A Philosophical Analysis of Clinical Decision Making in Nursing

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ABSTRACT
Background: Clinical decision making is a fundamental aspect of nurses’ clinical practice and has a direct impact on the health and well-being of each patient. Method: An exploratory analysis of the concept of clinical decision making in nursing will be provided from the two predominant theoretical perspectives: the systematic-positivist model and the intuitive-humanistic model. The origin, aim, value, ontology and epistemology, assumptions, communicability, and context specificity of these two models are discussed. Results: As nurses work in ever-changing health care environments, either the positivist model or the intuitive model is adequate to describe the dynamic processes nurses use in clinical decision making. Therefore, it was suggested that the cognitive processes used in decision making were neither completely analytical nor completely intuitive. Conclusion: Clinical decision making is complex. A combination of scientific evidence-based knowledge in conjunction with intuition and contextual factors could enable nurses to utilize excellent clinical decision making.

Clinical decision making is a term frequently used to describe the fundamental roles of nurses in clinical settings and is a process that nurses undertake on a daily basis when making judgments about the care they provide to patients. Clinical decision making is often defined as the process of choosing between alternative options (Thompson & Dowing, 2002). This simple definition highlights a key component of decisions—committing to one course of action, as opposed to others. Tiffen, Corbridge, and Slimmer (2014) defined clinical decision making as a contextual, continuous, and evolving process, whereby data are gathered, interpreted, and evaluated to select an evidence-based choice of action. Clinical decision making requires nurses to be knowledgeable in relevant aspects of nursing, to have access to reliable sources of information, and to work in a supportive environment (O’Neill, Dluby, & Chun, 2005). Standing (2008) developed a more comprehensive definition from a longitudinal phenomenological study of nurses’ perceptions of clinical decision making, and defined it as a complex process involving observation, information processing, critical thinking, problem solving, clinical judgment, reflective practice, ethical values, professional accountability, science, and evidence-based practice in order to select the best course of action that will optimize a patient’s health and minimize potential harm. This definition addresses the complex range of knowledge and skills that are required for effective clinical decision making.

According to Johansen and O’Brien (2016), clinical decision making is highly context specific and depends on the patient’s health status, the clinical setting, the nurse’s background knowledge, experience, the patient’s unique personal characteristics, and elements of the wider health care environment. The two distinct models that have been used in the clinical decision making are the systematic-positivist model and the intuitive-humanistic model (Banning, 2008; Rashotte & Carnevale, 2004; Thompson, 1999). To facilitate an exploratory analysis, the origin, aim, value, ontology and epistemology, assumptions, communicability, and context specificity of these two theoretical models will be discussed.
**SYSTEMATIC-POSITIVIST MODEL**

**Origin, Aim, and Value**

The systematic-positivist model was embraced in the nursing profession in the 1970s and the 1980s as a means of giving legitimacy to nursing science (Lee, Chan, & Phillips, 2006). The emphasis on the use of this explicit, analytical, cognitive process in decision making was believed to have led to superior outcomes for patients (de Vries, Witterman, Holland, & Dijkstra, 2010). This model was based on the hypothetico-deductive reasoning founded on the information processing theory. The information processing theory derived from the cognitive sciences has been one of the most influential descriptive theories of decision making in medicine and nursing. This theory is rooted in medical decision making and uses a positivist approach to assist metacognitive reasoning, which is essential in medical diagnosis (Banning, 2008). Carper (1978) defined empirics as the science of nursing, where facts are organized into laws and theory; she also suggested the need to develop a body of empirical knowledge specific to nursing. Theoretical knowledge, learned from physiology, anatomy, pathophysiology, and pharmacology is critical in clinical decision making and allows the development of hypotheses and subsequent testing. The knowledge derived from this approach is described as the “know that” knowledge in nursing science (Benner, 1984; Carper, 1978). The four stages involved in decision making in this model are cue recognition or cue acquisition, hypothesis generation, cue interpretation, and hypothesis evaluation (Tanner, Padrick, Westfall, & Putzier, 1987).

