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Decision Making in Nursing Practice: A Concept Analysis

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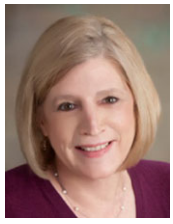

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PURPOSE. The study aims to gain an understanding of the concept of decision making as it relates to the nurse practice environment.
METHODS. Rodgers' evolutionary method on concept analysis was used as a framework for the study of the concept. Articles from 1952 to 2014 were reviewed from PsycINFO, Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL), JSTOR, PubMed, and Science Direct.
FINDINGS. Findings suggest that decision making in the nurse practice environment is a complex process, integral to the nursing profession. The definition of decision making, and the attributes, antecedents, and consequences, are discussed. Contextual factors that influence the process are also discussed. An exemplar is presented to illustrate the concept.
CONCLUSION. Decision making in the nurse practice environment is a dynamic conceptual process that may affect patient outcomes. Nurses need to call upon ways of knowing to make sound decisions and should be self-reflective in order to develop the process further in the professional arena. The need for further research is discussed.

Introduction

Nurses are called upon to make ethical, policy, practice, clinical, and nonclinical decisions on a routine basis (Lewenson & Truglio-Londrigan, 2008). Decision making is an integral part of nursing practice (Lauri et al., 2001). The decisions nurses make affect patient care, patient safety, and patient outcomes (Simmons, Lanuza, Fonteyn, Hicks, & Holm, 2003; Tanner, 2006). Decision making is used to guide the nurse in assessing, assimilating, evaluating, and/or discarding components of information to make good judgments in clinical and nonclinical situations that are often feverish with activity and fraught with conflict (Simmons et al., 2003; Tanner, 2006). An understanding of the concept of decision making is an important factor in educating nurses so that they develop good problem-solving skills. The purpose of this paper is to use Rodgers' method of evolutionary concept development to analyze and describe the concept of decision making and its emergence into nursing.

Good decisions or judgments are not only directly influenced by the cognitive process but also by how the information is weighted, prioritized, and the nurse's ability to recognize and respond to salient aspects of an ambiguous clinical or nonclinical scenario (Dowding & Thompson, 2003; Pearson, 2013; Tanner, 2006).

In practice, the nurse is required to make rapid decisions or choices under conditions of uncertainty. These choices are influenced by the subjective and objective information and data available to the nurse at the time of the decision (Dowie, 1993; Tanner,

2006). The credibility of the source and the weight given to the information available will determine if it is considered essential, critical, irrelevant, or discounted (Lauri et al., 2001; Rashotte & Carnevale, 2004). The nurse's integration of the selected information, knowledge base, and perception of the problem provides a basis for decision making (Lauri et al., 2001; Pearson, 2013). Combined together, these factors pose a potential disparity in the quality of the decision being made and may affect patient outcomes.

Methods

Rodgers' (2000) evolutional method of concept analysis was the framework used to gain a fuller understanding of the attributes, antecedents, and consequences of the decision-making process used by nurses in the clinical environment. Rodgers' inductive approach takes into consideration that a concept is dynamic and may change over time in different contexts. This is an appropriate method to use in order to determine the emergence of the concept and its current use in the nursing context. Identifying the attributes, antecedents, and consequences illustrates the importance of this concept in nursing.

A review of the literature was conducted using PsycINFO, Medline, Cumulative Index to Nursing and Allied Health Literature (CINAHL), JSTOR, PubMed, Science Direct, and Dissertation Abstracts from 1952 to 2014 using the keyword "decision making." Thousands of articles were revealed and further narrowing of the search was necessary. Keywords such as "decision making in nursing," "problem-solving," "clinical decision making," and "clinical judgment" were used to narrow the search. A total of 143 articles were reviewed, and a sample of approximately 30% was drawn from those that were relevant to the concept's meaning and usage from business, economics, psychology, and nursing.

The Evolution of Decision Making as a Concept

Decision making is derived from two primary sources: psychology and economics. Psychologist Egon Brunswick (1952) posited that an individual utilizes fallible "cues" from the environment while trying to be as empirically accurate as possible in making judgments about objects and events. In 1959, economist Herbert A. Simon sought to replace the classical single decision-making economic approach utilized by the profit-making entrepreneur. He argued that because of the cost of acquiring information, executives make do with good-enough decisions (Simon, 1959). Simon proposed that multiple factors contribute to the decision-making process to achieve acceptable economic objectives while minimizing problems and risks, as contrasted with the customary emphasis on maximizing profits. His theory also considered the psychological aspects of decision making. He did not believe that decision makers behave with perfect rationality; they used judgment.

