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THE DETERMINANTS OF NURSES' DISCRETIONARY DECISION TO RESPOND TO
SITUATIONS THAT PLACE PATIENTS AT RISK FOR SAFETY EVENTS BUT
REQUIRE A RESPONSE THAT IS BEYOND THE SCOPE OF
NURSING PRACTICE

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of
Philosophy at Virginia Commonwealth University.

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Abstract

THE DETERMINANTS OF NURSES' DISCRETIONARY DECISION TO RESPOND TO SITUATIONS THAT PLACE PATIENTS AT RISK FOR SAFETY EVENTS BUT REQUIRES A RESPONSE THAT IS BEYOND THE SCOPE OF NURSING PRACTICE

By Kathy M. Baker, Ph.D.

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at Virginia Commonwealth University.

Virginia Commonwealth University, 2011

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A nurse's contribution to patient safety in regards to early detection of issues in the clinical setting is undisputed (Redman, 2008). If these patient situations require a response that is beyond the scope of nursing practice, in most instances nurses are not sanctioned to intervene without physician consultation (Gaba, 2000). The evidence in the nursing literature does suggest that some nurses exercise professional discretion and are, at times, making the decision to initiate interventions independently (Benner, Hooper-Kyriakidis, & Stannard, 1999; Hutchinson, 1990; Tiffany, Cruise, & Cruise, 1988).

The focus of this inquiry was to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires a

response that is beyond the scope of nursing practice. This study utilized a cross-sectional correlation design. Data for this study were obtained using a survey questionnaire. The nurses were asked to respond to questions measuring each concept of the research model based on Thompson's (1967) conceptual model of determinants of discretionary behavior (education, experience, situational awareness, proactive behavior, and perceptions of transformational leadership). In addition, the nurses were asked to read three clinical vignettes and answer questions regarding the decisions they would make if faced with the situation in the clinical setting. The overall fit of the research model for this study was significant at the 95% confidence level when two of the independent variables (proactive personality and nursing education) were retained, and the three independent variables were excluded (nursing experience, situational awareness, and perceptions of transformational leadership). The predictive power of the final model was low indicating that the two retained independent variables explained only a small amount of the model variance. Eighty percent ($n = 84$) of the respondents did indicate that they would make a discretionary decision that extends beyond the scope of nursing practice when the patient was at risk for a safety event. This study demonstrates that nurses do engage in this behavior, but fails to identify the majority of the variables that influence this behavior.

CHAPTER 1. STATEMENT OF THE PROBLEM

Following the 2001 release of the Institute of Medicine's (IOM) report, "Crossing the Quality Chasm," a national imperative was launched to improve the safety of health care in the United States. As a result, acute care hospitals have been challenged to foster organizational climates that promote the development of patient safety cultures (Shapiro & Jay, 2003). Complex organizations at high risk for significant safety issues that produce impressive safety records have been termed by organizational theorists as high reliability organizations (HROs) (Roberts, 1990). The IOM report suggests that the attributes that contribute to safety cultures in HROs are appropriate for adoption in healthcare systems (Institute for Healthcare Improvement, 2008). Front-line employee decision making that moves beyond the employee's job role has been identified as one of the defining characteristics of safety cultures in high reliability organizations (Weick & Sutcliffe, 2001).

A nurse's contribution to patient safety in regards to monitoring and early detection of issues in the clinical setting is undisputed (Redman, 2008). Nurses, on the frontlines of patient care delivery, play a pivotal role in monitoring and detecting situations that place a patient at risk for safety issues. If, however, these emerging patient situations require decision making and a response that is beyond the scope of nursing practice; in most instances, nurses are not authorized to intervene without physician consultation (Gaba, 2000). The Evidence in the nursing literature suggests, however, that some nurses exercise professional discretion

in these situations and, with positive intent, make the decision to move beyond their job role and initiate interventions independently (Benner, Hooper-Kyriakidis, & Stannard, 1999; Hutchinson, 1990; Tiffany, Cruise, & Cruise, 1988).

While the HRO literature supports the need for frontline employees to respond to potential safety events and, at times, act beyond their sanctioned job roles in order to foster patient safety cultures, it falls short of describing how this is best implemented within the complexities of the nurse-physician relationship and the delivery of clinical care as it is organized in today's healthcare system (Gaba, 2000).

While HRO theory emphasizes the need for sufficient decentralized authority at the field level to deal with rapidly evolving incidents, it has not typically considered such widely decentralized industries [such as health care systems]. . . where individual physicians, acting independently are still the primary arbiters of what care is rendered and how it will be accomplished. (Gaba, 2000, p. 90)

In most HROs, front-line staffs are “socialized to use similar decision premises and assumptions so that when they operate their own units, those decentralized operations are equivalent and coordinated. This is precisely what culture does” (Weick, 1987, p. 124). Yet conversely, healthcare is organized around decision-making that is based on individual preferences that inhibits widespread, normalized, and decentralized decision-making processes (Gaba, 2000).

How front-line nursing discretionary decision making that moves beyond a nurse's sanctioned job role should be fostered in health care systems seeking to establish patient safety cultures, has not yet been determined (Gaba, 2000). There has been very limited research on discretionary decision making in the nursing literature and no quantitative studies have examined the determinants of this phenomenon in nursing (Benner et al., 1999). As the emphasis on

developing patient safety cultures in healthcare continues to escalate, research on nurses' discretionary decision making in the clinical environment will be essential in order to define the nurse's role in this safety effort (Hudson, 2003). The focus of this inquiry was to examine determinants that are associated with a nurse's discretionary decision-making to respond to situations that place patients at risk for safety events but require a response that is beyond the scope of nursing practice.

Theoretical work from the organizational behavior literature provides a framework for examining employee discretionary decision making and asserts that individual influences, situational influences and organizational influences all play a role (Thompson, 1967). Organizational contextual variables such as leadership support have been shown to contribute significantly to nurses' behavior in the practice environment (Tomey, 2009; Wong & Cummings, 2007). Nursing leadership at the unit level has been shown to influence patient outcomes by creating positive practice environments for nursing staff that include support for nurse decision making and action (Patrick & White, 2005; Tomey, 2009; Wong & Cummings, 2007). In addition, there is a body of research in the safety literature suggesting that front-line employee discretionary decision making that moves beyond the scope of the employee's job role may be more prevalent when supported by organizational leadership (Roberts, 2001; Weick & Sutcliffe, 2001). Other research has demonstrated that individual personality traits do influence the types of decisions that employees make in numerous work settings (Parker, Williams, & Turner, 2006). In pivotal work in the nursing literature, Benner et al. (1999) identified nursing education and experience as factors that influence discretionary decision making in the expert nurse. In the patient safety literature, Roberts (1990) found that situational awareness (knowledge about causation) and situational immediacy (orientation to time) are important antecedents of

discretionary employee decision making (Roberts, 1990). The concept of situational awareness has been examined from the perspective of Bandura's concept of self-efficacy. Self-efficacy has been correlated with proactive employee behavior (Parker et al., 2006).

This chapter presents background information in research on discretionary decision making in nursing that moves beyond the scope of nursing practice. This chapter also presents the statement of purpose for this study, definition of terms, and the relationships and effects among the concepts of the proposed model.

Background and Significance

A substantial body of research has examined the cognitive processes through which nurses make clinical decisions. This work has been critical in characterizing nurses as knowledge workers. This empirical work has spanned decades and multiple theoretical frameworks have been used to explore this phenomenon (Banning, 2008; Thompson & Dowding, 2002). The work of Benner et al. (1999), in particular, suggests that experienced nurses make sound decisions based on their refined ability to recognize, interpret, and prioritize relevant patient cues. This research provides useful information about the cognitive decision-making process itself or the determination of what actions should occur. Nursing, however, like other professions, has a discretionary component to the decisions they make that allows the individual nurse to determine not only what actions should occur, but also how the work should be accomplished and whether or not the nurse should intervene in certain situations (Tiffany et al., 1988). Discretionary decision making is defined as latitude of action or the range of behavioral options that can be used by employees to ensure effective and efficient job performance (Buckholtz, Amason, & Rutherford, 1999; Key, 1997). More simply stated, discretionary decision making is considered an employee's choice to act outside of normally

defined protocols for behavior when, based on his or her judgment, the situation warrants such a response.

When nurses are faced with changing patient scenarios that pose patient safety risks, they must not only have the knowledge to appropriately determine the actions that are required, they must also feel empowered to intervene as needed (Hughes & Mark, 2008). The scientific evidence suggests that there is variability in how nurses make the decision to exercise discretionary behavior and intervene in many types of patient scenarios (Hutchinson, 1990). Researchers in nursing who have traditionally focused on the cognitive processes of nurse decision making have begun to describe a gap between what nurses know and what is actually put into practice in the clinical setting that is not explained by knowledge deficits (Cranley, Doran, Tourangeau, Kushniruk, & Nagle, 2009). In a qualitative study by Cioffi (2000), perceptions of staff nurses of the emergency medical response team were examined. Nurses articulated their perceived value of the emergency medical response team and described patient criteria that would justify seeking assistance from this team. Generally, criteria for calling the emergency response team include a significant change in a patient's lab value, a change in the patient's physiologic state, or any suspicion that the patient may be in a declining state. Despite availability of this resource and knowledge of criteria for seeking assistance, nurses described a significant anxiety and uncertainty related to actually making the call for assistance. In situations in which nurses could correctly assess the situation and the need to act, there was variability in the decisions of the nurses on whether or not to actually intervene (Cioffi, 2000). In a descriptive quantitative study of nurses activating the emergency medical response team, 73 nurses completed a survey instrument examining their experiences of this phenomenon. Nurses were able to describe when to call the team for patient assistance, but a significant amount of

variability was demonstrated among nurses who actually felt empowered to act on their assessment of the situation (Salamonson, 2006). An analysis of nurse decision making in critical events revealed that nurses varied significantly in their assessments of both the probability of a critical event and whether or not they would intervene (according to local protocols). The probability of nurses choosing to intervene ranged from a low of 6% in some nurses to 96% in others. Although nurses were all given identical information, these results demonstrate significant variation in their discretionary decisions to act (Thompson & Yang, 2009).

In one of her classic publications, Benner describes discretionary decisions faced by nurses and states that nurses manage rapidly changing patient situations when physicians are not present or readily available by weighing different options based on their assessment of the situation, “but since this puts the nurse outside the usual boundaries of nursing practice, this skill area is not formally acknowledged or well studied” (Benner et al., 1999, p. 168). There is a need for a trajectory of nursing research in discretionary decision making in general and, as Benner asserts, the need to understand these decisions particularly when they extend beyond the scope of nursing practice (Benner et al., 1999).

While it can be hypothesized that patient safety improves when nurses use discretionary decision making and more quickly respond to patient needs, even if the action is outside of the scope of practice, empirical validation is needed. Still, there is evidence in the literature that supports this type of decision making in many high-risk industries with many different types of employees, fueling the need for exploration of discretionary decision making in healthcare (Gaba, 2000; Roberts, 2001; Weick & Sutcliffe, 2001).

Weick (1987) differentiates the type of formal decision making that is needed to promote a safety culture in high hazard organizations and suggests when more informal approaches such as decision making by front-line employees are needed. Weick states that formal decision-making pathways are best suited for situations when the environment is safely operating within standard operating procedures and tasks are predictable. In formal decision-making models, different predictive options can be analyzed and time is available to assess the situation from a variety of angles. At the point an environment is unable to function within normal operating processes and a rapid change in the environment is occurring, action is often needed to decrease the rate of change and avoid potential high-risk consequences. Weick suggests that organizational safety increases when front-line employee decision making and action fostered at these points in time.

Front-line employee decision making is necessary in complex organizations because situations can change rapidly and an immediate response is often required to mitigate risk for catastrophic error (Redman, 2008). Risk mitigation in these circumstances is challenging since organizations cannot prescribe definitive boundaries or behavioral expectations for every possible situation that may arise. As unanticipated problems emerge, time constraints may negate the ability for traditional hierarchical decision making to occur. In addition, formal organizational decision makers may not be available to the employee at the point in time when an action is required. Decision making and response by front-line workers that move beyond the boundaries of their job roles are needed—particularly in hospitals—because the work is such that adherence to traditional approaches to decisions are ineffective when circumstances do not allow for normal pathways of formal decision making to occur and an employee, often on the front line of service, is needed to act (Grabowski & Roberts, 1997).

Examples of organizations that promote decision making and behavior in their employees that move beyond their authorized job roles can be found in the patient safety literature, Naval aircraft carrier operations have been studied extensively secondary to their excellent safety reputations. There are daily examples of dangerous maneuvers that must be expertly executed under changing conditions on these aircraft carriers. The safety culture on these carriers is dependent on shifting from a formal hierarchical decision-making structure to one in which any employee with the knowledge and expertise to respond to a developing problem has the authority to act. For example, any level of personnel on the aircraft carrier who suspects an immediate danger to flights has the ability to halt operations (Roberts, 1990). This type of situationally-bound decision making is an example of behavior that is fostered and supported in HROs by organizational leadership in order to sustain their culture of safety.

In comparison to HROs that have demonstrated the influence of organizational contextual variables such as organizational leadership support on employee decision making, healthcare research as well, has demonstrated the influence of organizational contextual variables on employee behavior and decision making. In a study by Friese, Lake, Aiken, Silber, and Sochalski (2008), the nursing practice environment was also assessed in regards to its influence on this same outcome in a population of surgical oncology patients. A professional practice environment is characterized by greater registered nurse presence with the patient and greater decision-making authority and flexibility. These features enable preventive and monitoring action and support appropriate and efficient rectifying action in the context of fragile patient conditions. This study demonstrated that positive nursing practice environments were associated with significantly lower rates of failure to rescue (Friese et al., 2008).

Outcomes that have been characterized specifically as nurse sensitive have also been shown to be influenced by contextual variables. In a study by Houser (2003), a significant correlation was demonstrated between nursing leadership and both decreased patient falls and medication errors.

Statement of Purpose

The purpose of this inquiry was to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires a response that is beyond the scope of nursing practice. When a patient is experiencing a change in health status, immediate action is often needed to prevent a serious safety event from occurring (DeVita, Schaefer, Lutz, Dongilli, & Wang, 2004). In these instances, nurses must have the clinical knowledge base to assess situation and identify the intervention that is required and the judgment to determine how quickly the intervention is needed (Thompson & Dowding, 2002). Once an accurate determination of these variables is made, the actions needed in these circumstances may either fall within the defined scope of nursing practice or may fall outside of the scope of nursing practice. The discretionary decisions that nurses make in these circumstances include, but are not limited to, refusing to implement a physician order, withholding a medication, and even at times administering a medication without a physician's order (Benner et al., 1999; Hutchinson, 1990). Understanding the concept of nurse discretion underpins our understanding of why a nurse may choose to respond to an emerging situation that threatens patient safety even if the intervention is beyond the scope of nursing practice. As the event unfolds, the nurse uses the discretionary components of nurse decision making to determine if she will or will not intervene in the situation (Hutchinson, 1990; Tiffany et al., 1988).

