# DEVELOPMENT OF THE THEORY OF WISDOM IN ACTION FOR CLINICAL NURSING

by

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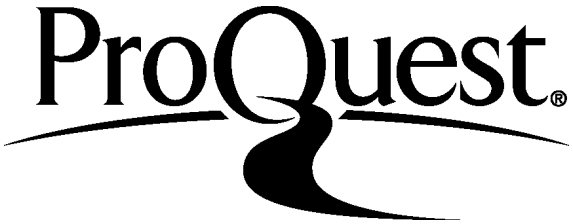

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# ABSTRACT

As nurses, we seek to gain nursing wisdom and apply it in our daily practice, yet the process of practicing with wisdom has not been well explained for nursing. The purpose of this dissertation was to develop a theory of wisdom in action (WIA) for clinical nursing, beginning with a formal concept analysis.

In Phase 1 (Aim 1), a preliminary theory was developed deductively using derivation and synthesis, based on theories and models from psychology, education, and nursing. Pertinent concepts were identified and nursing-specific definitions created. The theory included four dimensions: person-related factors, environment-related factors, knowledge, and wisdom.

Separately, a constructivist grounded theory approach inductively captured the experience of wisdom in nursing practice (Aim 2), based on wisdom narratives from 30 emergency department nurses. The resulting grounded theory focused on two processes, technical and affective, juxtaposed on a foundation of expertise. New findings were the importance of affective characteristics such as emotional intelligence and confidence.

Finally, the theories were synthesized into the Theory of Wisdom in Action for Clinical Nursing. The theory describes two antecedent dimensions, person-related and setting-related factors, and two types of wisdom processes. General wisdom processes apply to patient care and describe the actions nurses take during a stressful or uncertain

event. Personal wisdom develops afterwards, as a feedback loop with reflection, discovery of meaning, and learning, followed by increased knowledge and confidence.

Wisdom is critical for all areas of nursing practice. The Theory of Wisdom in Action for Clinical Nursing provides a working framework for translating wisdom in clinical nursing practice into theoretical and practical terms, depicting both the science and the art of nursing. This novel theory displays how nurses practice with wisdom, and reveals that wisdom in action requires clinical skills, experience, knowledge, and affective proficiency.

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# CHAPTER 1

# INTRODUCTION

## Background

Informatics has been identified as one of the core competencies for nurses in all specialties and at all levels of practice, not just for informatics nurse specialists (American Nurses Association [ANA], 2008; Staggers & Thompson, 2002). Early definitions of nursing informatics (NI) coalesced around Graves and Corcoran's (1989) seminal article outlining data, information, and knowledge as foundational concepts for the specialty (ANA, 2008). In 2008 the ANA revised the *Scope and Standards of Practice* for nursing informatics to include an additional concept—wisdom—in the definition of nursing informatics (ANA, 2008; Nelson, 2002). Building upon early work in the fields of information science and informatics, this resulted in the Data, Information, Knowledge, Wisdom (DIKW) framework (ANA, 2008). The DIKW framework is one of the core conceptual frameworks for the study of nursing informatics; however, the wisdom concept within the framework has not been clearly explained or defined. In order for the framework to be effective, nurses must understand what the concepts, including wisdom, represent in the context of clinical nursing practice, and how they are formulated and applied.

The fundamental precept of nursing informatics is that NI supports nursing in all

settings and roles, and that informatics knowledge and skills are integral for all nursing practice. Thus, it logically follows that the concept of wisdom applies to nursing practice as a whole and is not limited to nursing informatics specialty practice. It also does not appear that the ANA intended the concept of wisdom to be limited to its use within the DIKW framework, because the concept was included within the ANA's core definition of informatics practice (ANA, 2008).

## Statement of the Problem

The addition of wisdom to the nursing informatics scope and standards raises a number of questions and challenges. Nurses are challenged to develop ways to classify and measure wisdom. Means to discover the meaning and experience of wisdom in practice by identifying wisdom attributes (inherency and cause) and the relationships between them are essential to support expert practice as well as the decision making of more novice nurses (ANA, 2008). The concept and experience of wisdom within clinical nursing practice have not been clearly explained, however, and the applicability of applied wisdom (or wisdom in action) to clinical nursing practice has not been researched. Therefore, the extent to which wisdom is uniquely experienced among nurses in clinical situations is unknown.

Including wisdom as one of the concepts within the DIKW framework suggests that the concepts influence each other and that wisdom is in some way the result of combining or synthesizing the other three concepts. On the other hand, data, information, and knowledge have specific implications in terms of information structures (Blum, 1986; Graves & Corcoran, 1989), while wisdom seems to be an intrinsically human attribute (Matney, Brewster, Sward, Cloyes, & Staggers, 2011).

Wisdom is a cultural construct (Baltes & Staudinger, 2000). A cultural construct is an anthropological term that suggests our shared understanding of some aspects of the world, such as illness, gender roles, or the experience of death, are culturally defined. It reflects the shared views of a group of people who see the world a certain way, and how these shared views shape behavior. The social construction of reality is an unending process, reproduced by people acting on their interpretations and their knowledge of it. Wisdom can be thought of as a cultural construct that is uniquely defined by a group of people; the descriptors of wisdom vary in different cultures (Staudinger & Glück, 2011; Takahashi & Bordia, 2000).

Wisdom has been modeled and explained in other disciplines, such as psychology and education, but the extent to which those models are useful in nursing is unclear. Similar concepts, such as expertise and various forms of knowledge and ways of knowing, have been articulated in the nursing literature, but those concepts seem not to be quite the same as wisdom (Benner, 1984, 2000; Carper, 1978; Smith, 2009). We do not know precisely what the attributes of wisdom are, nor the relationship between those attributes. Hence, we do not have a formal definition of wisdom within the context of clinical nursing practice. We do not know the extent to which wisdom may have unique meanings and relationships in nursing; it is therefore difficult to determine how nursing knowledge influences nursing wisdom, how experience is reflected in nursing wisdom, or how wisdom relates to concepts such as clinical judgment, expertise, forms of nursing knowledge, empathy, and intuition.

## Proposed Solution

Wisdom has not been explained specifically for nursing practice. Benner (1991) defined nursing practice as skilled action and expertise. Nurses practice in many roles and settings, but most nurses practice in the clinical setting, doing bedside care at some point in their career. Therefore, we need to understand how we should think about wisdom as applied within the context of clinical nursing in specific situations before we can progress to address other challenges. The specific practice examined was emergency room nursing, because emergency room nurses have the autonomy to make decisions and perform interventions.

There are three assumptions regarding wisdom in action (WIA). The first assumption is that nurses provide care for patients using wisdom. Second, data, information, and knowledge precede wisdom. Third, wisdom is a situational process. Finally, during the act of providing care, data, information, and knowledge are used to assist in decision making and care.

## Study Purpose and Aims

The purpose of this dissertation was to develop a theory of wisdom in action for clinical nursing. Theory draws key concepts together by positing relationships between them, and as a result of the concepts being related in particular ways, processes or phenomena are defined. The theory then produces an explanatory framework that reinforces its own orientation while also shaping subsequent observations. Nursing theory provides the principles that underpin practice and helps us decide what we know and what we need to know (Colley, 2003). Therefore, defining a theory of wisdom in action can stimulate an interest in the area and provide an understanding of the nurse's purpose

and role in the healthcare setting.

The process of theorizing WIA was developed in three steps: first, a theory was developed using derivation and synthesis. Next, a second theory was developed using constructivist grounded theory (CGT). Finally, the two were compared and synthesized to produce the final Theory of Wisdom in Action for Clinical Nursing. Specific aims were:

- Aim 1: To develop a descriptive construct and graphical representation (model) of wisdom in action within the context of clinical nursing practice. The research questions were: (a) What are the attributes of wisdom in clinical nursing? (b) What concepts are related to, but distinct from, wisdom in clinical nursing? and (c) What are the relationships between the attributes of wisdom, and between wisdom and related concepts, in the context of clinical nursing?
- Aim 2: To understand how emergency room nurses construct the meaning of wisdom in the emergency room setting within the culture of clinical nursing practice. The research questions were: (a) What does wisdom mean to emergency room nurses? (b) What central processes are used to practice wisely and gain knowledge through practice? (c) What key concepts are involved in the processes? and (d) How are the processes related to each other?

## Significance

The initial construct work and the results of the qualitative study resulted in a new nursing theory, the Theory of Wisdom in Action for Clinical Nursing. Theory provides a framework for what is currently known and links nursing research, nursing practice, and

nursing knowledge. Therefore, this new theory can provide a working framework for explaining wisdom, in the context of clinical nursing practice, in theoretical and practical terms. The eventual goal was to provide the ability to classify, measure, and document wisdom. This will allow the development of information systems, research methods, and educational programs that support nursing practice, clinical decision making, critical thinking, and the development of wisdom. Nurses in all areas, including research, education, and practice, will be able to use the theory as a theoretical framework for their practice.

Nursing researchers will be able to research different aspects of the theory. Each of the concepts and relationships within the model provides research opportunities. The theory needs to be tested using examples from multiple specialties, settings, and institutions.

This research and theory can be significant for nursing education by serving as a roadmap that illustrates how knowledge leads to wisdom. The levels of knowledge within the theory can prescribe the types of knowledge required for clinical nursing by level of expertise or by specialty. The theory can inform instructors about how information can be presented to assist with knowledge development. The theory also emphasizes the importance of reflection; thus, a future implication for education may be establishing how to teach reflection. Reflection may be used to discover meaning and increase knowledge, thus enhancing future practice.

The theory can have the most impact in clinical nursing practice, with the ultimate result of improving patient care; it explains how knowledge can be applied as wisdom as well as how information can become knowledge. Knowing what knowledge is needed to

care for a patient in a stressful situation and applying it successfully is wisdom.

## Theoretical Framework

This dissertation is theory building; therefore, the framework was a theory construction approach outlined by Walker and Avant (2011). The construct, development (Aim 1), construct validation, and final theory development is specifically outlined within their approach. Aim 2, the qualitative research portion of this study, was approached using constructivist grounded theory (CGT). CGT allows the researcher to develop formal theory that explains human behavior, interactions, and cognitive and social processes (Charmaz, 2006; Jeon, 2004; Morse et al., 2009). The interpretation and analysis from the study will provide insights into ideas, beliefs, and knowledge of the process of wisdom in practice within the culture of the emergency room setting.

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# CHAPTER 2

# REVIEW OF THE LITERATURE

This chapter reviews literature relevant to this dissertation and is divided into five sections. The first section provides context for the dissertation and contains a brief overview of the DIKW framework and the role this framework has played in NI definitions. (Note that Chapter 4 is a review of philosophical underpinnings of the DIKW framework [Matney, Brewster, Sward, Cloyes, & Staggers, 2011]).

The second section is a literature review of wisdom in nursing and other disciplines. Wisdom definitions and theories in both psychology and education literature were examined. Nursing literature was reviewed for concepts similar to wisdom, such as phronesis, knowledge, and expertise.

The third section contains an examination of nursing theory development and validation. This section describes nursing theory and the method for the construction and validation of an initial construct of wisdom in action for clinical nursing. The fourth section is an examination and review of constructivist grounded theory (CGT). The final section concludes with a description of the current culture of nursing.

## Nursing Informatics and the DIKW Framework

The DIKW framework is an integral part of nursing informatics. It is described at length in Chapter 1; therefore, only a brief synopsis of the DIKW framework

development and structure is presented here.

The American Nurses Association (ANA) definition of nursing informatics includes special emphasis on the continuum of data, information, knowledge, and wisdom (Schleyer & Beaudry, 2009). Graves and Corcoran (1989) published a foundational article outlining data, information, and knowledge for nursing informatics. Early definitions of NI relied heavily on the Graves and Corcoran perspective, and the first version of the ANA *Scope and Standards of Practice* for NI contained the DIK portion of the framework (ANA, 2001). It was not until the 2008 edition of the ANA *Scope and Standards of Practice* that wisdom was added to the formal definition of nursing informatics (ANA, 2008).

The DIKW framework was first mentioned in the computer science literature (Cleveland, 1982). Within computer systems, data are transformed into information, information is transformed into knowledge, and knowledge can lead to wisdom. This framework has become the foundational model for nursing informatics.

## Data

Data are symbols that represent properties of objects, events, and their environments; they are products of observation (Ackoff, 1989). Data are discrete facts described objectively without interpretation (Graves & Corcoran, 1989). Data have no inherent structure or relationships between them (Ahsan & Shah, 2009), and thus a single piece of data has little intrinsic meaning (Hebda & Czar, 2012). Data are foundational components and are built on to provide a basis for reasoning, discussion, or calculation (Ahsan & Shah, 2009).

## Information

Information is data plus meaning. Information is derived from aggregated data, the total of all the facts known (Cleveland, 1982). When facts are put into a context and combined within a structure, information emerges (Tuomi, 1999). Information is derived computationally by manipulating the symbols, or data, using procedures in an organized or structured way (Graves & Corcoran, 1989).

Information can be quantifiable, objective, transferable, transparent, and measurable. It has shape and can be processed, accessed, generated and created, transmitted, stored, sent, distributed, searched for, used, compressed, and duplicated (Hey, 2004). Information answers questions that begin with "who," "what," "where," "when," and "how many." It may be organized in ways that serve the interest of the discipline (Turley, 1996). When context changes, even though the data remain the same, new relationships are formed that can generate new information (Kaipa, 2000).

## Knowledge

Knowledge is information that has been synthesized so that relationships, or associations, are identified and formalized (Graves & Corcoran, 1989). Just as data can be transformed into meaningful information, so information can be transformed into knowledge (Shedroff, 1994). Knowledge answers the questions that begin with "why." Knowledge is defined as being either tacit or explicit. Tacit knowledge is personal and context-specific, and therefore is difficult to formalize, summarize, and communicate to others (McGonigle & Mastrian, 2008; Tuomi, 1999). Explicit knowledge, in contrast, can be formalized, and can be encoded and transmitted in a language. Explicit knowledge is the type of knowledge informaticists try to capture, codify, store, transfer, and share.

## Wisdom

Wisdom has been defined by the ANA and others. The ANA (2015) defined wisdom as the appropriate use of knowledge to manage and solve human problems. Other nursing literature notes that wisdom implies an ethical duty to understand the rationale behind clinical actions (Zeleny, 2006). Wisdom involves recognizing what is most important by making distinctions among alternatives. It comprises the application of experience, intelligence, creativity, and knowledge, as mediated by ethics and values, toward the achievement of a common good (Nelson, 2002). Nursing wisdom is based on clinical judgment and a thinking-in-action approach that encompasses intuition, emotions, and senses (Benner, 2000). These definitions show that wisdom is inconsistently defined. According to the ANA, wisdom is only the use of knowledge, although other authors include cognitive and emotion concepts in their descriptions. It is also difficult to decipher from these definitions whether wisdom is framed as an object to be defined or as a process. This indicates that even though definitions of wisdom are found in the literature, the process of practicing with wisdom needs to be explained and formally defined, including the antecedents, defining characteristics, and relationships between the concepts that describe wisdom in nursing practice.

There is very little research regarding the concept of wisdom in the nursing or medical literature. There have been two recent qualitative research publications regarding wisdom. First, Matney, Maddox, and Staggers (2013) performed a qualitative content analysis study to determine if knowledge and wisdom were exchanged during patient care handoffs. They defined knowledge as information that is synthesized so that relationships are identified and formalized. The concept of knowledge was encoded when critical

thinking or nursing judgment was articulated. Wisdom was defined as "the ability to add experience and intuition to a situation and apply knowledge with empathy and compassion" (Matney et al., 2013, p. 179). Results indicated knowledge was present in every handoff, making change-of-shift reports more than just an information exchange. Subtypes of knowledge related to the care delivery process, including concepts such as assessment and physiology, activity, intake and output, and pain. Wisdom was not found or encoded in any transcripts. This was surprising to the authors, and indicates that possibly the definition of wisdom developed and practiced in nursing needs to be expounded upon.

Plews-Ogan, Owens, and May (2013) conducted a grounded theory study evaluating how physicians coped positively after making a serious mistake. Five categories were identified: acceptance, stepping in, integration, new narrative, and wisdom. Each category had subthemes, and the subthemes for wisdom included sense of strength, humility, compassion, learning from mistakes, tolerating ambiguity, and seeing the deeper meaning. The authors discussed the importance of openness to learning, especially after a mistake.

The researchers in these two studies approached wisdom definitions differently. The first study defined wisdom deductively *a priori*, and in the second study the categories were inductively derived from physician interviews. These two different approaches frame wisdom quite differently. The first describes wisdom cognitively, using knowledge to compassionately care for a patient, and the second describes wisdom more affectively, illustrating wisdom in the form of humility and compassion stemming from medical errors.

## Literature and Theories Pertinent to the Theory of Wisdom in Action

Wisdom is not a new concept that has emerged from the advanced information age of today; rather, the search for wisdom is almost as old as humankind (Staudinger & Glück, 2011). Hence, there is a plethora of literature regarding wisdom. The literature reviewed here applies to clinical or practice wisdom; literature is also reviewed from the domains of philosophy, psychology, education, and nursing.

### Philosophy

Philosophical underpinnings of wisdom are described in Chapter 4. A brief synopsis of wisdom in the philosophy literature is presented here.

Early definitions of wisdom were found in the writings of Greek philosophers. Socrates described wisdom using three forms; *Sophia, phronesis, and poiesis* (Guthrie, 1981). Sophia is a love of knowledge, which was a virtue for the Greeks. Phronesis is a Greek word for a type of intelligence corresponding with human understanding, and is analogous to practical wisdom (Barnes, 1984). Poiesis is creative knowledge. Other philosophical conceptions of wisdom have followed, with varying emphasis on the application of wisdom, or *wisdom in action*.

We see in Gadamerian hermeneutics the re-emergence and importance of practical wisdom (Kuhn, 1962). Hermeneutics has been considered the art of interpretation, and has been described as a method for understanding texts. Multiple approaches to hermeneutics exist. Gadamer's approach is based on the centrality of language and dialogue to understanding, and the premise that language is bound to our history (Crotty, 1998; Schwandt, 2001). Gadamer replaced the theoretical concept of

knowing with that of human understanding in practice (Dowling, 2004). He reclaimed the meaning of Aristotle's concept of phronesis.

## Psychology

The literature in the psychology discipline defined two major types of wisdom: general and personal. General wisdom is concerned with other individuals from a third-person perspective. It includes giving advice and assisting others. A person with general wisdom is wise regarding life and problems of other people. Personal wisdom is insight into life based on personal experience. This is wisdom about one's own life and problems seen from a first-person perspective (Staudinger, 1996).

Wisdom research in psychology has been conducted from two different approaches: descriptor-rating research and experience-based research. In the descriptor-rating approach, researchers ask a group of participants to list characteristics they associate with wisdom. These characteristics are rated by another sample. The ratings are statistically analyzed, using factor analysis, to determine the underlying components of wisdom (Clayton & Birren, 1980; Holliday & Chandler, 1986; Smith, Dixon, & Baltes, 1989). In the experience-based approach, individuals are asked to describe their experiences with wise people or with wisdom in their own life to identify the characteristics of wise individuals, wise thoughts, or behavior.

### Attributes of Wisdom in Psychology Research

Different researchers arrive at a different number of components or label them differently, but all agree that wisdom has a strong cognitive basis. Bluck and Glück (2004) studied people's views of wisdom in themselves or others by analyzing individual

autobiographical narratives describing a time these individuals thought they did something wise. Results indicated five essential components: the first is the *cognitive component*. The second component is *insight*, or a type of intelligence that goes beyond cognition. Third is a *reflective attitude*, thinking critically and deeply about themselves and others. Fourth is a genuine *concern for others* that goes beyond general interest. Finally, the fifth component is *real-world problem-solving skills* used to apply wisdom effectively.

In their second qualitative study, Glück and Baltes (2006) asked subjects to describe wise people and explain why they considered them wise. Themes that emerged from this research included morality, integrity, overcoming risk or adversity, searching for insight, and striving toward improvement. Findings indicated that wisdom is often manifested in social situations when there is a need for advice-giving or education. Seven elements of wisdom were characterized; people with wisdom (a) are unexpected, (b) are moral, (c) are selfless, (d) overcome internal and external orders, (e) strive toward balance, (f) take risks, and (g) strive toward improvement for mankind.