Early on in the evolution of decision-making theory, Hammond, Kelly, Schreider, and Vancini (1967) recognized that judgments are commonly made under conditions of uncertainty. Using nursing as an exemplar, they described how the nurse combines information to reach a judgment about a patient and how the judgment is revised in the light of new information (Hammond et al., 1967).

Hammond, one of the architects of modern decision-making theory, proposed that the accuracy of an individual's judgment in a particular situation will also depend upon the value that the individual attaches to "cues" coming from a situation (Hammond, Stewart, Brehmer, & Steinmann, 1975). In 1996, he later expanded on that theory and proposed the cognitive continuum theory to illustrate how judgment situations or tasks relate to cognition (Cader, Campbell, & Watson, 2005). Hammond (2000) clarified judgment as a shared function of both task properties and cognitive processes. Task properties are the weighing and combining of information by decision makers to make judgments (Hammond et al., 1975). Cognitive processes include the use of both intuition and analysis (Hammond, 1978).

Hammond rejected the view that analytical and intuitive thinking are dichotomous modes of thought (Offredy et al., 2007). He asserted that they are poles on a continuum as neither is purely analytical or purely intuitive, and they lie somewhere in between on the continuum (Hamm, 1988). Hammond et al. (1975) place the activities of decision makers into six broad categories based upon two continua: cognition and judgment task structure. The cognitive continuum ranges from intuition to analysis, and the judgment task structure ranges from ill-structured to well-structured (Cader et al., 2005). The decision-making mode approach to tasks that are well structured is most likely derived analytically. Conversely, the decision-making mode approach to tasks that are ill-structured is most likely derived by intuition.

Putting forward the concept of "cognitive continuum," Hamm (1988) suggested that decision making is based on a certain systematic process. He theorized that decisions are reached by the analysis of a situation, and that the kind of task that the practitioner is dealing with has an important role in determining the kind of thinking that will most likely be used (Hamm, 1988). In turn, the kind of thinking is influenced by the extent of the individual's experience (Hamm, 1988).

In recent years, support for the concept that decision making in nursing is complex has been growing, and encompasses both analytic and intuitive processes (Benner, Tanner, & Chesla, 1996). In the nursing literature, two models of decision making have been widely recognized: the information-processing model (analytical model) and the intuitive-humanist model (intuitive model) (Banning, 2008).

Analytic models assume that the thought processes used by the decision maker in the clinical setting (the nurse) follow rational logic that can be examined until a decision has been made (Banning, 2008). Key components of this model also include the experience of the decision maker and his/her ability to identify situations. The decision maker relates the presenting situation to a set of rules or guiding principles (Muir, 2004).

The information-processing approach used by nurses in decision making involves cue recognition or acquisition, hypothesis generation, cue interpretation, and hypothesis evaluation (Tanner, Padrick, Westfall, & Putzier, 1987). Nurses have adopted this hypothetical-deductive analytical method to assist in the decision-making process using decision trees to assess possible outcomes (Banning, 2008). While previous research has demonstrated that the use of decision trees has improved the decision-making ability of nurses and the likelihood of them reaching an accurate diagnosis, nursing researchers advise that because this analytic approach assumes that existing knowledge is present and accurate consideration must be given to any perceived benefit or consequence (Aspinall, 1979; Banning, 2008; Manias, Aitken, & Dunning, 2004; O'Neill, Dluhy, & Chin, 2005).

The main tenet of the intuitive-humanist model is that intuitive judgment differentiates the expert nurse from the novice nurse, with the expert no longer depending upon analytic principles to link his/her understanding of the situation to appropriate nursing action (Banning, 2008; Mok & Stevens, 2005). Rather than reducing a situation to discrete parts, the experienced nurse sees and uses patterns or similarity recognition in the whole situation (Mok & Stevens, 2005). Intuition is an intrinsic part of the process of decision making. Rew (2000) asserts that for nurses, intuition is "a component of complex judgment, the act of deciding what to do in a perplexing, often ambiguous and uncertain situation. It is the act of synthesizing empirical, ethical, aesthetic, and personal knowledge. Stated another way, intuitive judgment is the decision to act on a sudden awareness of knowledge that is related to previous experience, perceived as a whole, and difficult to articulate" (p. 95). Concurring with previous studies, nursing researchers have established that as nurses gained experience with patient management, the quality of analysis of their decision making improved (King & Clark, 2002).