Thompson (1967) provides an organizing framework to examine discretionary decision making in individuals and specifically acknowledges that this may involve situations when the criteria used to employ that discretion are not accepted by the organization or moves beyond formally authorized boundaries. Discretionary decision making and behavior is not just making a decision about the action needed to respond to a situation but making the decision about whether or not the needed action should be implemented based on analysis of the likely benefits and consequences of acting. As such, knowledge of how to respond to a situation is a necessary but not sufficient condition for engaging in discretionary decision making and behavior. Discretionary decision making, and consequently behavior, is an active, positive response to a situation that without a response may ultimately prove to inhibit organizational functioning (Organ, Podsakoff, & MacKenzie, 2006).

Thompson (1967), describes the concept of discretion initially, from an in-role perspective or within the context of assigned jobs within an organization that are characterized by patterned spheres of action. The action sphere for a particular job is determined by the technologies in which the job is embedded and this, in turn, determines the extent to which organization members may exercise discretion in the performance of their work. In routine jobs where the core technology involves standardized and repetitive tasks, for example, organizations develop detailed procedures that clearly specify the actions needed to complete the work efficiently. Such jobs offer little or no opportunity for employees to exercise discretion in how the work is done. In contrast, in jobs embedded in a context of uncertainty or intensive technology such as healthcare environments, the nature of the work itself varies in response to feedback from the object of the work. This type of work exposes employees to an unstable task environment that is ambiguous with respect to the actions that are needed and uncertain in terms

of potential outcomes. Such jobs require employees to exercise substantial discretion in how the work is done (Thompson, 1967).

While arguing that the action sphere of a job defines the range of behaviors available to employees in the performance of their work, Thompson also suggested that characteristics of the job alone are insufficient to explain the use of discretion in the workplace. In this way, Thompson recognizes discretion as incorporating an extra-role context or beyond sanctioned job roles. Thus, the decision to exercise discretion is based on employees' analysis of positive and negative factors that are thought to be associated with the behavioral options that are available in any given situation. Employees analyze all possible behavioral options for their causal attribution or the extent to which each option can be predicted to result in a desired change in the situation. This analysis of the benefit that is likely to result from taking action is balanced against consideration of the consequences or costs that are likely to be incurred if the action is taken. Discretionary action is avoided when causal attribution is uncertain or when the employee believes that action will result in penalty or exposure to serious or unpleasant consequences (Thompson, 1967).

Theoretically, Thompson (1967) identifies three domains of influence that motivate an individual to exercise discretionary behaviors. It is important to note, however, that Thompson recognizes that there are individual characteristics that predispose an individual to select a career that incorporates a significant level of discretion in their job role. Individuals who are more tolerant of risk and ambiguity, in general, are more likely to make discretionary decisions and seek positions in which the ability to exercise discretion is inherent in the position. Thompson's framework, distinguishes between the desire for an individual to hold a discretionary job position from the factors that actually influence an individual to engage in discretionary decision making.

The first domain is “individual influences” or individual characteristics that influence a person’s decision to engage in discretionary behavior. These characteristics include education, career experience, and tolerance for risk. The next domain identified by Thompson that influences an individual to exercise discretion is the domain of “situational characteristics.” Situational characteristics move beyond the objective reality of the situation and involve perception. If the individual feels there is a level of uncertainty surrounding a situation, discretion will be avoided. If the individual feels certain they have assessed the situation accurately, the motivation to exercise discretion will increase. Perceptions of the situation at hand, including the individual’s beliefs and knowledge regarding the cause of the situation, and the perception of time orientation in regards to what is needed to resolve the situation, influences an employee’s decision to engage in discretionary behavior. If the need for a response is imminent, the more likely it is the individual will choose to exercise discretion. The individual also needs to have confidence that he/she has assessed the situation correctly and is sure of the needed action. The third domain Thompson identifies is “organizational characteristics” specifically in regards to perceptions of norms and standards and perceptions of consequences as variables that influences an individual’s decision to engage in discretionary behavior. If an individual feels his/her decision to exercise discretion will be supported in the organization, the more likely it is the individual will choose to exercise discretion when opportunities for discretionary decision making arise (Thompson, 1967).

Based on Thompson’s (1967) conceptual model of discretionary decision making, the characteristics that are thought to influence discretionary decisions include individual attributes including tolerance for risk, education and experience, perceptions of the situation including confidence in knowledge of the situation and perception of the immediacy to act to prevent

detrimental consequences, and organizational characteristics including the leadership support to act. In Chapter 2, the specific research model for this inquiry based on Thompson's conceptual model will be defined. Each variable of the research model will also be defined and described. Figure 1 represents Thompson's (1967) conceptual model of determinants of discretionary decision making.

Definition of Terms

In the current investigation, the variables are defined as follows:

Discretion is defined as latitude of action or the range of behavioral options that can be used by individuals to ensure effective and efficient job performance (Buckholtz et al., 1999; Key, 1997).

Orientation to time is the perception by an individual that an action is needed immediately in the workplace or a detrimental consequence could occur (Weick & Sutcliffe, 2001).

Knowledge regarding causation is the perception of an individual that he/she has appraised a situation in the workplace accurately and has also accurately determined whether or not a safety risk is present (Weick & Sutcliffe, 2001).

Perceived leadership support is characterized by shared decision making, mutual goal setting, and employee empowerment that are conducive to discretionary decision making (Tabak et al., 1996; Thompson, 1967).

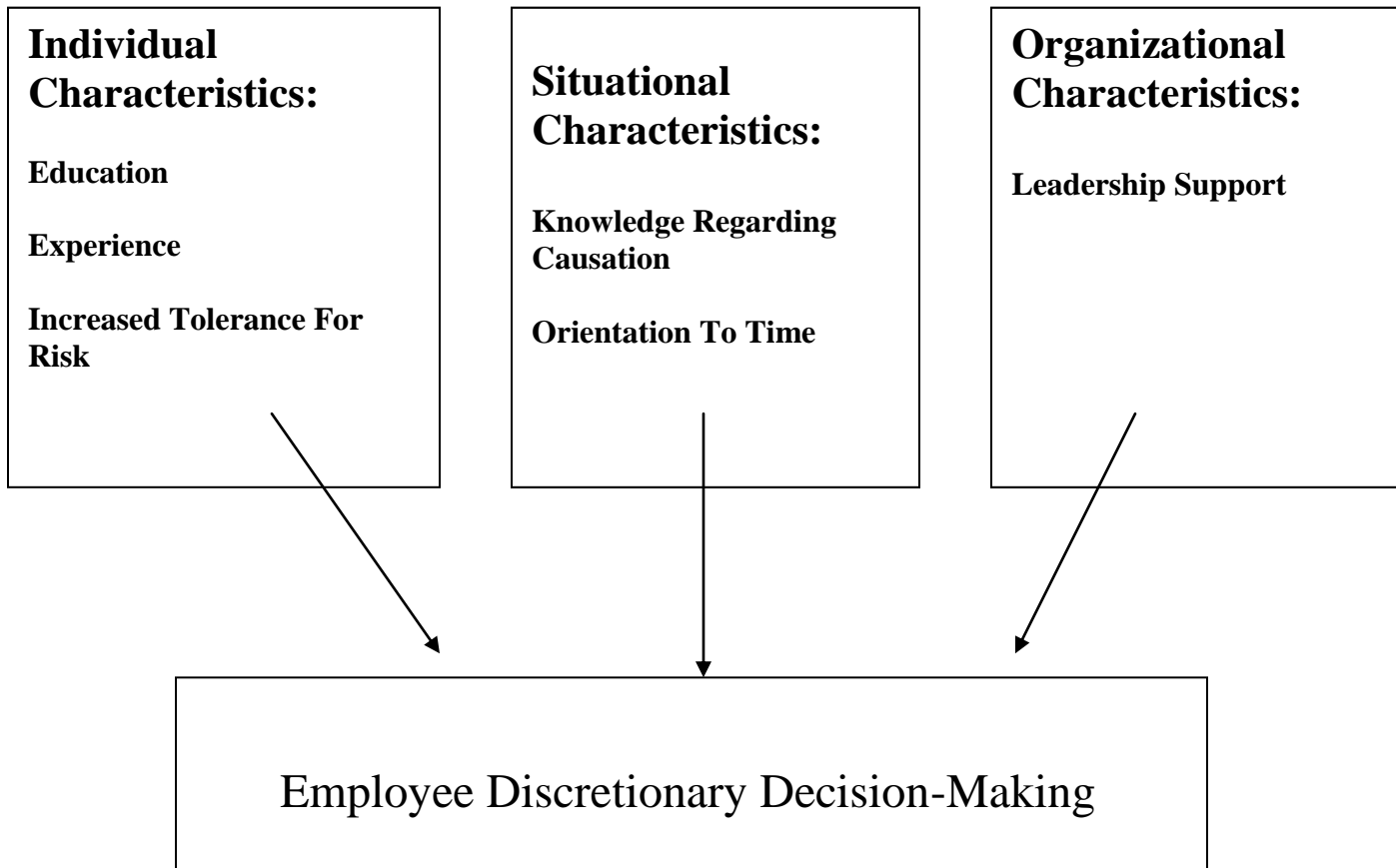


Figure 1. Conceptual model of determinants of discretionary decision making

Source: Thompson (1967).

Summary

There is a need to examine discretionary decision making in nursing that extends beyond the scope of nursing practice for multiple reasons and this inquiry will examine the determinants of this phenomenon. This chapter presented background information on research in this area. This is a phenomenon that is occurring in nursing but is not well understood. It is possible that nurses who engage in discretionary decision making that extends beyond the scope of nursing practice may be promoting patient safety and preventing adverse events in populations of at-risk patients (Benner et al., 1999). We need to understand what influences a nurse to engage in discretionary decision making in order to legitimize this behavior if indeed discretionary decision making that extends beyond the scope of nursing practice can be linked to improved patient safety or restrict this behavior if it is be linked to undesirable outcomes. This supports the need for this research question to be explored.

In the following chapters, a review of the relevant literature in regards to the conceptual framework and the identified variables is presented. The plan for data collection and analysis is described, and the findings presented and discussed. In addition, the implications for nursing practice and recommendations for further research are explored.

CHAPTER 2. CONCEPTUAL FRAMEWORK

The purpose of this inquiry is to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires an intervention that is beyond the scope of nursing practice. The purpose of this chapter is to provide a conceptual definition and understanding of each concept in the model (see figure 1). A review of the literature examining research pertinent to each of the variables of interest will also be presented. The conceptual-theoretical-empirical framework (see Figure 1) for this study was derived from a generic model proposed by Thompson (1967) describing determinants of employee discretionary decision making in complex organizations (Thompson, 1967).

In Thompson's (1967) model of discretionary decision making (see Figure 1), individual characteristics, situational characteristics, and organizational characteristics are proposed to influence an employee to engage in discretionary decisions when the boundaries of the decision making extends beyond sanctioned elements of the employee's job role. Thompson (1967) ascribes to a natural systems framework of complex organizations but acknowledges three paradigms of complex organizational functioning that guide scholars in understanding organizational behavior. One paradigm is the natural systems framework which proposes that employees within a system are seeking survival of the system and are motivated by informal structures comprised of groups of employees who engage in strategies to secure that end. The second paradigm is the rational system framework, which proposes that organizations are formed to reach specific goals and that organizational behavior is determined by the formal,

hierarchical structures constructed to reach those goals (Scott, 1992). The last paradigm is defined as an open system or one that is capable of self-maintenance and some theorists suggest that both rational and natural systems may also be considered open (Scott, 1992). Thompson (1967) acknowledges that an open system may also be a natural system but does not acknowledge that a rational system may also be open.

A natural systems framework of complex organizations asserts that multiple variables are continuously influencing the organization's social system in a manner that is difficult to control and at times difficult to comprehend. Still, patterns of adaptive and maladaptive responses can be studied and described in order to help decrease organizational uncertainty and improve organizational functioning. These patterns are important to understand in order to implement appropriate organizational structures and processes to affirm or dissuade particular responses. A simple example of this is demonstrated in employees who stockpile supplies when resources required to complete tasks fluctuate in an organization. Prohibiting stockpiling of supplies does not stop the behavior; it only increases the secrecy of the action. Improving the consistency of supply delivery, however, stops the behavior without regulation (Thompson, 1967).

Consistent with a natural systems framework, Thompson (1967) believes that employees choose to engage in discretionary decisions when they decide that it is to their advantage to do so. Specific concepts within each of the constructs of Thompson's model (individual characteristics, situational characteristics, and organizational characteristics) influence the employee in making that determination. These concepts include education, experience, increased tolerance for risk, time orientation, knowledge regarding causation, and leadership support.

Individual Characteristics

Within a natural systems framework of organizations, the characteristics of the individual employee as determinants of organizational functioning and decision making are given significant credence. In contrast to a rational system perspective of organizations in which decision making is viewed as a function of regulation and policies, a natural system's framework subscribes to the proposition that the variability evident in individuals in regard to their education, experiences, and personality significantly influences organizational behavior and decision making (Scott, 1992).

Education and Experience

Thompson (1967) refers to education as the level of training that an individual has received in preparation to assume particular job roles. Thompson (1967) refers to experience as the amount of time that an employee has spent in a particular employment field and specifically cites both education and experience as influencing an individual's choice to engage in discretionary decision making. He also acknowledges this is relative—depending on the type of job position. Therefore, Thompson (1967) provides no additional parameters to gauge the amount or type of education or the amount or type of experience that an individual may need that would influence the choice to make a discretionary decision in a given job role or situation (Thompson, 1967).

Nurses bring a wide range of education levels and experience to the professional workplace. Based on a survey conducted by the U.S. Human Resources and Services Administration (USHRSA), 25% of registered nurses (RNs) in the United States are prepared at the diploma level of educational entry, 32% of RNs are prepared at the baccalaureate degree level of educational entry, and 43% of RNs are prepared at the associate degree level of

educational entry (USHRSA 2010). Nurses may also bring a wide range of experience to the workplace and can gain clinical nursing experience in a variety of settings, including ambulatory care settings, operating room and procedure areas, medical-surgical units, intensive care units plus many other possible settings and types of experiences. The numerous potential combinations of education and experience can influence a nurse's judgment and decision making (Thompson & Dowding, 2002).