**Epistemology and Ontology**

This model is based on the hypothetico-deductive reasoning embedded in objectivism epistemology. Crotty (1998) stated that objectivism is the belief that truth and meaning reside within an object and is independent of human consciousness. Knowledge is universally applicable because the essence of the object remains unchanged regardless of who is studying the object. Knowledge from this epistemological standpoint is discovered and often used to explain, predict, and control. According to Levers (2013), objectivism epistemology is associated with ontological realism. From the realism perspective, reality exists independent of the human mind regardless of whether it is comprehensible or directly experienceable. The clinical decision making as per this model is based on objective indicators such as heart rate, laboratory data, and other diagnostic investigations. Positivism is the embedded theoretical perspective of this model, and it asserts that scientific knowledge is accurate, value neutral, ahistorical, cross-cultural, and certain (Crotty, 1998). This approach aims to have clinical decision making from the empirically verified knowledge and premises that if a nurse goes about it in the right way, he or she can identify reality with certitude. This positivist approach is in a strict sense of verification objectivity and needs to meet standards of defining variables from assessments. For example, geriatric depression is defined as a particular score on the geriatric depression scale, and tachycardia is defined by an increased heart rate above 100 beats per minute. In these examples, the subject’s view of care, spirituality, cultural issues, context, and emotions are not given any consideration in clinical decision making within this model.

**Assumptions**

The major assumptions of this model in decision making are that human responses to health and illness can be identified, measured, and understood, whereas human behavior can be explained by breaking it down into smaller components. It asserts that scientific knowledge is universal and superior and that the world is structured by law-like regularities that can be manipulated (Levers, 2013). The hypothetico-deductive model comprises both inductive reasoning through hypothesis generation from a set of observations to a generalization, and deductive reasoning through the testing of the hypothesis from a generalization to a conclusion (Higgs & Jones, 2000). In this clinical decision making process, induction refers to data being collected that are used to generate a hypothesis and deduction refers to a hypothesis of the nurse that leads him or her to search for the relevant cues to see whether they are present or absent, thereby confirming or falsifying the hypothesis (Buckingham & Adamas, 2000). For example, a geriatric nurse practitioner uses this approach in his or her everyday practice; if a resident displays behavioral and psychological symptoms of dementia, a hypothesis will be postulated that the resident is constipated, a digital rectal examination that follows would support or refute the hypothesis. If the hypothesis testing confirms constipation, appropriate constipation treatment would be prescribed, which will ultimately resolve the behavioral manifestations of the resident.

Hypothetico-deductive reasoning is considered the most dominant approach in health care, with practice based on rationality and empirical precision (Jeffroed, Fany, & Sundin, 2011). This approach is seen as a structured approach to clinical decision making underpinned by science with analytical processes involving critical thinking, which therefore makes it measurable, valid, and reliable (Pearson, 2013). An underlying assumption of this approach is that if practitioners could be taught how to make better decisions through evidence-based guidelines and protocols, they would make fewer poor decisions, resulting in improved patient care (Rashotte & Carnevale, 2004).

**Communicability and Context Specificity**

Knowing can only become shared knowledge when it is communicated to others. This explicable model of clinical decision making lies at the heart of logic, objectivity, and rationality and promotes communicability in the decision-making process (Thompson, 1999). Transparency of this decision-making model enables it to be shared with others and thus reproduced by others. In nursing, this approach has been used with verbal or thinking-out-loud protocols to study cognitive processes and in developing decision trees to numerically assess potential outcomes (Banning, 2008). Randell, Mitchell, Thompson, McCaughan, and Dowding (2008) analyzed nursing decision-making tasks and identified that many nurses who practice in primary health care made routine decisions associated with analysis and also used several guidelines and protocols in their decision making.

The positivist view of the clinical decision-making process does not reflect the dynamic world with multiple reali-
ties that prevail in the clinical environment. The complexities of decision making that actually occur in clinical practice are not reflected in this model. This rationalist approach also deemphasizes factors such as emotions, affect, social interactions, and context that are relevant to the decision-making process (Bucknall, 2000; Lee, Chan, & Phillips, 2006; Thompson, 1999). Compassion is part of the nursing social mandate and nursing is referred to as a science of the unique, where nurses are taught to reason and theorize about each individual nurse–patient encounter and not merely subjected to the stages of scientific activity (Rolfe, 2006). Gladston (2012) argued that the application of an inaccurate hypothesis can lead to a misdiagnosis and an inaccurate result. Jefford et al. (2011) supported this assertion, claiming the epistemic fecklessness of hypothetico-deductive reasoning wrongly implies a simple rational process to decision making without acknowledging context, affect, emotions, and intuition. Although this positivist approach promotes communicability in the decision-making process, it may not be relevant if it does not fit with the reality of the clinical situation. In other words, if this approach is failing to capture all variables involved in decision making and as a result only able to communicate an incomplete picture to others, even in the form of scientific evidence, it fails to paint the full picture and is fraught with significant gaps.

