which determined acuity of participant's employment site, and experience and education related to the use of physical restraints.

Research Instruments

Study instruments were selected for this study based on several considerations: the overall appropriateness of the instrument for measuring the intended study variables, the instrument's psychometric and measurement properties including reliability coefficient, length of time to complete, and availability. Clinical decision making (CDM) was measured using one instrument: the Clinical Decision Making in Nursing Scale (CDMNS). Nursing practice issues with PR use in critical care was measured using the Nursing Practice Issues with Physical Restraint Questionnaire. Attitudes toward PR use in critical care was measured using the Attitudes toward Physical Restraint Use Questionnaire.

Clinical Decision Making in Nursing Scale (CDMNS). The Clinical Decision Making in Nursing Scale (Appendix C) is a 40-item Likert scale self report instrument that took approximately 10 minutes to complete. It was originally developed by Dr. Helen Jenkins (1985) as an assessment questionnaire for decision making in professional nursing and nursing education (Jenkins, 1985). The aim of the instrument development was to discover how undergraduate nursing students perceived their own clinical decision making. Normative decision making and self-perception theory provided the theoretical basis for this instrument and Janis and Mann's (1977) decision making theory was used as the conceptual framework for overall scale and subscale development.

The scale contains 40 items on four subscales (ten items each): the search for alternatives and options, canvassing of objectives and values, evaluation and reevaluation of consequences, and search for information and unbiased assimilation of new information. Answers are provided using a five item Likert scale with both positive and negative items and answers ranging from always (A) to never (N). The potential score on the CDMNS can range from 40 to 200. Lower scores represent a negative perception of decision making and higher scores represent a positive perception of decision making.

Janis and Mann (1977) conducted an extensive literature review examining the normative structures of effective decision making especially during conflict situations. From this review, seven criteria were identified as those that will lead to an ideal decision: thoroughly canvassing a wide range of alternate courses of action; surveying

the full range of objectives to be fulfilled and the values implicated by the choice; carefully weighing the costs and risks of positive and negative consequences; intensively searching for new information relevant to further evaluation of alternatives; correctly assimilating and accounting for exposure to any new information or expert judgment; reexamining the positive and negative consequences of all known alternatives; and making detailed provisions for implementing or executing the chosen course of action (Janis & Mann, 1977). Janis and Mann's decision making theory provided the conceptual framework for the development of Jenkins' CDMNS instrument (Janis & Mann, 1977; Jenkins, 1985).

These seven criteria were examined critically by Jenkins and a panel of content experts and condensed to four subscales: search for alternatives and options, canvassing of objectives and values, evaluation and reevaluation of consequences, and search for information and unbiased assimilation of new information. Content validity was established in the early stages of instrument development and construction in several ways (Jenkins, 1985). First, test items were generated from a broad examination of the existing literature as noted above. Items were then pretested with several groups including nursing students. Following the pretest, content experts ($N = 8$) and nurse experts in baccalaureate nursing education ($N = 5$) provided a critique and rating of each item based on representativeness, sense of construction, appropriateness, and degree of independence from other items. Any item that had an evaluation score of less than 70% was excluded. Any item with a score between 70% and 75% was carefully evaluated for inclusion or exclusion from the instrument. Items

with score of 76% or greater were rated as good and retained (Jenkins, 1985). Formal testing of the questionnaire was conducted on a group of nursing students ($N = 111$). Overall test reliability was ultimately established using a Cronbach's alpha coefficient to measure internal consistency. The initial Cronbach's alpha coefficient was 0.79. After examination of items for intercorrelations using factor analysis, four items were dropped and the ultimate Cronbach's alpha for the entire 40-item questionnaire was established at 0.83.

Additional studies that have utilized the CDMNS have consistently shown validity and reliability values similar to the original work. Girot (2000) used the CDMNS to examine clinical decision making in four different groups of nurses ($N = 82$ total) with various levels of experience. Content validity was established by a group of experienced practitioners considered to be "expert decision makers" in practice. Additionally, reliability of the instrument was demonstrated with a Cronbach's alpha of 0.78. Bowles (2000) used the CDMNS for examining clinical decision making in her study of baccalaureate nursing students ($N = 65$). The reliability of the instrument was found to be similar (Cronbach's alpha = 0.83).

For this current study, the overall CDMNS was found to be highly reliable (Cronbach's alpha = 0.85). The reliability for each of the CDMNS subscales in this study were as follows: Subscale One: Search for Alternatives and Other Options (Cronbach's alpha = 0.56); Subscale Two: Canvassing of Objectives and Values (Cronbach's alpha = 0.61), Subscale Three: Evaluation and Reevaluation of

Consequences (Cronbach's alpha = 0.63); Subscale Four: Search for Information and Unbiased Assimilation of New Information (Cronbach's alpha = 0.65).

Permission to use the CDMNS survey instrument was received from Springer Publishing (Appendix F).

Physical Restraint Questionnaire – Nursing Practice Issues with Physical Restraint Use and Attitudes Toward Physical Restraint Use. Subscales three (nursing practice issues) and four (attitudes toward physical restraint use) of The Physical Restraint Questionnaire (Appendix D) were used to assess nursing practice issues and attitudes toward physical restraint use. The Nursing Practice Issues subscale has seventeen items. Each item has three answer choices – always, sometimes and never. There are thirteen items that are rated as positive and have frequency anchors of always (3) to never (1). There are four items that are rated as negative and have frequency anchors of always (1) to never (3). The Attitudes Toward Use of Physical Restraints subscale has twelve items. Each item has three answer choices – agree, disagree, and undecided with a score of agree (2), disagree (0), and undecided (1). Both subscales could be completed in a total of ten minutes.

This instrument was originally developed to examine physical restraint knowledge in nursing personnel in nursing homes in the United States (Janelli et al., 1991). It has subsequently been administered to nurses working in other healthcare settings where physical restraints are used, including critical care (Suen et al., 2006; Yeh et al., 2004). The entire instrument contains four sections. The first section elicits demographic information about participants (23 items), section two assesses level of

knowledge about use of restraints (18 items), section three contains items regarding nursing practice issues (17 items) and section four assesses attitudes regarding physical restraint use (12 items). The content validity of the overall questionnaire was found to be 0.86 (Suen et al., 2006). For the current study, two subscales of the Physical Restraint Questionnaire were used: Section Three: Nursing Practice Issues and Section Four: Attitudes Regarding Physical Restraint Use. Permission to use the Physical Restraint Questionnaire's two subscales was obtained from Dr. Janelli in 2011 (Appendix G).

Content validity was established for this instrument in several ways. Items for the questionnaire were generated from a careful review of the literature. It was then reviewed and examined by five nurse experts in the care and management of patients regarding the use of restraints. The questionnaire had an original content validity index score of 86% (Janelli, Stamps, & Delles, 2006). Although this instrument has not been widely used, it is the only available instrument written in English currently available to assess attitudes and nursing practice issues related to physical restraint use. Suen et al. (2006) utilized the Physical Restraint Questionnaire in their study examining the knowledge, attitudes, and practices of staff in rehabilitation settings in Hong Kong. Test-retest reliability was established using the intraclass correlation coefficient (ICC). The ICC scores of three of the subsections were: Knowledge of Physical Restraint Use = 0.85; Attitudes Toward Physical Restraint Use = 0.84; and Nursing Practice Issues with Physical Restraint Use = 0.99 respectively. This was seen as reliable (Suen et al., 2006). Yeh et al. (2004) used this instrument in their study examining nurses' PR

practices in Taiwanese ICUs. Two subsections were used in this study: Attitude Toward Restraint Use (Cronbach's alpha = .70) and Nursing Practice Issues with Restraint Use (Cronbach's alpha = .73).

While its use in the literature has been limited, this instrument has been shown to be reliable (Janelli, Stamps, & Delles, 2006; Suen et al., 2006; Yeh et al., 2004). In this study, the reliability for the Nursing Practice Issues with Physical Restraint Use subscale was found to be modest (Cronbach's alpha = 0.563). The reliability for the Attitudes Toward Physical Restraint Use subscale was higher (Cronbach's alpha = 0.784).

Data Collection Procedures

All data collection was conducted electronically using Survey Monkey™. An online solicitation form was sent to all AACN members who receive the weekly AACN newsletter (Appendix H). A link to the research surveys was embedded within the newsletter. Members opted to participate by clicking on the link. The survey link was sent out four consecutive weeks dating from July 19, 2012 to August 15, 2012.

Online data collection helps to minimize any potential risks and allows for greater maintenance of confidentiality (Burns & Grove, 2009). Only the researcher was able to obtain the completed questionnaire through a private passcode.

Confidentiality and anonymity of participants were maintained throughout the entire data collection process. There is a function of the Survey Monkey online format that is designed to allow for data collection to be anonymous to the researcher. This

function was utilized. All collected data were recorded anonymously. The coding system used did not have any identifying information such as names, addresses or social security numbers. Informed consent was implied by the voluntary completion of the research instruments by all participants. To insure further confidentiality of all responses, submitted data were stored only on a memory key and kept in a locked, secure place accessed only by the researcher.

Data Analysis Procedures

Collected data were directly imported into IBM (2011) SPSS for Windows (Version 20) through a set function of Survey Monkey™. Prior to conducting statistical analyses on the research question and participant information, the researcher screened all data for missing values, outliers and accuracy of data entry resulting in an analytical sample of 413. Any survey that was not completed in its entirety or had multiple outliers was omitted. Data recoding was used to recode items that required reverse scoring.

Descriptive statistics were computed for all continuous variables. These included the participants' survey scores, age, and total time working in nursing. Descriptive statistics were also computed for all categorical variables including gender, race, ethnicity, geographic area of practice, basic registered nursing education program, highest credential held, critical care unit of work, employment status (full time employment or FTE, part time employment or PTE, per diem), shift worked, average nurse-to-patient ratio, ranking of facility for level of acuity, and experience and education with physical restraints.

A total score, mean score, median, mode, standard deviation and reliability coefficient were obtained for each of the survey instruments. A total score, mean score, median, mode and reliability coefficient were obtained for each of the four subscales of the CDMNS.

Analyses of the data were conducted to see if the data met all of the assumptions of statistical testing for multiple regression. The testing for normality was conducted using the Shapiro-Wilk test, skewness and kurtosis. Clinical experience in nursing in general and clinical experience in critical care were not normally distributed as assessed by Shapiro-Wilk's test ($p < .05$). Clinical experience in nursing in general and clinical experience in critical care were not normally distributed with a positive skewness of .120 and kurtosis of .240. Therefore, non-parametric analyses were conducted using the Spearman rho correlation coefficient (Green & Salkind, 2008). Data transformation was conducted using the square-root transformation in order to correct for the non-normal distribution.