## Psychology Wisdom Literature

Sternberg (2007) hypothesized that effective leadership is the combination of wisdom, creativity, and intelligence. He and his team proposed a measurement approach to general wisdom by presenting complex problems to participants and asking them to think aloud about the solution. The solutions were scored by formal thinkers with a high degree of interrater reliability. Sternberg's findings showed that people with general wisdom are wise when it comes to other people; these people may or may not make good use of that same personal wisdom for themselves (Staudinger & Glück, 2011).

Researchers at the Max Planck Institute in Berlin, Germany have engaged in research on wisdom-related performance since the late 1980s. Explicit theories of wisdom were developed through empirically investigating expressions of wisdom. This was done by measuring wisdom in terms of personality characteristics, characteristics of adult thought, and performance on life tasks. They defined wisdom as "expertise in the fundamental pragmatics of life" (Baltes & Staudinger, 2000, p. 124). Think-aloud methodologies were used to explore different aspects of wisdom, such as aging, different professional experiences, moral reasoning, and personality characteristics (Baltes, Smith, & Staudinger, 1991; Baltes, Staudinger, Maercker, & Smith, 1995; Staudinger, 1996; Staudinger, Baltes, & Smith, 1994; Staudinger, Maciel, Smith, & Baltes, 1998; Staudinger, Smith, & Baltes, 1992). In each of the studies, a hypothetical life situation was given to a sample of participants. Baltes and Staudinger (2000) identified six properties of wisdom: (a) a high level of knowledge and judgment, including expertise in listening, evaluating, and advising; (b) the ability to address significant and difficult questions and form strategies about the conduct and meaning of life; (c) knowledge about the limits of knowledge and uncertainties of the world; (d) knowledge with uncommon scope, depth, measure, and balance; (e) a synergy of mind and character; and (f) knowledge used for the well-being of oneself and of others.

## The Balance Theory of Wisdom

Sternberg's (1998) Balance Theory of Wisdom is based on the fundamental premise of balance in life. The first "balance" is the well-being of an individual and that of the community, environment, or situational context. Responses reveal an interaction between the person making the judgment and the environmental context. Second is the

balance of cognitive, conative, and affective processes. People may balance interests in different ways. This balancing is influenced by the person's goals for the common good.

The base of the model is tacit knowledge underlying practical intelligence. This is portrayed in the model as a rectangle forming a foundational base. Tacit knowledge is usually acquired without the direct help of others, thus allowing individuals to aspire to achieve goals they value. Intelligence is defined as the ability to practically solve problems and express oneself verbally. Intelligence assists with goal orientation and fluid thought.

Tacit knowledge and practical intelligence are applied to interpersonal and extrapersonal interests. This involves understanding people's mental processing, motivations, and affects, and is used to shape and select environments. Again, the goal is the common good. All of the balancing and definition of the "common good" is value driven. Ethics mediate how one balances interests and responses for the common good. People's moral values mediate their use of tacit knowledge in "the balancing of interests and responses" (Sternberg, 1998, p. 350). The concepts are well defined in the model. No antecedent concepts are defined. Linear relationships come out from the base "tacit knowledge," through balance of interests and balance of responses, to environmental context, ending at the common good.

The theory is very simple and easy to understand. It makes sense that there is a life balance between interests for the goal of the common good. This aligns with the nursing goal and outcome components of the nursing process (ANA, 2012). The model is limited because it is too abstract, and it lacks antecedents and many common attributes of wisdom. Because the model does not capture the complexity of the practice environment

of wisdom it has limited use for the model of wisdom in action for clinical nursing.

## The Berlin Wisdom Paradigm

Researchers at the Max Planck Institute developed a framework of wisdom called the Berlin Wisdom Paradigm (BWP; see Figure 2.1). The BWP describes antecedent factors and processes required for the development and acquisition of wisdom. It was developed using a compilation of multiple theoretical perspectives, including research from the Max Planck Institute, and Erikson's (1959) Theory of Wisdom. Their purpose in creating the framework was to define wisdom in the conduct and meaning of life. The theory is highly abstract and covers antecedent factors, processes for the acquisition of wisdom, and wisdom in action.

The BWP is composed of three different sections. The first section, "person-related factors," contains three categories considered antecedents relevant to wisdom development. The first category is "general person factors, which holds concepts such as cognition, mental health, and ego. The second person factor category is "expertise-specific factors." The concepts found in this category deal with experience, receiving mentorship, and motivational disposition. The final category is "facilitative experiential context," which includes concepts such as age, education, being a mentor, and the professional work context.

The second section of the BWP framework was titled "Life Context," and was derived from Erikson's (1959) theory. This is the area dedicated to the application of wisdom to actual life. They called this "wisdom in action." Wisdom in action involves good judgment, insight, emotional regulation, and empathy in all areas of life, including family interactions, writing, and personal relations. The categories in this section are "life

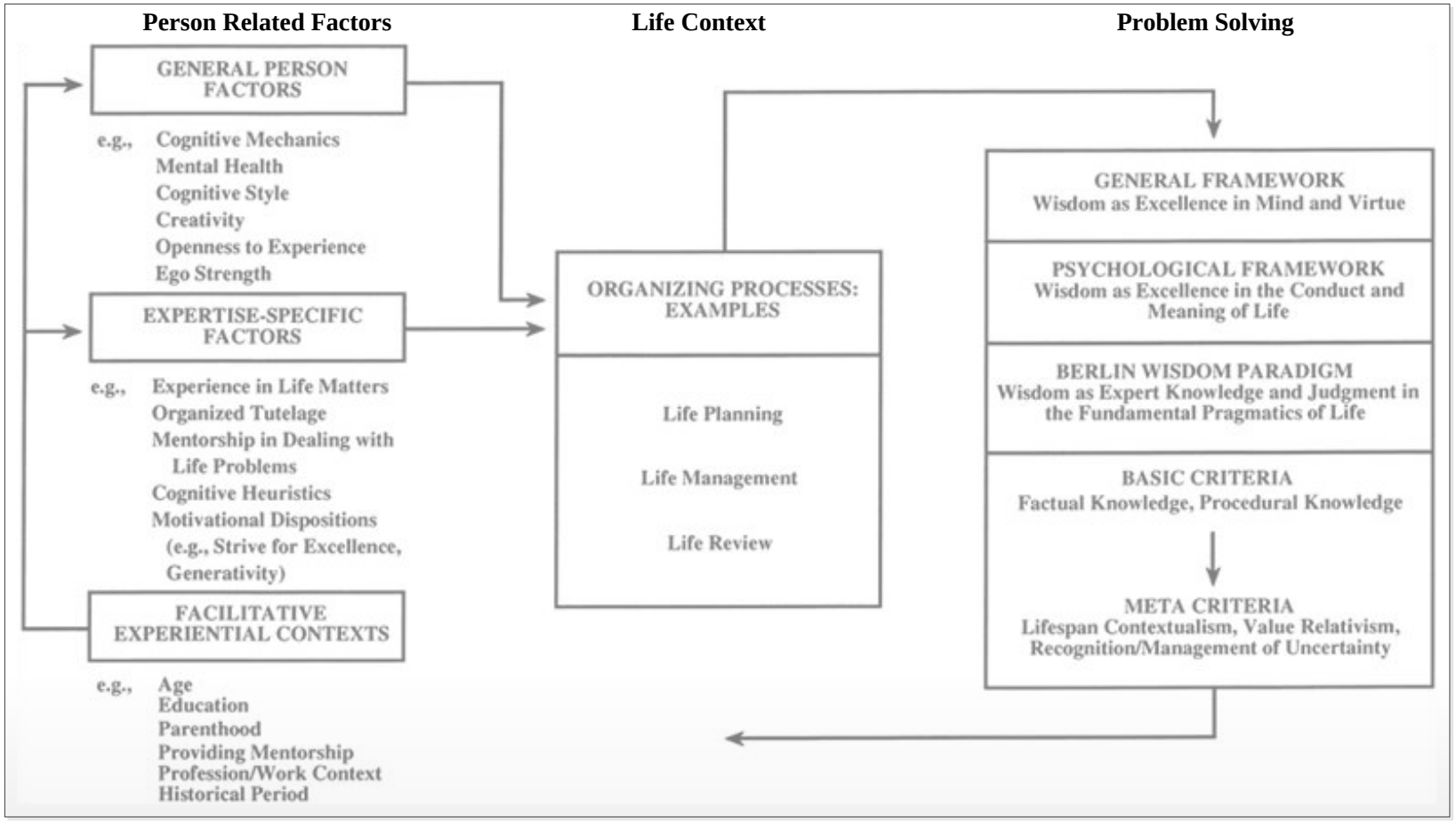


*Figure 2.1* The Berlin Wisdom Paradigm. From "Wisdom. A Metaheuristic (Pragmatic) to Orchestrate Mind and Virtue Toward Excellence," by P. B. Baltes & U. M. Staudinger, 2000, *American Psychologist, 55*(1), p. 121. Copyright 2000 by American Psychological Association. Reprinted with permission.

planning," "life management," and "life review." The categories were not defined in the description of the model.

The third section of the BWP framework portrays theoretical frameworks or paradigms, and qualitative criteria used when solving problems. The problem-solving criteria section contains five expertise-specific categories. This section contains two basic categories and three meta-criteria categories. Expertise development progresses sequentially through the categories. The first basic category is rich factual knowledge, which is extensive knowledge of life matters; this is considered the foundation of wisdom. The second basic category is rich procedural knowledge used for decision making and action planning.

The three meta-criteria include life-span contextualism; value, relativism, and tolerance; and recognition and management of uncertainty. Life-span contextualism is understanding social and individual differences across all ages and cultures. Value, relativism, and tolerance refer to knowledge about different values, priorities, and goals. The final criteria, recognition and management of uncertainty, are connected to the fact that one cannot know everything and can recognize when he or she lacks the knowledge to deal with a situation.

The BWP framework is potentially useful in thinking about wisdom in action in clinical nursing. The definitions of the concepts are theoretical, meaning they are high-level and abstract, with lower-order concepts describing them (Hinami, Farnan, Meltzer, & Arora, 2009). One example of an abstract concept is "person-related factors," with lower-order description concepts such as mental health, cognitive style, and creativity. No operational rules have been defined for measuring the concepts.

Causal relationships link the person-related factors and expertise-development factors to life context. The linear ascending relationships in the expertise-development concepts indicate sequential development building upon each concept.

Two critiques of the model were identified. First, the "wisdom in action" section should be moved to the far right, or final section of the model because it is the application of the person-related factors and the qualitative criteria of everyday life. Second, the graphic should display the qualitative criteria from the basic criteria up to the meta-criteria, because the criteria build upon each other for the development of wisdom.

Benefits are that the theory clearly describes antecedents and attributes of general wisdom, is generalizable, and is applicable to clinical nursing because real nursing-use cases can be walked through the model. To be a wise nurse, one needs to have experience, expertise (knowledge mastery), and good cognitive abilities. The sequential course of expertise development aligns with Benner's (1984) Novice to Expert Theory. A nurse needs to have basic knowledge regarding life and procedures before understanding lifespan and contextual differences. It takes an expert nurse to handle uncertainty with ease. Finally, a nurse must apply all of these attributes in action to be a wise nurse.

## The MORE Wisdom Model

The most current model of wisdom developed in the psychology discipline is the MORE Wisdom Model (Glück & Bluck, 2013). Research resulting in this model was focused on the development and manifestation of wisdom. The researchers ascertained that wisdom development occurs through dealing with and thinking about life challenges. They used qualitative research and asked the participants to describe life stories. The narrative stories were solicited with the following questions: (a) What life challenges

have you encountered in your life? (b) How did you deal with the life challenges? and (c) How have you integrated the challenges into your life story? Their research findings demonstrate that individuals display high levels of four interrelated characteristics they consider relevant for the development of wisdom across the lifespan: Mastery, Openness to experience, a Reflective attitude, and Emotional regulation skills. They feel that individuals are not born with these characteristics but that they can be developed throughout life. They published them in this order to create a nice acronym (MORE), but they are defined below in a more logical sequence.

In order for a person to develop knowledge and use it wisely, he or she must be open to experience. This implies that he or she has an interest in new experiences and ideas. People who are less judgmental and unprejudiced can accept that others share their own goals and values; they are not afraid of change. Glück and Bluck considered openness as "a necessary precursor to wisdom" (2013, p. 85); thus, high levels of openness may help individuals seek out wisdom-fostering situations.

Emotional regulation skills involve two things: first, the control of one's own emotions, and second, the ability to be sensitive to others' emotions and understanding what they feel. Wise individuals are calm and self-controlled. The MORE model proposes that wise individuals can perceive their emotions accurately and manage appropriately in both positive and negative situations. Wisdom concerns not only the ability to regulate one's emotions in stressful situations, but is also the capability to reach out to others with understanding and compassion.

Sense of mastery is an individual's belief that he or she can deal with any of life's challenges, but also the awareness that everything cannot be controlled. Challenges are

dealt with head-on or adapted to. He or she does not feel victimized when events are beyond his or her control. Individuals who do not feel victimized and learn from challenging situations develop a sense of mastery after crisis.

Wise individuals have a reflective attitude**.** This is not just the ability to reflect but a high motivation to think deeply. They can step back and examine the situation to understand the context. They seriously examine their own past behavior to gain meaning and set direction.

The description of the model is supported by the developers' qualitative research; the text includes narratives from the research participants' stories to illustrate each concept (Bluck & Glück, 2005; Glück & Bluck, 2011). They also used findings from the same research to validate the model. No tools have been developed to measure the concepts because they are determined by qualitative research.

The articles reviewed did not include a picture of the model, but there is a one in a presentation given by Glück on YouTube (Glück, 2010; see Figure 2.2). The relationships in the model illustrate that life challenges lead to learning through a reciprocal relationship to the four characteristics. This is an iterative process causing learning and resulting in wisdom. The model visually includes multiple colors, for example the life challenge boxes are blue, and there is no explanation regarding the reasons for the colors.

The model does not show any relationship between the four characteristics except that they are bound together. It also illustrates them as equally weighted. This does not feel correct and is not described or supported in the research (Bluck & Glück, 2005; Glück & Bluck, 2011). Finally, the model portrays life challenges, learning, and the four

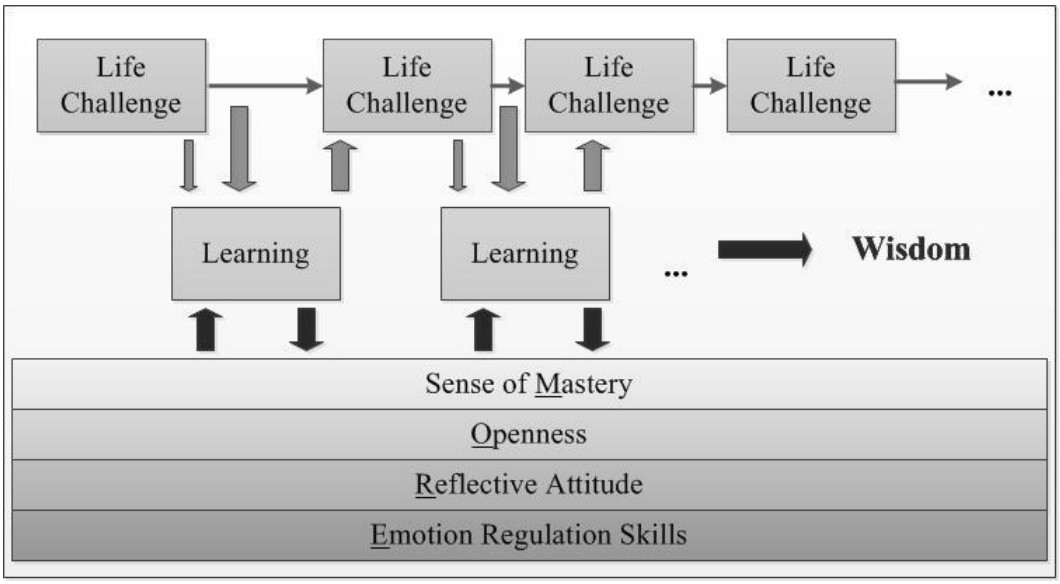


*Figure 2.2* The MORE Model of Wisdom. Copyright 2010 by Judith Glück. Used with permission.

characteristics as antecedents to wisdom.

This model aligns with the wisdom stories elicited from nurses. They discussed challenging situations and what they learned from them. Personal experience has shown that reflecting on information leads to knowledge and learning. Once knowledge is gained from experience and reflection, it can be applied in future situations.

## The Model of Wisdom

Within the field of education, Brown (2004) researched how wisdom develops in college students. He used grounded theory (GT) to develop a conceptual and theoretical model of wisdom called the Model of Wisdom (MW), as well as a validated Wisdom Development Scale (WDS). His research defined wisdom development by examining how it develops and identifying what conditions assist its development. The goal was to describe what conditions facilitate wisdom development. The model creation involved studying different aspects of a student's life in a campus environment, which facilitated

"the process of integration leading to the development of wisdom" (Brown, 2004, p. 135).

The MW describes how wisdom is developed (see Figure 2.3). The central or core component of the model is *learning from life*. This component contains the concepts of reflection, integration, and application. This means that we must take information in, ponder, analyze, process, and integrate it into our conscious and unconscious actions. Once that is achieved, the information can be used and applied. If application does not occur, the knowledge obtained does not result in growth or change.

Linked to the core component are three conditions: (a) orientation to learning, (b) experiences, and (c) interactions with others. These are considered circumstances that impact the development of wisdom. Orientation to learning is how a person approaches

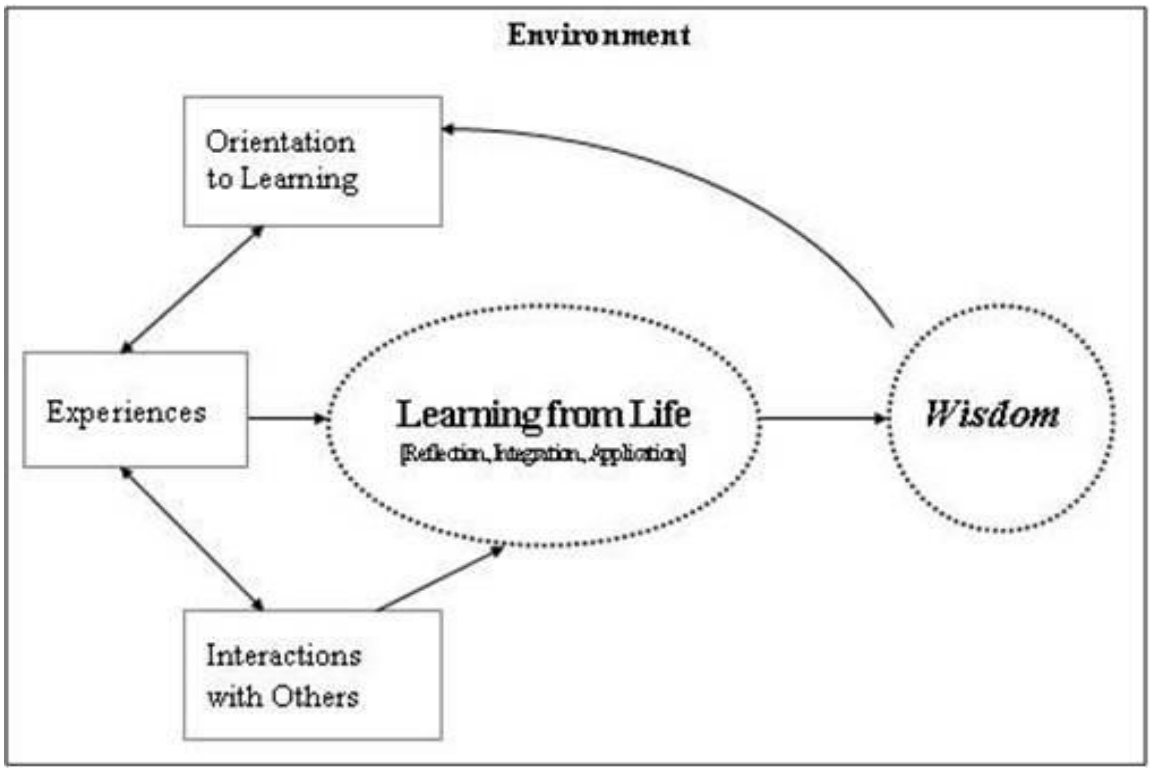


*Figure 2.3* Model of Wisdom. Copyright 1999 by Scott C. Brown.

specific knowledge-gaining experiences; this involves motivation and a desire to learn. Experiences refer to any circumstances or activities a person is involved in that result in knowledge acquisition.