THE INTUITIVE-HUMANISTIC MODEL

Origin, Aim, and Value

This model gained use in the late 1980s and was rooted in a phenomenological perspective. It is based on the well-known work of Patricia Benner (1984), who argued that intuition is an essential part of clinical judgment and that it is clearly linked to the experience of the practitioner. Benner and Tanner (1987) defined intuition as “understanding without a rationale” (p. 23) and categorized intuition as an art, rather than as a science. The main tenet of this theory is that nursing decisions can be the result of an almost unconscious level of cognition and that intuition and practical wisdom, gained by experience, play a significant role in everyday decision making (Thompson, 1999). Intuition can be explained by the unconscious thought theory, based on a research by Dijksterhuis and Nordgren (2006). According to this theory, there are two modes of thought—the unconscious and the conscious. The unconscious thought is capable of detecting recurring patterns (paradigm cases) in highly complex clinical situations and is often found in expert nurses. However, the essence of all intuitive decision-making models is that intuitive judgement distinguishes the expert from the novice, with the expert no longer relying on analytical principles to connect their understanding of the situation to an appropriate action (Thompson, 1999).

The six key aspects of the intuitive judgment are pattern recognition, similarity recognition, common-sense understanding, skilled know-how, use of salience, and deliberative rationality (Benner, 1984). Dörfler and Ackermann (2012) identified the process and outcome of intuitive decision making, in which intuition is a fast, rapid, instantaneous, and alogical unconscious process with minimal mental effort. The outcome of this process is usually tacit and holistic, where the decision maker feels confident about their judgment, despite not having any clear justification for their chosen course of action. Nightingale (1860) valued “know-how” (i.e., experiential knowledge) over “know-that” (i.e., theoretic knowledge). Polanyi’s description of experience as an effective means by which one develops unrecognized or tacit knowledge continued to support the know-how knowledge of Nightingale and Benner (Whall, Sinclair, & Parahoo, 2006).

Epistemology and Ontology

In the intuitive approach, the shaping force in the decision making is the individual making the decision, which is correlated to human experience (Benner, 1984), so it is underpinned by the subjectivism epistemology. Observations are influenced by the observer, and the observer is influenced by the observed. Subjectivists believe that knowledge is developed through interpretation and only when a subject ascribes meaning to an object that it exists (Crotty, 1998). Subjectivist epistemology is embedded in relativism ontology (Levers, 2013). Reality from a relativist perspective is not distinguishable from the subjective experience of it; reality is human experience, and human experience is reality—and that reality is a finite subjective experience. Nothing exists outside our thought (Denzin & Lincoln, 2005). Intuitions are often described in abstract ways, such as a gut feeling, an insight, an instinct, or a hunch. Buckingham and Adams (2000) used the term heuristics and argued that intuition is a function of experience and pattern recognition and may occur at the unconscious level. In that model, experience is recognized as a central component of clinical decision making. When the nurse becomes experienced, he or she observes the patterns and themes and can quickly differentiate between relevant and irrelevant information (Benner, 1984). Interpretivism, especially hermeneutics, is the embedded theoretical perspective of this model and asserts that determination of meaning is a matter of practical judgment and common sense, not just abstract theorizing (Crotty, 1998) and understanding the whole through grasping its parts. Rew (2000) described intuition as a component of complex judgment with a sudden awareness of knowledge, which is related to previous experiences and perceived as a whole with difficulty to articulate. Interpretivism believes that social context, lived experiences, perspectives, beliefs, and values are essential to the understanding of human sciences (Crotty, 1998).