Clinical decision making, nursing practice issues with PR use, and attitudes toward PR use were normally distributed as assessed by Shapiro-Wilk's test ($p > .05$), and skewness and kurtosis; thus, the relationships between these variables were analyzed using Pearson correlations. The assumption of independence of residuals was met by all variables as assessed by a Durbin-Watson statistic of 2.128. The assumptions of linearity and homoscedasticity were met by all variables by examining scatterplot diagrams which showed that the residuals were equally spread over the predicted values of the dependent variable.

Bivariate correlation and stepwise multiple regression models were constructed and analyzed to compute the relationships' effects of several independent or predictor variables on a dependent or criterion variable. This allowed for the examination of the relationships of the variables alone as well as in combination with other variables (Green & Salkind, 2008). For this current study, multiple regressions were conducted to evaluate the strength of the relationships between and among clinical experience, clinical decision making, nursing practice issues with PR use and attitudes toward PR use in the critical care environment.

The following regression models were used for analysis:

- 1) Clinical experience in nursing in general (IV) and clinical experience in critical care (IV) + attitudes toward PR use (DV)
- 2) Clinical experience in nursing in general (IV) and CDM (IV) + attitudes toward PR use (DV)
- 3) Clinical experience in nursing in general (IV) and nursing practice issues with PR use (IV) + attitudes toward PR use (DV)
- 4) Clinical experience in critical care (IV) and CDM (IV) + attitudes toward PR use (DV)
- 5) Clinical experience in critical care (IV) and nursing practice issues with PR use (IV) + attitudes toward PR use (DV)
- 6) CDM (IV) and nursing practice issues with PR use (IV) + attitudes toward PR use (DV)

Summary

A descriptive correlational research design was used for this research study to examine the relationships between and among registered nurses' clinical experience, clinical decision making processes, nursing practice issues, and attitudes toward physical restraint use, in the critical care environment. The CDMNS, Physical Restraint Questionnaire-Nursing Practice Issues with Physical Restraint Use and Physical Restraint Questionnaire-Attitudes Toward Physical Restraint Use were administered to a convenience sample of critical care nurses. To further define the population sample, the researcher collected demographic data about the participants. The variables were entered into statistical analysis software for analysis.

Chapter IV

FINDINGS

Introduction

The purpose of this study was to investigate the relationships between and among registered nurses' clinical experience, clinical decision making processes, and nursing practice issues related to the use of physical restraints with attitudes toward the use of physical restraints in the critical care environment. This chapter represents a comprehensive summary of that data collected by this researcher in narrative and tabular form using descriptive and numeric statistics. The demographic data related to the participants include (a) age; (b) gender; (c) race and ethnicity; (d) geographic area of nursing practice; (e) program from which basic registered nurse education was received; (f) year completed basic RN education, (g) highest credential; (h) total time working in nursing; (i) total time working in critical care; (j) critical care unit in which participant primarily worked; (k) present position held (full time, part time per diem); (l) shift predominantly worked; (m) average nurse-to-patient ratio at employment site; (n) ranking of facility in which participant worked; and (o) experience and education related to the use of physical restraints. The survey data were obtained as the scores from (a) the clinical decision making in Nursing Scale (CDMNS); (b) Nursing Practice Issues with Physical Restraint Use and (c) Attitudes Toward Physical Restraint Use. Following a presentation of data, an overview of the statistical

evaluation that was performed is presented. The research question is then evaluated through statistical analysis.

Description of the Sample

The age of the registered nurses (RN) who participated in this study ranged from 19 to 68 years ($M = 45.56$, $SD = 11.63$) with 365 female participants (88.4%), forty-four male (10.7%), and one identified as other (0.2%). The sample age and gender are similar to that provided in the findings from the 2008 National Sample Survey of Registered Nurses conducted by the U.S Department of Health and Human Services (HRSA). HRSA found the mean age of registered nurses to be 46; 90.4% of all employed nurses were female and 9.6% were male (HRSA, 2010).

There were fifty-two participants who received their basic RN education in a Diploma program (12.6%), 151 participants from an Associate's Degree program (36.6%), 196 participants from a Baccalaureate Degree program (47.5%), and 12 participants from a Master's Degree program (2.9%). These numbers are slightly different than those from the 2008 National Sample Survey of Registered Nurses conducted by the U.S Department of Health and Human Services. In 2008, 20.4% of registered nurses received their initial nursing education in a diploma program, 45.4% in an associate degree program, and 34.2% in a Bachelor's program or higher (HRSA, 2008). There were 21 participants who held a Diploma in Nursing as the highest earned degree (5.1%), 64 participants held an Associate Degree in Nursing (15.5%), 175 held a Baccalaureate Degree in Nursing (42.4%), 31 held a Baccalaureate Degree in other field (7.5%), 89 held a Master's Degree in Nursing (21.5%), 22 held a

Master's Degree in another field (5.3%), 9 held a Doctoral Degree in Nursing (2.2%) and 2 held a Doctoral Degree in another field (0.5%).

Table 1

Study Sample Characteristics Compared to National Survey Sample Characteristics (HRSA, 2008)

	Study Participants	National Sample (HRSA, 2008)
Mean Age (in yrs)(SD)	45.56 (11.63)	46.00
Female	365 (88.4%)	90.4%
Male	44 (10.7%)	9.6%
RN education – Diploma	52 (12.6%)	20.4%
RN education – Associate's	151 (36.6%)	45.4%
RN education – Baccalaureate	196 (47.5%)	34.2%
RN education – Master's	12 (2.9%)	0.4%

The demographic characteristics of this sample were similar to those listed by the American Association of Critical Care Nurses (AACN). There are 51% of AACN members between the ages of 40-59. 88% of AACN members are female and 12% are male. There are 57% of AACN members who hold a Bachelor's degree as the highest degree in nursing (AACN, 2012).

There were 377 participants who identified as White (91.3%), 9 as Black or African American (2.2%), 2 as American Indian or Alaska Native (0.5%), 7 as

Filipino (1.7%), 2 as Japanese (0.5%), 3 as Other Asian (0.7%), 1 as Guamanian or Chamorro (0.2%), and 10 as none of the above (2.4%). There were 311 participants who identified as not of Hispanic, Latino/a or Spanish origin (75.3%), 4 as Mexican, c American, Chicano (1.0%), 2 as Puerto Rican (0.5%), 3 as Another Hispanic, Latino/a, or Spanish origin (0.7%), and 89 as none of the above (21.5%).

The participants were representative of all regions across the United States. Participants were asked in what region of the country they practiced. Regional divisions were done according to the United States Census Bureau. Thirty-six participants practiced nursing in the Northeast (8.7%), 56 practiced in the Midatlantic states region (13.6%), 75 practiced in Midwest East North Central states (18.2%), 24 practiced in Midwest West North Central states (5.8%), 88 practiced in South Atlantic states region (21.3%), 21 practiced in East South Central region (5.1%), 32 practiced in West South Central (7.7%), 28 practiced in the Mountain States region (6.8%), and 47 practiced in Pacific states region (11.4%).

The total number of years of nursing practice ranged from 0 (less than one year) to 45 ($M = 19.84$, $SD = 12.31$). The total time the participants have spent working in nursing was then categorized according to Benner's Novice to Expert framework (2001). These stages are: 1) *Novice* (six months or less), 2) *Advanced beginner* (seven months to one year), 3) *Competent* (greater than one year – three years), 4) *Proficient* (greater than three years to five years), and 5) *Expert* (greater than five years). The table below depicts the sample participants' levels of clinical experience based on Benner's model.

Table 2

Study Sample - Total Time Spent In Nursing in General and Critical Care – Benner's Novice to Expert Sample Characteristics

	Nursing in General	Critical Care
Total Years (M, SD)	M = 19.84, SD = 12.31	M = 15.98, SD = 11.38
Novice	2 (0.5%)	9 (2.2%)
Advanced Beginner	9 (2.2%)	13 (3.1%)
Competent	32 (7.7%)	47 (11.4%)
Proficient	22 (5.3%)	30 (7.3%)
Expert	343 (83.1%)	310 (75.1%)

There were 323 participants who worked primarily in the intensive care unit (78.2%), 66 worked primarily in the coronary care unit (16.0%), 4 worked primarily in the post anesthesia care unit (1.0), and 14 floated or worked in all three units equally (3.4%). There were 345 participants who worked full time (83.5%), 44 worked part time (10.7%), and 22 worked per diem (5.3). There were 93 participants who worked an eight hour day shift or 7am – 3pm (22.5%), 9 worked eight hour evenings or 3pm – 11pm (2.2%), 6 worked eight hour night shift or 11pm – 7am (1.5%), 148 worked twelve hour day shift or 7am – 7pm (35.8%), 127 worked twelve hour night shift or 7pm – 7am (30.8%), and 30 worked rotating shifts (7.3%). There were 17 participants who had an average nurse to patient ratio at the place of employment of 1 to 1 (4.1%),

339 had a nurse to patient ratio of 2 to 1 (82.1%), 42 had a nurse to patient of 3 to 1 (10.2%) and 15 had a nurse to patient ratio of more than 3 to 1 (3.6%).

Ranking of the participants' employment site was categorized according to the American College of Surgeons ranking (Nathens, Xiong, & Shafi, 2008). There were 130 participants who worked at a Level One (comprehensive trauma center) facility (31.5%), 98 worked at a Level Two (collaborative trauma center) facility (23.7%), 45 worked at a Level Three (non-comprehensive, transfer capability) facility (10.9%), 12 worked at a Level Four (non-trauma, initial evaluative) facility (2.9%) and 127 were not sure of the ranking of their facility (30.8%).

When asked if they were taught content on physical restraints during their basic RN education, 215 participants answered yes (52.1%), 123 participants answered no (29.8%) and 73 participants answered they were not sure (17.7%). Two participants did not answer this question (0.5%). When asked if they fully understand their place of employment's policy on the use of physical restraints, 397 participants answered yes (96.1%), 5 answered no (1.2%) and 9 answered they were not sure (2.2%). Two participants did not answer this question (0.5%). When asked if they are required by their employer to attend a yearly in-service program on physical restraints, 337 participants answered yes (81.6%), 58 answered no (14.0%) and 16 answered they were not sure (3.9%). Two participants did not answer this question (0.5%).

Participants were asked if they have any personal experience (either themselves or with a family member) of being in a physical restraint. There were 132 participants

who answered yes (32.0%), 276 answered no (66.8%), and 3 answered as not sure (0.7%). There were 2 participants who did not answer this question (0.5%).

Description of the Major Study Variables

Survey materials from two established research instruments were administered electronically via Survey Monkey™ to the participants. These surveys were: The Clinical Decision Making in Nursing Scale (CDMNS) which had four subscales, and the Physical Restraint Questionnaire-Nursing Practice Issues Subscale and Attitudes Regarding Use of Physical Restraints Subscale.