Review of the Literature

Education and Experience

There are multiple bodies of literature that support education and experience as important determinants of overall employee decision making (Thompson & Dowding, 2002). The Dreyfus Skill Acquisition Model, in particular, suggests that a combination of education and experience allows individuals to acquire different levels of expertise in their job role that will influence decision making. Stuart and Hubert Dreyfus (1980) identified five stages of expertise ranging from novice to expert. The novice employee is rule driven while the expert employee no longer relies on specific rules and guidelines for decision making but has an intuitive grasp of evolving situations. The employee moves along this expertise trajectory based on a combination of education and expertise (Dreyfus & Dreyfus, 2010).

Nursing education and experience are well documented as factors determining decision-making methods and quality in the clinical setting (Benner, 1984; Tabak, Bar-Tal, & Cohen-Mansfield, 1996; Thompson & Dowding, 2002). Using the Dreyfus Skill Acquisition Model, Benner (1984) described the ability of experienced, expert nurses to use pattern recognition and subtle clues to accurately assess complex situations and intervene proactively in rapidly changing patient events. In contrast, it has been demonstrated that novice or

inexperienced nurses use primarily linear decision-making skills. This limits their ability to process multiple levels of information when considering their response to a clinical situation. It also limits their interventions to primarily implementation of unit standards or protocols (Benner, 1984). Nurses prepared at the bachelor of science level in nursing, when combined with clinical experience, have also been found to possess more advanced levels of clinical decision-making skills when compared to nurses with other levels of nursing education (Burrill & Steckel, 2009).

Research supports the proposition that nursing education and experience affects nurse decision making. This has been demonstrated in both the organizational behavior literature and in the nursing literature. The available evidence on nursing education and experience supports the inclusion of these variables in the research model for this study. It is hypothesized that both higher levels of nursing education and more career experience are positively correlated with discretionary decision making that moves beyond the scope of nursing practice.

Increased Tolerance for Risk/Proactive Personality

Thompson's (1967) model suggests that individuals differ in their propensity to engage in discretionary behavior and decision making based on personality traits that either increase or decrease an individual's tolerance for risk. The concept of proactive personality that has been described in the organizational behavior literature is theoretically similar to the personality disposition that Thompson (1967) describes as a determinant of discretionary decision making. Consistent with Thompson's description of individual personality traits that may predispose an individual to engage in discretionary behavior, proactive personality is associated with an individual's increased tolerance for risk in the work setting (Bateman & Crant, 1993; Thompson, 1967). There is a body of research in the organizational behavior literature that examines the

personality attribute proactive personality and its contribution to what has been termed proactive behavior. The personality attribute proactive personality has been linked to proactive behavior in numerous studies. Similar to the definition of discretionary decision making in the nursing clinical setting, proactive behavior is defined as an employee's desire to prevent the occurrence of evolving problems in a nonstandardized fashion and most often using extra-role behaviors (Bateman & Crant, 1993; Parker et al., 2006).

Theoretically, interest in the constructs of proactive personality and proactive behavior has evolved significantly over the past decade (Parker et al., 2006). The modern workplace has been transformed with flat organizational structures, a shift towards decentralization, self-managed teams, and advanced technology. As such, the need for proactive employees at the point of service has become apparent (Fay & Frese, 2000). No longer is employee surveillance the role of management; companies must now rely on front-line employees to identify and solve problems proactively (Crant, 1996). As a result, there is a significant amount of research in the organizational behavior literature examining these concepts.

Proactive Personality

The organizational behavior research exploring the concepts of proactive personality and proactive behavior has followed two distinct pathways. Some researchers have focused on the effect of proactive personality and proactive behavior in specific contexts—for example, the proactive behavior of individuals during their first six months of employment. More germane to this proposed research, the second pathway focuses on proactive behavior as a result of the personality disposition—proactive personality. In a study by Parker et al. (2006), 282 employees in the United Kingdom completed self-report surveys on proactive personality and proactive work behavior, which were then validated by supervisor ratings. In this study, proactive

personality was significantly correlated with proactive work behavior or behaviors in which employees chose to take action based on their assessment of the work situation (Parker et al., 2006). In a study by Crant (1995), proactive personality was examined in relation to proactive job behaviors over a 9-month period in a sample of 131 real estate agents. A significant relationship was found between proactive personality traits and exemplary job performance as a result of proactive discretionary decisions on the part of the employees. And in another study, Crant (1996) found a significant positive relationship between proactive personality and entrepreneurial behaviors in a sample of 181 participants. Entrepreneurial behavior was described in this study as an individual's propensity to make a discretionary decision to act in a variety of situations.

Based on an extensive review of the nursing literature, no studies were found in which tolerance for risk, proactive personality, and proactive behavior were explored in the nursing literature. Initiative-oriented behavior in the nursing literature has been examined as an outcome but not in relation to an individual personality trait (Boerner & Dtschke, 2008). Despite the gap in the nursing literature, proactive personality has been identified in the organizational behavior literature as an antecedent to proactive behavior (Bateman & Crant, 1993). Further, this concept, proactive personality, is conceptually similar to the concept of tolerance for risk, identified as a determinant of discretionary behavior in Thompson's (1967) model of discretionary behavior. For these reasons proactive personality will be specified as an independent variable in the research model for this study. It was hypothesized that proactive personality is positively correlated with discretionary decision making that moves beyond the scope of nursing practice.(

Situational Characteristics

A natural systems framework suggests that employees behave in certain ways in organizations because of a common sense of purpose they feel within their specific work unit and because of an ultimate desire for the organization to survive as an entity. This is true at a macro level in regard to broad organizational responses to the external environment of an organization. But it is also true at a micro level as employees respond to situations that arise in the internal environment of an organization on a day-to-day basis (Scott, 1992).

Situational characteristics are best described from the perspective of the employee who is faced with unexpected situations in the organization. Essentially, a phenomenon arises within the organization that produces rapid change. At the individual level, the employee is motivated to restore equilibrium to the organization. It is the perception regarding the nature of the situation that determines the employee's response to the event and ultimately drives the discretionary decision making. In essence, the employee does not simply react objectively to the internal environment within the organization but as a human being actively creates the world around him/her through perceptions. As such, the employee interacts within the situation and determines the meaning of the events that are unfolding (Scott, 1992). Within a natural system framework, an employee's awareness and view of the cause of a situation as well as the perception of the urgency that is needed to respond to avoid untoward consequences increases the likelihood that the employee will make a discretionary decision to act (Thompson, 1967).

Knowledge about Causation and Situational Awareness.

In Thompson's (1967) conceptual model of discretionary behavior, when the opportunity arises for an employee to make a discretionary decision in response to a rapidly changing situation within the organization, the employee's propensity to make a discretionary decision is

influenced by his/her observation of the environment, the ability to discern the cause of the situation, and the ability to assess the possible consequences of action and inaction. Thompson (1967) refers to this as knowledge regarding causation. The employee's belief of whether or not he/she has correctly ascertained the cause of the situation influences whether or not he/she will engage in discretionary decision making (Thompson, 1967). This belief is independent of an objective determination of whether or not the employee has appraised the situation correctly. In comparison, the more contemporary sources of Weick and Sutcliffe (2001) and Roberts (1990) describe the concept of situational awareness as a determinant of front-line employee discretionary decision making (Roberts, 1990; Weick & Sutcliffe, 2001). The concept "knowledge about causation" shares a comparable definition with situational awareness. Like Thompson's (1967) model, Roberts (1990) and Weick and Sutcliffe (2001) state that when individuals make the decision to respond to threats to safety they are aware of the context in which details of the situation are differing from expectations and the way in which these details affect the big picture. The specific concept of knowledge about causation as described by Thompson (1967) has not been described as a formalized concept in the nursing literature. The concept situational awareness as described by Roberts (1990) and Weick and Sutcliffe (2001) has been described as a formalized concept in the nursing literature only in a very limited fashion. The literature review will examine how this concept has been described by nurses in a quantitative study examining high reliability cultures and qualitative studies regarding discretionary decision making.

Knowledge About Causation and Situational Awareness

Roberts (1990) conducted a 5-year qualitative study of two organizations that had been termed high reliability organizations because of their pristine safety records despite their high-

risk operations and technical complexity. Her aim was to describe the unique features of these organizations that contributed to their level of safe operation. The organizations in the study were the Pacific Gas and Electric Company's nuclear power plant and the U.S. Navy's operation of its nuclear aircraft carriers. The methodology used included direct observation of operations and formal interviews. One defining feature of both organizations that improved the safety of their operations was discretionary decision making by front-line employees and military personnel that was beyond their scope of normal job responsibility. These discretionary decisions were noted at times to violate operational rules and policies but subsequently obviated serious safety events. One contributing factor that was identified to the discretionary decisions that were made by front-line employees and military personnel of both facilities was situational awareness. The naval operations personnel described this as "having the bubble." Basically, this was described as observing the environment, identifying subtle changes at times of uncertainty in front-line operations and understanding the potential impact on safety unless a response or action occurred (Roberts, 1990). Weick and Sutcliffe (2001) recount the study performed by Roberts as evidence of the need for situational awareness in safety cultures.

One quantitative study was found in the nursing literature that examined situational awareness as a determinant of high reliability cultures. Miller, Riley, and Davis (2009) simulated critical hospitals' events common to labor and delivery areas and examined team functioning of hospital personnel in response to the simulation. The teams that participated in the study included nurses, anesthesiologists, obstetricians, and nurse practitioners. Researchers examined the interactions of the team during the simulations to determine if they were employing behaviors necessary for high reliability cultures including situational awareness. Situational awareness was described as the ability to actively assess and discern changes in the

environment including changes in the patient's condition. In this study, the multidisciplinary teams were found to use behaviors identified as necessary for high reliability in an inconsistent fashion including situational awareness and more research on this topic was recommended (Miller et al., 2009).

In qualitative studies examining nurse discretionary decision making, nurses have described a phenomenon that is consistent with the concept knowledge about causation or situational awareness that influences their decision to make discretionary decisions (Benner et al., 1999; Furber & Thomson, 2006; Hutchinson, 1990). In the book, *Clinical Wisdom and Intervention in Critical Care*, Benner et al. (1999) provide multiple examples of discretionary decision making in nursing that moves beyond the scope of nursing practice as described by critical care nurses from their actual nursing practice. Throughout the exemplars, these nurses state that they chose to act because they were certain of what intervention was needed in the situation (Benner et al., 1999). In a grounded theory study by Hutchinson (1990), 21 nurses were interviewed and described a variety of examples in which they were asked about bending the rules in order to effectively respond to a patient's needs. Nurses reported that they often chose to bend the rules when they were sure of what actions should be taken (Hutchinson, 1990). Similarly Furber and Thomson (2006) examined this phenomenon in relation to nurses' responses to patients who were experiencing difficulty breast feeding their infants. In this study nurses reported that they made decisions to act because they were sure of what their patients needed in the situation (Furber & Thomson, 2006).

There is evidence to support Thompson's (1967) proposition that knowledge about causation is a determinant in discretionary decision making. The contemporary variable of situational awareness as described by Weick and Sutcliffe (2001), which is comparable to the

variable described by Thompson (1967), will be used in the empirical model (Thompson, 1967; Weick & Sutcliffe, 2001). Situational awareness has been documented in qualitative studies in the organizational behavior literature as a determinant of discretionary decision making in high reliability organizations (Roberts, 1990). Similarly, in qualitative studies in the nursing literature, nurses describe the reason they make discretionary decisions in the clinical setting. One reason they describe is that they have a sense of certainty that they have appraised the situation correctly (Benner et al., 1999; Furber & Thomson, 2006; Hutchinson, 1990). These studies support the inclusion of the variable, situational awareness, in the research model for this study. It is hypothesized that situational awareness is positively correlated with discretionary decision making that moves beyond the scope of nursing practice.

Orientation to Time and Situational Immediacy

According to Thompson's (1967) model, orientation to time refers to an employee's evaluation of the immediacy required for a response in a given situation. If an employee perceives that an immediate response to a situation is needed to avoid a detrimental consequence, according to Thompson's model (1967), the more likely the employee is to engage in discretionary decision making. Like Thompson's model (1967), Roberts (1990) also states that the more time pressure an employee perceives that exists to respond to a situation before a detrimental consequence occurs, the more likely the employee is to engage in discretionary decision making and they term this situational immediacy (Roberts, 1990). The unifying feature of these two variables is urgency.

Orientation to time and situational immediacy. In Robert's (1990) 5-year qualitative study of high reliability organizations (Pacific Gas and Electric Company's nuclear power plant and the U.S. Navy's operation of its nuclear aircraft carriers), described previously in this

chapter, situational immediacy was also identified as a determinant of discretionary decision making. A feature that she identified in both organizations studied was the potential for occurrence of unanticipated events that require urgent intervention to avoid untoward consequences. An example of this event was the need to halt operations on aircraft carriers during landing procedures if for any reason the deck was not clear. The need for immediate action propelled employees to make discretionary decisions to act demonstrating a positive effect on safety of operations (Roberts, 1990).

In a quantitative study in the nursing literature by Thompson et al. (2008), the effect of time pressure on nurse decision making was examined. Vignettes were presented to 241 RNs who were asked to determine whether or not to intervene in the situation. In this study, nurses were significantly more likely not to intervene under time pressure. Time pressure, however, was defined as a limited amount of time to make the decision and urgency was not identified as a component of the vignette (Thompson et al., 2008). In a study of 73 RNs, Salamonson (2006) examined the value of calling the emergency response team. One significant reason that nurses cited for making the decision to call the emergency response team was the determination that the patient had an immediate need (Salamonson, 2006). Benner et al. (1999) describe how critical care nurses choose to intervene in situations that move beyond their scope of practice and the need for an immediate response in an emergent situation was cited multiple times. In a grounded theory study by Hutchinson (1990), 21 nurses were interviewed and described a variety of examples in which they were asked about bending the rules in order to effectively respond to a patient's needs. Nurses reported that they often chose to bend the rules when an immediate response was needed (Hutchinson, 1990).

A sense of urgency in terms of orientation to time and situational immediacy is well documented in the organizational behavior literature and the nursing literature as a determinant of the need to act or engage in discretionary decision making. This was established in the qualitative work by Roberts (1990) in her study of nuclear power plants and naval aircraft carriers. This was also established in qualitative work in nursing examining reasons that nurses call the rapid response team and examining reasons that nurses make discretionary decisions that move beyond the scope of nursing practice (Benner et al., 1999; Hutchinson, 1990; Salamonson, 2006). Therefore the decision was made to control for orientation to time so the predictive power of the remaining independent variables could be examined.

Organizational Characteristics

The concept of organization, as viewed from a natural systems framework and consistent with Thompson's (1967) paradigm, is defined as a "collectivities whose participants share a common interest in the survival of the system and who engage in collective activities, informally structured to secure this end" (Scott, 1992, p. 25). In an organization functioning from a natural systems viewpoint, there are specific goals, rules, and regulations within the formal organizational structure; however, employees within an organization "are not specifically guided by them nor can they be safely used to predict organizational actions (Scott, 1992, p. 24). Rather, employees within these types of organizations function from a shared moral climate and sense of meaning that emerges from informal subgroups within the system. Leadership within these systems is effective when leaders are able to respond to employees' social and psychological responses and achieve organizational objectives through enabling a climate of mutual purpose. Perceived leadership support within a natural systems paradigm is the linchpin in understanding employee behavior and decision making (Scott, 1992).