The core component and the condition are embedded in the environment. This is the context and setting where learning occurs. The influencers of learning, such as teachers and mentors, depend on the person's specific learning style.

The model is clearly described and includes reciprocal relationships between the conditions. Each condition results in learning from life, with the final development of wisdom. Each shape in the model contains dotted lines indicating the "permeable nature of each element" (Brown, 2004, p. 141). The model is compared to and aligned with other wisdom theories. This wisdom development model is applicable to nursing because nurses require experiences, interaction with others, and an openness and willingness to learn to gain the knowledge and wisdom needed to care for patients. This also necessitates the ability to reflect, integrate, and apply the learning into their practice.

Brown (2004) found that the construct of wisdom consists of six interrelated dimensions: self-knowledge, understanding of others, judgment, life knowledge, life skills, and willingness to learn. Self-knowledge is a person's self-awareness of his or her own talents, interests, morals, and beliefs. The person has an awareness of his or her personal genuineness and has personal confidence. Self-knowledge pertains to multiple areas of a person's life, such as spiritual, professional, and political. "Self-knowledge embodies the adage, 'to thine own self be true'" (p. 137). Understanding of others refers to a genuine caring and compassion for others no matter the race, gender, culture, or educational level. It involves a willingness to give of oneself to influence the common

good. Judgment is the ability to assess, assimilate information, synthesize, and make a sound decision. Life skills are characterized by "personal competence in life matters" (p. 138) and expertise in balancing daily life. How one handles emergencies and utilizes available systems is a life skill. The final dimension is willingness to learn—being open and ready to learn. Willingness to learn requires admitting that one does not know everything (humility), the understanding of one's current level of knowledge, and the desire to know more.

The model is well described in Brown and Greene's articles (Brown, 2004; Brown & Greene, 2006), but its visual depiction is somewhat confusing. The reciprocal arrows between "Experience" and "Orientation to Learning" and "Interactions with Others" each feel incorrect. There should be a single arrow from the "Experience" to the condition. It seems that "Learning from Life" should have bidirectional instead of unidirectional arrows to each concept on the left of the diagram because life learnings impact experiences, interaction with others, and orientation to learning. Other than self-knowledge, no other types of knowledge are depicted in the model, which is puzzling, because the model was developed for education. The final confusing aspect is that the "Environment" label at the top has no linkages to any concepts in the model.

Brown and Greene (2006) developed a wisdom measurement questionnaire for education, the Wisdom Development Scale (WDS). The purpose of the questionnaire was to create a theoretically and psychometrically valid instrument that aligned with the model of wisdom and could measure wisdom development. The questionnaire was initially divided into six factors (sections): self-knowledge, interpersonal understanding, judgment, life knowledge, life skills, and willingness to learn. The six factors were

hypothesized to intercorrelate given that the model predicts that all six attributes contribute to the development of wisdom (Brown & Greene, 2006).

The WDS was developed in phases. First, the researchers drew survey items from the MW study and aligned them with each dimension of the wisdom construct. The initial questionnaire had 141 questions. Second, the 141 questions were given to three focus groups that varied in educational major and ethnicity. In addition to the questionnaire, they were asked to describe someone wise and to complete several questions regarding the clarity and comprehensiveness of the questions. Revisions were made to the questionnaire based on the feedback from the focus groups, but the articles did not describe the type of revisions made (Brown & Greene, 2006; Greene & Brown, 2009).

Third, the questionnaire was administered via a Web survey to 1,188 undergraduate students. A series of exploratory factor analyses using latent factor technique was used to determine the final questions in the questionnaire. Finally, there was a second research study of the WDS in which the sample included both professors and undergraduate students ($N$ > 3,000). This study specifically evaluated construct, discriminant, and criterion validity (Greene & Brown, 2009).

In the first study (Brown & Greene, 2006), both exploratory and confirmatory factor analyses were performed on the model as a means of cross validating the latent factor structure of the model. Prior to the factor analysis, the researchers used the Kaiser-Meyer-Olkin (KMO) method to determine if factor analysis was necessary. The KMO was .944, which indicated a high level of correlation between each pair of items. A split-halves method was used by dividing the sample in two through random assignment. Exploratory factor analysis (EFA) was calculated using the first half. Results of the EFA

revealed strong support for self-knowledge, judgment, and life-knowledge factors. The original "understanding of others" construct was divided into two factors, which were called altruism and inspirational engagement. Similarly, the hypothesized construct of life skills was also split between two factors, entitled emotional management and life skills. Reliability analyses on the final scale scores exposed Cronbach alpha values above .8 for each of the seven factors.

The results of the EFA were used to generate the final scales used for confirmatory analyses of the model. Confirmatory factor analysis is another form of validation regarding the scale scores' reliability and factor structure (DeVellis, 2003). The proposed factor and item structures were analyzed for fit using multivariate structural equation modeling. This was used to compare how the data fit the model. Correlation of the EFA was done using the results of the Social Desirability Scale (SDS) that had been administered at the same time (Brown & Greene, 2006). Using the scores derived from the EFA, those questions that had significant correlation with SDS were kept in the questionnaire. The altruism scale had 7 of 14 items, the inspirational engagement scale had 8 of 11 items, the judgment scale had 4 of 11 items, the life skills scale had 3 of 9 items, and the emotional management scale had 9 of 11 items.

The WDS was given to focus groups and administered for two different reliability and validation research projects (Brown & Greene, 2006; Greene & Brown, 2009); the consistent findings demonstrated internal consistency. The different types of validity described in the articles were construct validity, criterion validity, content validity, and discriminant validity. Several steps were taken to determine construct validity. First, the initial set of questions was drawn from the development of the theory. Second,

confirmatory factor analysis was used to determine the relationships between the concepts themselves. In the first study (Brown & Greene, 2006), construct validity was established for six of the seven factors (but not willingness to learn), and in the second study (Greene & Brown, 2009) all factors were validated. Internal consistency was statistically assessed by computing the WDS mean scores and performing Pearson correlations against the Social Desirability Scale (Reynolds, 1982) for the first study and Iowa Student Development Inventories (Hood, 1986) for the second study. The results of the analysis showed a Cronbach's alpha between .83 and .89, which demonstrated evidence for criterion validity (Greene & Brown, 2009). Construct validity was evaluated to determine the degree to which the items sufficiently capture the construct. In the first study, items in the WDS were correlated with the Social Desirability Scale utilizing factor analysis. All items except willingness to learn were validated. In the second study, all constructs were validated.

Early evaluation of the WDS has shown preliminary utility within the context of education because the research has demonstrated a good fit with the theory and the scale itself. Discriminate validity was assessed in the second study (Greene & Brown, 2009). The authors hypothesized that the latent mean scores for the professionals would be higher than the scores for the younger students; this was determined by examining the chi-square differences of the two scores. They found that those with higher education did indeed have higher latent mean scores. The major weakness of the WDS is that there is no evidence that the scale measures a level of wisdom within a specific individual. Therefore, it can be concluded that the instrument neither differentiates nor captures levels of wisdom.

The previous sections have described literature and wisdom models from disciplines other than nursing. Concepts and relationships have been used to derive the first draft of the construct of wisdom in action for clinical nursing, which is described at the end of this chapter. Nursing literature and wisdom models are used for synthesis of the construct and are described in the next section.

## Wisdom Nursing Theories and Literature

### Nursing Models of Wisdom

Two clinical models of practice wisdom were found in the literature. First, Edmonson and Pearce (2007) described a model of clinical wisdom, which was illustrated using cases from psychiatry. They defined a "trifoliate model of wisdom" that incorporates capacities of self, the other, and the problem itself. They used the metaphor of three leaves adjacent to, overlapping, and intertwining with each other. The capacities of self include the attributes of practice reasoning, professional knowledge, and moral characteristics. The authors stated that the problem may include technical and medical issues, but may "also possess some social, emotional and moral characteristics" (p. 238). This model appears insufficient to serve as a general representation of nursing clinical wisdom. "The other" is not well defined, but Edmonson and Pearce stated that it needs to be treated with tolerance within the context of the situation. There were implied relationships between the three entities (self, the other, and the problem), but the attributes of wisdom were not defined.

In a second model, Haggerty and Grace (2008) described a model for clinical wisdom consisting of the three key elements: (a) balancing and providing for the good of another and the common good, (b) the use of intellect and affect in problem solving, and

(c) the demonstration of experience-based tacit knowing in problematic situations. The authors postulated that clinical wisdom is a more specific type of general wisdom that can be linked to wisdom for nursing practice. No illustrations were provided, and no definitions of the concepts or relationships were described; thus, there is insufficient detail about the model to determine the alignment with nursing practice.

## Wisdom Attributes in Nursing

The ANA (2008) defined wisdom as the appropriate use of knowledge to manage and solve human problems. Wisdom involves recognizing what is most important by making distinctions among alternatives. It comprises the application of experience, intelligence, creativity, and knowledge, as mediated by values, toward the achievement of a common good (Nelson, 2002). Beyond that, wisdom as described in the nursing literature, including nursing theories, shares many of the attributes described in the other disciplines. These attributes include phronesis, ethics, good judgment, values, understanding of others, and life skills, and are discussed below.

Much has been written about phronesis in nursing (Connor, 2004; Flaming, 2001; James, Andershed, Gustavsson, & Ternestedt, 2010; Leathard & Cook, 2009). Phronesis has been defined in the nursing literature as practical wisdom. It has been likened to the moral foundation of nursing, meaning that nurses must being ready to assess the situation, determine the most appropriate response, think before acting, and intervene for the good of the situation (Chen, 2011; Connor, 2004; Davis, 1997; Flaming, 2001). Flaming (2001) posited that if we used the word “phronesis” instead of “research-based practice,” we could utilize the other sciences in our practice.

Wisdom and ethics share similar attributes such that they may be closely related

or even borderline cases of each other. The main attribute is the goal of caring for the patient for the common good by exercising values, judgment, caring, and responsibility. Wisdom is intertwined with the principles of morally doing the right thing (Carper, 1978). Wisdom implies an ethical duty to understand the rationale behind clinical actions (Zeleny, 2006). Proficient nurses show clinical wisdom with ethical discernment by demonstrating the ability to think critically and to practice responsibly by applying abstract thinking and knowing to specific acts of care. Wisdom is about comprehensibility, understandability, and ethics of doing (Zeleny, 2006). Nurses with wisdom are engaged and pay attention to the ethical challenges they face. They believe that the principles of morality and acceptable conduct are important for all people (Schmidt Bunkers, 2009). Nurses cannot be wise and unethical.

Benner (2000) based the understanding of wisdom in nursing on clinical judgment and a thinking-in-action approach that encompasses intuition, emotions, and the senses: "Clinical judgment requires moral agency, insight, skilled know-how, and narrative reasoning about patient transitions" (p. 103). Judgment implies that there is an internal connection between what matters and what is learned, known, and concluded within the mind (Uhrenfeldt & Hall, 2007). Clinical judgment requires the ability to effect and influence situations, perception, skilled know-how, and reasoning about particular clinical situations (Benner, 2000).

Wisdom in action in nursing requires the element of caring; indeed, caring is the central component of nursing practice (Benner, 2000). Nursing has always been an exemplar for genuine caring and compassion. Benner (1991) defined care as "the alleviation of vulnerability, the promotion of growth and health, the facilitation of

comfort, dignity, or a good and peaceful death; mutual realization" (p. 2).

The scope of practice for nursing mandates the understanding of others across the lifespan, including social and cultural differences. Benner (2000) illustrated this in her article, "The Wisdom of Our Practice," with many stories describing how nurses gave of themselves and cared for others. Carper's (1978) Ethical Pattern of Knowing deals with issues for which there are no black-and-white solutions. This knowing deals with items such as society, norms, moral issues, and legal issues.

Life skills in nursing encompass nursing competencies and align with Carper's (1978) Empirical Pattern of Knowing and Personal Pattern of Knowing. Carper's Empirical Pattern of Knowing is scientific knowledge, and personal knowledge is what one knows from lived experiences. These attributes also align with Benner's (1984) definition of proficient and expert nurses. Benner (1984) considered this practical knowledge, or "know-how." She stated that this requires the development of knowledge in applied disciplines and is characterized by an understanding of the know-how of clinical experience. How we handle emergencies and utilize available systems is a learned skill that demonstrates proficiency or expertise. Benner (1984) described proficient nurses as those who can learn from experiences and adapt and modify plans as needed. The expert nurse has an intuitive grasp of clinical situations with highly proficient performance.

This section described attributes of nursing practice relevant to wisdom. In the following section, the use of formal theory in nursing is reviewed. There are also lay underpinnings and culturally specific, socially constructed theories of how things work. Many nurses are taught nursing theory in school but never hear about it again in actual

practice; instead, they have culturally based theories. The attributes of wisdom reviewed so far may or may not be related to nursing culture.

After reviewing the models and literature pertaining to wisdom, it makes one wonder if wisdom can truly be defined, or if wisdom is an occasional destination in specific situations and the process of getting there should be defined. The ANA stated that nursing should support the development of wisdom (ANA, 2008). Development is a process toward some sort of growth or evolution. A definition of wisdom that might be derived from the models and the literature is "openness to learning, the ability to gain a sense of knowledge mastery, the practice of applying knowledge with empathy and emotion regulation, and the ability to reflect on nursing practice from multiple perspectives and to integrate knowledge gained from reflection back into the nurse's knowledge bank for future use." This definition is the beginning of the construct of wisdom in action and theory construction. The following sections discuss nursing theory as the foundation of nursing practice.

## Nursing Theory Purpose and Development

Nursing theory provides the principles that support practice and help to create nursing knowledge. Theory shapes practice and provides a methodology for expressing key ideas regarding the essence of nursing practice (Walker & Avant, 2011). Nursing theory draws key concepts together by positing relationships between them. As a result, the internally consistent groupings present a systematic view of a phenomena, or process, for the purposes of describing, explaining, predicting, and/or prescribing. The groupings are an explanatory framework, or theory. Theory is used in all aspects of care across the care continuum. It assists the practicing nurse to organize patient data, understand patient

data, analyze patient data, make decisions about nursing interventions, and plan patient care.

Theory shapes practice at the bedside, in education, and in research (Chinn & Kramer, 2011; Reed & Shearer, 2007; Risjord, 2009; Walker & Avant, 2011). Theory-based clinical nursing practice occurs when nurses intentionally structure their practice around a particular theory to guide them in their care of the patient. Theory provides a systematic way of thinking about nursing care that is consistent and guides the decision-making process.

In nursing education, at the undergraduate level, theory is used to teach the care process. Theory is introduced at the master's level to introduce practice-based evidence from research and experience. Finally, theory is used at the doctoral level as the framework for research.

Great strides have been made in theory-based research. Nursing research is necessary to test and refine theory, hence refining the knowledge base of nursing. Once a theory has been validated, it can be used as a framework for research. Research findings enable nurses to improve the quality of care and to understand that evidence-based nursing influences patient outcomes.

## Theory-Development Strategies

Theory can be developed two ways: inductively or deductively (Reed & Shearer, 2007). This research used both methods, deductive for Aim 1 and inductive for Aim 2.

In deductive theory development, ideas that are established in one field and are considered for ways in which they can be applied to another field. Deductive nursing theory can be developed when someone has an idea and wonders if it pertains to practice.

Walker and Avant (2011) described this as theory developed by derivation and synthesis.

Inductive theory arises out of practice. It does not depend on already established theories, but rather involves exploring practice and generating ideas. GT is an example of inductive theory development and is commonly used in nursing research to develop midrange theories (Engward, 2013; Jeon, 2004; Marcellus, 2005; McCallin, 2003; Morse et al., 2009).

Chinn and Kramer (2011) described a four-step process of creating empiric theory. The first step is creating conceptual meaning; this involves defining the concepts after they are identified. The second step is structuring and contextualizing the theory; this involves defining the relationships for the theory. The third and fourth steps are testing and applying the theory.

Walker and Avant (2011) further defined how qualities of concepts from derived theories are identified and developed by synthesizing the nursing literature. They also specified the types of relationships used within nursing theory, such as a causal relationship (one concept is said to be the cause of the other).

Four different levels of nursing theory are described in the literature: metatheory, grand theory, midrange theory, and microrange theory. Each type is described below, and examples are provided.

## Metatheory

Metatheories focus on theory about theory. These theories were created by asking philosophical and methodological questions that formed the nursing foundation. Florence Nightingale's work closely related to her philosophical orientation of the patient–environment interaction and the principles on which nursing practice was founded

(Nightingale, 1898). Nightingale believed that health was a reparative process, and that the patient's surroundings, including fresh air, warmth, noise reduction, good diet, and light would contribute to that process. She also believed that every person desired good health and would cooperate with the nurse and nature to allow the healing process to take place.

## Grand Theory

The next level of nursing theory is grand theories. Grand theories give a broad perspective to the purpose and structure of nursing practice (Peterson & Bredow, 2008; Walker & Avant, 2011). Many of these theories were developed between the 1960s and the 1980s. One of the greatest contributions grand theories provide for nursing is the differentiation between nursing practice and the practice of medicine. Grand range theorists are numerous, and include Wiedenbach, Orem, Peplau, and King.

Wiedenbach (1964) concentrated on the art of nursing and focused on the needs of the patient. She described four elements that guide the nurse's action: philosophy, purpose, practice, and art. She outlined four assumptions related to human nature. First, each human being has a unique potential to develop self-resources from within that enable him or her to maintain and sustain him-/herself. Second, each human being strives toward and desires independence, and will make best use of his or her capabilities to achieve this. Third, self-awareness and self-acceptance are essential to an individual's sense of self-worth. Finally, whatever the individual does represents his or her best judgment at the moment of doing.

Orem began publishing about nursing care in the 1950s. Her theory of self-care emphasized the person's need to care for himself (Orem, Taylor, & Renpenning, 1991).

Her work identifies three types of nursing systems: wholly compensatory, in which the nurse does everything for the patient; partly compensatory, in which the nurse helps the patient care for himself or herself; and supportive educative, in which the nurse helps the patient learn to do for him- or herself.

Peplau's (1952) contribution to nursing and the specialty of psychiatric nursing has been colossal. She identified four phases of the nurse–patient relationship: orientation, identification, exploitation, and resolution. Peplau proposed and described six nursing roles: stranger, resource person, teacher, leader, surrogate, and counselor.

The final grand range theorist described in this literature review is Imogene King (1981). King began publishing in the mid-1960s. Her conceptual framework specifies the following interacting systems: personal, interpersonal, and social. The concepts of the personal system are perception, self, body image, growth and development, and time and space. The concepts of the interpersonal system are role, interaction, communication, transaction, and stress.

Grand theories lay the foundation for nursing and offer general perspectives for nursing practice; however, because they are so abstract and are not concrete enough to test, they have gone out of vogue for nursing. Middle-range theory has emerged as the theory that guides nursing practice today (Smith & Liehr, 2008; Walker & Avant, 2011).

## Midrange Theory

Midrange nursing theories contain a related set of ideas and variables, are narrower in scope than grand theories, and are testable (Smith & Liehr, 2008; Walker & Avant, 2011). They offer the specificity needed for usefulness in research and practice. Midrange theories usually focus on one specific topic or area of care and are often begun

with a concept analysis and the development of a conceptual model or construct.

Smith and Liehr (2008) described a "ladder of abstraction" (p. 13) for the three levels (or rungs) of discourse needed in a midrange nursing theory development. The first rung of the ladder is the philosophical level that represents beliefs and assumptions about the theory. The second rung is the theoretical level, consisting of symbols and concepts linked with relationships. The third and final level is the empirical level, which is the most concrete portion of the model and includes items such as practice stories, physiological indicators, and questionnaires used to test the theory. All three levels must be included to be a midrange theory.

## Microrange Theory

Microrange theory is more focused than midrange theory and is comprised of very few concepts. Microtheory is often defined as a set of working hypotheses. The above section defined four different levels of nursing theory. The Theory of Wisdom in Action for Clinical Nursing was developed both deductively and inductively as a midrange theory. The philosophical assumption was that all nurses want to apply knowledge in practice using wisdom. Some of the concepts of the theory of wisdom in action are described above and were refined during the first aim of this research. The empirical level is also addressed. All levels of the theory were evaluated by conducting a focused ethnographic study and using the results to refine the theory defined in Aim 1.