Clinical Decision Making in Nursing Scale (CDMNS)

The CDMNS survey instrument has forty questions. There are four subscales, each with ten questions. These subscales are: 1) Search for Alternatives and Other Options; 2) Canvassing of Objectives and Values; 3) Evaluation and Reevaluation of Consequences, and 4) Search for Information and Unbiased Assimilation of New Information. The following table shows the survey results for the entire instrument and each of the four subscales by mean score (M), standard deviation (SD), actual range of scores, potential ranges of scores and alpha coefficient (reliability coefficient).

Table 3

The Clinical Decision Making in Nursing Scale (CDMNS) and CDMNS Four Subscales Survey Results

	Mean (SD)	Actual Range of Scores	Potential Range of Scores	Alpha
CDMNS	152.61(12.857)	84-194	40-200	0.85
Subscale One	39.68 (3.525)	19-49	10-50	0.56
Subscale Two	39.19 (4.154)	20-49	10-50	0.62
Subscale Three	36.85 (4.440)	23-50	10-50	0.63
Subscale Four	36.90 (3.561)	22-46	10-50	0.65

Physical Restraint Questionnaire – Nursing Practice Issues Subscale and Attitudes Toward Restraint Use Subscale

The Physical Restraint Questionnaire – Nursing Practice Issues has 17 items. The Physical Restraint Questionnaire – Attitudes Toward Physical Restraint Use has 12 items. The following table shows the survey results by mean score (M), standard deviation (SD), actual range of scores, potential ranges of scores and alpha coefficient (reliability coefficient).

Table 4

The Physical Restraint Questionnaire – Nursing Practice Issues and Attitudes Toward Physical Restraint Use – Survey Results

	Mean (SD)	Actual Range of Scores	Potential Range of Scores	Alpha
Nursing Practice Issues with PR Use	45.12(2.443)	36-51	17-51	0.56
Attitudes Toward PR Use	16.63(2.664)	9 – 23	0 – 24	0.78

Statistical Analyses

A multiple regression was run to assess the relationships between and among the study variables of clinical experience in nursing in general, clinical experience in critical care, clinical decision making, nursing practice issues with PR use, and attitudes toward PR use in critical care. The assumptions of independence of residuals, linearity, and homoscedasticity were met by all variables. The assumption of normality was not met for two variables, clinical experience in nursing in general and clinical experience in critical care; thus, the data was transformed to meet this assumption. Transformation was conducted using the square-root transformation.

A correlation matrix is a table showing correlations, or relations, for all possible pairs of the variables (Witte & Witte, 2007). The following is a correlation matrix that shows each pair of the main study variables in a bivariate correlation. The criterion variable was the score obtained on the Attitudes Regarding Physical Restraint

Use subscale. The predictor variables were clinical experience in nursing in general, clinical experience in critical care, total score on the CDMNS, and the score obtained on the Nursing Practice Issues with Physical Restraint Use subscale.

Table 5

Means, Standard Deviations, and Bivariate Correlations for Main Study Variables using Pearson and Spearman's rho coefficient

Variable	<u>M</u>	<u>SD</u>	1	2	3	4
Attitudes Regarding PR Use	16.63	2.66	-.155*	-.109*	-.073	-.138
1-Clinical Experience Nursing in General	19.84	12.31	---	.887*	.114*	.026*
2-Clinical Experience In Critical Care	15.98	11.38		---	.146*	.036*
3-CDMNS (total score)	152.61	12.86			---	.385
4-Nursing Practice Issues with PR Use	45.116	2.443				---

*p < 0.05 ; * indicates Spearman's rho correlation, all others Pearson's correlation*

Correlation coefficients were computed among each pair of the five study variables. A p value of less than 0.05 was required for significance. The results of the correlational analyses show that seven of the 10 correlations were statistically significant. Two had correlations of greater than .300 (Overall CDM with nursing practice issues with PR use and clinical experience in nursing in general with clinical experience in critical care). Any correlation greater than .300 is considered to be a moderate correlation (Witte & Witte, 2007). There were no moderate correlations noted between any of the other study variables.

Therefore, the results indicate that there is a moderate positive relationship between clinical decision making and nursing practice issues with physical restraint use in critical care. This means that nurses with higher perceived clinical decision making ability have more positive actions while caring for patients who are physically restrained in critical care. There were no strong correlations found between the following pairs of variables: attitudes regarding PR use (DV) and clinical experience in nursing in general (IV), attitudes regarding PR use (DV) and clinical experience in critical care (IV), attitudes regarding PR use (DV) and CDMNS – total score (IV), attitudes regarding PR use (DV) and nursing practice issues with PR use (IV), clinical experience in nursing in general (IV) and CDMNS – total score (IV), clinical experience in nursing in general (IV) and nursing practice issues with PR use (IV), clinical experience in critical care (IV) and CDMNS – total score (IV), and clinical experience in critical care (IV) and nursing practice issues with PR use (IV).

Correlations were computed for each of the five main study variables with each of the four subscales of the CDMNS using Pearson and Spearman's rho coefficients. The following is a matrix that shows each of these correlations.

Table 6

Bivariate Correlations of Study Variables and CDM Subscale Scores (Pearson and Spearman's rho Correlation)

	Atts	Total time- Nsg	Total time- CC	CDM	Nsg Prac. Issues	As and Os	Os and Vs	Eval. Conseq.	Look. For Info.
Atts		.155*	-.109*	-.073	.138	-.020	-.058	-.074	.084
Total Time- Nsg			.887*	.114*	.026*	.062*	.081*	.051*	.174*
Total time- CC				.146*	.036*	.093*	.118*	.069*	.204*
CDM					.385	.808	.829	.837	.799
Nsg Prac. Issues						.278	.334	.273	.299
As and Os							.555	.577	.562
Os and Vs								.572	.566
Eval Cons Eq.									.537
Look for Info.									

*p < 0.05; * indicates Spearman's rho correlation, all others Pearson's correlation*

Atts = attitudes; Total time-Nsg = total time worked in nursing in general; Total time-CC = total time worked in critical care; CDM = clinical decision making, Nsg Prac. Issues = nursing practice issues with PR use; As and Os = search for alternatives and objectives; Os and Vs = canvassing of objectives and values; Eval. Conseq. = evaluation and reevaluation of consequences; Look for Info. = search for information and unbiased assimilation of new information

The results of this analysis indicate that there was a moderate to strong relation between all four subscales of the Clinical Decision Making in Nursing Scale (CDMNS). All four subscales were also moderately related to nursing practice issues with PR use. This means that the nurses who obtained higher scores on each of the CDMNS subscales have more positive actions while caring for patients who are physically restrained in critical care. Examples of these items on the PR questionnaire are “I try alternating measures before restraining a patient” and “When I feel that the patient does not need to be restrained, I make this suggestion to the physician.” Items that were reverse coded on this scale included “More patients are restrained when we are working ‘short’ than when we have a full staff” and “All intubated patients and those with arterial and venous lines should be restrained.”

Stepwise Multiple Regression

Multiple regression is a method of analysis used to derive the variation of a criterion or dependent variable from several other independent, or predictor, variables. It is the simultaneous combination of multiple factors to assess how and to what extent they affect a certain outcome (Green & Salkind, 2008). Stepwise regression is designed to find the set of predictors that are most effective in predicting the dependent variable (Witte & Witte, 2007). Stepwise multiple regression was used to analyze the relationships between the dependent variable (attitudes toward PR use) and the independent variables (clinical experience in nursing as per Benner’s (2001) staging, clinical experience in critical care, clinical decision making, and nursing practice issues with PR use). The following tables show a summary of the stepwise

multiple regressions and ANOVA (analysis of variance that provides information about levels of variability within a regression model) for the study variables with attitudes toward PR use as the dependent variable.

Table 7

Summary of Stepwise Multiple Regression

Step	Variable	Total R ²	Incremental R ²
1	Total time in nursing in general	.026	.023*
2	Total time in nursing in general + Nursing Practice Issues with PR Use	.043	.043**

*Sig. F change = .001

**Sig. F change = .005

Note: No other exploratory variables entered into the regression equation

Table 8

One-Way Analyses of Variance (ANOVA) for Predictor Variable: Total Time Working in Nursing In General

Variable	<u>df</u>	<u>ss</u>	<u>MS</u>	<u>F</u>
Regression	1	74.642	74.642	10.764*
Residual	411	2850.186	6.935	
Total	412	2924.828		

* $p = .001$

Table 9

Analyses of Variance (ANOVA) for Predictor Variables: Total Time Working in Nursing In General + Nursing Practice Issues with PR Use

Variable	<u>df</u>	<u>ss</u>	<u>MS</u>	<u>F</u>
Regression	2	125.498	62.749	9.190*
Residual	410	2799.330	6.828	
Total	412	2924.828		

* $p = .000$

The results of this stepwise multiple regression indicate that the total time spent in nursing accounted for 2.6% of the variance in nurses' attitudes toward physical restraint use in critical care ($R^2 = .026$, $F(1,411) = 10.76$, $p = .001$). Total time in nursing in general and nursing practice issues together accounted for 4.3% of the variance in nurses' attitudes toward PR use in critical care ($R^2 = .043$, $F(1,410) = 7.45$, $p = .007$). No other variable entered into the equation which indicates that total time in critical care and clinical decision making (CDM) did not account for any variance in attitudes toward PR use in critical care which was not already explained. The small variance explained indicates that, overall, this is a weakly correlated model. However, statistical significance was found.

Therefore, the results indicate that there is no strong correlation to explain any variance between the dependent criterion variable (attitudes toward PR use in critical care) and the independent predictor variables in this model (clinical experience in nursing in general, clinical experience in critical care, clinical decision making, and nursing practice issues with PR use). There were no differences found in any of the

Benner stages of clinical experience. Novice nurses through expert nurses had no significant differences in attitudes toward PR use.

No differences were found in attitudes scores based on initial nursing education or highest degree obtained in nursing. Nurses who obtained their basic RN education in an Associate's Degree program had similar attitudes scores to those RNs who obtained their basic RN education in a Bachelor's program or a Master's program. This means that the education of the nurses, both the initial program attended by the participant when obtaining a nursing degree as well as the highest degree obtained by the participant in nursing, did not have a correlation with attitudes regarding PR use in critical care in this sample of registered nurses.

Correlations with Demographic Variables

In addition to the analysis of the main study variables, bivariate correlation analysis was also conducted with the demographic information provided by the study participants. The variable used for Benner Stage in nursing (Novice through Expert) was a categorical variable. In order to be used for multiple regression and correlation, categorical variables need to be coded. For this study, the categorical variable of the Benner Stage was coded as: Novice (1), Advanced Beginner (2), Competent (3), Proficient (4) and Expert (5).