Leadership Support and Transformational Leadership

The type of leadership support provided by an organization is strongly influenced by the type of leadership structure within the organization. In an organization where the leadership structure is strongly hierarchical with multiple managerial layers, leadership support is often characterized by norms, consequences, and rigid behavioral standards. Conversely, a leadership structure that is flat and decentralized will most likely provide leadership support characterized by shared decision making and employee empowerment. A decentralized structure refers to an organizational structure with minimal layers of managerial levels and a shift in authority to employees at the level of service (Daft, 2007). Prior to the 1990s, the predominant leadership structure in healthcare organizations was hierarchical and centralized. In the early to mid-1980s, both the organizational behavior literature and the healthcare literature acknowledged the value of decentralized organizational structures (Daft, 2007).

Thompson (1967) defines in very broad terms the type of leadership structure and leadership support required for discretionary decision making to occur. An organization where the leadership structure is hierarchical and whose leadership support is defined by norms, consequences, and rigid behavioral standards would not support discretionary decision making. Thompson (1967) cites organizational policing methods as a significant deterrent to employee's discretionary decision-making behaviors. In contrast, localized interdependence or decentralized command over the resources necessary to a particular job function encourages discretionary decision making (Thompson, 1967).

The contemporary leadership theory of transactional and transformational leadership is a broad comprehensive conceptualization of leadership styles and their effects (Bass & Avolio, 1994). Thompson (1967) provides a few simple propositions related to organizational support.

Still, when comparing the propositions set forth by Thompson describing the leadership structures and leadership support necessary to encourage discretionary decision making with the contemporary leadership theory of transactional and transformational leadership, obvious comparisons can be made. In the transactional leadership approach, the leader creates an atmosphere of supervision, rewards, and trade-offs to engage employees (Bass & Avolio, 1994). Thompson (1967) describes this as a system of rewards and consequences. Transactional leadership styles generally emerge in hierarchical structure and influences employee behavior through contingency or transaction (Bass & Avolio, 1994). This is consistent with Thompson's (1967) description of leadership with rigid norms and behaviors. In contrast, transformational leadership is focused on creating positive synergy between the leaders and is best operationalized in a decentralized structure (Bass & Avolio, 1994). As a result, transformational leadership is more effective in establishing organizational commitment and empowerment in team members (Bass & Avolio, 1994). Thompson (1967) would describe this as ensuring that employees have appropriate authority in regards to their responsibility and are empowered in their work environment. Based on these comparisons, it is probable that when employees perceive their leadership as demonstrating a transformational leadership style, they perceive the support necessary for discretionary decision making to occur.

Leadership support is defined as the specific relationships, shared resources, communications, and nature of the interactions between the employer and employees (Daft, 2007). Leadership support that is consistent with a transformational style of leadership is characterized by shared decision making, mutual goal setting, and employee empowerment that are conducive to discretionary decision making (Tabak et al., 1996; Thompson, 1967).

Leadership support and transformational leadership.

Leadership structures and leadership support have been extensively studied in the nursing literature. In the early 1980s, nursing researchers examined healthcare organizations where leadership structures and leadership support characteristics produced work environments that retained nurses and provided excellent patient care. Ultimately, these organizations were termed magnet hospitals (Kramer & Schmalenberg, 1988a). Kramer (1990) and Kramer and Schmalenberg (1988a, 1988b, 2003) studied characteristics of these magnet healthcare organizations throughout the 1980s, 1990s, and into the first decade of the 21st century. In their first study in 1988, Kramer and Schmalenberg performed a qualitative comparative analysis in 16 magnet hospitals. They interviewed multiple levels of nursing personnel and compared the characteristics of the magnet hospitals with characteristics of the best performing companies in the United States as described in the organizational behavior literature at that time. A decentralized organizational structure with leadership support that promotes employee empowerment was a hallmark feature of all the magnet hospitals (Kramer & Schmalenberg, 1988b). In a follow-up qualitative study in these same 16 hospitals, Kramer (1990) interviewed the chief nursing officers of these magnet hospitals and again documented the trends of a decentralized structure and an empowered nursing staff as a key to their success. Finally, in a qualitative descriptive study by Kramer and Schmalenberg (2003) in which staff nurse autonomy in magnet hospitals was examined, both expected and unexpected findings emerged. Decentralized structures and leadership support for empowerment were expectedly acknowledged as essential elements of magnet organization. In addition to the autonomy in professional practice that is a defining characteristic of magnet hospitals' nursing practice, staff nurses in magnet hospitals in this study also described another component of their practice. This

component involved bypassing a physician order and taking a different action with the patient, if warranted, including the administration of medication without an order or covertly going to another physician to obtain the order they felt was needed when they had provided new information about the patient that was not being addressed. Kramer and Schmalenberg (2003) termed this phenomenon in their study “clinical autonomy.” In a personal interview with Marlene Kramer, she acknowledged that the concept of discretionary decision making as described in this paper appears to share some conceptual features with her definition of clinical autonomy (Kramer, 2010).

Several research studies have described employee empowerments as an outcome of transformational leadership styles of organizational leaders (Morrison, Jones, & Fuller, 1997). Using a random sample of 90 RNs, Larrabee et al. (2003) examined both organizational and individual characteristics that influence registered nurses’ job satisfaction. In this study, perceptions of transformational leadership were found to positively influence perceived RN empowerment (Larrabee et al., 2003). Upenieks (2003) examined empowerment in RNs ($n = 305$) in two magnet hospitals in which leaders exhibited a transformational leadership style, and compared them to RN empowerment in nonmagnet hospitals in which leaders did not exhibit transformational leadership styles. RNs in the magnet-designated hospitals perceived themselves to be more empowered than those in the nonmagnetic hospitals (Upenieks, 2003). As such, transformational leadership has been demonstrated to be perceived by employees as empowering and is most often seen in decentralized structures.

Several other studies have been conducted that examine transformation leadership and nurses’ work behavior. In a study of 639 nurses across 10 different healthcare organizations, the relationship between transformational leadership and extra effort by staff nurses was examined

(Stordeur, Vandenberghe, & D'hoore, 2000). Using a survey methodology, employees were asked to complete questionnaires exploring their perceptions of transformational leadership and their self-perceptions of extra effort they offer their work unit. A significant positive relationship was found between perceptions of transformational leadership and self-perceptions of extra effort (Stordeur et al., 2000). Boerner and Dtschke (2008) examined the relationship between transformational leadership and initiative-oriented behavior within five different health systems. Transformational leadership and initiative-oriented behavior were explored using a survey methodology. The sample consisted of 543 healthcare providers including doctors and nurses. A significant positive relationship was found between perceived transformational leadership present within the organization and initiative-oriented behavior of employees (Boerner & Dtschke, 2008). In addition, transformational leadership is the particular leadership style that is endorsed by the American Nurses Credentialing Center (ANCC) for creating effective nursing practice environments (Cummings et al., 2008). The IOM report, *Crossing the Quality Chasm*, specifically suggests that transformational leadership is the management style necessary to promote safe and effective practice environments in nursing (Committee on the Quality of Healthcare in America, 2001). Transformational leadership is the current, preferred leadership style cited in the criteria for magnet hospitals (Cummings et al., 2008). This literature substantiates the use of transformational leadership as an independent variable in this research model measuring the type of leadership support needed for discretionary decision making and supports the hypothesis that perceptions of transformational leadership style of your unit manager are positively correlated with discretionary decision making that moves beyond the scope of nursing practice in patient safety situations.

In summary, leadership support has been extensively studied in nursing practice and transformational leadership has been established as the preferred leadership style in magnet organizations (Cummings et al., 2009; Tomey, 2009). Transformational leadership is characterized by shared decision making and employee empowerment that is consistent with the type of leadership support that Thompson (1967) described as fostering employee discretionary decision making. As a result, transformational leadership will be included as an independent variable in this research model.

Discretionary Decision Making

Discretion is defined as the power or decision to act according to one's own judgment or choice (Murdach, 2009). Discretionary behavior or discretionary decision making is the use of discretion in the evaluation process at the point in time when an action is needed in response to an evolving situation (Buckholtz et al., 1999). Discretionary decision making is considered vital to the practice of professionals who encounter stressful circumstances that require effective and timely responses (Murdach, 2009). In Thompson's (1967) model, discretionary behavior or decision making may be used by individuals even when the job role allows no discretion in a particular situation or the criteria that the employees are using to make the decision to use discretionary behavior or decision making is not specified in their job role.

Examples of discretionary decision making can be found in the organizational behavior safety literature (Roberts, 1990). Several key studies in the nursing literature over the last two decades have validated that nurses do engage in this behavior in a variety of practice settings (Benner, 1999; Furber & Thomson, 2006; Hughes & Mark, 2008; Hutchinson, 1990; Kramer & Schmalenberg, 2003).

Discretionary decision making

In Robert's (1990) 5-year qualitative study of high reliability organizations (Pacific Gas and Electric Company's nuclear power plant and the U.S. Navy's operation of its nuclear aircraft carriers) described previously in this chapter, discretionary decision making was identified particularly in the operation of the navy aircraft carriers. Daily on these aircraft carriers, there are multiple examples of dangerous maneuvers that must be expertly executed under changing conditions. The safety culture that permeates these carriers shifts the authority to respond to any risky situation from a formal hierarchical decision-making structure to any level of employee that suspects an ensuing problem. For example, any level of personnel on the aircraft carrier who suspects an immediate danger to flights is expected to halt operations. In interviews with personnel at both the nuclear power plant and the navy aircraft carriers, it was acknowledged that at times, employees and crew members respond to situations in ways that exceed their job roles in order to maintain a safe environment (Roberts, 1990). This type of independent decision making is an example of discretionary behavior.

Studies of HRO models in healthcare can also be found in the organizational theory safety literature. In 2006, Madsen, Desai, Roberts, and Wong published a case study report of a highly reliable pediatric intensive care unit that evolved over a 10-year period. The unit was distinguished by a track record of significantly lower mortality rates despite high case mix acuity. The medical director of the unit was a pediatric intensivist with experience as a naval officer. She deliberately changed the organizational design of the unit based on her desire to replicate the safety culture of high reliability she witnessed as a Navy officer. Working in conjunction with organizational theorists, she implemented a decentralized decision-making design that promoted discretionary decision making behaviors by registered nurses assigned to

that unit. Strategies that proved successful in promoting this safety culture included extensive training and knowledge distribution coupled with a set of protocols that established a framework for RN discretionary behavior.

In the book, *Clinical Wisdom and Intervention in Critical Care*, Benner et al. (1999) provide multiple examples of discretionary decision making in nursing that moves beyond the scope of nursing practice that have been described by critical care nurses from their actual nursing practice. Several examples that were given include a situation in which a patient was experiencing a lethal arrhythmia, a situation in which a patient developed significant bleeding from an arterial graft, and a situation in which the patient developed flash pulmonary edema. Responses that nurses described included reporting the situation to senior physicians when they did not agree with the response from the residents and on several occasions administering medication without an order (Benner et al., 1999).

In a grounded theory study by Hutchinson (1990), 21 nurses were interviewed and described a variety of examples in which they were asked about bending the rules in order to effectively respond to a patient's needs. Hutchinson's study examined bending rules in response to a variety of situations that a nurse may encounter not just situations in which the patient was experiencing a significant change in their condition. For example, Hutchinson's study explored situations in which nurses bent the rules to support the emotional needs of a patient's family members. Still, a portion of Hutchinson's study examined situations in which the RN felt compelled to act in order to respond to a patient's changing condition even though the required actions were, at times, beyond the scope of nursing practice. Nurse responses in these situations included both withholding and administering medications without an order. Hutchinson described discretionary behavior in her study as "responsible subversion" (Hutchinson, 1990).

A 2006 grounded theory study performed in the United Kingdom by Furber and Thomson (2006) examines this phenomenon in relation to nurses' responses to patients who were experiencing difficulty breast-feeding their infants. Although the phenomenon is examined in this study in a less emergent clinical situation than it has been examined in other United States studies cited, the clinical scenario does meet the essence of the phenomenon being reviewed. In the United Kingdom, there are standardized regulations for nurses to follow when assisting new mothers with breast feeding their infants. This study demonstrated that even though they were at risk for disciplinary action that nurses routinely acted outside of these regulations when they felt the patient situation warranted this response. Furber and Thomson (2006) described such actions as consistent with the term responsible subversion as described by Hutchinson in her 1990 study.

In a qualitative descriptive study by Hughes and Mark (2008), 13 experienced nurses were interviewed in relation to their response to situations in which there was a patient need and their response required an intervention which was beyond the scope of nursing practice. Each study participant provided multiple examples of the consistent inclusion of this behavior that moved beyond the scope of nursing practice in his/her professional life. Behaviors by nurses cited in this study included reporting of the situation to a more senior or different physician, administration of a medication without an order, and withholding medication. Hughes and Mark (2008) termed this phenomenon in their study "discretionary decision making."

The research that has been conducted on this topic is qualitative and describes the phenomenon as it exists in high reliability organizations and in nursing practice. The qualitative evidence that has been assimilated confirms that many nurses do practice discretionary decision making that extends beyond the scope of nursing practice (Benner et al., 1999; Furber & Thomson, 2006; Hutchinson, 1990). The effect on patient outcomes when nurses practice

beyond their scope is unknown. This is a needed area for future research. The focus of this study is to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires an intervention that is beyond the scope of nursing practice. There are no quantitative studies in the nursing literature that examine the determinants of this decision making behavior. Better understanding of these determinants is needed as nursing administrators ascertain the need to either support or restrict this behavior in staff nurses in regard to its implications for patient safety.

Empirical evidence supports the use of experience, education, proactive personality, situational awareness, situational immediacy, and perceived transformational leadership as variables in a research model examining determinant of a nurse's discretionary decision to respond beyond his/her scope of practice when a patient is at risk for experiencing a safety event. This research model is based on Thompson's (1967) model of employee discretionary decision making (see Figure 2).

Summary

Some nurses on the front line of patient care are making decisions to act in response to patient needs even if at times this means intervening with actions beyond the scope of nursing practice. Examining this phenomenon empirically is important to needed to better understand the value of this practice in the clinical setting and the determinants that influence a nurse to engage in discretionary decision making and behavior. This chapter has reviewed the model of discretionary decision making proposed by Thompson (1967).