## Current Nursing Culture

Culture is important when considering researching nursing practice. Culture has been defined by many, and these definitions include concepts such as values and belief

systems, acquired knowledge, behaviors, and understandings shared by certain groups of people (Morse & Richards, 2002). One definition given by Merriam-Webster aligns specifically with this dissertation: "The integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations" (Culture, 2015). According to Van Maanen (1988),

> A culture is expressed (or constituted) only by the actions and words of its members and must be interpreted by, not given to, a fieldworker. To portray culture requires the fieldworker to hear, to see, and most important for our purposes, to write of what was presumably witnessed and understood during a stay in the field. Culture is not itself visible, but is made visible only through its representation. (p. 3)

One key point regarding culture is that knowledge and beliefs are shared. Shared ideation makes it possible to include a finite number of individuals as cultural informants because each of them is accessing shared cultural knowledge (and probably some personal idiosyncratic knowledge as well). The goal for Aim 2 of this study was to discover the general, shared nursing knowledge and how the social processes of applying wisdom in clinical environments are a cultural or social event.

Nursing culture is influenced by cultural models as well as nursing theory. Cultural models are taken-for-granted models of the world that are widely shared by the members of a society, in this case nursing (Kleinman, 1978). They play an enormous role in nurses' understanding of the world and influence ways that nurses think about practical problems. An example of a past cultural model in healthcare was the relationship between the provider and the patient. In the past the provider was the primary decision maker in the patient's care, but that is currently evolving to a model in which the patient plays a larger role in his or her care.

The culture of nursing is changing. Nurses have always been expected to

transform data into information, formulate that information into knowledge, and wisely apply that knowledge for the good of the patient. Florence Nightingale (1898) wrote that nurses need to know how and what to observe in the patient, and understand what symptoms indicate improvement. This was the first documentation of the transformation of data to knowledge in a nursing text. Now, with advancing technology, nurses are seeing, and are required to process, much more data and information into knowledge than ever before. In addition, it is mandated that they use and understand computerized documentation.

In 2011 the Institute of Medicine (IOM) released *The Future of Nursing*, and stated that the landscape of nursing was changing so much that nursing is required to "undergo a fundamental shift" (p. 115). The technological changes, such as more advanced patient monitoring equipment and the shift from paper to electronic documentation, requires a change in workflow and decision making. This means that clinical practice habits will need to be adapted to adjust to this change (Thede, 2009). It also implies that new skills and behaviors will need to be acquired to locate data in the computer instead of on paper. In addition, data capture from electronic devices such as automatic blood pressure cuffs, cardiac monitors, and so forth, provide massive quantities of data. Those data need to be processed, either in the mind or electronically, to provide care.

The present nursing culture classifies nursing and technology as separate entities. Clark (2004) argued that information technology can be an extension of the mind because the mind expands with technology. Nurses who do not embrace technology are required to do low-level cognitive processing, such as data processing, within their own mind,

whereas nurses who allow the computer to process data can potentially free up some of their mental space for higher-level critical thinking activities when they receive preprocessed information from the system.

Changes in work environment resources will alter nursing culture and ultimately transform care at the bedside. They will also entail that nursing education systems provide the tools required to utilize the technology (Abbott & Coenen, 2008; Benner, 2012; Benner, Sutphen, & Leonard, 2009; IOM, 2011; McNeill & Porter-O'Grady, 2007). These tools can be used to leverage evidenced-based practice and interoperable quality measures (Mason & Wesorick, 2011). The IOM (2011) suggests that nursing culture (including the transmission of values and behaviors via education) should change and adapt along with healthcare organizations, and build in an ongoing process of adaptation to technology as part of the cultural values and socialization of new members.

Nursing culture is changing in concert with the advancing technologic environment. Culture materialists believe that changes in technology play a role in changing society (Harris, 2001). Therefore, utilizing this technology (e.g., computerized documentation, advanced monitoring equipment, reports, alerts, and quality measurements) will require a change in how data, information, and knowledge are processed by nurses in order to provide wise care. The major change is focused on the technological advances in nursing, which necessitates re-educating the bedside nurse as well as transforming nursing education to meet the technological education needs.

There are three assumptions regarding wisdom in action: (a) nurses provide care for patients using wisdom; (b) data, information, and knowledge precede wisdom; and (c) practicing with wisdom is a process. During the act of providing care, data, information,

and knowledge are used to assist in decision making and care.

## Summary

The nursing informatics (NI) scope and standards imply that data, information, and knowledge can lead to the development of wisdom, yet wisdom has not been defined for nursing. The ANA (2008) definition of wisdom within the NI scope and standards focuses on the appropriate application of knowledge, implying that the intent is to focus on wisdom in action. There is an abundance of literature pertaining to wisdom that describes attributes of general wisdom, but the pertinence to and application for nursing is unclear. Nursing theory guides practice, but there is no theory for nursing that pertains to wisdom in action. No formal models are present in the nursing literature for wisdom, although the nursing literature contains related constructs such as expertise and knowledge. Wisdom is unique within the context of clinical nursing due to the cultural context of providing care. Grounded theory is an appropriate way to study actions within a culture. The next chapter contains a detailed description of the methods used for this dissertation.

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# CHAPTER 3

## STUDY OVERVIEW

The purpose of this dissertation was to develop a theory of wisdom in action for clinical nursing and conduct an initial validation of a model of wisdom in action for clinical nursing. The study design type was sequential, in three steps: First a preliminary theory was developed deductively using derivation and synthesis, based on theories and models from psychology, education, and nursing. Second, a constructivist grounded theory approach inductively captured the experience of wisdom in nursing practice based on wisdom narratives from emergency department nurses. Finally, the theories were synthesized into a theory of wisdom in action for clinical nursing. Specific aims of the study were:

- Aim 1: To define a descriptive construct and graphical representation (model) of wisdom in action within the context of clinical nursing practice. The research questions were: (a) What are the attributes of wisdom in clinical nursing? (b) What concepts are related to but distinct from wisdom in clinical nursing? and (c) What are the relationships between the attributes of wisdom, and between wisdom and related concepts, in the context of clinical nursing?
- Aim 2: To understand how emergency room nurses construct the meaning of

wisdom in the emergency room setting within the culture of clinical nursing practice. The research questions were: (a) What does wisdom mean to emergency room nurses? (b) What central processes are used to practice wisely and gain knowledge through practice? (c) What key concepts are involved in the processes? and (d) How are the processes related to each other?

## Methods—Aim 1

The method of theory derivation and synthesis as defined by Walker and Avant (2011) was used to construct of the Theory of Wisdom in Action for Clinical Nursing and to develop a graphical model for the theory. This method was chosen because derivation and synthesis, concept development, and relationship types were clearly defined. The combined use of these two strategies are described sequentially but were done conjointly.

### Theory Derivation

Theory derivation entailed the development of a new theory using a theory or theories from other fields. Walker and Avant (2011) described a process for theory derivation using five steps. The first step was to be aware of other theories. Three theoretical models of wisdom from other disciplines and one from the nursing literature were evaluated.

The second step was to gain an increased understanding of wisdom by widely reading wisdom literature pertinent to the theory. Reading materials that were sought and studied included theoretical models, literature, and poems. These readings helped to determine the concepts and relationships that were pertinent to and contributed to the new

theory.

The third step was to select a parent theory or theories from which the new theory could be developed. The four theories chosen for derivation of the wisdom-in-action theory were the Berlin Wisdom Paradigm (Baltes & Staudinger, 2000), the Model of Wisdom Development (Brown & Greene, 2006), the Model of Wisdom (Glück & Bluck, 2013), and the DIKW framework (American Nurses Association [ANA], 2008).

The fourth step was to identify which parts of the parent theories could be used to construct the new theory. The four theories were evaluated to understand the concepts, their definitions, and the relationships between them. The parts that were identified and selected from these four theories were consequently inserted into a diagram of the emerging theory.

The final step of deriving the new theory was to determine if any of the concepts included in the parent theories needed to be redefined within the nursing context. This was required to develop the actual model. In addition, definitions for similar or synonymous concepts were compared.

## Theory Synthesis

Theory development by synthesis was described by Walker and Avant (2011) as the "process of transforming practice-related research about a phenomena of interest into an integrated whole" (p. 140). The three steps outlined for this method were:

1. Identify the concepts of interest. Initially, the focal concepts came from the parent models from other disciplines which were used for the literature review. These concepts focused on both knowledge and wisdom. Further concepts of interest arose from the review of the nursing literature and nursing

theories.

2. Identify the related factors, and define the relationships between the concepts, including the direction and type of relationship. For example, the relationship between knowledge and wisdom depicted in the DIKW figure published in the American Nurses Association (2008) scope and standards is unidirectional, with knowledge as a necessary factor enabling wisdom development. Because wisdom influences knowledge, this should be bidirectional, with the converse happening as well.
3. Develop an integrated representation or model. This is a diagram of the concepts illustrating the relationships between them. The concepts were grouped, or put into blocks, according to their similarity.

Derivation and synthesis were performed synchronously, and it was evident that the findings from one strategy influenced the other. The concepts found in the pre-existing models from other disciplines were used as the search terms for the synthesis literature review. Conversely, definitions found in the literature during synthesis were compared to the models from other disciplines and assisted in writing the definitions within a nursing context.

## Methods—Aim 2

Wisdom is intrinsically a social, cultural, shared construct—something perceived and difficult to define. Therefore, stories of the actions, perceptions, decision making, and human interactions of clinical emergency room nurses were examined using a constructivist grounded theory (CGT) approach. Emergency room nurses were chosen because they have a lot of autonomy in their practice to make patient care decisions. In

building the grounded theory, the specified processes used to practice wisely within the culture of the emergency room were examined. The theory developed from this aim was separate from the theory produced in Aim 1. The grounded theory was compared to the derived theory and the two models were harmonized to create the final Theory of Wisdom in Action for Clinical Nursing (see Chapter 8).

## Constructivist Grounded Theory

A particular theoretical or philosophical perspective is the foundation of social research (Crotty, 1998). Wisdom is considered a cultural construct, so it is appropriate to examine wisdom as a dynamic, in how it is both socially developed as well as an exercise of wisdom in action in a particular patient scenario. The wisdom-in-action theory was developed using a grounded theory (GT) approach, more specifically constructivist grounded theory (CGT), for Aim 2 of this study. CGT is a logically consistent inductive research approach used for generating midrange theory of human behavior in a social context (Charmaz, 1996; Munhall, 2011). The goal of using CGT was to generate a theory that illustrates processes of human behavior—in this case wisdom in action—directly from the data.

GT is a systematic approach of inquiry used for the purpose of theory construction. The researcher generates an explanation (theory) of a process, action, or interaction which is shaped by views of the participants: "The theory is inductively derived from the study of the phenomena it represents" (Corbin & Strauss, 2008, p. 23). This means that the data produce the theory. GT provides the tools to answer "why" questions from an interpretive stance by considering the dependent relationships between the "whats" and "hows" of social life (Gubrium & Holstein, 1997). It allows the

researcher to develop abstract theoretical understandings from the analyzed material. GT strategies enable researchers to control and expedite the research process because they foster momentum (Charmaz, 2014).

Barney G. Glaser and Anselm L. Strauss (1965) developed GT during their research on dying in the hospital. Glaser and Straus observed how an awareness that they were dying influenced the patients' interactions with family and hospital staff. As this research progressed, they developed systematic methodological strategies that scientists could adopt for qualitatively studying other topics. These strategies were first articulated in their book, *The Discovery of Grounded Theory* (1967). They advocated for developing theories from research grounded in the data rather than deducing testable hypotheses from existing theories.

The method includes four key strategies for data collection and analysis (Charmaz, 2006, 2012, 2014; Strauss & Corbin, 1994). First, analysis is both inductive and abductive. Inductive is a type of reasoning that is used to infer patterns from the data rather than a description or application of current theory (Charmaz, 2014). Abduction is moving deliberatively from qualitative inductive conjectures that are systematically tested deductively and using those conjectures in subsequent interviews to test within and between participants for validity (Morse & Niehaus, 2009; Schwandt, 2001). Second, the analysis is comparative. Comparison is made throughout the process and can include data with data; data with codes; codes with codes; codes with data; codes with categories; and categories with categories (Charmaz, 2014). Third, GT is interactive and requires the researcher to be continually involved with and interacting with both the collected data and the emerging analysis. Fourth, the approach is iterative in both data collection and

analysis. The researcher begins with the initial generative questions that guide the research. The researcher must remain open to developing the tentative interpretations into theoretical propositions about these data through codes and emerging categories, and return to the field to gather more data to check and refine major categories. In addition, the data can be recoded if needed.

Theoretical sensitivity is a defining concept of grounded theory (Charmaz, 2014; Morse et al., 2009; Strauss & Corbin, 1994). Theoretical sensitivity refers to personal qualities within the researcher. These qualities include foreknowledge of the phenomenon of inquiry through previous experience, insight into the research area (which may change as the study progresses), the ability to give meaning to data, and the capability to separate the pertinent from that which is not pertinent. All this is done in conceptual abstract terms rather than concrete terms. Theoretical sensitivity is influenced by the literature, professional experience, and personal experience (Charmaz, 2014; Corbin & Strauss, 2008).

GT theory differs from other methods of qualitative research. The inductive analytic process prompts process discovery then the theorization of that process; therefore, data collection and analysis proceed simultaneously in order to refine, elaborate, and exhaust conceptual categories. The systematic application of GT analytic methods progressively leads to more abstract analytic levels (Charmaz, 2014). GT is shaped by the aim to discover social and psychological processes, whereas the other methods code for topics and themes (Charmaz, 2014; Corbin & Strauss, 2008; Morse et al., 2009). Coding emphasizes actions by embedding them in the codes using nouns formed as verbs by adding “ing” (gerunds).

Three major types of GT are used for research: Glaserian, Straussian, and CGT. As mentioned previously, the first GT method published, now called Glaserian GT, was developed by Glaser and Straus (1967). The two researchers had different career paths, so Strauss moved on and developed collaboration with Juliet Corbin. Together, they developed Straussian GT (Morse et al., 2009). Kathy Charmaz studied under Strauss. She stated that one of the ways Strauss differed from Glaser was that he was a "theorist of actions and not of individuals" (Charmaz, 2014, p. 9). She went on to develop CGT.

In GT, processes are studied, but it is also a method in process because it is young, still being developed and refined (Charmaz, 2012). The method can be adopted by researchers who embrace different theoretical perspectives, focus on various levels of analysis, pursue varied objectives, and address diverse areas such as nursing, policy analysis, organizational studies, and social psychology.

CGT is a contemporary GT method that uses strategies from the original GT—such as coding, memo writing, and theoretical statements—but shifts its epistemological foundations to an interpretive/constructivist paradigm (Charmaz, 2006, 2014). In CGT, what is "real" is viewed as problematic, therefore moving GT further into interpretive social science. It looks for multiple definitions of reality or standpoints that can provide cues for multiple definitions. The goal of CGT is to examine how experience is represented in the time and place of the situation.

One of the main reasons CGT was chosen is that the subjectivist stance of the researcher who already has involvement and interactions with the research topic is recognized. Charmaz (2014) stated that the researcher should be "theoretically agnostic not theoretically innocent" (p. 159). This researcher entered the analysis process with

perspectives on and understandings of the topic, having read widely in the literature; therefore, it was impossible to embark on coding with theoretical innocence. In addition, the researcher brought individual perspectives that were acknowledged when constructing and interpreting the data gathered.

The theoretical perspectives behind CGT are symbolic interactionism and interpretivism. Symbolic interactionism (SI) supports and informs the research methodology of CGT because actions are performed in the environment, or culture, on the basis of meanings (Schwandt, 2001). In SI the focus is on how one interprets the situation and chooses one type of action (Oliver, 2012). Interpretivism is the study of social life and aligns with CGT, which aims toward an understanding of an individual's actions and the meaning of those actions (Charmaz, 2006; Crotty, 1998). The epistemology that informs both theoretical perspectives is constructivism. Crotty (1998) claimed that meanings are constructed by human beings as they interact with the world they are interpreting.

Research from a constructivist perspective examines the meaning of a perspective from the participant's view (Creswell, 2009). This means identifying a culture-sharing group—in this case practicing nurses who work in acute-care environments—and examining shared patterns of behavior—in this research using wisdom in practice. The type of constructivism that aligns with constructivist grounded theory focuses on the individual's use of knowledge as the products of a process of construction resulting from the interaction of intelligence and environment (Schwandt, 2001). The stance taken in the current research is that WIA is a social-cultural enterprise influenced by many internal and external factors. These factors include the people in the situation, the environment,

the information needed for decision making, and the critical thinking/cognitive processes possessed to practice wisely.

CGT has been used to examine different perspectives of nursing practice such as workplace bullying (Gaffney, Demarco, Hofmeyer, Vessey, & Budin, 2012), humor in healthcare (McCreaddie & Payne, 2014), and becoming a role model (Hoarea, Millsc, & Francis, 2013). Each of these studies from nursing practice demonstrates the explanatory power of CGT by illustrating how meaning is made from the data and rendered into theory (Mills, Bonner, & Francis, 2006. They also show how the core category is defined and linked to all other categories. CGT is an appropriate methodology for studying nursing wisdom within the nursing culture.

## Sampling and Participants

Nurses practicing in the emergency room within the setting of Intermountain Healthcare (Intermountain) were interviewed. Ten nurses were interviewed from a pool of more than 150 emergency room nurses working in the Salt Lake Valley. These nurses were chosen because they (a) practice in stressful and/or uncertain situations; (b) are required to possess a high degree of knowledge and skill; and (c) have a lot of autonomy to make immediate patient care decisions in a time-constrained environment and under urgent circumstances.

There were 10 participants (7 women, 3 men) with an age range of 22 to 59 years. They had an average of 11.1 years of experience (range = 5–35 years). Educational preparation of the nurses included associate degree ($n$ = 4), baccalaureate degree ($n$ = 5), and master's degree ($n$ = 1); all were employed at Intermountain Medical Center (IMC).

IMC is a level-1 trauma center with a 452-bed tertiary center. It is a high-volume

emergency room setting that had 82,179 visits in 2013 (U.S. News & World Report, 2013). In addition, IMC's enterprise, Intermountain Healthcare, is the largest provider of integrated medical services in the Intermountain West, experiencing 463, 872 emergency room visits in 2011 (U.S. News & World Report, 2013). Intermountain operates 23 hospitals in Utah and runs more than 400 clinics and urgent care facilities.

A convenience sample was used in one theoretical sampling phase. The sampling was considered theoretical because tentative analytic categories were identified in the derived theory (Tweed & Charmaz, 2012). Initially, Linda Hofmann, RN, vice president of nursing at Intermountain, approached the emergency department at IMC to introduce this research and obtain approval for the study to take place in that setting. Roger Keddington, APRN, regional education consultant, posted flyers in the departments, sent an introductory email to the nursing staff at each of the facilities, and attached the recruitment flyer (see Appendix A). The email introduced the researcher and described the study. The flyer highlighted the purpose of the study and the inclusion criteria for potential participants. The participants contacted the researcher directly by either email or phone. After potential participants initiated contact, they were asked if they were willing to be interviewed in either a one-on-one face-to-face interview or by phone. If so, a meeting was scheduled at a time of their convenience. The goal was to have the setting be convenient and private so the participants could have a thoughtful, uninterrupted conversation. The interviews were held in the researcher's offsite office and in study rooms at two local libraries. A $25 Amazon gift certificate was offered to each nurse who participated.

The inclusion criteria for nurse participants were: (a) those who had practiced or

supervised practice (such as clinical faculty) within an emergency room setting within the previous 5 years; (b) a registered nurse or an advanced practice registered nurse (APRN) at any level of education; and (c) holders of an associate, baccalaureate, or master's degree or doctorate, with at least 5 years of nursing experience.

The participants described practice situations that made them feel they had made a difference, and how they felt they had made that difference. The interviews were used to generate the initial set of stories for coding. The 10 participants contributed 30 stories about clinical wisdom.

There was no a set target number for enrollment. Initially, the plan was to have two sampling phases, initial and theoretical. It was determined after the first phase of open coding that the questions were theoretical, and another interview phase was not needed. This was confirmed as the concepts from the theory were uncovered and the process of wisdom in action was evident.