The following shows only the correlations that were moderate or higher ($r > .300$).

Table 10

Correlations with Ancillary Variables – Spearman's rho Correlation

Variable	Variable	Spearman's rho	Significance**
Total time working in nursing in general	Taught content about PRs during basic RN education	.374	.000
Benner Stage (Novice through Expert) in nursing	Taught content about PRs during basic RN education	.356	.000
Total time working in critical care	Taught content about PRs during basic RN education	.310	.000
Benner Stage (Novice through Expert) in critical care	Taught content about PRs during basic RN education	.396	.000

** $p < 0.05$ level

Summary

The results of the research study indicated that there is a modest positive relationship between clinical decision making and nursing practice issues with physical restraint use in critical care. This means that nurses with higher perceived clinical decision making ability have more positive actions while caring for patients who are physically restrained in critical care. There were no correlations found between the dependent variable (attitudes with physical restraints) and the independent

variables (clinical experience in nursing in general, clinical experience in critical care, clinical decision making, and nursing practice issues with PR use).

There was a statistically significant moderate relation between time working in nursing as well as time working in critical care and the likelihood of content about physical restraint use being taught in basic RN education. This means that the more time the participant spent working in nursing and working in critical care, the more likely that participant had been taught content about PR use in his/her basic RN education. Novice nurses were less likely than expert nurses to have been taught PR content.

There were no moderate or strong correlations noted between any of the main study variables (clinical experience in nursing in general, clinical experience in critical care, CDM, nursing practice issues with PR use and attitudes toward PR use) and other demographic information (gender, geographic area of practice, critical care area of practice, program from which participant received basic RN education, highest credential held, fully understanding place of employment's policy on the use of PRs, and personal experience with PR use).

There were small yet statistically significant relationships ($p < 0.05$) between each of the following pairs of study variables: attitudes toward PR use and clinical experience in nursing in general, attitudes toward PR use and nursing practice issues with PR use, clinical experience in nursing in general and CDM, clinical experience in nursing and clinical experience in critical care, clinical experience in critical care and CDM.

Chapter V

Discussion of Findings

Introduction

The purpose of this quantitative correlational study was to examine the relationships between and among registered nurses' clinical experience, clinical decision making processes, and nursing practice issues related to physical restraint use with attitudes regarding physical restraint use in the critical care environment. Multiple small yet statistically significant relationships were found between the study variables (attitudes regarding PR use and clinical experience in nursing in general, attitudes regarding PR use and clinical experience in critical care, attitudes regarding PR use and nursing practice issues with PR use, clinical experience in nursing in general and clinical experience in critical care, clinical experience in nursing in general and CDMNS total score, clinical experience in critical care and CDMNS total score, and CDMNS total score and nursing practice issues with PR use). While only one moderate correlation was found (between clinical decision making and nursing practice issues with physical restraint use), the results provide useful information on the overall topic. This chapter will give a brief background review of the research problem and the related study variables. The methodological strengths and weaknesses of the study will then be reviewed.

Background

Clinical decision making is an integral part of the healthcare arena especially in the critical care environment (Harbison, 2001; Muir, 2004; Ramezani-Badr,

Nasrabadi, Yekta, & Taleghani, 2009). Critical care is an environment where there is a vital need for quick, accurate decision-making in order to meet the life or death needs of the critically ill patients. Clinical decision making in the critical care environment is highly complex and incorporates a wide range of attributes (Aitken, 2003). It is the nurse who is expected and needed to be an expert decision maker in order to deliver the highest quality care. Therefore, it is imperative that there be an understanding of the mechanisms involved in reliable CDM (Florin, Ehrenberg & Ehnfors, 2008; Muir, 2004) since obtaining a greater understanding of the CDM processes used by nurses has the potential to lead to overall improved patient care (Aitken, 2003).

Registered nurses' overall levels of clinical experience are considered to influence the clinical decision making process. Experience is an active process involving refining and changing previous thoughts and ideas when confronted with real-life clinical situations. It can be considered the ultimate contributor when making clinical decisions (Benner, 2001, 2004). As more experience is gained, it is the intuitive decision making of the experienced, expert nurse that becomes more prevalent (Benner, 2001, Lyneham, Parkison, & Denholm, 2008).

The importance of learning more about nurses' clinical decision making clinical experience and the potential relationships with the use of physical restraints in critical care led to the development of this study's overall research question:

What are the relationships between and among registered nurses' clinical experience, clinical decision making processes, and nursing practice issues

related to physical restraint use with attitudes toward the use of physical restraints in the critical care environment?

Statistical Findings

The major study variables for this research were clinical experience in nursing in general, clinical experience in critical care, clinical decision making as measured by the Clinical Decision Making in Nursing Scale (CDMNS), nursing practice issues with PR use in critical care as measured by the Physical Restraint Questionnaire – Nursing Practice Issues subscale and attitudes toward PR use in critical care as measured by the Physical Restraint Questionnaire – Attitudes Toward PR Use subscale.

For the CDMNS, the participants had a mean score of 152.61. For subscale one (search for alternatives and other options) = mean score was 39.68, subscale two (canvassing of objectives and values) = mean score was 39.19, subscale three (evaluation and reevaluation of consequences) = mean score was 36.85 and subscale four (search for information and unbiased assimilation of new information) = mean score was 36.90. There were no differences seen in scores between the five Benner (2001) categories (novice, advanced beginner, competent, proficient and expert). For the PR questionnaire – Nursing Practice Issues with PR Use subsection, the mean score was 45.12. For the PR Questionnaire – Attitudes Toward PR Use, the mean score was 16.63. There were no differences seen in scores between the five Benner categories.

Statistical evaluation and analysis of the research question demonstrated that seven of the ten correlations between the main study variables were statistically

significant. These were: attitudes regarding PR use and clinical experience in nursing in general, attitudes regarding PR use and clinical experience in critical care, attitudes regarding PR use and nursing practice issues with PR use, clinical experience in nursing in general and clinical experience in critical care, clinical experience in nursing in general and CDMNS total score, clinical experience in critical care and CDMNS total score, and CDMNS total score and nursing practice issues with PR use. Statistical significance indicates that the results were more likely indicative of a pattern and not chance alone, allowing for some generalization to the entire population (Green & Salkind, 2008). This statistical significance was likely due to the large sample size ($N = 413$). The correlations between the main study variables were small to moderate and ranged from .026 to .385.

There was a moderate positive correlation between clinical decision making processes (CDM) and nursing practice issues with physical restraint use (*Pearson's* = .385). Therefore, it is likely that nurses with higher perceived clinical decision making skills have more positive actions while caring for patients who are physically restrained in the critical care environment. Examples of items from the CDMNS on which the study participants scored higher include: "I go out of my way to get as much information as possible to make decisions" and "I mentally list options before making a decision." Examples from the Nursing Practice Issues with PR Use subsection on which the study participants scored higher include: "I try alternate nursing measures before restraining a patient" and "When I feel that the patient does not need to be restrained, I make this suggestion to the physician".

Bivariate correlations were conducted between the major study variables and the four subscales of the CDMNS (search for alternatives and other options, canvassing of objectives and values, evaluation and reevaluation of consequences, and search for information and unbiased assimilation of new information). Nursing practice issues with PR use moderately correlated with all four subscales. Each subscale also strongly correlated with each other. The range of the correlations was .288 to .528. Nurses who obtained higher scores on each of the CDMNS subscales had more positive actions while caring for patients who are physically restrained in critical care.

Multiple regression was performed to further assess the potential relationships between the study variables. The results of this stepwise multiple regression indicated that the total time spent in nursing accounted for 2.6% of the variance in nurses' attitudes toward physical restraint use in critical care ($R^2 = .026$, $F(1,411) = 10.76$, $p = .001$). Total time in nursing in general and nursing practice issues together accounted for 4.3% of the variance in nurses' attitudes toward PR use in critical care ($R^2 = .043$, $F(1,410) = 7.45$, $p = .007$). Total time in critical care and clinical decision making (CDM) did not account for any variance in attitudes toward PR use in critical care which was not already explained. This small explained variance indicates that, overall, this is a weakly correlated model. However, statistical significance was found which allows for some generalization of the results to the overall population.

The results indicate that there was no strong correlation found to explain the variance between the dependent criterion variable (attitudes toward PR use in critical

care) and the independent predictor variables (clinical experience in nursing in general, clinical experience in critical care, clinical decision making, and nursing practice issues with PR use) in the model. There were no differences found in any of the Benner stages of clinical experience. Nurses at all of Benner's level from novice through expert had no significant differences in their attitudes toward PR use.

When looking at the ancillary demographic data given by the participants, it was found that overall clinical experience in nursing and clinical experience in critical care had statistically significant correlations with the likelihood of content about PRs being taught during the nurse's basic RN education. The range of the correlations was .310 - .396. In this sample, those nurses who had worked longer in nursing and had more clinical experience were more likely to have been taught content about physical restraints during their basic RN education. Novice nurses were less likely than expert nurses to have been taught any content about physical restraints in their basic RN education.

Although the correlations found between the major study variables were small to moderate, they have clinical significance to nursing practice. When looking at the existing literature, it can be seen that there is no consensus of findings on the relation of clinical experience to clinical decision making (Andersson, Omberg & Svedlund, 2006; Bucknall, 2000; Bucknall, 2003; Dowding et al., 2009; Ebright et al., 2003; Ferrario, 2003; Hoffman, Aitken, and Duffield, 2009; King & Clark, 2002; Komararat & Oumtane, 2009; Lauri et al., 2001; Lyneham, Parkison, & Denholm, 2008; Offredy, 1998; Ramezani-Badr et al., 2009; Ritter, 2003; Traynor, Boland, & Buus,

2010a) or practice issues and attitudes regarding PR use in critical care (Benbenbishty, Adam, & Endacott, 2010; Choi & Song, 2003; Huang, Chuang, & Chiang, 2009; Whitman et al., 2002; Martin & Mathisen, 2005; Minnick et al., 2007; Racey, 2006; Yeh et al., 2004). The findings of this study show that continued research in this area is needed to explore possible relationships.

Benner's Model

Patricia Benner (2001) developed a practice-based model of clinical experience and skill acquisition that she used to describe the body of nursing knowledge. She discussed five levels of skill and knowledge acquisition that nurses go through when developing their practice and knowledge base. These five levels are: novice, advanced beginner, competent, proficient, and expert.

The meaning of experience is integral to Benner's work. According to Benner (2001), experience is a process of knowing through repeated exposure to situations that lead to the refinement of earlier thoughts and ideas. Experience over time is mandatory in order to develop expertise in clinical decision making. With experience comes a higher level of clinical decision making.