Most recently, O'Neill et al. (2005) introduced a multidimensional clinical decision-making model that is based upon a computerized decision support system that uses information processing (hypothetical-deduction) and pattern recognition. This model was derived from a synthesis of evidence from the nursing literature and from the novice to expert clinical reasoning model (O'Neill & Dluhy, 1997). The model takes into account that the clinical decision-making process of nurses is multidimensional. The principal features of this model include investigating patient-specific pre-encountered data, risk assessment and reduction, nursing standards of care, situational elements affecting decision making, salient concerns, and triggers for hypothesis selection and subsequent nursing action (Banning, 2008; O'Neill et al., 2005).

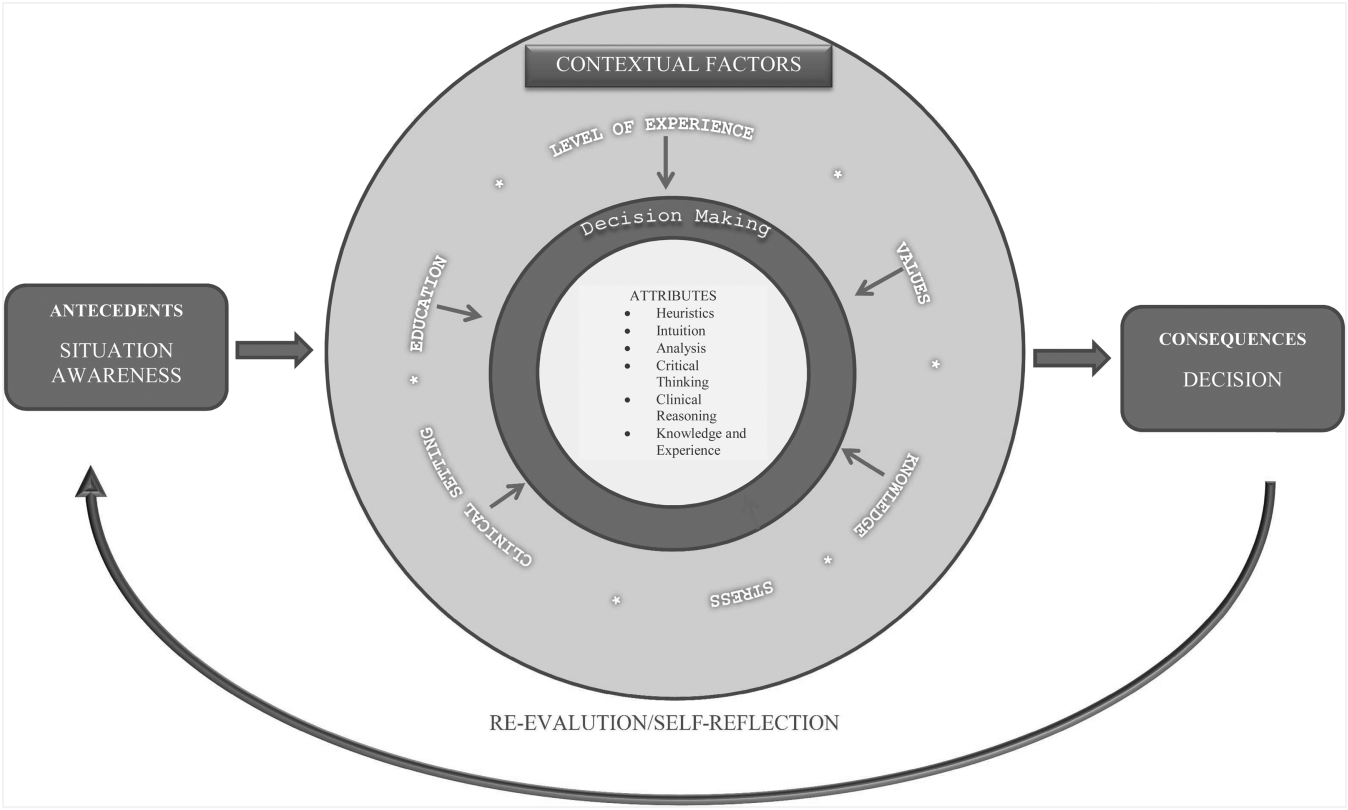
Findings

Using Rodgers' method of concept development, surrogate terms, attributes, antecedents, and consequences were identified. Surrogate terms are synonyms that can be used to identify the concept. The surrogate terms identified for decision making in nursing were clinical decision making, problem solving, critical thinking, and clinical judgment. In the nursing literature, these terms tended to be used interchangeably. Figure 1 illustrates the attributes, antecedents, consequences, and surrounding contextual factors of the concept of decision making in nursing.