Assumptions

The basic assumption of the intuitive-humanistic decision making is that intuitive judgment distinguishes the expert from the novice, with expert no longer relying on analytical principles to connect their understanding of the situation to an appropriate action (Thompson, 1999). Intuitive decision making is not based on scientific evidence-based knowledge but relies more on an individual’s perception of the situation. “Knowing that” and “knowing how” are two different kinds of knowledge, where “know-how” could be acquired without “knowing that.” Not all “knowing how” knowledge can be captured in theoretical propositions, but rather by interpretive description of the actual practice (Benner, 1984). Schraeder and Fischer (1986) suggested that “intuitive perception in nursing practice is the
ability to experience the elements of a clinical situation as a whole, to solve a problem or reach a decision with limited concrete information” (p. 161).

Benner’s work is based on work by Dreyfus and Dreyfus (1980), who argued that good decisions are made intuitively by professionals with expertise (Benner, 1984). Intuition has been defined as “the deliberate application of knowledge or understanding that is gained immediately as a whole and that is independently distinct from the usual, linear, and analytical reasoning process” (Young, 1987, p. 49). Intuition is seen as knowing without knowing how one knows. According to Banning (2008), intuition has been viewed with skepticism because the process did not employ scientific reasoning. The description of intuition as a hunch or sixth sense suggests how difficult it is to explain how intuition actually functions. The key attributes of a person using the intuitive decision making include knowing without prior reasoning, knowing that is holistic in nature, knowing in a rapid way without a progression of reasoning, and knowing in a composite rather than reductionist way (Robert, Tilley, & Peterson, 2014). Rew (1988) grouped the nurses’ description of intuition into three themes: the cognitive inference (rapid unconscious processing of cues), gestalt intuition (gaps of data filled in to complete a pattern), and the precognitive function (perceiving a change before it happens).

Communicability and Context Specificity

Defining the term intuition is seemingly difficult as it is mainly concerned with tacitly held knowledge, which is itself difficult to articulate. Given that intuition operates in the subconscious realm, attempts to study it as a scientific construct have generated a great deal of controversy in the fields of cognitive science and decision making (Kahneman & Klein, 2009). One of the reasons that have been attributed to the controversy surrounding intuitive decision making is that it lacks the monolithic definition, as well as the clearly defined qualities that are characteristic of the deliberate/analytical/ rational strategy (Bargh & Morsella, 2008). Arguably, the lack of transparency in the process of intuitive decision making appears to be the major bone of contention and the fact that the underlying values and beliefs that influence the way important task-related decisions are being made, only remain known to the individual decision maker (Lamond & Thompson, 2000).

Intuition has seldom been granted legitimacy as a sound approach in clinical decision making; instead, it has been seen as the basis for irrational act or guessing (Benner & Tanner, 1987). Leners (1992) and Davis-Floyd and Davis (1996) viewed intuition as the making of connections or sensing of a physical or spiritual relationship.

Intuition lacks confirming evidence; therefore, its status relies on the perceived epistemological power of the person having it. In general, nurses have less power than physicians, so the credibility given to nurses’ intuition will be less (Cash, 1995). Intuition is proposed as an individual attribute, given that what may be intuitive to one nurse is not to another (Cioffi, 1997).

Cioffi (1997) observed that intuition was “renounced due to its association with gender; women were thought be unscientific” (p. 203). Benner (1984) argued that intuitive knowledge can be transmitted through simulations and case examples where the learner must actively rehearse or imagine the situation, but real clinical situations are too complex to be transmitted.

The intuitive model respects the unique challenges of the clinical situation so it is almost entirely context specific and the transferability of this approach between different decision makers becomes impossible. The model has shown to be accurate in situations that require time-limited decisions or present with large volumes of information (Hall, 2002). This model allows for complexity of decision making and recognizes that health is more than the sum of its constituent parts and emphasizes the holistic approach of the nursing practice. Crow, Chase, and Lamond (1995) affirmed the importance of practice context or domain specific knowledge to intuitive decision making and in order to understand the process involved in clinical decision making it is essential to consider the context in which decision-making activities are being performed. As noted by Feyerabend (1991), objectivity is an impression given life by thoughtlessness, and no matter how we look at science, personal judgment is always involved. Moreover, this approach supports Nightingale’s historic recognition that health care is holistic, which depends on multiple contextual and environmental factors such as the expertise of available health professionals.