The results from this study were inconsistent with previous research on Benner's (2001) model. As previously discussed in Chapter 2, Lyneham, Parkison, and Denholm (2008) and King and Clark (2002) found that nurses become expert, more intuitive decision makers, with the passage of time and acquisition of experience. The results of this study found no strong correlations between clinical experience, CDM processes, and nursing practice issues with attitudes toward PR use.

The lower strength correlations are not surprising for several reasons. Based on the description of the sample given in Chapter 3, it is clear that the participants were a homogenous sample in relation to level of experience based on Benner's (2001) model. The more homogenous the population from which the sample under study is drawn, the lower the resulting correlation (Witte & Witte, 2007). The majority of the participants (83.1%) were "experts" according to Benner's (2001) classifications. The study sample was obtained through use of a professional organization, the American Association of Critical Care Nurses and unknowingly yielded a high number of experts. Another contributing factor to the reduced strength of the correlations may have been the small sizes of Benner's (2001) subgroups; in nursing in general: novice (n=2), advanced beginner (n=9), competent (n=32), and proficient (n=22) and in nursing in critical care: novice (n=9), advanced beginner (n=13), competent (n=47) and proficient (n=30). This may have resulted in an inadequate power to detect a greater strength in the correlations.

Since a skewed sample was noted with the study population, the data was also analyzed using different groupings of the sample to see if any changes occurred in the strength of the study variables. A sample of 45 nurses was extracted using equal cells for the five Benner stages (n=9 for novice, advanced beginner, competent, proficient and expert). There were no differences noted in the resulting correlations.

Clinical Experience and CDM

The clinical decision making processes of the participants were measured using the Clinical Decision Making in Nursing Scale (CDMNS) created by Dr. Helen

Jenkins (1985). Previous work using the CDMNS had varying scores. Girot (2000) used the CDMNS in her work examining the differences in clinical decision making skills of newly graduated nurses (less than one month after graduation from RN program) and experienced nurses (at least two years of clinical experience). The new graduates had a mean score of 147.21 and the experienced nurses had a mean score of 137.6. Bowles (2000) also used the CDMNS as one of her instruments in her study examining the relationship of critical thinking to clinical-judgment abilities in baccalaureate nursing students at the completion of the RN education. While the specific scores were not mentioned, the participants were noted to have achieved “about average” scores on the CDMNS (Bowles, 2000, p. 375). Krumwiede (2010) used the CDMNS in her dissertational research examining and comparing the perceptions of clinical decision making of students enrolled in accelerated and basic baccalaureate nursing programs. The mean score on the CDMNS for accelerated students was 152.64 while the mean score for basic nursing students was 147.99. The mean score for the current study sample was 152.610, much higher than experienced nurses in Bowles (2000) and Girot’s (2000) studies but comparable to the accelerated students in Krumwiede’s (2010) work. The higher scores in this study may be accounted for by the homogeneity of the study sample which yielded a higher number of “experts” (Benner, 2001), more experienced nurses.

Findings from this study are consistent with a study by Hoffman, Donoghue, and Duffield (2004) who examined relationships between nurses’ clinical decision making and experience, education, area of practice and age. They found no significant

correlations between experience and decision-making ($r = 0.024, p = 0.834$) nor between education and decision-making ($r = 0.045, p = 0.697$). The nurses' own occupational orientation, or value they personally held to the RN work role, accounted for the greatest variance in the CDM process. This is similar to the current study's finding. Nurses with higher perceived CDM processes had more positive practices and actions with PR use in critical care. No correlation was found with clinical experience or education level to PR practice in critical care.

Lauri et al. (2001) sought to identify the cognitive and decision-making processes used by registered nurses in five different countries. One of the findings in their study revealed that knowledge received in participants' basic nursing education played a role in their overall CDM process. This finding is similar to the findings of the current study. It was found that the more experienced nurses were more likely to have received PR content in their basic nursing education than the nurses with fewer years of experience, who graduated more recently. While there was a small correlation found between clinical experience and CDM, there was a moderate correlation found between CDM and nursing practice issues with PR use (Spearman's $\rho = .385$). Since, the experienced nurses were more likely to have had content related to physical restraints in their RN education, this may account for some difference in the overall CDM process with PR use.

The quantitative study done by Ferrario (2003) investigated the thought patterns and CDM processes of registered nurses working in the emergency room. It was found that experienced nurses used a trial-and-error approach to decision making,

one based on prior experience, more so than inexperienced nurses. Ferrario's study found a distinction in the CDM processes between novice and expert nurses. While the current study did not find a significant difference in the perceived CDM process between the expert and novice nurses, a correlation was found between level of experience and likelihood to have received PR content in the basic RN education. Expert nurses were more likely to have learned about PR use in their basic RN education than the novice nurses. Again, this learned content can have a role in the overall CDM process.

Physical Restraint Use

The nursing practice issues with physical restraint use and attitudes regarding PR use were measured using the PR Questionnaire created by Janelli (1991). This instrument was the only one currently available to measure PR use in the critical care environment that had some reported reliability and validity. Previous work using the PR Questionnaire had varying scores. Suen et al. (2006) used the PR Questionnaire when looking at the use of physical restraints in rehabilitative settings. The study sample included registered nurses, licensed practical nurses and healthcare assistants. The median score, not the mean score, was reported for the Nursing Practice Issues with PR Use subsection as 37.00. The Attitudes Regarding PR Use was scored differently than the current study. When converted to comparable scoring, the median score was 13.56. Yeh et al. (2004) used the PR Questionnaire in their study examining the effect of a continuing education session on nurses' practice with PRs. The instrument was administered twice, directly before the start of a four hour continuing

education session about PRs and three days after the continuing education session. The mean scores on the Nursing Practice Issues subscale pre-intervention was 28.41, post-intervention was lower at 28.05. The mean scores on the Attitudes Toward PR Use pre-intervention was 28.35, post-intervention was significantly lower 26.68. The researchers in this study were given permission to modify the instrument and its scoring as needed. Reverse scoring for negatively worded items was not used; therefore, the scores from the two studies cannot be directly compared. However, for the current study, the mean score on the Nursing Practice Issues with PR Use was 45.116 and the Attitudes Toward PR Use was 4.625, higher than those obtained by Suen et al. (2006).

While the availability of research conducted about attitudes and practice issues with physical restraint use in critical care is limited, there was some concordance found in the results when compared to the current study. Choi and Song (2003) found no relationship between RN attitude, experience level, and education level with physical restraint use. The results of the current study are consistent with this finding. Huang, Chuang, and Chiang (2009) and Yeh et al. (2004) each looked at the role of in-service education and its relation to PR use with registered nurses. Each found similar results: an improvement in attitudes and knowledge after completion of an in-service education program specific to PR use. The current study found a correlation between years of clinical experience and likelihood of learning about PR during the basic RN education. The more experienced nurses were more likely to have had PR education than the less experienced, novice nurses. There was 81.6% of participants who were

required by their employer to attend a yearly in-service program on physical restraints yet no correlation was found between this and any of the study variables (clinical experience, CDM, nursing practice issues with PR use or attitudes regarding PR use).

Study Strengths

One strength noted with this study is the work done in regard to practice issues and attitudes regarding physical restraint use in the critical care environment. There is no existing research that has been conducted in the United States found on this topic. This study's results, though small, can be utilized to guide decisions and directions of future physical restraint quality initiatives in critical care environments in the United States.

Another strength of this study was the large national sample that was obtained. The sample came from the AACN whose membership reflects similar characteristics to the HRSA national sample of 2008 (HRSA, 2010). Based on the number of study variables, power analysis determined that a sample of 91 would be adequate for correlational analyses. This study had a sample of 413. There were participants from all regions of the United States, thus giving the findings some generalizability to a larger population.

This large sample size directly contributed to the statistical significance of seven of ten correlations of the major study variables (Witte & Witte, 2007). Statistical significance was found with each of the following correlations: attitudes regarding PR use and clinical experience in nursing in general, attitudes regarding PR use and clinical experience in critical care, attitudes regarding PR use and nursing practice

issues with PR use, clinical experience in nursing in general and clinical experience in critical care, clinical experience in nursing in general and CDMNS total score, clinical experience in critical care and CDMNS total score, and CDMNS total score and nursing practice issues with PR use. Although weakly correlated, the statistical significance shows that the findings did not occur by chance alone.

Another strength of this study was the use of online data collection. Online data collection allowed participants to answer the questionnaire electronically at their convenience and in the location of their choosing. Advantages of using an online format when conducting research include higher response rates, reduced cost of data collection, lack of geographical boundaries, and fewer respondent errors and item omissions (O'Neill, 2004).

Limitations of the Study

The convenience sample was recruited from a single professional nursing organization. When using Benner's work for categorizing the participants based on their experience levels, a higher level of experts was yielded in a specialty area which created a homogeneous sample. This may have skewed the results and influenced the overall outcomes. For future studies, this will be considered and a different sampling process may be utilized.

The reliability measures of the research instruments may have also impacted the findings. An acceptable alpha coefficient for an established instrument is .80 (Burns & Grove, 2009). The alpha coefficient of the CDMNS was acceptable ($\alpha = 0.85$) as was the alpha coefficient for the Attitudes Toward PR Use subsection of the

PR Questionnaire ($\alpha = 0.78$). However, the reliability coefficients of the subscales were somewhat lower: CDMNS Subscale One ($\alpha = 0.56$), CDMNS Subscale Two ($\alpha = 0.62$), CDMNS Subscale Three ($\alpha = 0.63$), CDMNS Subscale Four ($\alpha = 0.65$), and Nursing Practice Issues with PR Use subscale of the PR Instrument ($\alpha = 0.56$). These lower reliability coefficients may have impacted measurement performance the overall findings.

The predominance of previous research done on clinical decision making has been conducted using qualitative methods (Andersson, Omberg, & Svedlund, 2006; Bucknall, 2000; Bucknall, 2003; Dowding et al., 2009; Ebright et al., 2003; Hoffman, Aitken, & Duffield, 2009; King & Clark, 2002; Lyneham, Parkison, & Denholm, 2008; Offredy, 1998; Ritter, 2003; Ramezani-Badr et al., 2009; Traynor, Boland, & Buus, 2010a). The CDMNS instrument was chosen for use in this research as it demonstrated reliability in previous studies (Bowles, 2000; Girot, 2000; Jenkins, 1985; Krumwiede, 2010) as well as ease of use for participants. This instrument measures the participants' perceptions of their own clinical decision making skills and, therefore, can be biased based on inflated self-perceptions.