Attributes

Attributes are the characteristics or salient features that assist in identifying and defining the occurrence

Figure 1. Model of Decision Making



of a concept (Rodgers, 2000). The review of the literature revealed six common attributes of the concept of decision making: intuition and analysis, heuristics, experience, knowledge, clinical reasoning, and critical thinking.

Intuition and analysis

Nurses may guide their practice through "ways of knowing" (Carper, 1978). Ways of knowing may come from a variety of perspectives, one of which may include intuition (Benner & Tanner, 1987). Intuition is an "understanding without a rationale" (Benner & Tanner, 1987, p. 23). When intuition is used as a way of knowing, it is a valued attribute of the decision-making process as suggested by many authors (Benner & Tanner, 1987). Schraeder and Fischer (1987) noted that intuition is the process whereby the nurse knows something about the patient that cannot be verbalized without difficulty, or for which the source of knowledge cannot be determined.

Rew and Barron (1987) defined intuition as immediate knowledge of something without the conscious use of reason. However, despite the many studies that confirm the accuracy of intuitive judgment, there is a debate over their validity since many of these studies relied upon recall of an incident by the participant (Benner, 1984).

Dowie (1996) implied that nurses should increase the amount of analytic thought when making a decision as opposed to relying on intuition. During the analytic process, the nurse breaks down the current circumstance into elements and weighs the multiple options that are available (Tanner, 2006). Dowie argues that an analytical approach to decision making contemplates that all available information would become known, thus allowing for a complete examination of choices.

However, it is more likely that the nurse will use a combination of reasoning patterns to arrive at a decision (Tanner, 2006). Studies of nurses' decision making have shown that the nurse's initial grasp of the situation and the type of task at hand are determining factors of the type of processes that are likely to be used in decision making (Hamm, 1988; Hammond et al., 1967, 1975; Lauri & Salanterä, 2002; Narayan & Corcoran-Perry, 1997; Tanner, 2006). This

suggests that for nurses, the decision-making process may not be the same in different nursing situations and may vary from one clinical setting to another (Lauri & Salanterä, 2002).

Heuristics

Another aspect of decision making is the use of heuristics. Heuristics is the subjective individualized approach that draws on one's experience to simplify a decision that is complex (Redelmeier, Rozin, & Kahneman, 1993). Simon (1990), the widely regarded father of heuristics, argued that individuals seek to minimize the amount of effort associated with the decision-making process. Researchers often refer to heuristics as the "rule of thumb" or "mental shortcut" that helps one to figure out or discover a solution to a problem or task (Shah & Oppenheimer, 2008). The vast majority of daily decision-making situations in the clinical setting are based upon experiential knowledge (Benner et al., 1996). However, reliance on this type of knowledge base means that nurses using cognitive shortcuts (heuristics) for handling information may deviate from the normative rules associated with competent decision making due to systematic bias encouraged by the heuristic approach (Buckingham & Adams, 2000; Cioffi, 2001; Thompson, 2003). For example, nurses may assess the probability of a teenager having a stroke using only the particular cues manifested by the patient verbally and nonverbally, and not the probability of a stroke actually occurring in a young patient. Stressful situations may also affect the decision-making process, and may result in oversimplified solutions or adverse outcomes where no intervention is chosen. Qualitative studies suggest that experienced nurses do use their past experiences and heuristics to reason more quickly and efficiently (Cioffi, Purcal, & Arundell, 2005; Simmons et al., 2003).