## Data Collection Methods

Institutional review board approval was obtained from the study setting, and initially, the participants completed the consent and demographics form (see Appendix B). Then, stories of clinical wisdom were elicited from nurse participants through face-to-face, unstructured interviews. In the interviews, there was a brief chat about their practice, and then the conversation flowed into the open-ended questions (see Appendix C). The relaxed interview setting and sequence of questions facilitated free discussion of each nurse's experience. Interviews were recorded with participant permission.

Typical clinical stories of wisdom in action were nonroutine challenging events or other situations that involved uncertainty. The questions were open ended and aligned

with the research assumptions. CGT stories regarding nurses' practice were chosen because daily situations yield a certain kind of story readily analyzable using a GT methodology (Lai, 2010). The initial open-ended interview question was, "Tell me about a clinical situation where you or someone else demonstrated wisdom in a clinical situation." This specific question was chosen because previous psychology research used this question to investigate the social and nonverbal behaviors people display when using wisdom in life matters (Kunzmann & Baltes, 2005). Each nurse was allowed to tell her or his story without interruption from beginning to end.

The next questions were "deepening" questions asked to ascertain the process of decision making and to understand what was happening within the situation. This went beyond the facts and started getting to the actual thought processes that were occurring during the situation. The probing questions pertained to the culture and using knowledge with expertise in the form of wisdom. Questions from the interview guide (Appendix C) were:

1. What information did you use to make a decision?
2. Can you describe the setting?
3. What made this situation difficult?
4. What did you learn from this situation?
5. How did this influence your future practice?

The final question entirely focused on this dissertation: "What are the characteristics, or attributes, of the wisest nurse you have ever worked with?" As many stories were gathered as the nurses chose to provide. No interview lasted more than an hour.

## Data Analysis

The analysis method was Charmaz's (2014) CGT, using three coding phases: open coding, axial coding, and selective coding (Strauss & Corbin, 1994). Before coding began, the recordings were listened to as the transcripts were reviewed. Coding was approached as an inductive/abductive, comparative, interactive, and iterative process. Memo writing also occurred throughout the analysis process. The goal of the analysis was to be fully immersed in the data by studying and restudying to define what the data were all about (Charmaz, 1996). Figure 3.1 pictorially displays the process. Each step is described and discussed below.

### Open Coding

Open coding using line-by-line and action-by-action coding was performed on all of the transcripts with the goal of producing as many codes as possible (Charmaz, 1996; Munhall, 2011). Line-by-line coding allowed the researcher to take an analytic stance toward the work (Charmaz, 1996). The initial coding focused on the processes and actions occurring during the situation because the theory being developed was wisdom "in action" (Charmaz, 2014; Saldaña, 2009). Therefore, the codes assigned were process codes using gerunds. Example questions asked of the data were:

1. What action is happening here?
2. What is the person really saying?
3. What do these statements and actions imply?
4. What is the participant's understanding of the situation? What social processes are occurring in the context of the data?
5. What category do these data indicate?

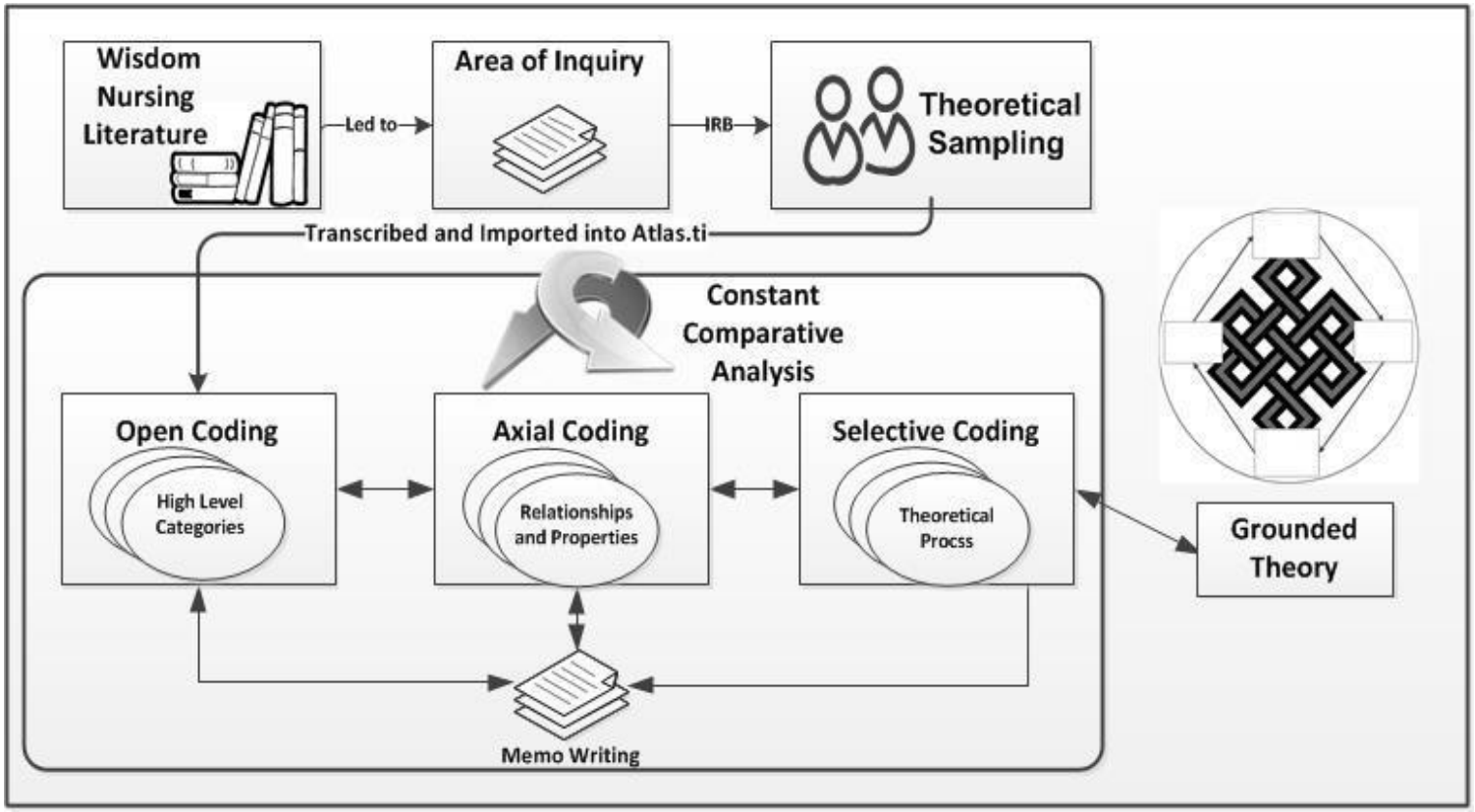


*Figure 3.1* Representation of Constructivist Grounded Theory Analysis Process

Open coding required several passes through the data. The codes assigned were active, not passive. As the coding progressed, some codes were expanded into two or more codes while other codes were collapsed into one. The data were compared with codes, and codes with codes, throughout the process, while looking for similarities and differences. The codes assigned during open coding were examined for their properties (associated characteristics), dimensions, and relationships to each other (McCreaddie & Payne, 2014; Mills et al., 2006). Documentation was done within the ATLAS.ti application and included definitions and concept properties (Friese, 2012). At the end of open coding, documentation was evaluated and the initial concepts for the theory were identified with their properties and dimensions (Corbin & Strauss, 2008).

Axial Coding

The relationships between concepts were determined during the axial coding phase (Corbin & Strauss, 2008). For example, some concepts were time ordered, with one concept preceding another temporally, such as an assessment occurring before a judgment. Identifying relationships among concepts required interpretive work and was represented through a series of illustrative frameworks designed over time to capture the emerging grounded theory. Through constant comparison, the data were refined into categories for the purpose of interpretation. New concepts were created and compared to the data (Charmaz, 1996). Properties of each concept were identified and continually evaluated until the main processes were identified.

Open and axial coding were iterative processes, and this is where abduction began. The iterative component meant that the transcripts were reexamined as new concepts, and properties were identified and refined. Higher-level concepts were

constructed according to the study purpose and were created as categories (Charmaz, 2014).

Abduction occurred as the categories were evaluated and conjectures, or inferences, were developed and evaluated against the data. Codes assigned to each category were evaluated for determination of fit. Network diagramming was used to assist in analyzing the codes that were linked to a category. Figure 3.2 is a network opinion (conjecture) that the emotional codes were somehow related to each other. Network diagramming assisted in visual evaluation. These codes were ultimately assigned to the category "emotional intelligence."

After the concepts began to emerge, an analytical technique described as diagram illustrating the codes assigned during open coding regarding emotion. We had an

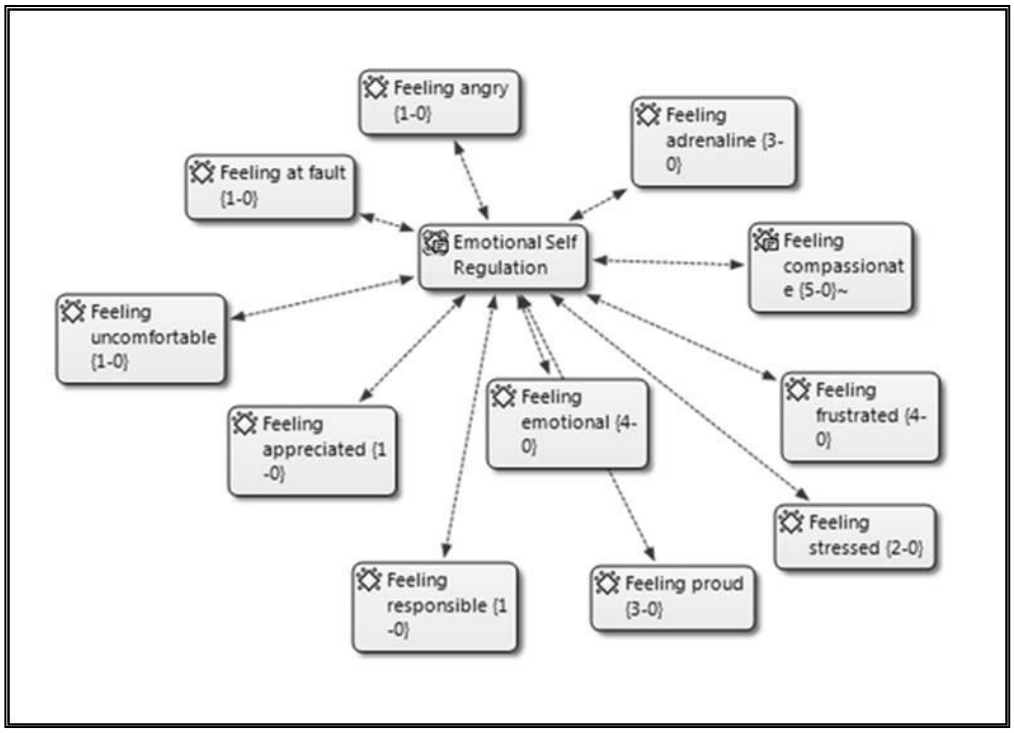


Figure 3.2 *Emotional Intelligence Network Diagram*

"clustering" was used to understand the relationships between the categories. Charmaz (2014) described clustering as linked wheels with spokes. Clustering assisted in linking the categories and identifying the high-level concepts. A software tool, ATLAS.ti (Friese, 2012), assisted in this task, but the drafting could have been done on paper. Figure 3.3 is an example of a cluster diagram that was created.

## Memo Writing

Memo writing occurred throughout the analysis process (Charmaz, 2014). Memos included field notes, code notes, and theoretic/analytic memos, and allowed the researcher to become involved in, question, and analyze the data (Lempert, 2007). The memos included thoughts, comparisons, and questions about the developing theory, the concepts, and their interrelationships. The goal of memo writing was to define and check the properties of the codes; to write thoughts about what was occurring; and to bring in citations from the literature to assist in explaining and clarifying the data. The memos were created as separate documents, or notes, that paralleled the coding of the transcripts.

## Selective Coding

During selective coding, the theoretical processes were interpreted from the data (Tweed & Charmaz, 2012). High-level categories central to the processes were identified and defined; the high-level actions and subactions concepts for each category were identified; and the linkages between the categories were identified and defined (Charmaz, 2014). After all categories, subcategories, and relationship were identified inductively and grounded in the data, each was compared to the nursing and wisdom literature to refine the properties and relationship(s) (Charmaz, 1996). This process, generally called

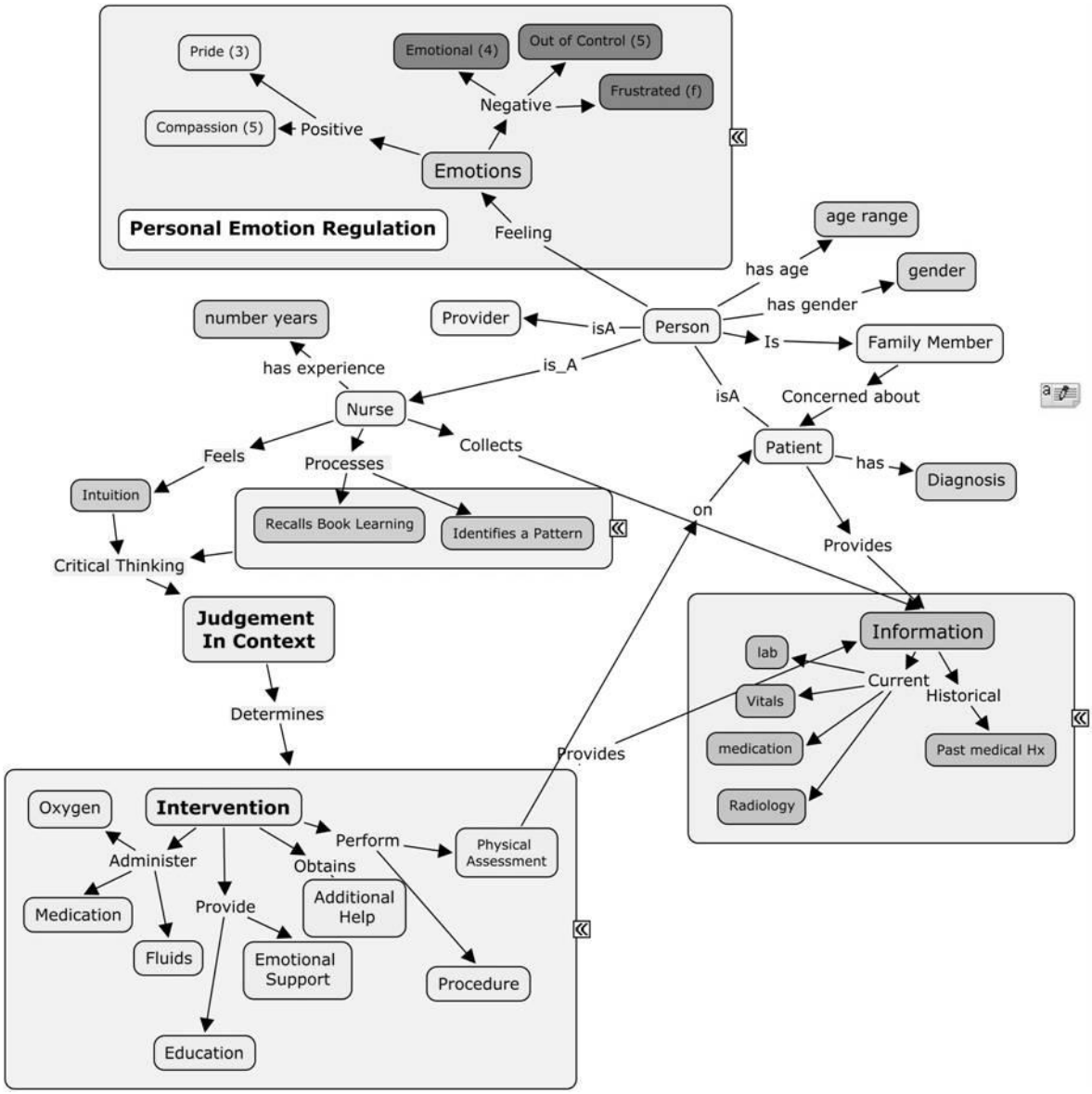


*Figure 3.3* Clustering Diagram

theoretical sensitivity, assisted in gaining additional insight into conceptualizations of the data by considering other theoretical bases for interpretation. Potential transferability of the phenomenon of wisdom in action to similar situations in health care became visible by highlighting similarities between the findings of this study to previous theoretical constructs and concept analyses in the literature (Chiovitti & Piran, 2003).

The theory was diagrammed as concepts and relationships emerged (Lempert, 2007). Diagrams created a visual display of what was known and assisted in understanding the meaning of the phenomenon of wisdom by evaluating each concept, category, and relationship.

The final analysis step was to prepare a chapter (Chapter 7) describing the study and theory. The writing process facilitated further analysis and grounded the theory, making it more concrete (Charmaz, 1996).

## Trustworthiness

Trustworthiness of the data was considered throughout this qualitative research. The phenomenon of wisdom in action for clinical nursing was accurately represented and was supported by evidence, resulting in trustworthy findings as evidenced by the story walkthroughs in Chapters 5 and 6. Trustworthiness was determined by a set of criteria outlined by Lincoln and Guba (1985) that include credibility, transferability, dependability, and confirmability.

Credibility was evaluated as to whether or not the research findings represent a "credible" conceptual interpretation of the data. To do this, peer debriefing was used with Lauren Clark and Nancy Staggers, the dissertation committee co-chairs, over the course of several meetings. This was done after the data were collected and periodically during

the process of analysis. The meetings included a progress report of the analysis and discussions regarding the research questions and methodology. The role of the co-chairs was to question the logic and coherence of the emerging theory and to dialogue about the application of the steps (Lincoln & Guba, 1985). Their consultative roles allowed the researcher to think theoretically about the process and to gain confidence in the defensibility of the analytic methods and results.

The study was conducted in a way that built credibility. Sufficient time was spent with the participants to build rapport. The investigator continually strove to demonstrate to the participants that the information they provided was valuable and would not be used against them. To minimize distortions, the investigator did not use participants who were known to her. Interpretation of the data required continual return to the original transcripts to grasp the meanings offered by the participants. Credibility of data for participants was ascertained by interviewing nurses currently employed in and using stories from the emergency room and by reviewing the consent which explained the purpose of the study, therefore facilitating their understanding of the phenomenon (Trochim, 2005).

Reliability was addressed by keeping an accurate audit log. The audit log shows changes and additions to definitions, how codes moved from family to family, and when code families were created or deleted. The audit log also helps with reliability, replicability, and rigor.

Verification strategies were used to ensure that reliability and validity were continually attained throughout the research process. The verification strategies used for this study were methodological coherence, appropriate sample, concurrent collection and

analysis of data, thinking theoretically, and theory development.

Methodological coherence ensured coherence between the research questions and the research method. The desired data output was the cognitive process used when using wisdom in practice within a specific culture. The verification strategy of concurrent data collection and analysis was followed. Data analysis began immediately after the first interview and continued through all interviews.

Aim 2 was theory building using GT; therefore, the analysis was conducted in parallel with the interviewing, congruent with CGT. The theory was created inductively using the stories to develop a new theory regarding wisdom in action. A completely different theory emerged and was developed from the data. Once the GT theory was developed, it was compared with and contrasted to the theory developed in Aim 1. Both theories were influenced by the researcher's identity relative to nursing and goals.

## Conclusion

This chapter described the research methodologies used for this dissertation. The work occurred in two phases. The first phase was the development of the Theory of Wisdom in Action for Clinical Nursing using derivation and synthesis. The second phase of the dissertation work was a qualitative study examining stories obtained from the interviews of emergency room nurses, using a CGT approach to develop a theory of wisdom in action.

This dissertation research, including findings, is covered in the following three chapters. Chapter 4 was published in *Advances in Nursing Science* in 2011 and is foundational to this research. It represents a widely known use of the concept of wisdom in nursing. The article illustrates the data, information, knowledge, wisdom framework

and describes its philosophical foundations. Chapters 5 and 6 together are a two-part series describing the development of the Theory of Wisdom in Action for Clinical Nursing. Chapter 5 describes the analysis of wisdom models from other disciplines and the derived concepts (antecedents and characteristics) that are pertinent to nursing. Chapter 6 presents the relevant concepts, framed in the nursing context, to describe the theory and illustrate the relationship(s) between the key concepts.