While its use in the literature has been limited, the PR Questionnaire has been shown to be reliable (Janelli, Stamps, & Delles, 2006; Suen et al., 2006; Yeh et al., 2004). No other quantitative instrument was found to measure the variables of nursing practice issues with PR use and attitudes regarding PR use in the critical care environment. For the current study, the reliability of the two subscales was found to be moderate (Nursing Practice Issues with Physical Restraint Use Alpha coefficient =

0.56) and near acceptable (Attitudes Toward Physical Restraint Use Alpha coefficient = 0.78). This lower reliability may have impacted the overall results.

In summary, the findings of this study will add to the small existing body of research conducted comparing registered nurses' clinical experience, clinical decision making processes, practice issues with physical restraint use, and attitudes toward PR use in the critical care environment. This study's results, though small, can be utilized to guide decisions and directions of future physical restraint initiatives in critical care environments.

Chapter VI

Summary, Implications for Nursing Education, Research, and Practice and Conclusions

Introduction

The purpose of this quantitative correlational study was to examine the relationships between and among registered nurses' clinical experience, clinical decision making processes, nursing practice issues with physical restraint use, and attitudes regarding physical restraint use in the critical care environment. Multiple statistically significant correlations were found between the study variables (attitudes regarding PR use and clinical experience in nursing in general, attitudes regarding PR use and clinical experience in critical care, attitudes regarding PR use and nursing practice issues with PR use, clinical experience in nursing in general and clinical experience in critical care, clinical experience in nursing in general and CDMNS total score, clinical experience in critical care and CDMNS total score, and CDMNS total score and nursing practice issues with PR use). This chapter will provide a summary of the study findings and also provide implications for nursing practice, education and future research.

Summary

This descriptive correlational survey study explored the relationships between and among registered nurses' clinical experience, clinical decision making processes, nursing practice issues with physical restraint use, and attitudes regarding physical restraint use in the critical care environment. Online data collection was used with a

large convenience sample of 413 critical care registered nurses that was obtained from across the United States. A moderate positive correlation was found between clinical decision making processes (CDM) and nursing practice issues with physical restraint use (*Pearson's* = .385, $p = .000$). Nurses with higher perceived clinical decision making skills have more positive practices when caring for patients who are physically restrained in the critical care environment. Examples of these positive actions include trying alternate nursing measures before restraining patients, determining the reason the restraint was ordered before application, answering the call light of the restrained patient as soon as possible and working with other staff member to discover ways to control patients' behavior other than using physical restraints.

Results of a multiple regression analysis indicated that there were no strong relationships between the dependent criterion variable (attitudes toward PR use in critical care) and the independent predictor variables (clinical experience in nursing in general, clinical experience in critical care, clinical decision making processes and nursing practice issues with PR use). No significant differences were seen in this sample's attitudes toward PR use based on the level of experience using Benner's stages; novice through expert, CDM processes and nursing practices or actions with PR use in critical care. This lack of variance may be attributed to the overall homogeneity of the study sample as the predominance of the participants were categorized as experts (Benner, 2001).

Implications for Nursing Education

An interesting finding of the study was clinical experience in nursing (*Spearman's rho* = .374, *p* = .000) and clinical experience in critical care (*Spearman's rho* = .310, *p* = .000) had statistically significant positive correlations with the likelihood of content about PRs being taught during the basic RN education. Nurses who had worked longer in nursing and had more clinical experience were more likely to have been taught content about physical restraints during their basic RN education. Novice nurses were less likely than expert nurses to have reported being taught any content about physical restraint uses in their basic RN education. This finding supports previous work (Lauri et al., 2001) on knowledge received in participants' basic nursing education playing a role in their overall CDM process. In Lauri's study, content from the basic RN education played a major role in the nurses' CDM processes.

This reported lack of PR content in today's nursing curriculum is concerning considering the current use of PRs in critical care and on other hospital units. Research shows that at least 27,000 people are physically restrained in U.S. hospitals each day, with the majority of use (56%) confined to the ICUs (Minnick et al., 2007). Physical restraints are a common technique that is utilized in critical care areas to facilitate tolerance of invasive monitoring and to reduce treatment interference (Hofso & Coyer, 2007; Hine, 2007; McCabe et al., 2011; Minnick et al., 2007). All nurses, whether novice or expert, need to have a knowledge base about the care required for patients who are physically restrained. Understanding registered nurses' perceptions and

knowledge about PR use can assist in establishing effective education initiatives.

Therefore, based on this study, it is suggested that nursing curricula assess and include evidence-based PR content in order to better prepare all future nurses to provide high quality, safe patient care.

Implications for Nursing Research

There have been numerous studies that have been conducted examining possible relationships between nurses' clinical experience levels and their clinical decision making processes (Andersson, Omberg & Svedlund, 2006; Bucknall, 2000; Bucknall, 2003; Dowding, Spilsbury, Thompson, Brownlow, & Pattenden, 2009; Ebright, Patterson, Chalko, & Render, 2003; Ferrario, 2003; Hoffman, Aitken, and Duffield, 2009; Komararat & Oumtane, 2009; King & Clark, 2002; Lauri et al., 2001; Lyneham, Parkison, & Denholm, 2008; Offredy, 1998; Ramezani-Badr et al., 2009; Ritter, 2003; Traynor, Boland, & Buus, 2010a). Although there has been no consensus of findings, clinical experience has been found to be the predominant contributor to nurses' CDM processes. There has also been research examining physical restraint practice issues and attitudes with PR use (Benbenbishty, Adam, & Endacott, 2010; Choi & Song, 2003; Huang, Chuang, & Chiang, 2009; Whitman et al., 2002; Martin & Mathisen, 2005; Minnick et al., 2007; Racey, 2006; Yeh et al., 2004) These studies mainly looked at PR use overall, not specifically nurses' CDM processes with PR use in the critical care environment. No work has been done to explore the possible link between nurses' clinical experience, CDM, and PR use in critical care. The findings of this study showed that there is a correlation between clinical decision making and

nursing practice issues with PR use in critical care (Spearman's $\rho = .385, p < 0.05$). These findings, though modest, show that continued work in this area is needed to further identify factors not included in this study.

There is a need for the development of more reliable and valid instruments as well as improving current instrument reliability. Nursing practice issues with PR use was measured using the PR Questionnaire – Nursing Practice Issues with PR Use subscale. This subscale was shown to be reliable in previous research (Suen et al., 2006; Yeh et al., 2004). It was chosen to measure nursing practice issues with PR use in this study since it was the only available instrument with published reliability and validity data. Slightly lower overall reliability of the instrument was found in this study (Cronbach's $\alpha = 0.78$) as well as on the Nursing Practice Issues with PR Use subscale (Cronbach's $\alpha = 0.56$). Therefore, continued construct and content analysis using a larger sample size could improve the instrument's reliability as well as lead to the creation of new instruments. These new tools would expand the body of existing research knowledge.

The sampling technique used in this study to garner participants unknowingly solicited a high number of nurses with advanced clinical experience. The overall CDM scores for the sample were high yet there were no strong correlations found between CDM, clinical experience, nursing practice issues with PR use and attitudes regarding PR use in critical care. The relative homogeneity of this sample likely skewed the results. To avoid a homogenous sample, replication of this study, using a different

sampling technique is recommended, with attention to recruiting equal numbers of participants from each of Benner's categories.

There is an inherent bias when using a self-report instrument. Using self-perception as a method of measurement, participants may have inflated scores. Future studies might include the use of an additional method of data collection such as participant observation. Observation, along with self-report instruments, could generate more accurate data.

The overall lack of studies regarding physical restraint use in critical care in the United States is another area for future work. There are minimal studies available to guide the decisions about the need for, and direction of, future physical restraint initiatives in critical care environments. Studies that are available have limitations including small sample sizes and are mainly conducted outside of the United States. Continued work in the United States examining nurses' CDM and practice issues related to PR use is recommended.

Implications for Nursing Practice

Hoffman, Donoghue, and Duffield (2004) found that nurses with higher perceived CDM processes had more positive practices and actions with PR use in critical care. While this study did not support clinical experience as contributing to PR use in critical care, it was found that those nurses with higher perceived CDM processes were more likely to have more positive PR practices. This includes finding alternate ways to assist patients with their treatment plan rather than use PRs as well as work with colleagues in a team approach to find ways to not use PRs with their

patients. Therefore, hospitals and other healthcare institutions need to pay closer attention to professional mentorship and orientation. Better mentoring, preceptorship and orientation programs within acute care facilities could help implement this knowledge about perceived value of the RN role and its importance to the overall CDM process, especially with PR use. More emphasis can be placed on the importance on the RN role. Mentors and preceptors can help novice nurses in their transition into the role of professional nurse. Higher value placement on the RN role leads to increased CDM processes which in turn may yield better patient outcomes with PR use.

Conclusions

One clinical decision that is often made in the critical care environment involves the utilization of physical restraints (PRs). The most common reason in critical care for PR use is to prevent the removal of invasive tubes and devices such as endotracheal tubes (Happ, 2000; Choi & Song, 2009; Huang, Chuang, & Chiang, 2009). Data show that PR applications are initiated by nurses, not physicians (Choi & Song, 2003; Langley, Schmollgruber, & Egan, 2011; Whitman et al., 2002). However, it is not an automatic procedure to restrain a critically ill patient simply to maintain treatment modalities. Previous clinical exposure to physical restraints and experience with PRs may influence the decision to use PRs. (Choi & Song, 2003).

Within the literature, a substantial amount of research examining the clinical decision making process of registered nurses and the role of clinical experience in clinical decision making (Andersson, Omberg & Svedlund, 2006; Benner, 2001;

Benner, 2004; Bucknall, 2000; Bucknall, 2003; Dowding, Spilsbury, Thompson, Brownlow, & Pattenden, 2009; Ebright, Patterson, Chalko, & Render, 2003; Ferrario, 2003; Hoffman, Aitken, and Duffield, 2009; Komaratat & Oumtanee, 2009; King & Clark, 2002; Lauri et al., 2001; Lyneham, Parkison, & Denholm, 2008; Offredy, 1998; Ramezani-Badr et al., 2009; Ritter, 2003; Traynor, Boland, & Buus, 2010a) has been done. The majority of this research was conducted using qualitative methods with clinical experience being the most commonly cited influence in the CDM process. There has also been research regarding the use of physical restraints in critical care (Benbenbishty, Adam, & Endacott, 2010; Choi & Song, 2003; Huang, Chuang, & Chiang, 2009; Whitman et al., 2002; Martin & Mathisen, 2005; Minnick et al., 2007; Racey, 2006; Yeh et al., 2004). This existing research was conducted internationally looking mainly at the reasons for using physical restraints. There was no available research dedicated to examining the possible relationships between nurses' clinical experience, CDM processes, and practice issues and attitudes toward PR use in critical care. This gap in the literature is troublesome as learning more about the use of physical restraints in critical care and its possible link with clinical experience and CDM will directly contribute to the body of nursing knowledge and patient care information.