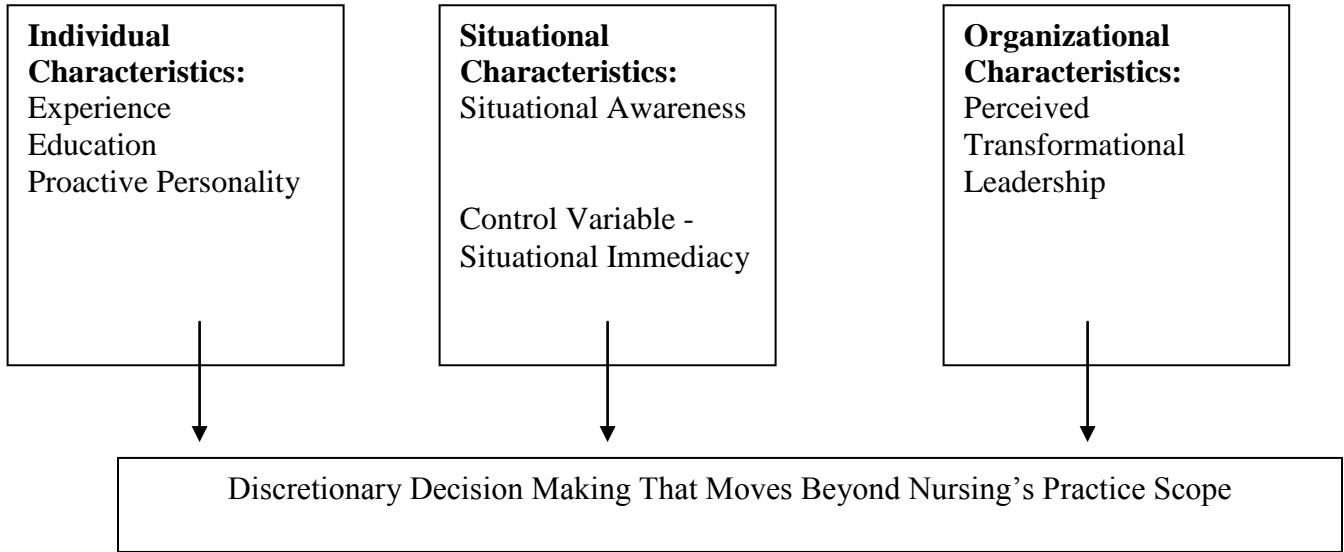


Figure 2. Research model. Discretionary decision making: The move beyond nursing's practice scope

Variables identified by Thompson include education, experience, increased tolerance for risk, knowledge regarding causation, orientation to time, and leadership support. The final variables in the research model include education, experience, proactive personality as a proxy measure of tolerance for risk, situational awareness as a measure of knowledge of causation, situational immediacy as a measure of orientation to time and transformational leadership support measured as a style. Chapter 3 will review the identified methodology for this study and the instruments that will be used to measure each of the variables.

CHAPTER 3. RESEARCH METHODS

The purpose of this research was to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires a response that is beyond the scope of nursing practice. This chapter will review the research methods for the study including the design, setting and sample, the data collection procedures, measurement of study variables and the data analysis plan.

Research Design

This study utilized a cross-sectional correlational design to answer the research question. Since no variables were manipulated, the design was nonexperimental. A theoretical model (see Figure 1) was used to guide the development of an empirical model (see Figure 2) and the data were analyzed to determine the overall fit of the model using logistic regression.

Data Setting, Sample Sources, and Data Collection

Setting and Sample

Participants were recruited from Virginia Commonwealth University (VCU) Health System using a random sample of registered nurses (RNs) who had been employed on the same medical-surgical patient care unit for the period of at least 1 year. Virginia Commonwealth University Health System is a licensed 770 bed, urban, academic teaching hospital in the southeastern United States. The health system is a level-1 trauma center and is recognized by the American Nurse's Association Credentialing Center (ANCC) as a magnet facility.

The random sample of RNs was created by obtaining a sequentially numbered alphabetical list of all RNs who met the above inclusion criteria. The list was obtained from the nursing data analyst employed in the Division of Nursing Services at the VCU Health System. The numbers and names of the staff nurses that corresponded to the randomly generated numbers constituted the sample for the research. Ultimately however, the entire population of eligible nurses was included in the study in order to achieve the required sample size.

The targeted sample size was 91, and this was determined using a power analysis table for nonexperimental correlational designs and was based on the presence of five variables in the empirical model (Cohen, 1992). A medium effect size was estimated and an alpha level of .05 was assumed. The target population was all RNs at the VCU Health System who met the inclusion criteria. The sample was all RNs who agreed to complete and submit the electronic survey. The response rate was 21%.

Data Sources and Data Collection Procedures

Data for this study were obtained using a survey questionnaire. RNs were notified by confidential campus electronic mail (email) that they were selected to participate in the study. Advertisements were posted on all nursing units informing nurses that this study was being conducted and also informing them that some nurses would be selected and asked to participate through confidential email. The nurses were asked to respond to questions measuring each concept of Thompson's (1967) model of determinants of discretionary behavior (see Figure 1). In addition, the nurse was asked to read three clinical vignettes and answer questions regarding the decisions that he/she would make if faced with the situation in the clinical setting. If the nurse was willing to participate, the email notification provided the nurse with information to access the electronic questionnaire survey tool, Redcap®, and enroll in the study. Once the

nurse accessed Redcap®, the initial screen contained all of the elements of informed consent and the nurse acknowledged confidentially and electronically that he/she agreed to participate in the study. At that point the nurse was then able to access the survey questionnaire. Since the site is entered confidentially, there was no ability for the researcher to identify any of the study participants; however, study participants were able to contact the researcher if they so desired.

Permission to conduct the study was obtained from the Institutional Review Board for Virginia Commonwealth University and from the Nursing Research Council at the VCU Health System.

An electronic questionnaire is an acceptable method of gathering self-report data from study participants. Use of an electronic questionnaire format is one of the fastest growing approaches to data collection at academic health centers (Buchanan & Hvizdak, 2009). This approach has many advantages. For the researcher, electronic questionnaires are generally less expensive than questionnaires that are distributed by U.S. mail. The data can be imported directly into the statistical package for analysis, saving time and eliminating the possibility of data entry errors. Data also can be collected more quickly since research participants have immediate access to the questionnaires (Rhodes, Bowie, & Hergenrather, 2003). Some researchers have identified a selection bias when using electronic questionnaires, since only participants who have basic computer skills can be recruited (Buchanan & Hvizdak, 2009). This was not a concern in this particular study since all potential respondents in this study are required to have basic computer skills in their job role at the VCU Health System. For participants, anonymity can be better assured when electronic questionnaires are managed using a commercial product such as Redcap® as was done in this study. Redcap® allows for automatic de-identification of the data.

Measurement of Variables

Instrumentation

In order to understand why nurses make discretionary decisions that move beyond their scope of nursing practice, it is necessary to study models that provide a theoretical basis for explaining nurse discretionary decision-making behavior at the level of the individual nurse (Benner et al., 1999; Thompson, 1967). Thompson's (1967) model of discretionary decision making asserts that individual, situational, and organizational characteristics contribute to an employee's decision to engage in discretionary decision making and behavior that moves beyond their job role. Each of the concepts of Thompson's (1967) model was reviewed in Chapter 2; and based on the literature review presented in Chapter 2, individual characteristics operationalized in the empirical model were education, experience, and proactive personality. Situational characteristics were operationalized as situational awareness, and situational immediacy. Organizational characteristics were operationalized as the nurses' assessment of their managers' leadership style as transformational.

Individual Characteristics

Nursing education and experience. An investigator-developed questionnaire was used to describe the sample and measure nursing education and years of nursing experience. Nursing education was measured as the current highest level of nursing education in the following categories: associate degree, diploma, bachelor of science degree, or master's degree in nursing. Years of experience was measured as the total number of years of nursing experience since passing boards as a registered nurse.

Proactive personality. The Proactive Personality Scale was used to measure proactive personality. Bateman and Crant (1993) developed the Proactive Personality Scale in the early

1990s as the construct of proactive behavior was gaining attention in the literature. Proactive personality is defined as an employee's individual characteristics which results in he/she thwarting evolving problems in a nonstandardized fashion and most often using extra-role behaviors (Parker et al., 2006). Initial reliability and validity of the scale was established in three samples of undergraduate and graduate students in a southeastern state university. In these samples, the 17-item Likert scale demonstrated a Cronbach alpha ranging from .87 in two of the samples to .89 in the third sample. Total sample size in all three studies equaled 548 participants. A single factor construct was also established with acceptable factor loading. Construct validity of the instrument has been demonstrated by positive relationships with the following concepts—conscientiousness, extraversion, need for achievement, and dominance (Bateman & Crant, 1993). The proactive behavior scale is scored on a 7-point Likert scale with higher scores indicating a stronger indication of a proactive personality (1 = Never; 7 = Always).

Situational Characteristics

Situational awareness. A visual analogue scale was used to measure situational awareness. Situational awareness is defined as the employees' feelings of confidence that they are knowledgeable in regards to the cause and appropriate response to an event as it is unfolding (Roberts, 1990). Visual analogue scales are a means to measure the subjective experience of a research participant as it relates to a specific variable of interest. The scales are generally constructed using a linear 100-millimeter line. The line is segmented at one millimeter intervals. The left end point of the line is scored as "0" and the right end point of the line is scored at "100." Each end point of the line represents opposite and extreme characteristics of the variable. In this incidence, the end of the line scored as 0 represented the experience of being unfamiliar with a specific situation and the end of the line scored as 100 represented the experience of being

very familiar with the situation. The research participant places a mark along the continuum representing the point they feel best represents their experience with the variable of interest. The response to the scale is measured at the millimeter interval where the mark is placed. For example, if the participant places the mark on the 75-millimeter interval the score equals 75 (McDowell, 2006).

Organizational Characteristics

Transformational leadership. Transformational leadership is a style of leadership that supports nurses through empowerment and shared decision making (Bass & Avolio, 1994). The Multifactor Leadership Questionnaire (MLQ) was used to measure transformational leadership, conceptualized as a measure of leadership support. The MLQ is a self-report measure in which an employee assesses the leadership style of their superior (Tejeda, 2001). The Multifactor Leadership Questionnaire (MLQ) is derived from the theory of multi-factor leadership developed by Bass and Avolio (1994). This theory posits that leadership styles fall into the complementary categories of transformational and transactional (Bass & Avolio, 1994). According to the IOM report, transformational leadership provides the type of organizational support necessary to promote patient safety cultures (Institute for Healthcare Improvement, 2008). The MLQ is the most widely used measure of transformational leadership in the organizational behavior literature and its use is documented in over 75 research studies (Lowe, Galen Kroeck, & Sivasubramaniam, 1996; Tejeda, 2001). The MLQ has been used to study transformational leadership in multiple types of organizations including manufacturing, healthcare, the military, and education. Multiple hierarchical levels of organizational leaders, including frontline managers as well as CEOs, have been examined using this instrument (Lowe et al., 1996).

Despite its widespread adoption, there has been some debate in the literature regarding psychometric concerns in early versions of the MLQ. The specific concerns were in the subscales measuring transactional leadership (Kanste, Miettunen, & Kyngs, 2007). Meta-analytic review of current versions of the MLQ demonstrates acceptable coefficient alpha reliabilities for each of the leadership factor subscales contained in the instrument. The subscales measuring transformational leadership (Charisma, Individualized Consideration, and Intellectual Stimulation) all had coefficient alpha reliability greater than .85 (Lowe et al., 1996). See Table 1.

Table 1

Subscale Measurements of Transformational Leadership

Scale	Total Sample Size	Mean Cronbach Alpha	Mean Scale Score	SD
Charisma	6,482	.92	2.52	1.04
Individualized Consideration	6,232	.88	2.50	.99
Intellectual Stimulation	6,360	.86	2.48	.85

In addition, in a study of 250 nurses examining the use of the MLQ in the nursing population, support for the reliability of instrument was demonstrated with Cronbach alphas for each subscale ranging from .78 to .94 (Kanste et al., 2007). Construct validity of the instrument has been demonstrated by positive relationships with the concepts of idealized attributes, idealized behaviors, inspirational motivation, intellectual stimulation, and individualized consideration (Antonakis, Avolio, & Sivasubramaniam, 2003; Bass & Avolio, 1994).

The MLQ uses a 5-point Likert response scale (0 = not at all; 4 = always). High scores on the transformational leadership scales indicate a strong perception of transformational leadership behaviors in one's immediate supervisor (Lowe et al., 1996).

Discretionary Decision Making

Clinical vignettes were used to measure the dependent variable (discretionary decision making that extends beyond the scope of nursing practice when a patient is at risk for a safety event). Vignettes have been used by social scientists to assess judgment and decision making since this technique was first introduced by Rossi and Nock in 1982 (Ludwick & Zeller, 2001). Vignettes are short descriptions of situations that may be found in actual clinical practice. They are used in situations in which the logistics of observation are prohibitive. Vignettes are used to simulate clinical situations as closely as possible. Vignettes are often used to assess nurse decision making and clinical judgment in the research setting (Ludwick & Zeller, 2001). Based on an extensive review of the literature, there are no established research instruments that measure discretionary decision making. Vignettes then are not only an appropriate but a necessary measure of discretionary decision making in this research. Based on recommendations by Ludwick and Zeller (2001), three vignettes were presented to each research participant. Each vignette represents a situation that a nurse may face in the clinical setting and required a discretionary decision by the nurse to initiate a response that is beyond the nurse's scope of practice in order to optimally prevent an adverse patient event. There were three responses that the nurse could choose to respond to the situation in the vignette, and the nurse could choose 1, 2, or all 3 responses if he/she would consider them appropriate actions for the situation. Only one of the responses, however, represented a discretionary decision that is beyond the scope of the nurse's practice. Each clinical situation required an immediate response in order to protect

the patient from harm. The vignettes were developed using the expertise of two certified clinical nurse specialists at the VCU Health System. Each clinical specialist reviewed the vignettes and determined that they did represent actual clinical scenarios that nurses on their units may encounter. In addition, each clinical nurse specialist verified that nurses working on their units should be aware of the response that would be most likely to prevent an adverse safety event from occurring. The vignettes were pilot tested with 15 RNs who are employed in the supplemental staffing pool at the VCUHS and would not be eligible for participation in the larger study. The pilot group of RNs also verified that the scenarios were representative of situations they would see in their clinical practice and could identify the response that would most likely prevent a patient safety event from occurring. However, there was significant variability among the pilot group in regards to which action they would actually choose to implement.

If the nurse chose the discretionary decision response in at least 1 out of the 3 scenarios, then the nurse was classified as a discretionary decision maker. In the pilot group, 9 RNs were classified as discretionary decision makers and 6 RNs were not.

Situational immediacy. Situational immediacy is defined as the employee's perception that an immediate response to an evolving event is required to prevent a significant and untoward consequence (Roberts, 1990). Situational immediacy was controlled for in this study by generating vignettes that represent an impending crisis in each patient scenario.