Chapter 7 describes the qualitative study using a CGT to develop a midrange theory of wisdom in action. The findings from both aims of this study are synthesized in Chapter 8 to develop the final Theory of Wisdom in Action for Clinical Nursing. The new theory/model is introduced. The extent to which the model corresponds to clinician descriptions of wise practice is discussed. Also discussed is the extent to which wisdom relates to other constructs (e.g., clinical judgment) and the nature of those relationships.

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# CHAPTER 4

# PHILOSOPHICAL APPROACHES TO THE NURSING INFORMATICS DATA-INFORMATION-KNOWLEDGE-WISDOM FRAMEWORK[1]

Matney, S. A., Brewster, P. J., Sward, K. A., Cloyes, K. G., & Staggers, N. (2011). Philosophical Approaches to the Nursing Informatics Data-Information-Knowledge-Wisdom Framework. *Advances in Nursing Science, 34*(1), 6–18.

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# Philosophical Approaches to the Nursing Informatics Data-Information-Knowledge-Wisdom Framework

***Susan Matney, MSN, RN, FAAN; Philip J. Brewster, PhD; Katherine A. Sward, PhD, RN; Kristin G. Cloyes, PhD, RN; Nancy Staggers, PhD, RN, FAAN***

Although informatics is an important area of nursing inquiry and practice, few scholars have articulated the philosophical foundations of the field or how these translate into practice including the often-cited data, information, knowledge, and wisdom (DIKW) framework. Data, information, and knowledge, often approached through postpositivism, can be exhibited in computer systems. Wisdom aligns with constructivist epistemological perspectives such as Gadamerian hermeneutics. Computer systems can support wisdom development. Wisdom is an important element of the DIKW framework and adds value to the role of nursing informaticists and nursing science. **Key words:** *constructivism, hermeneutics, information management, knowledge, nursing informatics, nursing, nursing research, objectivism, philosophy, postpositivism, qualitative research*

*Where is the wisdom we have lost in knowledge?*
*Where is the knowledge we have lost in information?*

Thomas Stearns Eliot[1]

EARLY definitions of nursing informatics (NI)[2] varied but soon coalesced around Graves and Corcoran's[3] seminal article outlining data, information, and knowledge as foundational concepts for the specialty. Their conceptual framework has been widely accepted throughout the international NI community. In 2008, the American Nurses Association (ANA) revised the Scope and Standards for Nursing Informatics to include an additional concept, wisdom, in the definition of nursing informatics.[2] Data, information, knowledge, and wisdom (DIKW) provide a foundational framework for NI and the framework is useful for the broader nursing community as well, providing a basis for linking theory and practice.

The philosophical foundations of this widely accepted framework have not been well described. The recognition of Graves and Corcoran's work and its worldwide adoption by the nursing informatics community, coupled with the more recent addition of the concept of wisdom, merit philosophical inquiry and clarification. Therefore, we describe the concepts of the data, information, knowledge, and wisdom (DIKW) framework and how they are used in nursing and NI. We explain two philosophical approaches, postpositivism and the hermeneutics of Hans-Georg

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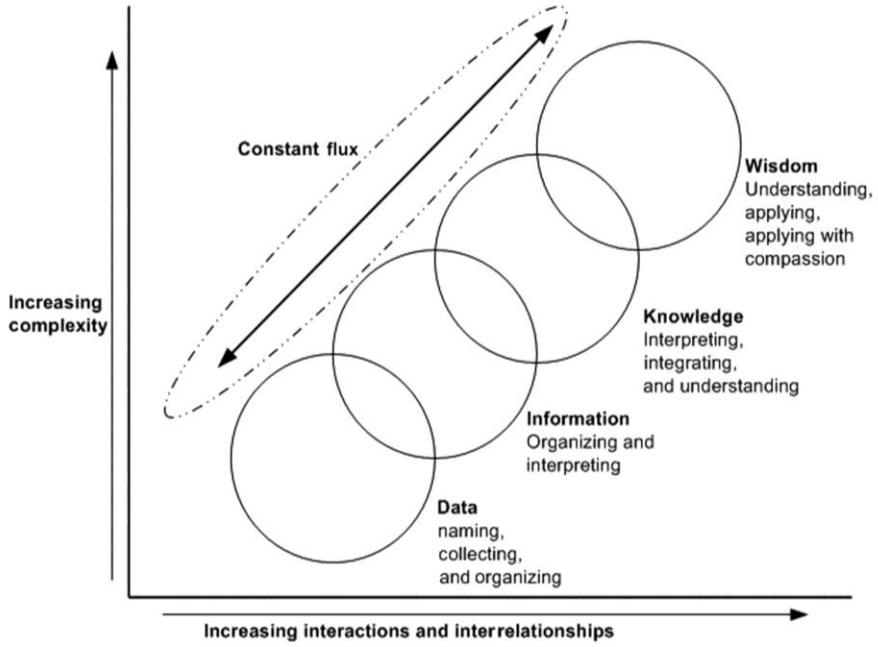


**Figure 1.** DIWK framework. Reprinted with permission from Nelson.[17]

Gadamer that collectively provide an epistemological basis for understanding the DIKW framework. We examine how each approach contributes conceptual clarity and structure for the DIKW framework as a foundation for nursing informatics. We provide NI and nursing examples of these perspectives, and discuss how DIKW can be useful in linking theory with practice.

## DIKW FRAMEWORK IN NURSING

Informatics has been identified as one of the core competencies for nurses at all levels of practice, not just for informatics nurse specialists.[2,4] Data, information, knowledge, and wisdom are considered overarching concepts (metastructures) supporting all of nursing and informatics practice. The DIKW concepts, often described as a hierarchy, originated in computer and information sciences, in particular, in the subspecialty of knowledge management.[5] Figure 1 is the most current model adopted by nursing informatics, illustrating how the concepts build upon each other, growing in scope and meaning as they become increasingly abstract and sophisticated.[2] 'Fuzzy' or overlapping boundaries exist at the juncture between each of the concepts. As a prelude to the philosophical discussion, the following section describes each DIKW concept in more detail.

### DATA

Data are the smallest units in the DIKW framework. They are typically understood as symbols that represent objects, events, and their properties. Data come in many forms such as numbers, words, sentences, or pictures—they can be anything given, no matter what the origin or form.[6] Data have been explained as the products of observation,[7] discrete facts with a minimum of interpretation.[3] Thus, a single piece of data (a *datum*) has little or no meaning in isolation. Data are the form most often stored within patient records, and are used as a basis for further reasoning, calculation, or discussion.

## INFORMATION

Information may be thought of as "data plus meaning." It can be derived by processing data.[3] Information represents the facts and ideas that are available to be known within a certain context.[8] When data are put into a context and combined within a structure, information emerges.[9]

Data and information are not discrete bits; rather, there is a continuum of progressively increased meaning and value.[10] To describe an example of data becoming more meaningful information, consider the number "110." The number has little meaning without context. When developed into a name-value pair, such as "heart rate = 110" (where heart rate is the name, and 110 beats per minute is the value), a meaning begins to emerge. The phrase "a heart rate of 110" increases in meaning when we know that the context is an older adult. Data and information not only represent physical observations, but may also represent abstract concepts such as depression, pain, spirituality, or psychosocial care.[11]

Information answers questions that begin with basic words such as who, what, where, when, and how many. Information may be organized in ways that serve the interests of a discipline[12] and in practice, health information is organized in a way unique to the practice of nursing.

## KNOWLEDGE

Just as data can be transformed into meaningful information, so too can information be transformed into knowledge. Knowledge is information that has been synthesized so that relationships are identified and formalized.[3] Knowledge answers questions that begin with "how" and "why."

There are many types of knowledge.[13] Two types are described within the field of knowledge management: tacit and explicit. Tacit knowledge is difficult to summarize and communicate to others.[14] It is personal, context-specific, and therefore hard to formalize.[9] We may call this "background" knowledge. Explicit knowledge, in contrast, can be generated and formalized, and is more amenable to encoding and transmitting in a formal manner. Explicit knowledge is what knowledge management systems (such as computer decision support systems) seek to capture, codify, store, transfer, and share.

Like the transformation of data to information, the transformation of information to knowledge in nursing and information systems can be conceptualized as a continuum of increasing understanding.[10] Knowledge is derived by discovering patterns and relationships between types of information.

Consider the previous example of a patient with a heart rate of 110 beats per minute. If we combine this with additional information such as: this is a 70-year-old man with pneumonia, his blood pressure is 80/60 mm Hg and decreasing steadily from previous values, his temperature is 101°F, his respiratory rate is 30, his urine output has totaled 60 mL in the past 4 hours, and his skin is dry to the touch—then based on known physiologic patterns nurses will conclude that this person is exhibiting signs of dehydration caused by his fever and pneumonia, and he needs increased fluid intake. This exemplifies nursing knowledge. Similarly, knowledge may be exhibited when a nurse formulates a nursing diagnosis, such as spiritual distress, and identifies the potential interventions such as spiritual care or a clergy referral that could lead to a positive outcome.[11]

## WISDOM

The ANA defines *wisdom* as the appropriate use of knowledge to manage and solve human problems.[2] Beyond that, wisdom implies a form of ethics, that is, knowing why things should or should not be done in practice.[15] It is not a fixed entity, but rather a reciprocal, action-oriented process.[16] Wisdom involves recognizing what is most important, by making distinctions among alternatives. It comprises the application of experience,

intelligence, creativity, and knowledge, as mediated by values, toward the achievement of a common good.[17] Benner[18] bases the understanding of wisdom in nursing on clinical judgment and a thinking-in-action approach that encompasses intuition, emotions, and the senses. Yet, each of these extant definitions does not fully capture the complexity or sophistication of the concept.

There is an increased level of critical thinking at each level of the DIKW framework. Although the progression from knowledge to wisdom is not as straightforward as the path among the other concepts, wisdom builds on and uses knowledge. The difference between knowledge and wisdom is like the difference between memorizing and understanding—there is a process of internalization.

To continue our previous examples, wisdom is displayed when the nurse chooses a specific, tailored means of providing fluid to the elderly patient with pneumonia. The nurse who chooses a form of spiritual care, based perhaps on the preferences and inclinations of the patient, is also displaying wisdom.

## PHILOSOPHICAL APPROACHES

There are different—at first glance even contradictory—philosophical approaches that inform and provide conceptual structure for the DIKW framework. Nursing has long recognized that there can be valuable contributions from theories emerging from different paradigms and epistemologies.[19] At the intersection of philosophical paradigms and the exploration of the DIKW framework is the question: What is meant by "knowledge" and how does knowledge, in turn, support "wisdom?" That is, what is the appropriate application of knowledge to form wisdom? We argue that 2 distinct yet integrated epistemological approaches, the objectivist approach of *postpositivism* and the interpretive approach of *Gadamerian hermeneutics* (especially what Gadamer termed *practical philosophy*),[20] combine to frame and illuminate how the DIKW functions as the basis of informatics inquiry and practice.

## DEFINITIONS

The definitions and usages of philosophical terms have evolved over time, and nuances of those definitions remain the subject of philosophical debate. Many of the terms remain broadly defined and have fuzzy boundaries.[21] Although acknowledging other definitions exist for these terms, and that other terms may fit these definitions, we begin with an explication of philosophical terms used here and the meaning we intend when using these terms. This explication provides the assumptions and foundation for the later discussion.

*Epistemology* is the study of the nature of knowledge. It is the philosophical grounding for deciding what kinds of knowledge are possible, "how we know what we know,"[21(p4)] and how knowledge links with related concepts.[21,22] Following Crotty,[21] 2 common epistemological perspectives are objectivism and constructivism.

*Objectivism* is the epistemological perspective that things exist and have intrinsic meaning independent of human experience.[21] It is the perspective of the world as an objective reality that can be discovered by an observer who is distinct from the thing observed.[21,22] We understand *postpositivism* as an example of this perspective. Postpositivism in this article encompasses the basic assumptions of objectivism (such as intrinsic reality that can be discovered, researcher objectivity, and generalizability of findings) but acknowledges that scientific statements are tentative and contain a level of uncertainty and error.[21,22] We chose this example because much of the nursing informatics literature has been approached from the perspective of postpositivism.

*Constructivism* is the epistemological perspective stating that meaning comes into existence through engagement with the world. This perspective suggests that meaning is

constructed as an interaction between humans and the world around them.[21,22]

We use *Gadamerian hermeneutics* as an example of an approach arising from this epistemology. *Hermeneutics* is concerned with interpreting meaning based on a text, which may be written or recorded. Although there are many varieties of hermeneutics, Gadamer's approach was based on the centrality of language and dialogue to understanding, and that language is bound to history and traditions.[21,22] We chose this example because the focus on language and communication is compatible with many nursing informatics roles and responsibilities.

## POSTPOSITIVISM

The objectivist epistemology posits an understanding of science in which objects and phenomena have intrinsic meaning discoverable through observation.[22,23] Truth and meaning are held to exist within the objects or phenomena, and are independent of human consciousness or experience.[21] A researcher, or observer, is separate from the thing being observed. Detachment in the research process is desirable because meaning resides in the objects or phenomena themselves.[21,22]

Comte used the term *positivism* to describe a strict application of the objectivist epistemology. Knowledge was viewed as being built from unbiased observations (objective data) through a logical process of induction to empirically verifiable conclusions.[21,22] In positivism, all that is known must be experienced through the senses. Different observers should record the same results, or at least be able to repeat the same experiments. Once the facts have been established, the phenomenon under observation can be explained by reference to those facts.

Other philosophers have endorsed a less strict form of objectivism, which has evolved to become the currently prevailing approach to "classical" science. Although there have been several schools of thought that followed positivism, those that remain grounded primarily in the objectivist epistemology are what we mean when we use the term *postpositivism.*[21,22]

Unlike the certainty and claims of absolute truth within the positivist approach, Popper,[24] a 20th-century philosopher, suggested that scientific knowledge is probabilistic and fallibilistic in nature—that there is a level of uncertainty and error in science. He saw scientific knowledge as subject to further testing and possible falsification at some future date. Popper emphasized the influence of background knowledge on science, whereas postulating a need for the ongoing revision and criticism of scientific assumptions.[24] We can see Popper's influence in the methods of research reports today—for example, with statistical findings that include confidence levels and levels of significance. In information systems, uncertainty and error are acknowledged in decision support systems that employ probabilistic reasoning methods or "fuzzy logic" algorithms.

Kuhn[25] opened a still wider perspective onto the practice of what he called *puzzle solving* as representing what science does to generate knowledge. Like other postpositivists, Kuhn emphasized that observations are theory laden; that scientists are never completely detached and value free, but that they approach science out of a background of beliefs and theories.[21] We can see Kuhn's influence, for example, when we witness the frequent efforts to "upgrade" standardized terminologies in response to changes in health care practices.

Postpositivist scientific theory has evolved and increasingly recognizes the significance of context for the understanding of meaning.[21] The postpositivist approach acknowledges the social aspects of reality, accepting that what is "real" includes things that cannot be directly observed. Society, feelings, intelligence, spirituality, pain, and similar constructs are assumed to be just as real as physical observations, at least to the extent that they influence the observable world.[22] Abstract concepts are "observable" through surrogate measures that reflect

the effects of the underlying reality on the senses. The rigorously formalized language of science—whether expressed symbolically as digits, codes, concepts, or statistical *P* values—is understood to refer to entities that are real and that are described accurately.

The postpositivistic approach nevertheless affirms that authentic knowledge comes from the truth of facts (data and information), derived through the use of strict scientific methods and controls. The facts that "count" are observable and objective.[26] Facts representing abstract concepts can be represented through observable surrogate measures.[11]

A fundamental assumption of postpositivism is that data, information, and knowledge can be described accurately and can be created or imputed, stored, shared, and reused. For information and knowledge to be valid and generalizable, the data must be "clean," or virtually independent of context-specific or individual interpretation. This assumption is exemplified in the use of data-cleaning operations prior to the permanent storage of data records in a clinical database or enterprise data warehouse. Use of shared definitions for data, and processes to support objectivity in collecting data, enable a certain degree of confidence that the meaning of data recorded in an electronic health record (EHR) can be known and shared. Clinicians and researchers may conclude that information and knowledge developed from this data will be accurate and can reliably support research, clinical nursing practice, and nursing decisions.

The progression from data to information and from information to knowledge, while not having discrete boundaries, is internally consistent and may be clearly demonstrated. The idea of evidence-based practice is built upon a predominantly objectivist epistemology, as are many of the practices related to patient safety and health care quality. Wisdom, defined as appropriate application of knowledge,[2] is also supported in the postpositivistic theoretical perspective. Wisdom is demonstrated in nursing decisions and actions. Wisdom, then, is illustrated when a nurse determines whether a particular body of knowledge applies to the current patient, at the current time.

Early understandings of the DIKW framework within nursing informatics were described solely from within the assumptions of objectivist epistemology. Graves and Corcoran[3] defined data as *discrete observations* described *objectively* (emphases ours). In this regard, we may also note that data entered into an EHR during the course of care are typically referred to as observations. Information is formed through aggregation or other replicable procedures. Knowledge is based on objective data and information, with little or no interpretation and minimal interference from human preconceptions.

Observations may be used for decision support (via the assertion of facts in decision support systems) and to determine if the criteria for evidence-based practice have been met. Individual patient data, evaluated against the knowledge that has been encoded in an evidence-based guideline, can help the nurse decide whether to act on the knowledge—thus illustrating nursing wisdom. Sophisticated clinical decision support systems can tailor recommendations to individual patient data, helping the nurse decide if a particular decision support recommendation is appropriate for this patient, at a particular time.

If information is assumed to have meaning that can be commonly understood, it follows logically, then, that nurse informaticists and clinical nurses should collaborate to define nursing data and ensure that the semantics of "concepts" stored in an EHR are collectively agreed upon. Standardized terminologies used in nursing include not only physical data, but also abstract concepts such as pain, coping, or spiritual distress.

Burkhart and Androwich[11] discuss measurement of spiritual care using data captured in an EHR. This article illustrates a postpositivist approach. The authors emphasize capturing data in such a way that they can be aggregated, optimally within structured documentation and preferably through quantitative measures such as Likert-type scales

(data) using standardized terminology with agreed upon definitions that are consistently applied (information). They discuss developing an instrument to consistently measure the abstract concept of spiritual health (knowledge), and discuss appropriate ways to apply the instrument such as during nursing assessments (wisdom). A philosophical question (explored further in the article) is: can standardized terms and objective instruments capture the deeper meaning of nurse-patient care situations?

## GADAMERIAN HERMENEUTICS

Although the perspective of objectivism suggests that meaning is contained within objects and phenomena, *constructivism* is the epistemological perspective that meaning comes into existence through essentially social engagement. Meaning is constructed as an interaction between humans and the world around them.[21,22]

There are many approaches within constructivism, including interpretive approaches that focus on constructing meaning through language. We will use *Gadamerian hermeneutics* as an example of an approach that emerges from this epistemology. Traditionally, *hermeneutics* has been considered as the art of interpretation and described as a method for understanding texts. There are multiple varieties of hermeneutics. Gadamer's approach is based on the centrality of language and dialogue to understanding, and the premise that language is bound to our history.[21,22]

In Gadamerian hermeneutics, subjective ways of knowing take on a significant role. Gadamer explicitly thematizes the impact of the individual's background knowledge and the ways that preconceptions play an inextricable role in human judgment and practice. Without providing criteria for epistemological certainty beyond the assurance that participants in a dialogue know the truth of their hermeneutic situation implicitly and at every moment while being involved in this activity, Gadamer replaces the theoretical concept of knowing with that of human understanding in practice.[27] Gadamer reframes the epistemological question of knowledge in the form, "How is *understanding* possible?,"[28] and anticipates a response in the form of actively seeking an answer.

We focus on 2 central themes in Gadamer's work. One is the activity of developing understanding in the *hermeneutic circle*. Second is what Gadamer called *"the universality of hermeneutics."*[29]

The hermeneutic circle is a back and forth interplay that makes us aware of the "preunderstandings"[30] that are essential to our understanding of the world.[27] Martin Heidegger, one of Gadamer's philosophical teachers, introduced the concept of the hermeneutic circle to elucidate the idea that understanding is a reciprocal activity. Further elaborating on this concept, Gadamer's hermeneutic approach was a way of focusing attention on the interpretation of experience in what he calls the 'hermeneutic situation', as found primarily within dialogue.[31] Gadamerian hermeneutics concentrates on expanding meaning and shared understanding through dialogue, whether in a living conversation between persons or in the linguistic interplay that takes place between a reader and a text.