The results of this study support a moderate correlation between registered nurses' overall self-perceived clinical decision making processes and practice issues when using physical restraints in the critical care environment. Nursing practice issues indicate what the nurses actually do while caring for patients who are physically

restrained. These nurses will try alternate measures before restraining patients, answer the call light of restrained patients as soon as possible, and tell patients who are restrained why the restraints are being used and when they will be removed. Nurses with higher CDM processes have more positive actions when using PRs including working with other staff members to discover ways to maintain therapies other than the use of PRs. These nurses may use alternate ways to help maintain treatment modalities in the critical care environment rather than automatically restraining all patients who are intubated or have multiple treatment modalities.

Correlations found between clinical experience and CDM, nursing practice issues with PR use and attitudes regarding PR use in the critical care environment, while modest, were statistically significant and are important to the nursing profession. The overall CDM processes scores of the sample were higher when compared to other samples that were measured using the same instrument (Bowles, 2000; Girot, 2000; Krumwiede, 2010). Since this sample consisted of mainly expert nurses (Benner, 2001), this study gives some support that nurses with more clinical experience have higher perceived clinical decision making processes and abilities. More experience can lead to better clinical decisions, thus improving overall patient care.

Results from this study indicated that nurses who worked longer in nursing and had more clinical experience were more likely to have been taught content about physical restraints during their basic RN education. The results of this study revealed that novice nurses were less likely than more expert nurses to have been taught any content about physical restraints in their basic RN education, suggesting there is a

need for physical restraint content to be assessed and included in nursing curricula. This content should include evidence-based physical restraint uses in acute care settings, costs to patients and staff, potential injuries with use and alternatives to PR use, thus preparing future nurses in how to properly care for patients who are physically restrained.

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APPENDIX A

Permission to Conduct Research through AACN

20 March 2012

To Whom It May Concern

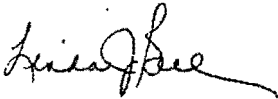
The American Association of Critical Care Nurses (AACN) is pleased to support Kristi Stinson in completing her research by providing access to our membership. In order for us to facilitate this access we have asked her to send copies of her research abstract and instrument for review and when available, a copy of IRB approval for her project.

Access to respondents through AACN may be through one or both of the following:

- 1) Posting a link to the survey materials in our weekly eNewsletter for a maximum of four weeks. AACN does not guarantee a response rate with this posting.
- 2) Purchase of a mailing list tailored to the researcher's specifications. We do not provide members e-mail addresses for any reason.

Please feel free to contact me directly for any additional questions at

linda.bell@aacn.org. Sincerely,



Linda Bell, RN, MSN
Clinical Practice Specialist
American Association of Critical Care-Nurses

APPENDIX B

Direct Online Solicitation Script

(Subject line):

NURSING DOCTORAL STUDENT INVITES CRITICAL CARE NURSES TO PARTICIPATE IN RESEARCH ABOUT CLINICAL EXPERIENCE, CLINICAL DECISION- MAKING, AND ATTITUDES AND PRACTICE ISSUES WITH PHYSICAL RESTRAINT USE IN CRITICAL CARE

Dear Fellow Critical Care Nurse:

My name is Kristi Stinson, RN, BSN, MSN, APN-BC. I am a doctoral candidate in the College of Nursing at Seton Hall University. I am also an acute care nurse practitioner with over 15 years of critical care experience. I would like your input into your experience using physical restraints in the critical care environment. I am inviting all critical care nurses to participate in a research study entitled "The Ties That Bind: The Relationships between and among Clinical Experience, clinical decision making Processes, Attitudes toward the Use of Physical Restraints, and Nursing Practice Issues with Physical Restraint Use in the Critical Care Environment".

Participation in this research will involve completing two surveys (The Jenkins' Clinical Decision Making in Nursing Scale (Jenkins, 1985), a 40 item Likert-scale survey and The Physical Restraint Questionnaire (Janelli et al., 1991), a 29 items with Likert-scale survey) as well as a short demographic and supplementary data questionnaire. You can complete all of the surveys in less than 20 minutes.

Participation in this study by completing the online survey materials will imply your consent to participate.

Your participation in this study is voluntary and confidential. The Survey Monkey format is designed to insure that all data will be submitted anonymously so I will not have access to your identity at any time. To insure further confidentiality of all responses, data submitted will be stored only on a memory key and kept in a locked, secure place in my office. It will be available only to me. While there are no anticipated risks involved in your completion and submission of study materials, if you start the survey and then decide not to complete it, you can simply log out of Survey Monkey and no data will be submitted or saved.

If you have any questions or concerns, you can contact me at stinsokr@shu.edu or contact the Seton Hall IRB office at 973-313-6314. I hope you decide to participate in this research. To enter the study, please click on the following link to gain access to the study materials:

<https://www.surveymonkey.com/XXXXXXXXXX>

Thank you so much for taking the time to participate in this research!

Kristi Stinson, RN, BSN, MSN, APN-BC

APPENDIX C

The Jenkins' Clinical Decision Making in Nursing Scale

The instrument is used with permission from Springer Publishing Company

Directions: For each of the following statements, think of your behavior while caring for clients in the critical care environment. Answer on the basis of what you are doing right now in the clinical setting.

There are no "right" or "wrong" answers. What is important is your assessment of how you ordinarily operate as a decision maker in the clinical setting. None of the statements cover emergency situations. Circle the answer that comes closest to the way you behave. Do not dwell on the responses.

Answer all items. This should take appropriately ten minutes.

Please use the following scale when answering these questions:

Circle whether you would likely behave in the described way:

A – Always – What you consistently do every time

F – Frequently – What you usually do most of the time

O – Occasionally – What you sometimes do on occasion

S – Seldom – What you rarely do

N – Never – What you never do at any time

Clinical Decision-Making in Nursing Scale

Note: Be sure you respond in terms of what you are doing *in the clinical setting at the present time*.

- | | | | | | |
|---|---|---|---|---|---|
| 1) If the clinical decision is vital and there is time, I conduct a thorough search for the alternatives. | A | F | O | S | N |
| 2) When a person is ill, his or her cultural values and beliefs are secondary to the implementation of health services. | A | F | O | S | N |
| 3) The situational factors at the time determine the number of options that I explore before making a decision. | A | F | O | S | N |
| 4) Looking for new information in decision making is more trouble than it's worth. | A | F | O | S | N |
| 5) I use books or professional literature to look up things I don't understand. | A | F | O | S | N |
| 6) A random approach for looking at options works best for me. | A | F | O | S | N |
| 7) Brainstorming is a method I use when thinking of ideas for options. | A | F | O | S | N |

- 8) I go out of my way to get as much information as possible to make decisions. A F O S N
- 9) I assist clients in exercising their rights to make decisions about their own care. A F O S N
- 10) When my values conflict with those of my client, I am objective enough to handle the decision making required for the situation. A F O S N
- 11) I listen or consider expert advice or judgment, even though it may not be the choice I would make. A F O S N
- 12) I solve a problem or make a decision without consulting anyone, using information available to me at the time. A F O S N
- 13) I don't always take time to examine all the possible consequences of a decision I must make. A F O S N
- 14) I consider the future welfare of the family when I make a clinical decision which involves the individual. A F O S N
- 15) I have little time or energy available to search for information. A F O S N
- 16) I mentally list options before making a decision. A F O S N

- 17) When examining consequences of options I might choose, I generally think through "If I did this, then . . ."
- 18) I consider even the remotest consequences before making a choice.
- 19) Consensus among my peer group is important to me in making a decision.
- 20) I include clients as sources of information.
- 21) I consider what my peers will say when I think about possible choices I could make.
- 22) If a colleague recommends an option to a clinical decision making situation, I adopt it rather than searching for other options.
- 23) If a benefit is really great, I will favor it without looking at all the risks.
- 24) I search for new information randomly.
- 25) My past experiences have little to do with how actively
- | | A | F | O | S | N |
|-----|---|---|---|---|---|
| 17) | | | | | |
| 18) | | | | | |
| 19) | | | | | |
| 20) | | | | | |
| 21) | | | | | |
| 22) | | | | | |
| 23) | | | | | |
| 24) | | | | | |
| 25) | | | | | |

I look at risks and benefits for decisions about clients.

26) When examining consequences of options I might choose, I am aware of the positive outcome for my client. A F O S N

27) I select options that I have used successfully in similar circumstances in the past. A F O S N

28) If the risks are serious enough to cause problems, I reject the option. A F O S N

29) I write out a list of positive and negative consequences when I am evaluating an important clinical decision. A F O S N

30) I do not ask my peers to suggest options for my clinical decisions. A F O S N

31) My professional values are inconsistent with my personal values. A F O S N

32) My finding of alternatives seems to be largely a matter of luck. A F O S N

33) In the clinical setting I keep in mind the course objectives for the day's experience. A F O S N

34) The risks and benefits are the farthest thing A F O S N

from my mind when I have to make a decision.

35) When I have a clinical decision to make, I consider A F O S N
the institutional priorities and standards.

36) I involve others in my decision making only A F O S N
if the situation calls for it.

37) In my search for options, I include even those that A F O S N
might be thought of as "far out" or not feasible.

38) Finding out about the client's objectives is a regular A F O S N
part of my clinical decision making.

39) I examine the risks and benefits only for consequences A F O S N
that have serious implications.

40) The client's values have to be consistent with my own A F O S N
in order for me to make a good decision.

APPENDIX D

Physical Restraint Questionnaire**Section I: Nursing Practice Issues**

Please circle one number in the column to the right to indicate what you actually do when caring for patients in restraints.

This section focuses on what you actually do when caring for patients in restraints.

1 = Always 2=Sometimes 3=Never

	Always	Sometimes	Never
1) I try alternate nursing measures before restraining a patient.	1	2	3
2) Before I restrain a patient, I find out the reason for the restraint.	1	2	3
3) When I feel that the patient does not need to be restrained, I make this suggestion to the physician.	1	2	3
4) I answer the call light or calls for "help" for the patient who is restrained as soon as possible.	1	2	3
5) I check the restrained patients at least every two hours.	1	2	3
6) When giving personal care (bathing or dressing) to a patient who is restrained, I check his/her skin for reddened areas of bruises.	1	2	3
7) I tell the patient why the restraint is being applied.	1	2	3
8) I tell family members / visitors why the patient is restrained.	1	2	3
9) I tell the patient when the restraint will be removed.	1	2	3

10) I tell the family members / visitors when the restraint will be removed.	1	2	3
11) The application of physical restraints is necessary in a hospital setting to prevent the patient for injuring him or herself.	1	2	3
12) All disoriented patients should be restrained.	1	2	3
13) All intubated patients and those with arterial and venous lines should be restrained.	1	2	3
14) More patients are restrained when we are working "short" than when we have a full staff.	1	2	3
15) In the unit I work, staff members work together to discover ways to control patients' behavior other than the use of physical restraints.	1	2	3
16) When I need to restrain a patient, a restraint is available on my unit.	1	2	3
17) I would rather sedate a patient with prescriptive medication than physically restrain them.	1	2	3

Section II: Attitudes Regarding Use of Restraints

Please circle one number in the column to the right to indicate how you feel about each statement.