Knowledge and Experience

Generally speaking, experience and knowledge are employed in unison. Experience increases the cognitive resources available for interpretation of data, which results in more informed decision making (Liek & Clifford, as cited by Evans, 1990). Knowledge and experience were studied in 1987 by Benner & Tanner. The diagnostic reasoning strategies of nurses were examined, and it was discovered that a strong knowledge base in conjunction with experience resulted in data collection that was thorough, resulting in greater diagnostic accuracy (Benner & Tanner, 1987). Thompson (2003) reaffirmed this finding and maintained that experiential knowledge is necessary but not alone sufficient for decision making in the practice environment. Recent research conducted by Considine, Botti, and Thomas (2007) found that in the emergency department setting, factual knowledge appears to be more important than years of experience in triage decision accuracy.

Clinical Reasoning and Critical Thinking

Clinical reasoning and critical thinking refer to the cognitive process used in assessing and assimilating information to make decisions in the clinical environment (Matteson & Hawkins, 1990; Simmons et al., 2003). However, clinical reasoning is a term that is often used synonymously with decision making (Simmons, 2010). Clinical reasoning differs from decision making in that it specifically focuses on the thinking strategies used to make a judgment or decision and solve problems (Kautz, Kuiper, Pesut, Knight-Brown, & Daneker, 2005; Simmons, 2010). Simmons (2010) found that in nursing, clinical reasoning is self-repeating, drawing upon both inductive and deductive cognitive skills. This strategy or behavior to assimilate information, analyze data, and make decisions depends upon on the nurse's level of practice (Benner, 1984). According to Benner (1984), attributes may not be well developed, and thus may influence the capability of the nurse in the decision-making process.

Antecedents

Events or behaviors that bring about the occurrence of the concept are antecedents (Rodgers, 2000). After a review of the literature, Stubbings, Chaboyer, and McMurray (2012) determined that the primary antecedent to decision making is situation awareness. Situation awareness prompts the individual to make a decision and choose a course of action (Stubbings et al., 2012). The decision maker needs to assess the current situation and appraise the risk associated with the choice of action (Pearson, 2013). This must be done in relation to the context in which the situation occurs (Tanner, 2006). The nurse identifies the options available, assesses the risks and benefits of those options, and chooses a course of action (Tanner, 2006). The variables that affect this multidimensional

process of decision making comprised both personal and environmental factors that occur within a situation-specific context (Noone, 2002).

Consequences

Once available choices have been examined and a determination is made as to the most beneficial solution, the decision making is concluded. The choices or outcomes of the decision-making process are consequences. Consequences of the decision-making process include the primary acceptance of choice and reevaluation of choice, and self-reflection (Noone, 2002). If the nurse perceives the result to be beneficial, then the choice is accepted. After the decision is made and an outcome occurs, reevaluation and self-reflection should follow (Simmons, 2010). Reevaluation may reaffirm the original decision or the decision maker may choose another option (Commendador, 2003; Noone, 2002). Self-reflection related to the decision may in fact add to the nurse's knowledge and experience and influence future decision making.

Exemplar

To promote understanding of the decision-making concept in nursing practice, a model case is presented. According to Rodgers (2000), it provides a practical example of how a concept may appear in real life. The model case encompasses several defining attributes of the concept of decision making in the practice environment, as well as the antecedents and consequences.

Model Case

MO is a 39-year-old Hispanic female who arrives on a medical surgical floor after gallbladder removal. It is change of shift on a busy Friday night. Nurse M receives report from the postanesthesia care unit nurse and does an initial assessment, and takes MO's vital signs and finds that they are stable. Nurse M is a baccalaureate-prepared nurse with 15 years of experience. The patient has no previous past medical history. The patient is awake, responsive, and oriented but complains of abdominal pain. The nurse assesses the patient's abdomen, and notes that there are bowel sounds, no distention, and the dressing over her surgical wound is intact without any drainage. Her pain is a 9 on a scale of 1 to 10. With these findings and using the pain scale as a guideline, the nurse educates the patient about her Dilaudid patient-controlled analgesic pump and has her press the pump for an additional small dose. During the night, she continues to monitor the patient, and notes that the patient is restless in the bed and still complains of severe pain despite additional self-administered doses of Dilaudid. The nurse medicates the patient with Percocet, as per the standing orders of the physician. When she checks the patient 30 min later, she observes that the patient is very restless and is complaining of severe pain to her abdomen. Nurse M's intuition, experience, and knowledge make her suspicious that some postoperative complication may be occurring. Nurse M has a strong *knowledge* base and understanding regarding the care of management of patients post gallbladder surgery. Based upon her recent observations of the patient, the nurse *decides* to repeat the vital signs and reassess the patient. Upon her findings, she now *decides* to call the physician. The surgeon arrives to evaluate the patient with the nurse at the hospital shortly thereafter, evaluates the patient, concurs with the nurse, and orders a stat computerized tomography (CT) scan. The CT scan showed the patient has a peritoneal bleed. The bleed was successfully repaired, and the patient recovered without further incident.