The nursing process might be thought of as a representation of the hermeneutic circle—from the flow of data collection and problem identification, through outcome measurements, which are a form of data collection. Documentation that links nursing diagnoses, interventions, and outcomes, tracks those links over time, and is evaluated and revised, also reflects a form of the hermeneutic circle.

In Gadamerian hermeneutics, everyday communication presupposes the historical existence of a language and a collectively shared tradition to which it belongs as a medium and repertoire of available meanings. Meaningfulness is codetermined by language and the context provided by tradition. What Gadamer calls tradition can be understood as

being the knowledge that is effective in the shared life-world of the participants in dialogue at any given place and time.[32] Tradition, then, is background knowledge, available to us both tacitly and explicitly.

This life-world experience is the basis for what Gadamer called the "universality" of philosophical hermeneutics[29]—the second central theme of focus. Universality is the idea that there is a common structure in human experience, as given through shared natural languages, which makes understanding possible. In human life-world contexts, something logically and temporally always precedes our conscious awareness or focused attention. For Gadamer, this "something" is language, which is a type of experience that is tacitly "known" to us from our everyday encounters and interactions in the world with others. Hermeneutic understanding relies on a continuous process of interpretation and translation of meaning within the linguistic world of common human experience.

Gadamer underscores the dimensions of language and effective history as the horizon of human experience.[28] The act of interpretation occurs through what Gadamer calls a fusion of horizons, which implies that the interpreter's own horizon of expectation is a limit or boundary informing the act of interpretation, as well as that this limit is not permanent, static, or final. The hermeneutic fusion of horizons, in other words, is a dialectical process. When new understanding occurs, it is then possible for a type of learning to take place or rather, to emerge from a prior horizon of understanding. This process of learning involves a kind of trusting openness as a fundamental dimension of the interpreters' shared approaches to experiencing the world, for example, through language and history. The more we practice interpretation and understanding, the more we improve at these processes. In everyday contexts, we often practice hermeneutic understanding unawares. In reading, we slow down and are implicitly asked by the subject matter and its degree of difficulty or "strangeness" to concentrate attentively.

Gadamer's claim of hermeneutics' "universality" in the context of the DIKW framework supports standardized terminology in that there are common human experiences that can be described, there are patterns that can be known, and language used to communicate those patterns. Research based in Gadamerian hermeneutics is needed to help identify those patterns. A philosophical question for nursing informatics is whether it is possible to communicate the full meaning of language within a standardized terminology. Meaning and judgment exist in the choice of a specific standard terminology to use in a health record—but how much of that meaning and judgment can be captured? From the perspective of Gadamerian hermeneutics, an unconscious dimension of understanding always exceeds our conceptual grasp. Thus, what language is saying beyond our intended meanings can never be completely controlled or formalized with absolute precision. The number of contexts-within-contexts-within-contexts (and so on. . .) involved in even the most common linguistic utterances is beyond finite human capabilities or understanding.

As opposed to the linear progression from data to knowledge in the empirical perspective, the hermeneutic approach to understanding (knowledge) is recursive and increasingly contextual and personal. The hermeneutic process presupposes that an interpreter must be able to understand the cultural and historical horizon of the person being understood as well as his or her own cultural biases and limitations.[33] Though hermeneutic criteria for the reasonableness of viewpoints and for the justification of arguments exist, these ideally ought to be agreed to by all the participants in the dialogue from the beginning.[34] What if the resulting understanding simply reinforces a group's biases, rather than generating a new understanding that is aware of them? Hermeneutics' version of fallibilism would suggest that the only answer in this situation is to return to the topic again at some other time, when the effect of biases may or may not be more clearly

recognized, and so on, in a potentially lengthy series of research studies. For Gadamer, the outcome of an authentic dialogue can never be predetermined in advance.

Interpretation becomes especially important in orienting practice when meaning becomes elusive or difficult to grasp, or when a consensus needs to be reestablished within a group or team. We see in Gadamerian hermeneutics the emergence and importance of practical wisdom (praxis), as a dimension that is not simply identical with institutional norms and professional guidelines (as Kuhn and a number of sociologists of knowledge might seem to imply).[27] Understanding how wisdom is present in day-to-day tasks can be challenging, even for the most experienced practitioner. Gadamer taught that arriving at this understanding might involve reentering the hermeneutic circle from a different angle, or along a different "learning curve," for example, going back and reviewing what our preunderstandings were, as we discover how understanding may continue to grow and become translated into practical wisdom.

Interpretive approaches such as Gadamerian hermeneutics certainly include data and information (eg, the words on the page, the "what" of the subject matter being discussed). They focus our attention on the importance of context in developing knowledge or understanding from the ground up, for example, by fore-grounding the significance of life-world experience. The references to "tacit knowledge"[35] in many explications of the DIKW framework confirm the potential significance and importance of the interpretive dimension and of its discernible ties to personal values and ethics.

As we become more and more versed in the art of understanding through hermeneutic praxis—whether it be through encounters with patients in a clinical setting or taking night-school classes in how to read poetic literature—we become experienced in the ability to ask the right questions and to receive meaningful answers. Expressly translated from the experience of the hermeneutic circle back into daily life-world activity (or praxis), this ability is what Aristotle called *phronesis*, or practical wisdom. Practical wisdom enables ethical action that contributes to the common good, by allowing us to recognize and then follow the right course of action in a specific situation. It is not a rule-based, or rule-following, understanding of ethics that Aristotle is proposing. Rather, phronesis denotes such potentially universal, yet everyday behavioral qualities and attributes as prudence, discernment, sensitivity, and tact, as well as an intuitive or "natural" sense of what is "the good," that is, the proper goal of action to be taken for the benefit of oneself and for that of others at any given moment.[36,37]

Gadamer was quite explicit regarding the significance of this dimension for his work: "my whole philosophy is nothing but *phronesis*," he once noted in an interview.[38(p54)] The work of Benner et al[39] explicating the growth of novice to expert nursing practice (praxis) illustrates the role of judgment and phronesis in understanding the DIKW framework.

One of Gadamerian hermeneutics' recurring motifs is that modern scientific rationality and technology have systematically forgotten *phronesis* in favor of exclusive promotion of *techne*—that is, the idea of "applying skills" as the most efficient way to solve problems. In the 1970s and earlier, Gadamer expressed rather prescient concern regarding the impact of information overload on an "unprepared humanity," as technology progresses ever onward without being guided by *phronesis*.[40]

We showed in the preceding section an example from the literature in which measurement of an abstract concept, spirituality, illustrated the DIKW framework from the perspective of postpositivism. Christensen and Turner[41] also conducted research regarding nurses' provision of spiritual care, but from a Gadamerian hermeneutic perspective. They sought to understand spiritual care from the perspective of registered nurses in Denmark. They used audio taped, unstructured interviews that were then transcribed (the words and text are the data). Using established

qualitative techniques, they sought to uncover meaning—both from the words/text themselves and from the context surrounding the words/text (data with meaning is information). They then explicated their understanding of spiritual care as the themes derived from their analysis (knowledge) and talked about possible interpretations and application of their findings (wisdom).

## DISCUSSION

Epistemology is a way of explaining and understanding how we know what we know.[21] It influences, but is not the same as, research methods or selecting the type of data used in research. Popper remained agnostic as to whether quantitative or qualitative methods should be employed to test scientific hypotheses.[42] Quantitative methods require or presuppose a scientifically proven (falsifiable) epistemology for the sake of reliability and accuracy, for example, to preserve the integrity of clinical patient data. Qualitative methods may include a hermeneutic approach, for example, to help lend a personal voice to life-world experiences within an otherwise highly technical and very specialized professional discipline. Quantitative and qualitative research approaches have specific methods, or techniques, to answer a specific research question. They are not in conflict but are ways to answer different questions.[21] Although statistical approaches are common in postpositivist research, broad affinities exist between the hypotheticodeductive approach and the hermeneutic process of question and answer in dialogue. Reconciliation between quantitative and qualitative approaches therefore no longer appears quite as unthinkable as it once might have.[42]

The DIKW framework can be examined from seemingly conflicting, but actually surprisingly commensurable and complementary epistemological foundations. Nurses are knowledge workers—they need fundamental knowledge to support practice and they constantly generate and consume knowledge. Nursing is also a practice profession with knowledge and practice being inextricably intertwined.[13,18] Knowledge or theory supports practice by describing meaningful relationships between information and concepts.[43] Thus, theory is a means of representing knowledge (defined relationships between meaningful information) and is used to describe or explain practice phenomena, to predict outcomes from decisions or action, or to prescribe a course of action.

The initial components of DIKW, the data, information and knowledge components can be considered a direct fit with nursing practice, nursing informatics, and information systems. Wisdom, on the contrary, is more elusive. In addition to being a knowledge and practice profession, nursing is an ethical activity, requiring judgment and decisions.[34] Wisdom within nursing is then a uniquely human state, calling upon human attributes such as values, beliefs, and one's moral and ethical perspectives.

Given that wisdom is supported by knowledge, different manifestations of wisdom may exist. Wisdom may be manifested in nursing through "professional expertise"[43] or "clinical judgment."[18] It may also be manifested in caring and compassionate practices that support each patient's particular life-world and in the moral and ethical decisions nurses make every day.[44]

The ANA's addition of the concept of wisdom as represented in the DIKW framework is supported by multiple philosophical perspectives.[2] We concur that wisdom is an important element of the DIKW framework and adds value to the roles of nursing informaticists and nursing science.

Some lingering philosophical questions are as follows: (1) Will computers and EHR fully embody the DIKW and display wisdom? and (2) Can the internal processes of nursing judgment (wisdom) be identified and then programmed? Current technology used within EHRs today neither computes nor displays wisdom. Computers can display data, information, and knowledge including abstract concepts. They can receive

data and information and process it against stored knowledge (such as rules) to produce decisions or recommendations. To date, computers do not display tacit knowledge and may never be able to fully embody wisdom. However, the attainment of wisdom can be supported by computer systems. A computer system can be programmed with information and knowledge to promote human learning, understanding, and personal growth, which, in turn, support the development of human-centered wisdom.[7]

Wisdom is an attribute of human beings. Thus, even though computers do not themselves possess wisdom, nurses who use computers can exhibit wisdom in their practices and can develop wisdom through the use of computer systems. Nursing informatics specialists support developing wisdom through sound management and communication of data, information, and knowledge. The appropriate and ethical application of knowledge and theory is understood as wisdom.[2]

The DIKW framework can support the translation between research and practice. Understanding how the concepts of the DIKW framework overlap and interact will assist clinical nurses in the critical evaluation and implementation of research.[17]

The DIKW framework facilitates the nurse's ability to represent ethical practices. As knowledge workers, nurses collect data and information and make decisions that affect individuals, families, and communities.[2] Wisdom is intertwined with the principles of doing things right. Wisdom and ethics are attributes of each other. In addition, wisdom and ethics share the characteristics of judgment, caring, and responsibility. "Clinical judgment requires moral agency, insight, skilled know-how, and narrative reasoning about patient transitions."[18(p103)] Proficient nurses show clinical wisdom with ethical discernment by demonstrating the ability to think critically and to act and practice responsibility, by applying abstract thinking and knowing to implement specific acts of care within specific situations. Wisdom is about comprehensibility, understandability, and the ethics of our doing.[15] Nurses with wisdom are engaged and pay attention to the ethical challenges they face. They believe the principles of morality and acceptable conduct are important for all people.[45]

Wisdom, supported by a postpositivistic perspective, often takes the form of clinical judgment, asking, "Is this body of scientific knowledge applicable for patient X at the current time?" From the Gadamerian hermeneutic perspective, wisdom takes the form of praxis—the day-to-day decisions made by nurses with experience levels ranging from novice to expert.[18]

Nursing is a holistic practice, expanding beyond the physical dimension to include social, interpersonal, spiritual, and other dimensions. Like other professions, it is both an art and a science. The caring practices and discernment implicit in "nursing judgment" are often called the art of nursing. Many of the judgments nurses make can be identified and programmed into an EHR, but healing relationships cannot be reduced to objective data, nor can they always be predicted—nevertheless, we know they exist and recognize them when we experience them.[16]

## CONCLUSION

Data, information, knowledge, and wisdom are foundational concepts for nursing and nursing informatics. We conclude that the DIKW framework provides a foundation for linking theory and practice. We presented 2 epistemological perspectives, postpositivism and Gadamerian hermeneutics that contribute foundational elements to nursing informatics and the DIKW framework. We discussed how both approaches conceptualize and clarify the aims of informatics, and described ways to study phenomena from both perspectives using the DIKW framework. The combination of postpositivism and Gadamerian hermeneutics provides an appropriate epistemological basis for understanding the DIKW framework. Awareness of the assumptions about knowledge in both approaches

will allow nurse informaticists, nurse scholars, and nurse researchers to link data, information, knowledge, and wisdom in a meaningful way.

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# CHAPTER 5

# TOWARD AN UNDERSTANDING OF WISDOM IN NURSING


## Abstract

Nurses seek to better understand how to gain nursing wisdom and apply this wisdom in daily practice, yet the concept and experience of wisdom in nursing practice has not been well defined. This is the first of two chapters addressing wisdom in action for nursing practice. This chapter briefly describes nursing theory, reviews the wisdom literature as presented in various disciplines, and identifies characteristics of wisdom by analyzing four models of wisdom from other disciplines. It also discusses the 10 antecedents of wisdom (data, information, age, education, social interaction, cognition, openness to learning, mentors, life experiences, and the values relativism and tolerance) and the 10 characteristics of wisdom identified in an analysis of the wisdom literature. Understanding these 10 antecedents and the 10 characteristics of wisdom in action, which are described in Chapter 6, can be used both to help nurses demonstrate wisdom as they provide nursing care and teach new nurses the process of becoming wise in nursing practice.[2]


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[2] This chapter has been submitted for publication in the *Online Journal of Issues in Nursing*.

## Introduction

"Where is the wisdom we have lost in knowledge?" (Eliot, 1969, p. 147). Few could imagine the technological advances that would occur after T. S. Eliot wrote this poetic line in 1934, relating wisdom to knowledge and suggesting a distinct relationship between the concepts. In 2008 the American Nurses Association (ANA) released the revised *Nursing Informatics: Scope and Standards of Practice*, adding the concept of wisdom to the accepted framework of data, information, and knowledge concepts in nursing informatics. This expanded data, information, knowledge, wisdom (DIKW) framework is widely accepted by the international nursing informatics (NI) community as a foundational model for the field of nursing (Nelson, 2002).

Wisdom is defined in the *Merriam-Webster Online Dictionary* (2014) as (a) knowledge gained through life experiences, (b) the innate ability to understand things that others cannot understand, and (3) judgment or good sense. In the NI *Scope and Standards of Practice*, wisdom is defined as "the appropriate use of knowledge to manage and solve human problems. It is knowing when and how to apply knowledge to deal with complex problems or specific human needs" (ANA, 2008, p. 5). Although the concept of wisdom has been added to the NI *Scope and Standards of Practice*, the concept and its applicability to nursing have not been well defined beyond the field of nursing informatics (Matney, Brewster, Sward, Cloyes, & Staggers, 2011). Because nurses have a desire to apply wisdom within their practice, and nurse informaticists need to understand how to support the use of wisdom in practice (see discussion below), a clearer understanding of the concept is needed. This chapter describes the development of a theory of wisdom in action for clinical nursing and represents a deliberate study to

identify characteristics of nursing wisdom theories by studying these theories in other disciplines. The identified characteristics are subsequently used to create a theory of wisdom in action for nursing that is described in Chapter 6.

## Nursing Theory

Nursing theory facilitates the development of nursing knowledge and provides principles to support nursing practice. Theory shapes practice and provides a method for expressing key ideas regarding the essence of nursing practice (Walker & Avant, 2011). Nursing theory is developed from groups of concepts and describes their interrelationships, thus presenting a systematic view of nursing-related events. The purpose of theory is to describe, explain, predict, and/or prescribe (Chinn & Kramer, 2011; Reed & Shearer, 2007; Risjord, 2009; Walker & Avant, 2011). Theory is used in all aspects of nursing care and assists the practicing nurse in organizing, understanding, and analyzing patient data. Essentially, theory provides a systematic, consistent way of thinking about nursing care to guide the decision-making process. Theory-based clinical practice occurs when nurses intentionally structure their practice around a particular theory to guide them in their care of the patient.

Different levels of nursing theory exist; these levels include metatheory, grand theory, midrange theory, and microrange theory. Metatheories focus on theory about theory. These theories develop through asking philosophical and methodological questions to form a nursing foundation. Grand theories give a broad perspective for the purpose and structure of nursing practice (Peterson & Bredow, 2008; Walker & Avant, 2011). One of the greatest contributions grand theories (largely developed between the 1960s and the 1980s) provide for nursing is the differentiation between nursing practice

and the practice of medicine. In contrast, midrange nursing theories contain a related set of ideas and variables, are narrower in scope, and are testable (Smith & Liehr, 2008; Walker & Avant, 2011). They offer the specificity needed for usefulness in research and practice, usually focusing on one specific topic or area of care and often beginning with a concept analysis and the development of a larger conceptual model (often called a construct).

The Theory of Wisdom in Action for Clinical Nursing was developed deductively as a midrange theory (Higgins & Shirley, 2000). The philosophical assumption of this theory is that all nurses want to practice using wisdom.

## Review of the Wisdom Literature

Today there is a large body of literature about wisdom, although much of it does not relate to wisdom in nursing practice. Wisdom is an abstract ideal, an end point or characteristic, something applied in yet separate from practice. The focus in this chapter is to further nursing's clinical or practice wisdom. To support this exploration, definitions of wisdom from early classic philosophy and psychology literature, along with definitions from the nursing literature, are presented. Additionally, their alignment with nursing is discussed.

### Philosophy

Classical philosophers began defining wisdom as early as 400 B.C. Plato wrote that wisdom is the knowledge about the good between all that exists (Truglio-Londrigan, 2002), while according to Aristotle, wisdom is knowledge of the first causes and principles of things (Rice, 1958). Aristotle differentiated wisdom into five states of mind: *episteme*, or scientific knowledge; *theoretikes*, or theoretical knowledge devoted to truth;

*techne*, or technical skill; *phronesis*, or practical wisdom, which enables ethical action that contributes to the common good; and *Sophia*, which is concerned with truth toward a practical end (McKie et al., 2012). All five of these wisdom states could define the art and science of nursing practice. The nursing profession is built upon scientific knowledge (episteme), and nursing practice is grounded with theory (theoretikes; ANA, 2004). Nurses must understand and stay abreast of current technology (techne). One of the nursing standards of practice is ethics; hence, nurses integrate ethics (phronesis) into all areas of their practice. Finally, the art of nursing practice is based on a framework of caring (Sophia).

## Psychology

There are two types of wisdom described in the psychology literature, general and personal (Staudinger & Glück, 2011). General wisdom is directed toward other individuals from a third-person perspective; it is a personal trait manifested by caring for others. In contrast, personal wisdom is individual, focused on advice and judgment that is based on insight gained from experience (Mickler & Staudinger, 2008). Personal wisdom is about one's own life and problems seen from a first-person perspective. These are both important to understand because nursing pertains to both general and personal wisdom. Initially, general wisdom is used when caring for the well-being of others during practice (Staudinger & Glück, 2011); afterwards, learning from the caring experience can be applied personally. Personal wisdom comes into play after experienced nurses reflect on their own practice and learn from their experiences, thereby increasing their personal knowledge.

Extensive research concerning wisdom is available in the psychology literature

(Staudinger & Glück, 2011). Bluck and Glück (2004) qualitatively analyzed autobiographical narratives from individuals of all ages concerning times when they felt they said or did something wise. Results demonstrated that all age groups were able to change negative life experiences into positive ones when wisdom was used. Bluck and Glück defined wisdom as an adaptive form of judgment that involves how one thinks. In a second qualitative study, Glück and Baltes (2006) asked subjects to describe wise people. Resulting themes included morality, integrity, overcoming risk or adversity, searching for insight, and striving toward individual improvement.

Wisdom is assumed to be intrinsically associated with age and experience. Although older people have more experience, age is not the only characteristic associated with wisdom. Pasupathi and Staudinger (2001) posited that those who are "open to new experiences, are creative, who think about the how and why of an event rather than simply whether it is good or bad, who demonstrate more social intelligence, or who are oriented towards personal growth display higher levels of wisdom-related knowledge and judgment" (p. 403). This is important for nursing because it means that age is not necessarily a factor in being a wise nurse.