This section focuses on feelings about physical restraints or how you feel about caring for patients in restraints.

1 = Agree 2 = Disagree 3 = Undecided

	Agree	Disagree	Undecided
18) I feel guilty that family members have the right to refuse the use of restraints.	1	2	3
19) I feel that nurses have the right to refuse to place patients in restraints.	1	2	3

	Agree	Disagree	Undecided
20) If I were the patient, I feel I should have the right to refuse/resist when restraints are placed on me.	1	2	3
21) I feel guilty placing a patient in restraints.	1	2	3
22) I feel that the main reason restraints are used is that the hospital staff is short staffed.	1	2	3
23) I feel embarrassed when the family enters the room of a patient who is restrained and they have not been notified.	1	2	3
24) The hospital is legally responsible to use restraints to keep the patient safe.	1	2	3
25) It makes me feel badly if the patient gets more upset after restraints are applied.	1	2	3
26) I feel that it is important to let the patient in restraints know that I care about him or her.	1	2	3
27) It seems that patients become more disoriented after the restraint has been applied.	1	2	3
28) A patient suffers a loss of dignity when placed in restraints.	1	2	3
29) In general, I feel knowledgeable about caring for a restrained patient.	1	2	3

APPENDIX E

DEMOGRAPHIC AND SUPPLEMENTARY DATA

Please answer each question or check off with an X the answer that best describes you. Record your answer in the column on the right. Please answer every question and answer each only once.

Current Age (in years):		
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Gender:	Female	
	Male	
	Other	

Race:	White	
	Black or African American	
	American Indian or Alaska Native	
	Asian Indian	
	Chinese	
	Filipino	
	Japanese	
	Korean	
	Vietnamese	
	Other Asian	
	Native Hawaiian	
	Guamanian or Chamorro	
	Samoan	
	Other Pacific Islander	
	Not of Hispanic, Latino/a or	

Ethnicity:	Spanish origin	
	Mexican, Mexican American, Chicano	
	Puerto Rican	
	Cuban	
	Another Hispanic, Latino/a or Spanish Origin	
	None of the above	

Geographic region in which you practice nursing:	Northeast Division I/ New England – ME, NH, VT, MA, RI, CT	
	Northeast Division II / Mid Atlantic – NY, NJ, PA	
	Midwest Division III / East North Central – WI, MI, IL, IN, OH	
	Midwest Division IV / West North Central – MO, ND, SD, NE, KS, MN, IA	
	South Division V / South Atlantic – DE, MD, DC, VA, WV, NC, SC, GA, FL	
	South Division VI / East South Central – KY, TN, MS, AL	
	South Division VII / West South Central – OK, TX, AR, LA	
	West Division VIII / Mountain – ID, MT, WY, NV, UT, CO, AZ, NM	
	West Division IX / Pacific –	

	AK, WA, OR, CA, HI	
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Program from which you received your basic RN education:	Diploma	
	Associate's Program	
	Baccalaureate Program	
	Master's Program	

Year completed basic RN education:		
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Highest credential held:	Associate Degree	
	Diploma	
	Baccalaureate Degree in Nursing	
	Baccalaureate Degree in other field	
	Master's Degree in Nursing	
	Master's Degree in other field	
	Doctoral Degree in Nursing	
	Doctoral Degree in other field	

Total time you have been working in nursing (Please answer in months and years):		
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Total time you have been working in critical care (Please answer in months and years):		
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Critical Care Unit where you primarily work:	ICU	
	CCU	
	PACU	
	Float (work in all three units equally)	

Present position held:	Full time	
	Part time	
	Per Diem	

Shift You Predominantly Work:	Days (Eight hour shift 7a-3p)	
	Evenings (Eight hour shift 3p-11p)	
	Nights Eight hour shift 11p-7a)	
	Twelve hour days (7a – 7p)	
	Twelve hour nights (7p – 7a)	
	Rotating shifts	

During your basic RN education, were you taught content on physical restraints?	Yes	
	No	
	Not sure	

Do you fully understand your place of employment's policy on the use of physical restraints?	Yes	
	No	
	Not sure	

Are you required by your employer to attend a yearly in-service program on physical restraints?	Yes	
	No	
	Not sure	

Do you have any personal experience (either yourself or with a family member) of being in a physical restraint?	Yes	
	No	
	Not sure	

Average nurse to patient ratio in your place of employment:	1 to 1	
	2 to 1	
	3 to 1	
	More than 3 to 1	

Ranking of the facility in which you work (Level ranking as per the American College of Surgeons):	Level One (trauma center)	
	Level Two	
	Level Three	
	Level Four	
	Not sure of ranking	

Did you receive your basic RN education outside of the United States?	Yes. If so, what country?	
	No	

Have you ever practiced nursing outside of the United States?	Yes. If so, what country?	
	No	

If you practiced nursing outside of the United States, did you practice in critical care?	Yes	
	No – Area in which you did practice nursing	

APPENDIX F

Permission to use the Clinical Decision Making in Nursing Scale (CDMNS)

From: stinsonrn@aol.com [stinsonrn@aol.com]
Sent: Sunday, February 12, 2012 1:18 PM
To: Kristi J Stinson
Subject: Fwd: RE: Nursing Instrument - Permission To Use

-----Original Message-----

From: Mary Wheeler <mwheeler@springerpub.com>
To: stinsonrn <stinsonrn@aol.com>
Sent: Thu, Sep 22, 2011 8:54 am
Subject: RE: Nursing Instrument - Permission To Use

Dear Kristi, Thank you for contacting Springer Publishing Company. We have no problem letting you use this material in your educational research (one-time use.) Please use the following when citing the material: Measurement of Nursing Outcomes, 2nd Edition, Waltz/Jenkins, 2001, Springer Publishing Company, LLC. Hope this material is beneficial in you research. Best, Mary Mary Wheeler Sales Assistant Springer Publishing Company Demos Medical & Health Publishing, LLC 11 West 42nd Street, 15th Floor New York, NY 10036 Email: mwheeler@springerpub.com P: (212) 431-4370 ext. 217 www.springerpub.com www.demosmedpub.com

From: Hyacintha O'Brien
Sent: Wednesday, September 21, 2011 4:21 PM
To: Mary Wheeler
Subject: FW: Nursing Instrument - Permission To se

From: stinsonrn@aol.com [mailto:stinsonrn@aol.com]
Sent: Wednesday, September 21, 2011 4:20 PM
To: CS
Subject: Nursing Instrument - Permission To se My name is Kristi Stinson. I am nursing doctoral student at Seton Hall University. I am writing this email as a request to gain permission to use a nursing instrument as a tool in my doctoral research study. The tool is the Jenkins' Clinical Decision Making in Nursing Scale (CDMNS). This tool is described in the book Measuring Nursing Practice, Education and Research in 2001 published by your company. I was recently informed that all requests for permission to use this tool should be directed to Springer Publishing.

APPENDIX F (cont.)

My research area is examining nurses' clinical decision making processes, specifically in relation to the decision to utilize physical restraints in the critical care environment. I believe using the CDMNS will allow me to ascertain the most accurate information and data for purposes of my research.

Thank you in advance. I hope this email finds its way to the appropriate person who can help me in acquiring permission to use this tool.

Thanks-Kristi Stinson, RN, MSN, APN-BC.

APPENDIX G

Permission to use the Physical Restraint Questionnaire

From: stinsonrn@aol.com [stinsonrn@aol.com]
Sent: Sunday, February 12, 2012 1:19 PM
To: Kristi J Stinson
Subject: Fwd: Re: Physical Restraint Instrument

-----Original Message-----

From: Linda Janelli <ljanell6@zimbra.naz.edu>
To: stinsonrn <stinsonrn@aol.com>
Sent: Wed, Sep 21, 2011 3:17 pm
Subject: Re: Physical Restraint Instrument

Hi Kristi,

Yes you may use the questionnaire and you may adapt it to fit your needs. I would appreciate receiving the results of your study if you do use the instrument. There are two articles you may want to look at: (1) Use of physical restraints in rehabilitation settings: staff knowledge, attitudes and predictors - appeared in the 2006 issue of Journal of Advanced Nursing by Suen, L et al. They used the instrument and did some z scores etc. which may be helpful and (2) Perceptions of physical restraint use among registered nurses and nurse assistants which appeared in the January/February 2011 issue of Geriatric Nursing.

Best wishes,

Linda

From: stinsonrn@aol.com
To: ljanell6@zimbra.naz.edu
Sent: Wednesday, September 21, 2011 8:49:44 AM
Subject: Physical Restraint Instrument

Hello Dr. Janelli. My name is Kristi Stinson. I have contacted you in the past. I am a doctoral student at the College of Nursing at Seton Hall University. I am currently working on my dissertation proposal and hoping to start data collection in the spring. My subject is the examination of the factors related to nurses' clinical decision making processes in relation to the decision to utilize [physical restraints in the critical care environment.

APPENDIX G (cont.)

You sent me the Physical Restraint Knowledge Questionnaire you created last year. Thank you again for that. I am hoping it is still okay with you that I use it. I am looking to use your instrument in conjunction with a clinical decision making tool, likely the Jenkins' Clinical Decision Making in Nursing Scale (CDMNS). I am in the process of acquiring permission for that tool

I am wondering if your tool has been utilized recently. When last we exchanged emails, you said that the tool was not validated or an alpha coefficient had not been established. Has that changed in the last year? Has anyone contacted you with any recent uses of your tool?

Thank you in advance for all of your help. I really appreciate it.

-Kristi J. Stinson, RN, BSN, MSN. APN-BC

APPENDIX H

Recruitment Flyer for AACN Enewsletter

Subject line within newsletter: **Call To Action:** Participate in study on clinical experience, clinical decision making, and use of physical restraints in critical care.

Participate in a research study on the relationships between and among clinical experience, clinical decision making, attitudes toward physical restraint use, and nursing practice issues with physical restraint use in the critical care environment. This study is being conducted by Kristi Stinson, a PhD student at Seton Hall University, South Orange, NJ. If you have any questions please feel free to email me at the following address: stinsonkr@shu.edu

If you would like to participate in this study, follow the link which will take you to a secure web site where the surveys will then follow; www.surveymonkey.com/xxxxxx (link to follow).