The antecedent in this case is the nurse's awareness of the situation of the patient's pain and postoperative status. The first action, based upon the patient complaint, was heuristic. That is a decision made using a "rule of thumb" or a shortcut. In this case, the appropriate decision is to medicate the patient for pain. When the patient's pain is unrelieved using medication, the nurse is now aware that the situation may not be as it appears, and uses knowledge, experience, and intuition to assess and analyze the problem in order to make the next decision. Nurse M then reflects on the decision that was made, feeling confident that the right course of action had been taken based on the positive outcome of the situation.

Contextual Factors Influencing the Decision-Making Process

In recent years, the varying contextual factors that may influence the decision-making process have gained the attention of researchers. Contextual factors are characteristics of the environment and the resources available in which the healthcare practice occurs (Meijers et al., 2006). The interaction between decision making and context is reciprocal, mutually

influential, complex, dynamic, and variable (Smith, Higgs, & Ellis, 2008). The effect of specific contextual factors upon decision making in nursing relies upon the distinctive features of the decision being undertaken at the time (Smith et al., 2008).

A systematic review of the literature revealed that the majority of studies conducted on contextual factors influencing the decision-making process were client-focused. In the late 1990s, Mann, Burnett, Radford, and Ford (1997) listed general observations related to personality characteristics, such as anxiety, decision-making style, stress tolerance, and the ability to process information. Several recent studies that examined how contextual factors relate to nurse's ability to make such decisions were situation-specific. Studies found that time, volume of patients, fear of missing a serious condition, personal capacity, and work environment were the contextual factors influencing and central to the decision-making process of triage nurses (Andersson, Omberg, & Svedlund, 2006; Fry, 2004; Göransson, Ehnfors, Fonteyn, & Ehrenberg, 2008). In addition, contextual factors influencing decision making in the clinical setting include education and level of experience, values, knowledge, clinical setting, and stress (Gillespie & Paterson, 2009; Hoffman, Donoghue, & Duffield, 2004).

Implications for Nursing

Decision making in nursing is a complex process that may be defined as a series of decisions, including obtaining subjective and objective data in relation to a patient situation and the evaluation of that data to implement actions to achieve a desired outcome (Lauri et al., 2001). The knowledge, experience, and the ability of the nurse to cope with rapidly changing situations have been identified as significant to decision making in clinical practice (Lauri et al., 2001). Consequently, the nurse's decision making is explained by these variables as related to the individual, the nature of the nursing task, and its context. It can be said that decision making is a composite process whereby the use of knowledge and experience is integrated with heuristics enabling the practitioner to engage in effective decision making (Shah & Oppenheimer, 2008). However, very little has been written about the influence that contextual factors have upon the process of decision making. Because the nurse is required to make the best decision using knowledge and intuitive ability developed over years of experience, there is a need to understand the role that contextual factors play in the process of decision making. Further research is needed to illuminate the function of contextual factors in relation to antecedents and the potential effect they may have upon the consequences.

According to Martin (2002), "complex decision making goes hand in hand with critical thinking" (p. 245). The American Association of Colleges of Nursing (2014) and the Institute of Medicine (2010) concur that education has a significant impact on the development of critical thinking skills, which in turn influences decision-making competencies. In addition, Benner (1984) suggests that the level of a nurse's experience may also influence his/her decision-making ability. In other words, the decision-making process may be influenced by both the level of practice and education. It is not surprising then that research shows that facilities that employ nurses with baccalaureate or higher educational level have better patient outcomes (Aiken, Clark, Cheung, Sloane, & Silber, 2003). And so competencies in decision making must become an integral part of nursing education.

Conclusion

Decision making is an important and complex concept. In nursing, decisions are made in many different areas of practice. These include decisions of a clinical, administrative, ethical, and moral nature. As in other professions, decisions in nursing are made using the universal attributes of the concept. Contextual factors along with the level of education and practice are factors that impact decision making in nursing practice. Moreover, because the decision-making process, particularly in nursing, is paramount to influencing patient outcomes and safety, educational programs need to be developed to enhance the nurse's skills in clinical decision making.

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