Analytic Method

A nonexperimental correlation descriptive design was the method used for this study and data collection was achieved using a 69-item questionnaire. The sample was described using descriptive statistics. For each multi-item scale, Cronbach alphas were computed to determine

the reliability of the instrumentation. Using the SPSS statistical package, a logistic regression model was used to analyze the data. A logistic regression model is appropriate for this data analysis because the dependent variable was dichotomous (only has two values), not continuous. The values for this variable were coded as either “1” or “0” and the probability of the dependent variable equaling 1 was modeled using an odds ratio. An odds ratio indicates the numerical chance of an individual demonstrating a certain characteristic (the dependent variable) given that the individual also demonstrates another group of characteristics (the independent variables). This is accomplished by transforming the dependent variable using logit transformation, which generates coefficients equal to the log of the adjusted odds ratios. Statistical significance and variance explained by the model were examined (Daniel, 2005).

Summary

This chapter reviewed the research design, the study methods, the instrumentation, and the analytic process that was used to answer the research question for this study. Each concept in the conceptual model specified as a variable in the empirical model shown in Chapter 2. Subsequently, the measurement plan for each independent variable was reviewed in this chapter as well as the measurement plan for the dependent variable. Study results are presented in Chapter 4.

CHAPTER 4. FINDINGS

The purpose of this investigation was to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires a response that is beyond the scope of nursing practice. In this chapter, characteristics of the sample are first described. Then, psychometric properties of the measurement instruments are presented. Finally, a review of the data, descriptive statistics of the study variables, and the results of the logistic regression analysis are discussed.

Characteristics of the Sample

The Sample

A total of 503 registered staff nurses (RNs) who met the inclusion criteria were invited to participate in this study via electronic email notification and confidential link to the electronic survey. A total of 136 participants responded to the electronic survey. Of the returned questionnaires, 21 questionnaires had at least one of the scales in the survey that had no responses and were therefore excluded from the study. The final sample size was 105 (response rate = 21%). Frequency distributions for the sample are included in Table 2.

Individual attributes included educational preparation in nursing, clinical areas in which respondents had or currently worked and total years of nursing experience. The sample

Table 2

Demographic Characteristics of the Study Sample
(N = 105)

	Variable	n	%
Educational preparation	BSN	76	75
	Non-BSN	29	25
Work units	Med-Surg only	27	26
	Med-Surg and Progressive care	58	55
	Progressive care only	20	19
Years of experience	1-2 years	13	12
	3-5 years	19	18
	6-10 years	15	14
	11-19 years	33	32
	> 19 years	25	24

consisted of 79 nurses (75%) with at least a bachelor of science degree in nursing (BSN) and 26 nurses (25%) with either an associate degree or diploma in nursing. This is a slightly higher percentage of nurses with a BSN than the 65% of nurses with a BSN in the overall population of nurses at VCUHS, and higher than the 50% of nurses with a BSN reported in the national survey of registered nurses from the U.S. Department of Health Resources Service Administration (USHRSA, 2011).

Registered nurses (RNs) employed in medical surgical units and progressive care units within the health system were eligible to participate. Of all RNs eligible to participate, 58% worked in units with both medical surgical patients and progressive care patients, 12% worked in units with progressive care patients only, and 30% worked in units with medical surgical patients only. Of the RNs in the final sample of the study, 55% worked in units with both medical and surgical patients and progressive care patients, 19% worked in units with progressive care patients only, and 26% worked in units with medical surgical patients only. Overall, participants in the study worked in similar areas as the population of nurses eligible to participate in the study.

Registered nurses who were included in the final sample for this study represented a wide range of nursing experience. Twelve percent of the RNs in the study sample had 1 to 2 years of nursing experience, 18% of the RNs in the study sample had 3 to 5 years of nursing experience, 14% of the RNs in the study had 6 to 10 years of nursing experience, 32% of the RNs in the study had 11 to 19 years of experience, and 24% of the RNs in the study had more than 19 years of nursing experience. Comparison data of nursing experience was not available for this specific population of nurses or within the USHRSA national survey sample (USHRSA, 2011).

Description of Key Study Variables

Of the 105 respondents, 13 surveys had a small number of missing data elements in either the proactive behavior scale responses or in the multifactor leadership questionnaire responses. The number of missing data elements was minimal and 10 of the surveys with missing data elements only had 1 missing data element. Normalization of the data was conducted by averaging the final scale score with only the number of responses answered. For example, the proactive behavior scale had 17 data elements and if 1 data element was missing, the final proactive behavior scale score for that respondent was calculated by averaging the total score of the scale by 16 instead of 17. In addition, there were no specific patterns or trends in regards to the data elements that were missing. The missing data elements appeared to be random and there was no evidence to suggest that respondents were choosing not to answer a specific question or type of question. The alpha coefficient in this study for the multifactor leadership questionnaire was 0.95. The alpha coefficient in this study for the proactive personality scale was 0.92.

Histograms of the continuous variables were reviewed for overall distribution of the data, multiple peaks and outliers (Fields, 2009). Skewness was calculated for each continuous variable and tested for significance. A nonsignificant value was obtained for each variable indicating that a normal distribution could be assumed. No issues with multicollinearity among the variables were detected. Descriptive statistics for continuous variables are presented in Table 3.

Table 3. Descriptive Statistics for Continuous Variables

Variable	Min	Max	Mean	Standard Deviation
Nursing Experience	1.00	19.00	10.84	6.50
Proactive Personality Scale	3.23	6.70	5.09	.83
Multifactor Leadership Questionnaire	1.00	4.00	2.52	.84
Situational Awareness	6.00	100	84.13	21.85

Model Fit and Tests of Significance

Model Fit

In simple linear regression the, R^2 statistic describes the predictive ability of the research model. This calculation is based on the total sum of squares around the means and is considered the proportion of variance explained by the linear model. This measure of predictive power is not applicable in logistic regression. A pseudo R^2 statistic can be calculated using both the Cox and Snell R^2 or the Nagelkerke R^2 (Fields, 2009) and as in simple linear regression, scores that approach a value of 1.0 show stronger predictive power than lower scores. The Cox and Snell R^2 was .084 and the Nagelkerke R^2 was .133.

Despite the low level of predictive power of the model, the number of respondents who indicated they would engage in discretionary decision making that extends beyond the scope of nursing practice was noteworthy. Eighty percent ($n = 84$) of all respondents did indicate in at least one of the three vignettes, that they would make a discretionary decision that extended beyond the scope of nursing practice in a situation in which a patient's safety was at risk.

Tests of Significance

The simple linear regression model is based on the linear relationship between the independent/predictor and dependent variables. In logistic regression, a linear relationship is not possible because the dependent variable is dichotomous. The equation for the logistic regression model is based on the logarithmic odds of the dependent event. The chi-square (χ^2) statistic is used to determine the significance of the predictive contribution of each independent/predictor variable. An odds ratio is used to determine the odds of the increase or decrease in the level of the dependent variable when the value of the independent/predictor variable is increased by one unit (Fields, 2009).

In this study, the p value for each independent/predictor variable is presented in Table 4 and demonstrates a significant relationship at the .05% significance level between the independent/predictor variables of education and proactive personality and the dependent variable discretionary decision making that moves beyond the scope of nursing practice. When these two significant variables were included, and the other three variables excluded from the model, the overall fit of the model was improved and was also significant at the .05% significance level. This is detailed in Table 4.

Table 4

Chi Square Test of Significance

Variable	P value (significance)
Nursing experience	.688
Proactive personality	.048
Perceptions of transformational leadership	.218
Situational awareness	.150
Nursing education	.038
Final research model (proactive behavior and nursing education)	.010
	Chi - square 9.22

The odds ratio and the confidence limit of the two significant independent variables, education and proactive behavior, are presented in Table 5. The odds ratio represents the natural log base and does not directly correspond to overall probability. It does however suggest effect size. An odds ratio of 1 corresponds to no effect. If the odds ratio is greater than 1 then the independent/ predictor variable has a positive effect on the dependent variable. If the odds ratio

is less than 1 then the independent/predictor variable has a negative effect on the dependent variable. In this study, proactive personality has an odds ratio below 1 and therefore has a negative effect on the dependent variable (discretionary decision making). In other words, the more proactive an individual is, the less likely an individual is to engage in discretionary decision making that is beyond the scope of nursing practice. Also in this study, the associate degree or diploma level of education in nursing has an odds ratio greater than 1.0 indicating a positive effect on the dependent variable. Therefore, non-BSN nurses were more likely to engage in discretionary decision making beyond the scope of nursing practice and conversely an individual with at least a BS degree in nursing was less likely to engage in discretionary decision making beyond the scope of nursing practice.

Table 5

Odds Ratios and 95% Confidence Limits (CI) of Significant Variables

Variable	Odds ratios	95% CI Lower Limit	95% CI Upper Limit
Proactive personality	.535	.287	.999
Education level:			
• Non-BSN	4.675	1.001	21.828

Conclusions and Summary

The results of this investigation were presented in this chapter. The overall fit of the research model for this study was significant at the .05% significance level when two of the independent/predictor variables (proactive behavior and nursing education) were retained and the three other independent/predictor variables were excluded (nursing experience, situational awareness, and perceptions of transformational leadership). The total predictive power of the final model, however, was extremely low indicating that the two retained independent/predictor variables explained only a minimal amount of the model variance. This is important since 80% ($n = 84$) of the respondents did indicate that they would make a discretionary decision that extends beyond the scope of nursing practice in the event that the patient was at risk for a safety event. This study then demonstrates that nurses do engage in this behavior but fails to identify the majority of the variables that influence this behavior. This dilemma will be further discussed in Chapter 5.

In addition, the negative correlation between proactive behavior and educational preparation at the B.S. in nursing level and the dependent variable was an interesting finding. Potential explanations for these findings are explored in Chapter 5.

Chapter 5. DISCUSSION OF FINDINGS

The purpose of this research was to examine the determinants of a nurse's discretionary decision to respond to situations that place patients at risk for safety events but requires a response that is beyond the scope of nursing practice. The Evidence in the nursing literature suggests that some nurses exercise professional discretion in these circumstances and with positive intent at times, make the decision to move beyond the formal boundaries of their job role and initiate interventions independently (Benner et al., 1999; Hutchinson, 1990; Tiffany et al., 1988).

Descriptive Statistics

Sample Nurses in this study self-reported their educational level and their years of nursing experience. The percentage of nurses with a BSN level of education (75%) represented a higher proportion of nurses with a BSN than in the population of nurses employed at the research study site or in the national nursing population. The percentage of nurses with a BSN at the VCU Health System is 55% as compared to the percentages of nurses with a BSN in the national nursing population, which is 32% (USHRSA, 2010). While there was a wide range of experience reported by nurses in the study (1 year - > 20 years), 70% of the participants reported greater than 6 years of experience, which Benner would describe as sufficient to develop expert nursing decision-making skills (Benner, 1984). As both nursing experience increases and the percentage of nurses with a BSN level of education increases, based on current research, expert decision-making skills of the nurse increases. Nursing education and experience are well documented as factors determining decision-making methods and quality in the clinical setting (Benner, 1984; Tabak et al., 1996; Thompson & Dowding, 2002). The high percentage of BSN-

prepared nurses and several years of experience suggests that there may be a high level of expert nurse decision-making skills in this population of participants.

Proactive personality. Score on the Proactive Personality Scale suggests that participants in this study did not have strong proactive personalities, indicating that proactive behavior may be less prevalent in the study population than in other groups. According to Bateman and Crant (1993) individuals with a strong proactive personality take initiative, tackle issues head on, and generate constructive organizational change. This is in contrast to individuals who do not have a strong proactive personality who are content to conform and maintain the status quo (Bateman & Crant, 1993).

It is important to note however that nursing research has characterized autonomous nursing work behaviors that are consistent with the principles of proactive behavior. Nurses have demonstrated autonomous work behavior in regards to proactive discretionary decision making and patient advocacy (Wade, 1999). These behaviors are more prevalent in nurses who work in magnet hospitals, like the hospital in this research study, than in nurses who work in nonmagnet hospitals (Kramer & Schmalenberg, 2003). These behaviors however are distinct from discretionary decision making in that they describe autonomy over practice which is within the scope of nursing practice. Still, while the overall proactive scores for nurses in this study are lower when compared to other professions, proactive behavior has been documented in the nursing population.

Situational awareness. High levels of situational awareness are necessary for employees to act in high-risk situations (Roberts, 1993; Weick & Sutcliffe, 2001). On a scale of 0 to 100, with 100 indicating the highest level of situational awareness, the mean score in this study was 84 with a SD of 21 and a range of 6 to 100. Findings from this study indicate that

these participants had a high level of situational awareness in regards to the vignettes in this study.

Perceptions of transformational leadership. Findings from this study suggest that participants' perceptions of transformational leadership in their immediate supervisor were low to moderate. The transformational leadership score is characterized by five attributes that comprise the transformational leadership construct. The first attribute is the ability of an immediate supervisor to instill pride in co-workers. The average score in this study for this factor was 2.59. In comparison to other managers that have been studied using this questionnaire, this score is at the 25th percentile level indicating that 75% of the other managers evaluated had higher scores in this factor. The next attribute is the ability to emphasize the importance of strong values and beliefs. The average score in this study for this factor was 2.55. In comparison to other managers that have been studied using this questionnaire, this score is at the 35th percentile level indicating the 65% of the other managers studied scored higher in this factor. The next attribute depicts the ability to create optimism about the future. The average score in this study for this factor was 2.8. In comparison to other managers that have been studied using this questionnaire, this score is at the 45th percentile indicating that 55% of the other managers studied scored higher in this factor. Intellectual Stimulation or the ability to seek different perspectives and examine critical assumptions is the next attribute. The average score in this study for this factor was 2.34. In comparison to other managers that have been studied using this questionnaire, this score is at the 25th percentile indicating that 75% of the other managers studied scored higher in this factor. The last attribute, Individual Consideration, is the ability to coach, mentor, and help others develop their strengths. The average score in this study for this factor was 2.4. In comparison to other managers that have been studied using this

questionnaire, this score is at the 25th percentile indicating that 75% of other managers studied scored higher in this factor. Overall, the scores on each of the individual attributes ranked lower when compared to other managers that have been studied using this Multifactor Leadership Questionnaire (Mind Garden, 2010).

Model Relationships

In this study the independent/predictor variables proactive personality and BSN level of education had a significant but negative relationship with the dependent variable, discretionary decision making that moves beyond the scope of nursing practice in patient safety situations. Therefore the hypothesis that proactive personality and BSN level of education would have a positive correlation with discretionary decision making was not supported. Individuals with a proactive personality are considered action-oriented so, in some respects, it seems counterintuitive that an individual with a proactive personality would be less likely to engage in discretionary decision making that moves beyond the scope of nursing practice in patient safety situations. In the qualitative work by Benner et al. (1999), Benner characterizes RNs with a higher level of education as more likely to take action in critical situations so it also seems counterintuitive that a BSN level of education would be negatively correlated with discretionary decision making that moves beyond the scope of nursing practice in patient safety situations.