IMPLICATIONS FOR NURSING PRACTICE

Hunter (1996) identified in her fieldwork that clinical decision making occurs by the selective application of general rules to particular individuals and contexts and the uniqueness of the individual preclude any purely rule-based method for assessment or interventions. Robinson (2002) warned that the best clinical practitioners may become hemmed in by protocols and standards, suggesting this will result in clinicians developing fewer intuitive skills leading to more drone-like practice. The systematic-positivist approach to decision making can be criticized because it includes an implicit assumption that judgment is the result of a unitary generic process used by all clinicians at all times (Benner, 1984). Overall, clinical decision making is complex, interpretive, and personalized, and an expert clinician attends to the direction of change in the patient’s condition and interprets ambiguous and unfolding patient information as it becomes available.

Clinical decision making is an essential component of professional nursing care, and nurses’ ability to make effective clinical decisions is the most important factor affecting their quality of care. Clinical decision making is both a cognitive and an affective problem-solving activity that focuses on defining patient problems and selecting appropriate treatment interventions (Buckingham & Adams, 2000). Nursing has been described as a moral enterprise, which means that the end goals of nursing are not technical, but moral; the goal of nurses in clinical decision making must be to the benefit of the patient. Hunter (1996) asserted that clinical education is preparation for practical and ethical action: what best to do, how to behave, how to discover enough to warrant taking action, and which choice to make on behalf of the patient. These choices are governed not by hard and fast rules but rather by competing maxims that are relentlessly contextual. As the systematic-positivist model became more widely used, it was argued that the rigid procedures of
analytic decision making were not conducive to decision making in all situations, such as rapid crisis decision making, and was prone to error (Lee et al., 2006). The positivist approach to decision making assumes that existing knowledge is available and accurate at the time of making a decision. However, in real clinical situations, the decisions that are often made possess an element of uncertainty. One who holds a phenomenological perspective may argue that knowledge is socially constructed and patient problems are not merely amenable to systematic or analytical approaches alone. In the process of reducing patients’ situations to discrete elements for analysis, nurses’ sensitivity will be lost and the basis for decision making would thus be weakened in many clinical scenarios where knowing the patient in many aspects is essential for the effective clinical decision making.

Growing evidence suggests intuition in nursing is an important part of effective clinical decision making that supports safe patient care (Institute of Medicine, 2010). Intuition is a holistic, experience-based approach to decision making. Intuitive skill application is needed in education, practice, and research. Nursing education must promote intuitive skill development to improve direct patient care. Promotion of the use of intuition as an adjunct in clinical decision making should begin in undergraduate training and be continued in graduate nursing education. Intuitive concepts should be introduced early in nursing curriculum to ensure novice nurses will be well-equipped and more confident in making effective and timely decisions for their patients. In addition, the limited body of knowledge on nursing intuition suggests the need for more studies to explore the nature and use of intuition on every level and every setting of clinical nursing practice.

Debate has continued regarding the use of which model, positivist/analytical or intuitive, results in the best patient outcomes. Intuitive decision making as a cognitive process could result in errors by the introduction of cognitive biases. Positivist decision making could result in errors due to a lack of available information or time constraints (Harbison, 2001). As nurses work in ever-changing environments, neither model is adequate to describe the dynamic processes nurses use in clinical decision making. Therefore, it was suggested that the cognitive processes used in decision making were neither completely analytical nor completely intuitive. Hammond (1988) argued that the cognitive processes operate on a continuum with positivism anchored to one pole and intuition at the opposite pole. The area between the poles is what he calls quasi-rationality, which is composed of varying degrees of positivism and intuition. Thompson (1999) suggested that Hammond’s cognitive continuum theory provided a middle ground for decision making in nursing practice. Kikuchi and Simmons (1999) supported this notion and stated that features such as scientific reasoning, tacit knowledge, and situational application provide practitioners with “the basis for care which is individualized, just and benevolent” (p. 53).

CONCLUSION

There is little evidence to suggest that either the systematic-positivist model or the humanistic-intuitive model should be used to account for the breadth of processes used in clinical decision making in the nursing field. The pattern of knowing links information processing and intuition together in clinical decision making. This suggests that the combination of scientific evidence-based knowledge in conjunction with intuition and contextual factors could enable nurses to use excellent clinical decision making.

REFERENCES