It is possible that individuals with a proactive personality behaved just as the definition and characteristics of the construct proactive personality would suggest they should. It is possible that a patient in a medical crisis represents a stressful situation and a proactive individual would take early action to avoid the situation from becoming life threatening. Therefore it is less likely that they would allow the situation to worsen to the point that an action beyond their scope of practice would need to be considered. In studies examining the construct

failure to rescue in regards to patients in critically declining health conditions, it has been determined that preventive and monitoring actions that would be considered proactive behaviors are linchpins in avoiding impending medical crises (Friese et al., 2008).

The defining attributes of the personality trait proactive personality include sensemaking, relationship building, and positive framing. Sensemaking is the active process of seeking information and acquiring feedback about the environment to reduce uncertainty and make sense of new situations. Weick and Sutcliffe (2005) provide the following example of a nurse using sensemaking as she was caring for an infant who was beginning to decline:

I took care of a 900-gram baby who was about 26 or 27 weeks many years ago who had been doing well for about 2 weeks. He had an open ductus that day. The difference between the way he looked at 9 a.m. and the way he looked at 11 a.m. was very dramatic. I was at that point really concerned about what was going to happen next. There are a lot of complications of the patent ductus, not just in itself, but the fact that it causes a lot of other things. I was really concerned the baby was starting to show all of these. (Weick & Sutcliffe, 2005, p. 410)

Relationship building is the tendency to initiate and maintain positive social interactions with all levels of personnel in work settings. Proactive individuals recognize the need to maintain good working relationships and actively acquire feedback from both their peers and superiors. Positive framing is the ability to interpret events as an opportunity or challenge versus interpreting events as threats. An example of this type of behavior is viewing any type of changing situation as the opportunity to respond and provide stability not as a threatening situation (Wanberg, 2000). An individual with a proactive personality, who subsequently engages in proactive behavior, mitigates risk by scanning and interpreting the environment; by

actively building relationships with peers and superiors; and gaining environmental feedback and taking action to avoid a crisis or a difficult situation by viewing changing situations, which allows for an opportunity to respond. The findings from this study may be explained by how these defining attributes manifest when an individual with a proactive personality is faced with a stressful or potentially stressful situation (Wanberg, 2000). This interpretation is consistent with the nature of the work situations that nurses encounter and the degree of risk they accept when they practice outside the scope of practice. This finding may suggest that the relationships documented in studies using non-health providers may not be applicable to nurses where the risk of patient harm and the risk to a nurse's license must be considered.

In this study, a BSN level of education was negatively correlated with the dependent variable. It can be hypothesized that because of the multiple ways that education can positively influence the work environment, a more highly educated RN workforce may create an overall safer patient environment minimizing situations in which nurses would need to move beyond the scope of nursing practice to keep patients safe. Validation of this hypothesis, however, is needed.

There is a body of literature in the organizational behavior literature that examines the role of education and job performance. In a meta-analytic review of the organizational behavior literature on the relationship between education level and job performance, Ng and Feldman (2009) examined the relationship between education level and core job performance, counterproductive behavior and organizational citizenship behaviors. Similar to the nursing literature, this review found mixed results between education level and core job performance in some studies, but overall meta-analysis did reveal a positive relationship between education level and core job performance. The review also found a negative relationship between education

level and counterproductive behaviors operationalized as attendance and substance abuse. The review did find a strong positive relationship between level of education and organizational citizenship behaviors which some suggest encompass discretionary decision making (Ng & Feldman, 2009). The results of this meta-analysis do suggest that education level has a significant effect on job performance in a variety of dimensions, not just in core job performance. Therefore the effect of education level on job performance is multidimensional and it is difficult to draw definitive conclusions from the findings of this study and the available nursing literature on this topic. It is possible that education level is related to other variables that were not included in this model.

There was not a significant relationship in this study between either levels of experience or situational awareness and discretionary decision making that moves beyond the scope of nursing practice in situations that place patients at risk for safety events. Therefore the hypotheses that level of experience and high levels of situational experience would be positively correlated with discretionary decision-making were not supported. This is an unexpected finding since experience and situational awareness are well documented factors that influence decision-making skills and quality in the work setting (Benner, 1984; Roberts, 1990; Tabak et al., 1996; Thompson, 2009).

Using the Dreyfus Skill Acquisition Model, Benner (1984) described the ability of experienced, expert nurses to use pattern recognition and subtle clues to accurately assess complex situations and intervene in rapidly changing patient events. In a study by Tabak et al. (1996), experienced nurses demonstrated significantly more advanced and clinically effective decision-making skills when compared to their novice nurse counterparts. In a study of 245 nurses (Thompson et al., 2009), years of critical nursing experience was positively correlated

with correct discrimination of critical events in multiple patient scenarios. Therefore it was an unexpected finding that nursing experience was not significantly correlated with discretionary decision making that move beyond the scope of nursing practice in this study.

In regards to situational awareness, like Thompson's (1967) model, Roberts (1990) and Weick and Sutcliffe (2001) state that when individuals make the decision to respond to threats to safety they are aware of the context in which details of the situation differ from expectations and are aware of the way in which these changes affect the big picture (Thompson, 1967; Roberts, 1990; Weick & Sutcliffe, 2001). While the construct situational awareness has been explored in the nursing literature only in a limited fashion, related concepts such as certainty have been explored in nursing and have been found to significantly influence nurse decision making (Thompson & Dowding, 2002). In a study of 245 nurses, certainty of needed clinical action increased the probability of nurses taking action in critical patient scenarios (Thompson et al., 2008). Certainty regarding clinical scenarios is considered a determinant of nurse behavior in every major theoretical decision-making model used in nursing research (Banning, 2008).

It is important to note that when assessing the nonsignificant relationship between nursing experience, situational awareness, and discretionary decision making that moves beyond the scope of nursing practice in patient safety situations, in this study this finding does not mean that experienced nurses or nurses with high situational awareness did not make the decision to take some action. This finding signifies that there was no relationship between years of nursing experience and one specific behavior—the decision for a nurse to act beyond his/her scope of practice in patient safety situations. In this study, 100% of the nurses did state that they would notify the physician in these changing patient situations demonstrating that they would take some action. It is also important to consider that this study was conducted in an academic medical

center in which the physician practice model makes interns and residents more readily accessible to the bedside nurse to respond to a patient's changing situation when compared to nonacademic medical centers. Therefore, accessibility of physician staff may moderate the effect on nursing experience and situational awareness in regards to a nurse's decision to respond to situations that place patients at risk for safety events but requires a response that is beyond the scope of nursing practice.

Perception of transformational leadership was also not significant in the final model and therefore the hypothesis that perception of transformational leadership would be positively correlated with discretionary decision-making was not supported. This was also an unexpected finding since perceptions of nurse managers' transformational leadership style have been linked to extra role work behaviors in nurses in a variety of studies.

In this study population, however, the overall level of perceptions of transformational leadership was moderately low. One subscale score was at the 45th percentile, another subscale score was at the 35th percentile, and the remaining three subscale scores were at the 25th percentile. Transformational and transactional leadership styles represent two different approaches to leadership and both are measured by the MLQ. Transformational leadership is consistent with Thompson's (1967) model of discretionary decision making as a factor that promotes discretionary decision making that moves beyond a sanctioned job role. Conversely, a transactional leadership style is inconsistent with Thompson's (1967) model (Bass & Avolio, 1994; Thompson, 1967). When perceived transformational leadership levels are low it can be suspected that perceptions of transactional leadership are high. In this study population the scores on the MLQ for the transactional leadership factors were at the 60th percentile when compared to other managers and therefore represent a more predominant perceived leadership

style in this group of participants. The low levels of perceived transformational leadership and high levels of perceived transactional leadership may have contributed to the lack of significant relationship with the dependent variable in this study population since a predominantly transactional leadership style discourages discretionary decision making in Thompson's (1967) model.

Implications for Nursing Research

While the final research model demonstrated low predictive power, a large percentage (80%; $n = 79$) of respondents did acknowledge that they would engage in discretionary decision making that moves beyond the scope of nursing practice in patient safety situations; further legitimizing the need for empirical inquiry in this area. The combined findings of a significant research model with low predictive power but a large percentage of respondents who acknowledged they would participate in discretionary decision making that moves beyond the scope of nursing practice in patient safety situations, suggests the need to explore the large amount of variance unexplained in the final model. In addition, the significant and nonsignificant relationships between the independent/predictor variables and the dependent variable, discretionary decision making that moves beyond the scope of nursing practice in patient safety situations, yielded some unexpected findings which warrant further empirical investigation.

The theoretical linkages that connected the variables in the research model with the concepts identified in Thompson's (1967) model of discretionary decision making are logically consistent. The variables that were nonsignificant in the final model, however, have been demonstrated to influence decision making and behavior in many other empirical studies.

Specifically, level of experience and perceptions of transformational leadership have been linked

to nurse decision making that leads to action and positive patient outcome (Benner et al., 1999; Upenicks, 2003). In contrast to this study, the actions that have been studied and found significant in the nursing literature in regards to their relationship to level of experience and perceptions of transformation leadership were all well within the bounds of nursing practice. This study suggests that decision making that falls outside of the scope of practice and therefore has ramifications related to employment and licensure, may have some unique characteristics that make conventional models of decision making inadequate to explain the total model variance found in this study.

There may be ways to operationalize Thompson's (1967) model differently and explore other characteristics that may influence this phenomenon. For example, some authors suggest that there are multiple levels of authority and power that influence the behavior of frontline employees in a healthcare organization, not just the hierarchical authority of a nurse's immediate supervisor. The relationship between discretionary decision making that moves beyond the scope of nursing practice in a patient safety situation and these multiple levels of authority and power should be explored to help define the unexplained variance in the research model found in this study especially in terms of physician support. In addition to the traditional hierarchical authority of a nurse manager, a nurse on the front line of patient care delivery may also consider the authority of the state's licensing board, the patient's physician, and the informal authority of his/her peers when making decisions regarding actions and behaviors (Gaba, 2000; Kovner, Brewer, Wu, Cheng, & Suzuki, 2006; Pohlman, 2003).

Discretionary decision-making that moves beyond the scope of nursing practice in patient safety situations carries potential consequences for the nurse and the way in which these consequences influence discretionary behavior should be explored. Nurses are governed by their

state board of licensure and mandated to function within their scope of nursing practice. Practice outside of the nurse's scope could result in disciplinary action and licensure revocation (Pohlman, 2003). Medline searches revealed no literature on the influence of licensure and potential professional disciplinary action on RN decision making. Sitkin and Sutcliffe (1991) did examine the effect of regulatory licensing control on pharmacist decision-making behavior in regards to providing advice to clients on diagnosis and treatment. Providing advice on diagnosis and treatment in the context of this study was defined as beyond the scope of practice of the participating pharmacist. In this study, the researchers examined the influence of individual characteristics of the pharmacist including commitment to quality and self-regulation, organizational characteristics including customer service/sales focus and centralization of control, and situational characteristics including problem severity. Perceptions of regulatory licensing control were also measured. There were 94 participants in this study who completed questionnaires on each of these characteristics and the dependent variable was assessed using a vignette in which the pharmacists were asked if he/she would provide advice on diagnosis and treatment in a particular scenario. Perceptions of regulatory licensing control was negatively correlated with the dependent variables and had the highest predictive power of any variables in the study ($R^2 = 0.3$). The results of this study suggest that the effect of regulatory licensure control may be a characteristic that influences nursing discretionary decision making as well (Sitkin and Sutcliffe, 1991).

A nurse's relationship with attending physicians may also have an effect on this type of decision making. Interactions between nurses and physicians have been characterized by multiple sources as authoritative and hierarchical (Gaba, 2000; Mannahan, 2010). Contributing factors to these complex relationships include differences in the educational levels of the two

groups, perceptions of ultimate authority for patient decisions, as well as socioeconomic and cultural differences (Mannahan, 2010). Despite these differences, it is well documented that characteristics of the nurse-physician relationship have a significant effect on patient outcomes. In a study by Baggs et al. (1999) across three different intensive care units, a significant relationship was demonstrated between nurse-physician collaboration and both patient mortality and ICU readmissions. In a study by Knaus, Wagner, and Lynn (1991), with 13 intensive care units, patient mortality was also linked to the nurse-physician relationship. The significance of the nurse-physician relationship on a nurse's discretionary decision making is unknown. Because the nurse-physician relationship has been shown to influence nurse behavior in other specific contexts and represents a hierarchical relationship consistent with Thompson's (1967) model—examining the effect of the nurse-physician relationship on nurse discretionary decision making that moves beyond the scope of nursing practice in patient safety situations is warranted.

The concept of organization as viewed from a natural systems framework and consistent with Thompson's (1967) paradigm (as described in Chapter 2), is defined as a “collectivities whose participants share a common interest in the survival of the system and who engage in collective activities, informally structured to secure this end” (Scott, 1992, p. 25). In an organization functioning from a natural systems viewpoint there are specific goals, rules, and regulations within the formal organizational structure; however, employees within an organization “are not specifically guided by them nor can they be safely used to predict organizational actions (Scott, 1992, p. 24). Rather, employees within these types of organizations function from a shared moral climate and sense of meaning that emerges from informal power within an employee's peer group (Scott, 1992). The effect of the peer group as a source of informal power and subsequent nursing behavior has also been documented in the

nursing literature and could be explored in relationship to discretionary decision making that moves beyond the scope of nursing practice in patient safety situations.

While it is possible to consider and form theoretical linkages to a variety of other variables that are found in the literature that may influence a nurse's discretionary decision making that moves beyond the scope of nursing practice in patient safety situations, this trial and error method to operationalize Thompson's (1967) model in a different way or consider alternative models of decision making, may not be the best empirical approach for understanding this phenomenon. In situations in which a phenomenon is relatively unexplored, grounded theory is a methodological qualitative option designed to abstract analytic themes from interview data and ultimately generate theory. Using this method, the researcher collects interview data from participants who have experienced the phenomenon. An analytic approach using open or axial coding of the data and the constant comparison of collected data to detect emerging categories of themes is used to generate theoretical propositions (Creswell, 1998). Grounded theory should be considered as the next empirical approach to explore a nurse's discretionary decision making that moves beyond the cope of nursing practice since minimal exploration of this phenomenon is documented in the literature, and in this study a large amount of variance was unexplained.

In addition, the prevalence of discretionary decision making that moves beyond the scope of nursing practice in patient safety situations had a very high prevalence in this quantitative study. This finding is supported by the qualitative work that has been done in this area (Benner et al., 1999; Furber & Thomson, 2006; Hughes & Mark, 2008; Hutchinson, 1990; Kramer & Schmalenberg, 2003). Therefore, research is warranted to examine the effects of this behavior on patient outcomes.

Implications for Nursing Administration

While there remains a significant amount of nursing research that should be conducted on this phenomenon, nursing administrators must still deal with the reality that this behavior is likely occurring at a high level of prevalence. From a regulatory perspective, nurse administrators should work with the boards of nursing in their individual states to determine how nursing scope of practice issues should be addressed when the nurse responds to a potential patient safety situation. Nursing administrators, managers, and supervisors should be well versed in the implications of this behavior and should ensure that nursing staff are well aware of the regulatory issues associated with this practice.

Proactive personality is a construct that is relatively unexplored in the nursing literature. In high reliability organizations with impressive safety records, employees are encouraged to remain mindful of their environment and to assume that rapid change is possible in any situation. The ability for front line employees to manage their environment and prevent errors is based on ongoing situational assessment, review of assumptions, and stabilization of uncertainty in the environment rather than relying on what Weick (1987) terms hesitant action. This is consistent with the features of proactive personality described by Bateman and Crant (1993). A proactive personality predisposes an employee to prevent the occurrence of evolving problems in a nonstandardized fashion and most often using extra role behaviors (Bateman & Crant, 1993; Parker et al., 2006). As the need to for health care organizations to foster patient safety climates continues to rise, further understanding and analysis of the construct proactive personality in the nursing workforce may be helpful.

Study Limitations

While many of the findings of this study are thought provoking, there are significant limitations of this study that must be considered when determining next steps for further scientific inquiry.

The minimal sample size for this study was determined using recommendations developed by Jacob Cohen (1992) for regression models that estimate moderate effect size for each variable. In Cohen's (1992) methodology, if a small effect size is expected, the number of respondents required for sufficient power to detect significance is notably larger at 645 participants. Therefore, there may have been insufficient power to demonstrate significance for the independent/predictor variables —nursing experience, situational awareness, and perceptions of transformational leadership—if indeed the effect size was small. This study should be replicated with a larger sample

In addition, the research setting for the study has some unique characteristics. The organization is a large, urban, academic medical center. The organization has also achieved magnet designation as credentialed by the American Nurses Credentialing Center. There are over 5,000 acute care hospitals in the United States but only 256 are designated as part of the Council of Teaching hospitals and as such are considered academic medical centers (AHA, 2011). Only 6.61% of all hospitals in the United States have achieved magnet status. Because both the academic environment and magnet status influence the nursing practice environment, the findings of the study may not be generalizable to all types of healthcare settings.

Each of the scales used for measuring variables in this study had mechanisms for establishing reliability and validity. The reliability for both the Proactive Personality Scale and

the Multifactor Leadership Scale were quite strong with Cronbach alphas greater than 0.90 for each. The methods for establishing validity for both the Proactive Personality Scale and the Multifactor Leadership Scale were also quite strong. Validity was established for each scale using factor analysis and using comparisons to multiple comparable constructs (Devillis, 2003). However, the methods used for establishing reliability and validity of both the measure for the dependent variable using vignettes and the visual analogue scale measuring the respondents' perceptions of situational awareness were weak. Reliability for each scale was implied because there were measures of validity for each scale and reliability is a condition for validity (Devillis, 2003). Validity was established for the vignettes using expert opinion of clinical nurse specialists and validity was established for the visual analogue scale because of the expected corresponding high scores to the vignettes that were given by the respondents in this study. These methods for establishing validity are acceptable but weak. A more robust method would have been to use a test-retest method to establish reliability and use of multiple measures for each variable (Devillis, 2003).

It is also important to note that correlation studies cannot establish causal relationships. Ultimately more robust experimental designs will be needed to definitively establish true cause and effect between these variables (Fields, 2009).

Summary and Conclusion

Decision making that moves beyond the scope of nursing practice is occurring in the nursing workforce but is not well understood. It is possible that nurses who engage in discretionary decision making that extends beyond the scope of nursing practice in patient safety situations may be promoting patient safety and preventing adverse events in populations of

at-risk patients (Benner et al., 1999). This study demonstrated the high prevalence of this behavior in the population that was included in this research. Further study is needed to understand what influences a nurse to engage in discretionary decision making in order to legitimize this behavior if indeed discretionary decision making that extends beyond the scope of nursing practice can be linked to improved patient safety or restrict this behavior if it is linked to undesirable outcomes. A grounded theory methodology should be considered as a reasonable methodological option for continued research in this area.

Nursing administrators should grapple with how to influence nursing environments to both protect nursing staff and promote patient safety given the reality that discretionary decision making that moves beyond the scope of nursing practice in patient safety situations places nurses at risk of losing their nursing license. Results of this study suggests that supporting and facilitating proactive behavior by nurses may both promote patient safety and obviate the risk for nurses. Proactive behavior by nurses results in earlier interventions for patients in high-risk safety situations. It also lessens the possibility that nurses will be faced with situations that require a response that is beyond the scope of nursing practice since patient issues can be addressed more effectively when proactive behavior is used.

Both nurses and patients will benefit from the continued exploration and increased knowledge of this phenomenon. While the HRO literature does support the need for frontline employees to respond to potential safety events, and at times act beyond their formal job roles in order to foster patient safety cultures, it falls short of describing how this is best implemented within the complexities of the nurse-physician relationship and the delivery of clinical care as it is organized in today's healthcare system (Gaba, 2000). This research study fuels the need for nursing researchers and nursing administrators to understand the phenomenon and the

implications for the practice environment. Further investigation may help to delineate where there is overlap in the boundaries between nursing and medicine that should be legitimized in legal and institutional policies.

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Appendix A

Research Questionnaire

Thank-you for agreeing to participate in this Study.

Directions for Sections I – Demographics – Education and Experience

The purpose of this section is to gain a better understanding of your nursing experience and background. For each question, please select the response that best describes you.

1. Years of Nursing Experience (estimate your total number of years in actual practice).

- A. >1 – 2 years
- B. >2 – 3years
- C. >3 – 4 years
- D. > 4 - 5 years
- E. >5 – 6 years
- F. >6 – 7 years
- G. >7 – 8 years
- H. >8 – 9 years
- I. >9 – 10years
- J. >10 – 11years
- K. >11 – 12 years
- L. >12 – 13 years
- M. >13 – 14 years
- N. >14 – 15 years
- O. >15 – 16 years
- P. >16 – 17 years
- Q. >17 – 18 years
- R. >18 – 19 years
- S. >19 – 20 years
- T. > 20 years

2. Your Primary area of practice

- A. General Care Only
- B. General Care and Intermediate Care
- C. Intermediate Care Only

3. Your highest level of educational preparation in Nursing

- A. Associate Degree
- B. Diploma
- C. Bachelors
- D. Masters

Directions for Section II – Proactive Personality Scale

The purpose of the next section is to gain insights into your personality. Please select the response that best represents the frequency with which each statement describes you.

I am constantly on the lookout for new ways to improve my life	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I feel driven to make a difference in my community and maybe the world	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I tend to let others take the initiative to start new projects	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
Wherever I have been, I have been a powerful force for constructive change	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I enjoy facing and overcoming obstacles to my ideas.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
Nothing is more exciting than	Never True	Usually Not	Sometimes Not True	Occasionally True	Sometimes True	Usually True	Almost Always

seeing my ideas turn into reality	(1)	True (2)	(3)	(4)	(5)	(6)	True (7)
If I see something I don't like, I fix it.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
No matter what the odds, If I believe in something I will make it happen.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I love being a champion for my ideas, even against others' opposition.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I excel at identifying opportunities	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I am always looking for better ways to do things	Never True (1)	Usually Not True (2)	Sometimes Not True (3))	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
If I believe in an idea, no obstacles will present me from making it happen.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I love to challenge the status quo	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
When I have a problem I tackle it head-on	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
I am great at turning	Never True	Usually Not	Sometimes Not True	Occasionally True	Sometimes True	Usually True	Almost Always

problems into opportunities	(1)	True (2)	(3)	(4)	(5)	(6)	True (7)
I can spot a good opportunity long before others can.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)
If I see someone in trouble, I help out in any way I can.	Never True (1)	Usually Not True (2)	Sometimes Not True (3)	Occasionally True (4)	Sometimes True (5)	Usually True (6)	Almost Always True (7)

Directions for Section III – MLQ

The purpose of this section is to gain insight into your perceptions of the leadership style of your Nurse Manager. Please select the response that you feel best describes your Nurse Manager.

The purpose of this section is to gain insight into your perceptions of the leadership style of your Nurse Manager. Please select the response the you feel best describes your nurse manager.

21) Provides me with assistance in exchange for my efforts

Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

22) Re-examines critical assumptions to question whether they are appropriate

Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

23) Fails to interfere until problems become serious

Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

24) Focuses attention on irregularities, mistakes, exceptions, and deviations from standards

Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

25) Avoids getting involved when important issues arise

Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

26) Talks about their most important values and beliefs

Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

27) Is absent when needed

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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28) Seeks differing perspectives when solving problems

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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29) Talks optimistically about the future

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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30) Instills pride in me for being associated with him/her

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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31) Discusses in specific terms who is responsible for achieving performance targets

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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32) Waits for things to go wrong before taking action

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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33) Talks enthusiastically about what needs to be accomplished

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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34) Specifies the importance of having a strong sense of purpose

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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35) Spends time teaching and coaching

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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36) Makes clear what one can expect to receive when performance goals are achieved

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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37) Shows that he/she is a firm believer in "If it ain't broke, don't fix it."

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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38) Goes beyond self- interest for the good of the group

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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39) Treats me as an individual rather than just as a member of a group

Not at all (0)	Once in a while (1)	Sometimes (2)	Fairly Often (3)	Frequently, if not always (4)
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- 40) Demonstrates that problems must become chronic before taking action
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 41) Acts in ways that builds my respect
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 42) Concentrates his/her full attention on dealing with mistakes, complaints, and failures,
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 43) Considers the moral and ethical consequences of decisions
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 44) Keeps track of all mistakes
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 45) Displays a sense of power and confidence
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 46) Articulates a compelling vision of the future
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 47) Directs my attention toward failures to meet standards
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 48) Avoids making decisions
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 49) Considers me as having different needs, abilities, and aspirations from others
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 50) Gets me to look at problems from many different angles
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 51) Helps me develop my strengths
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 52) Suggests new ways of looking at how to complete assignments
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

- 53) Delays responding to urgent questions
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 54) Emphasizes the importance of having a collective sense of mission
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 55) Expresses satisfaction when I meet expectations
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 56) Expresses confidence that goals will be achieved
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 57) Is effective in meeting my job-related needs
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 58) Uses methods of leadership that satisfying
 Not at all (1) Once in a while (2) Sometimes (3) Fairly Often (4) Frequently, if not always (5)
- 59) Gets me to do more than I expected to do
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 60) Is effective in representing me to higher authority
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 61) Works with me in a satisfactory way
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 62) Heightens my desire to succeed
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 63) Is effective in meeting organizational requirements
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 64) Increases my willingness to try harder
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)
- 65) Leads a group that is effective
 Not at all (0) Once in a while (1) Sometimes (2) Fairly Often (3) Frequently, if not always (4)

Directions for Section IV. Clinical Vignettes

The purpose of this section is to gain insight into decisions that you may make in your clinical practice. Please read each clinical scenario and check all responses that apply:

- 1. Mr. A is an Insulin-dependent Diabetic who was admitted to the hospital for exacerbation of his COPD. He was found extremely lethargic at 9PM and his blood sugar per accucheck was 30.**

If you were Mr. A's nurse what would you do (Check all that apply):

- A. Send a stat blood sugar to the lab per a standing order to confirm the bedside accucheck reading.
- B. Stat page the Rapid Response Team
- C. Stat page Mr. A's MD.
- D. Administer an amp of D 50 IV

- 2. Mr. B. was admitted to the hospital status post a motor vehicle accident in which he sustained multiple injuries and had undergone abdominal surgery. He was currently stable with only a maintenance IV ordered at 75CC's/ hour. Mr. B was found unresponsive with a blood pressure of 50 Systolic; a heart rate of 130 and his abdominal dressing was saturated with fresh blood.**

If you were Mr. B's nurse what would you do (Check all that apply):

- A. Check with the blood bank to make sure that there is a current type and cross-match on Mr. B.
- B. Stat page the Rapid Response Team
- C. Stat page Mr. B's MD.
- D. Increase Mr. B's IV rate to 1000 cc's/hour to begin fluid resuscitation

3. . C was admitted to the hospital for a routine orthopedic procedure with no history of cardiac disease. He was scheduled for discharge home the next day. He called for his nurse complaining of severe chest tightness and pain that he had never experienced before. His nurse notified Mr. C's MD who suspected he might be having a MI. The MD ordered an EKG and said that he would be up to see Mr. C momentarily. The nurse obtained the EKG and noted that there was ST elevation in the inferior leads indicating a possible inferior wall MI. Mr. C was continuing to complain of chest pain.

If you were Mr. C's nurse what would you do (Check all that apply):

- A. Administer O2 at 2L/NC based on a standing prn order for Mr. C.
- B. Stat page the Rapid Response Team
- C. Stat page Mr. C's MD.
- D. Administer sublingual nitroglycerin

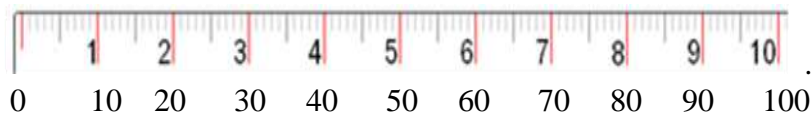
Visual Analogue Scale – Situational Awareness

Directions:

The purpose of the next section is to provide additional information regarding your assessment of the clinical scenarios.

The line below is 100 millimeters in length. The far left side of each line is point “0” and the far right side of each line is point “10”.

For line 1 - based on the clinical scenarios you just reviewed – please place a mark on the line that best represents your level of familiarity with the clinical situations described in the scenarios you just reviewed. A mark at point 0 = I am not at all familiar with these types of clinical scenarios; A mark at point 100 = I am very familiar with the type of clinical situations described in the scenarios.



Thank-you for completing this survey!

Vita

The author, Kathy M. Baker, was born in Roanoke Rapids, North Carolina but has resided in Richmond, Virginia for most of her adult life.

She currently serves as the Nursing Director for Patient Care Support, the Emergency Department, and the LifeEvac 1 Helicopter Program for the VCU Health System in Richmond, Virginia. Previously, she spent a significant portion of her professional career serving in a variety of roles in the Cardiac Surgery and Transplantation program at the Health System.

She is blessed with a loving family—husband, Tim; children, Zach and Kait; and parents, Charles and Josy Moore.