Sternberg (2007) and his team hypothesized that the key leadership components of wisdom are intelligence, creativity, and knowledge, as well as being able to use these characteristics to make good decisions. His team presented difficult life-problem vignettes with possible solutions to study participants. The participants rated the solutions; then, their solutions were compared against ratings from psychological experts. Findings showed that people with general wisdom are wise when the stories are about other people, but they may or may not apply that same wisdom themselves (Staudinger &

Glück, 2011.

The findings from psychology illustrate that important wisdom character precursors include morality, integrity, creativity, intelligence, knowledge, and insight, as well as concepts used during the application of wisdom, such as judgment and thinking of others. All of these concepts align with the practice of nursing.

## Nursing

Few authors have explored or attempted to define wisdom in a nursing context. Benner (2000) wrote that nursing wisdom is based on clinical judgment and a thinking-in-action approach encompassing intuition, emotions, and senses. Benner, Hooper-Hyriakidid, and Stannard (1999) described clinically wise nurses as both proficient and expert. Matney et al. (2011) described wisdom as the application of experience, intelligence, creativity, and knowledge, mediated by values, toward the achievement of a common good. These definitions link wisdom to performance, or nursing practice, leading one to recognize that wisdom must be tied to actions using skills and knowledge.

Haggerty and Grace (2008) evaluated the psychology and philosophical wisdom literature to determine the key components of clinical wisdom. They identified the following three themes: "balancing and providing for the good of another and the common good, the use of intellect and affect in problem solving, and the demonstration of experience-based tacit knowing in problematic situations" (p. 235). Christley, McMillan, McCallum, and O'Neill (2012) completed a concept analysis of practical wisdom, describing three antecedents (also called precursors) and three attributes of practical wisdom along with their implications for nursing practice. The three antecedents were experience; reflection; and care, compassion, and empathy. The three wisdom

attributes were experiential knowing, judgment and balance, and action.

Two concepts from the field of philosophy, namely praxis and phronesis, are associated with wisdom in nursing. Praxis is defined as the act of putting theory into practice (Rolfe, 2006); is developed from moral, experiential, and practice-related situations; and changes over time with increased experience (Connor, 2004). Litchfield (1999) illustrated a nursing-praxis framework merging theory, practice, and research.

Phronesis is defined in the nursing literature as practical wisdom requiring the context of the situation to be considered before action is taken (Connor, 2004; Flaming, 2001; James, Andershed, Gustavsson, & Ternestedt, 2010; Leathard & Cook, 2009). Phronesis is indicative of morality in that nurses need to be ready to determine the most appropriate response in a particular circumstance (Chen, 2011). It is paired with praxis by relating intellectual virtues to practice (Newham, Curzio, Carr, & Terry, 2014).

Characteristics of wisdom found in praxis and phronesis—e.g., putting theory into both practice and morality—can be applied to nursing practice, yet how they are applied is not clear. A clearer understanding of the concept of wisdom is needed to clarify how knowledge is translated or actioned into wisdom during practice. Clinical nursing is a process requiring a practice-based theory of wisdom rooted in action. Understanding wisdom from a nursing context will leverage the ability of both practicing nurses and nursing informaticists as they facilitate the development and use of wisdom. This chapter is focused on identifying wisdom concepts that pertain to clinical nursing and that are derived from wisdom theories in other disciplines. In the second part of this series (Chapter 6), a theory of wisdom in action for clinical nursing is developed.

The researcher made three assumptions pertinent to the identification of wisdom

characteristics and the development of a theory for nursing. First, wisdom is defined in other disciplines; therefore, existing theories of wisdom likely contain characteristics useful for wisdom in clinical nursing even though these other disciplines' theories have not yet been collected into a single whole. Second, nurses provide care for patients in clinical situations using wisdom. Third, nurses use both general and personal wisdom, as described above.

## Identification of Wisdom Characteristics

The process of derivation as defined by Walker and Avant (2011) was used in the identification of wisdom characteristics. Derivation implies that the concepts are obtained from another source. The method entails examining existing models or theories, selecting a core model or models from which to create a new theory, and specifying how existing models are adapted. This derivation process included three steps: (a) identification of potential theories that may contribute to or overlap with nursing wisdom, (b) selection of the theories from which the characteristics could be derived, and (c) analysis of the characteristics of the parent theories needed for the new nursing theory. The researcher followed this process to produce a list of wisdom antecedents and characteristics that describe and can support wisdom in nursing practice.

Multiple models from other disciplines were evaluated and analyzed using formal theory analysis for possible derivation (Walker & Avant, 2011). The following four models or theories were used for theory derivation: The data, information, knowledge, wisdom (DIKW) framework from the computer science and nursing informatics discipline (Nelson, 2002), the Berlin Wisdom Paradigm (BWP; Baltes & Staudinger, 1993), the MORE Wisdom Model (Glück, 2010; Glück & Bluck, 2013) from the

discipline of psychology, and finally the Model of Wisdom (MW; Brown, 2004) from the discipline of education. These models were chosen because they focus on knowledge as the core of wisdom, a central component in the application of wisdom to any actions. Each is described below.

## The Data, Information, Knowledge, Wisdom Framework

The initial model evaluated was the DIKW framework that originated in computer and information sciences, particularly in knowledge management (Blum, 1986). The DIK portion of the framework was first discussed in nursing in Graves and Corcoran's (1989) work; the DIKW framework was first described for nursing informatics by Nelson (2002) and was adopted by the ANA in 2008 (ANA, 2008; Schleyer & Beaudry, 2009).

The components consist of four overlapping concepts: data, information, knowledge, and wisdom (see Figure 5.1). Data are symbols that represent properties of objects, events, and their environments that alone have little meaning. Information is data given structure. Knowledge is derived by discovering patterns and relationships between types of information (Nelson, 2002). Wisdom is using knowledge correctly to manage or explain human problems. The ANA described wisdom as the ability to evaluate information and knowledge within the context of caring, and to use judgment to make care decisions (ANA, 2008; Matney et al., 2011).

## The Berlin Wisdom Paradigm

The Berlin Wisdom Paradigm (BWP) was developed at the Max Planck Institute to provide direction toward investigation of wisdom-related knowledge systems and judgment processes (Baltes & Staudinger, 1993; Smith, Dixon, & Baltes, 1989). They

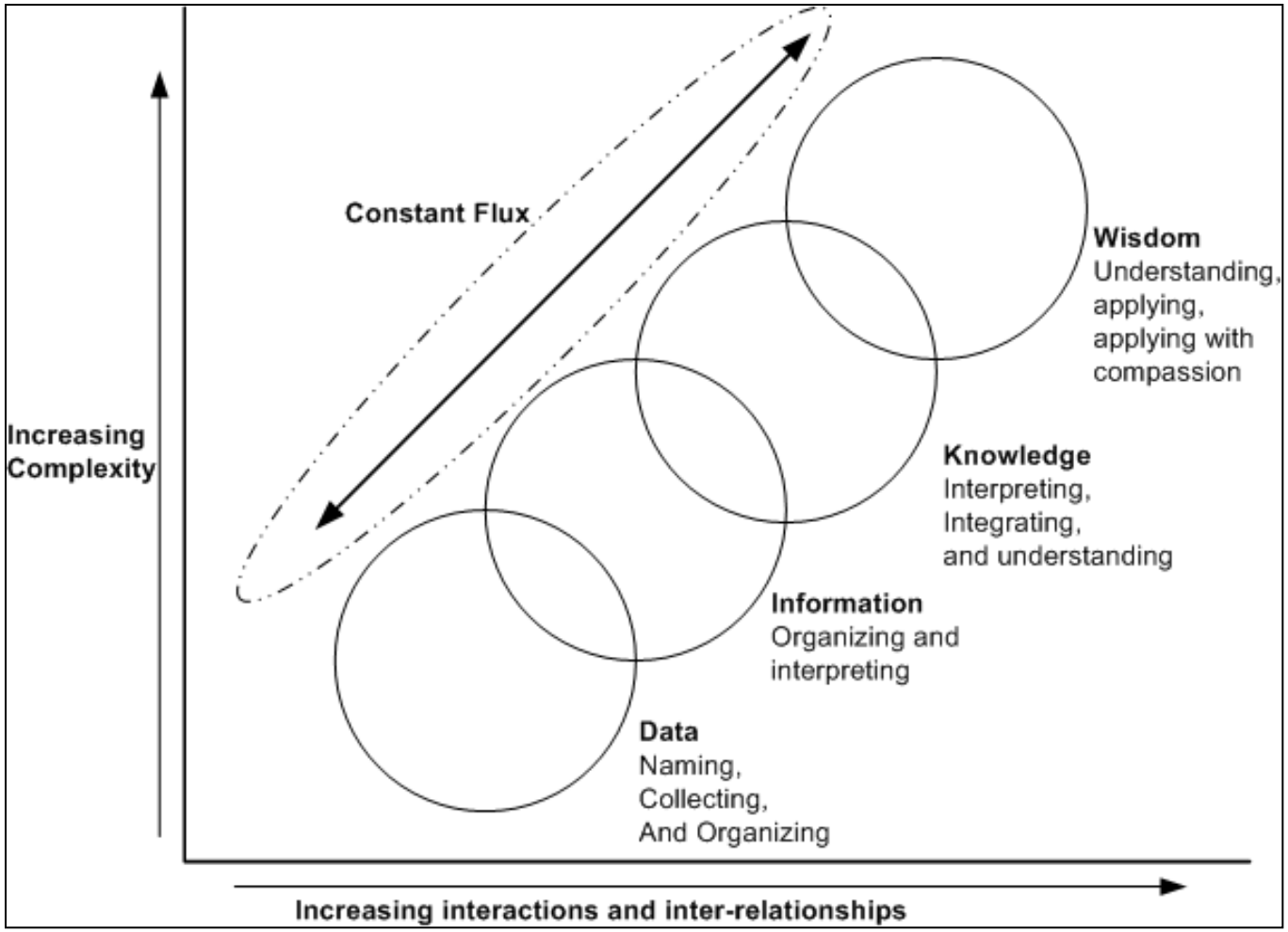


*Figure 5.1* Revised Nelson Data Information Knowledge Wisdom (DIKW) Model, 2008 version. Copyright© 2008 Ramona Nelson, Ramona Nelson Consulting. All rights reserved. Reprinted with permission.

defined wisdom as "a cognitive and motivational metaheuristic (pragmatic) that organizes and orchestrates knowledge toward human excellence in mind and virtue, both individually and collectively" (Baltes & Staudinger, 2000b, p. 132). Fundamental pragmatics in life refers to deep insight and sound judgment regarding the human condition, and the ways of planning, managing, and understanding life (Staudinger & Glück, 2011). Metaheuristics are high-level strategies that organize lower-level rules within individuals to assist in planning, managing, and evaluating life issues.

The BWP (see Figure 5.2) is composed of three different sections: person-related factors, life context, and problem solving (Baltes & Staudinger, 2000b). The sections include wisdom antecedent factors (precursors) and process concepts. The first section, person-related factors, contains three categories considered antecedents to wisdom development. The second section of the framework is life context, and is defined as wisdom applied to actual life. Wisdom involves using good judgment, insight, emotional regulation, and empathy, and is found in all areas of life including family interactions, writing, and personal relations. The third section portrays qualitative criteria for solving problems. The five expertise-specific categories, namely experience in life matters, organized tutelage, mentorship in dealing with life problems, cognitive heuristics, and motivational dispositions, are deemed sequential for developing expertise (Baltes & Staudinger, 2000a). This theory led us to investigate the MORE Wisdom Model.

## The MORE Wisdom Model

The acronym MORE represents the following concepts: Mastery, Openness, Reflection, and Emotional regulation or Expertise (see Figure 5.3). It was conceptually derived from the BWP (Glück, 2010; Glück & Bluck, 2013), with the goal of developing

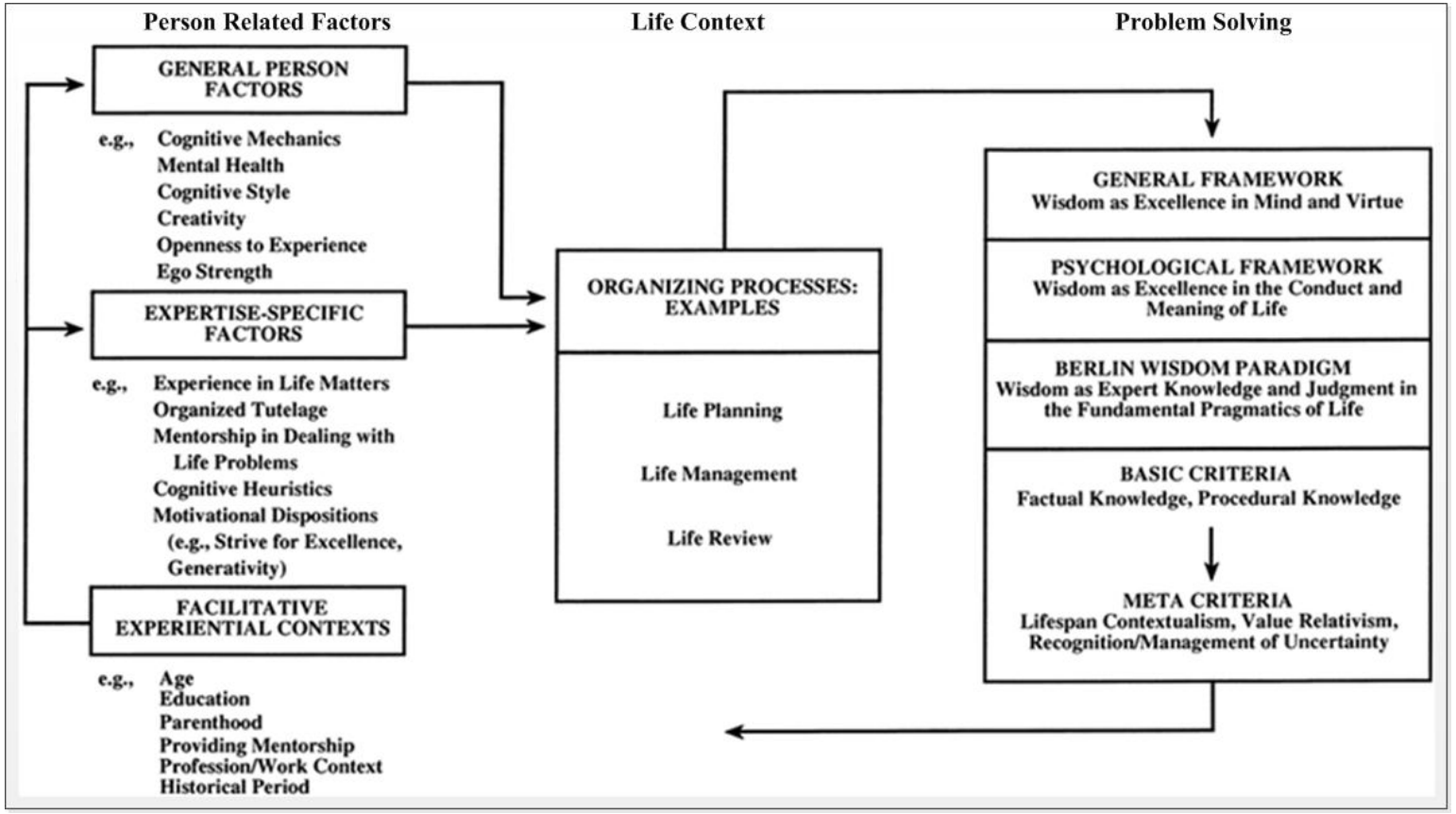


*Figure 5.2* Berlin Wisdom Paradigm. Reprinted from "Wisdom: A Metaheuristic (Pragmatic) to Orchestrate Mind and Virtue Toward Excellence," by P. B. Baltes & U. M. Staudinger, 2000b, *American Psychologist, 55*(1), p. 125. Copyright 2000 by American Psychological Association. Reprinted with permission

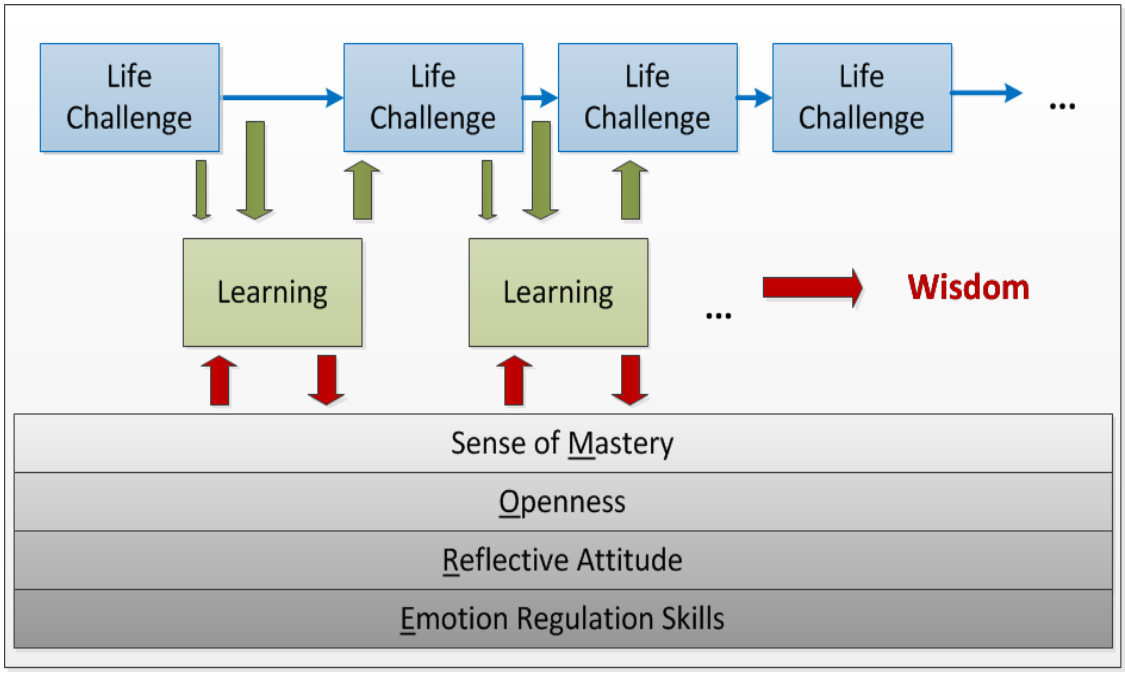


*Figure 5.3* The MORE Wisdom Model. Reprinted with permission from the developer, Judith Glück.

a specific framework for understanding why and how some people cumulatively develop wisdom while others do not. The authors' first study was conducted using autobiographical narratives of people who thought they were wise. The second was a qualitative study of people nominated as wise (open interview questions were used in this study).

The first concept, sense of mastery, is the belief that any of life's challenges can be dealt with, but also the awareness that not everything can be controlled. Challenges are managed head-on or through adaptation, and individuals do not feel victimized when events are beyond their control, giving them a sense of mastery.

The second concept is openness. People must have an interest in and be open to experiences and ideas to develop knowledge and use it wisely. High levels of openness help individuals seek out wisdom-fostering situations.

The third concept is having a reflective attitude. Wise individuals are reflective and motivated to think deeply; they step back and examine the situation to better understand the context, and seriously examine their own past behavior to gain meaning and set direction. Individuals reflect on experiences and learn from them. Once knowledge is gained from experience and reflection, it can be applied in future situations.

The fourth and final concept is emotional regulation, or control of emotions and the ability to be sensitive to others' emotions. Wise individuals are calm and self-controlled; they perceive their emotions accurately and manage them appropriately in both positive and negative situations.

These positive and negative situations involve life experiences and serve as means for fostering wisdom development. The arrows in Figure 5.3 (relationships) illustrate that life challenges lead to learning through a reciprocal relationship with the four characteristics.

## The Model of Wisdom

Brown (2004) developed the Model of Wisdom (MW) and a validated Wisdom Development Scale (WDS). The central component of the MW (see Figure 5.4) is learning from life. This component includes concepts of reflection, integration, and application. Individuals must take information in, and then ponder, analyze, process, and integrate it into their conscious and unconscious actions. Once that is achieved, learning occurs, and the new knowledge can be used and applied. If it is not applied, the knowledge obtained does not result in growth or change.

Three conditions, all considered circumstances that affect the development of wisdom, are linked to the "learning from life" core component. These conditions include

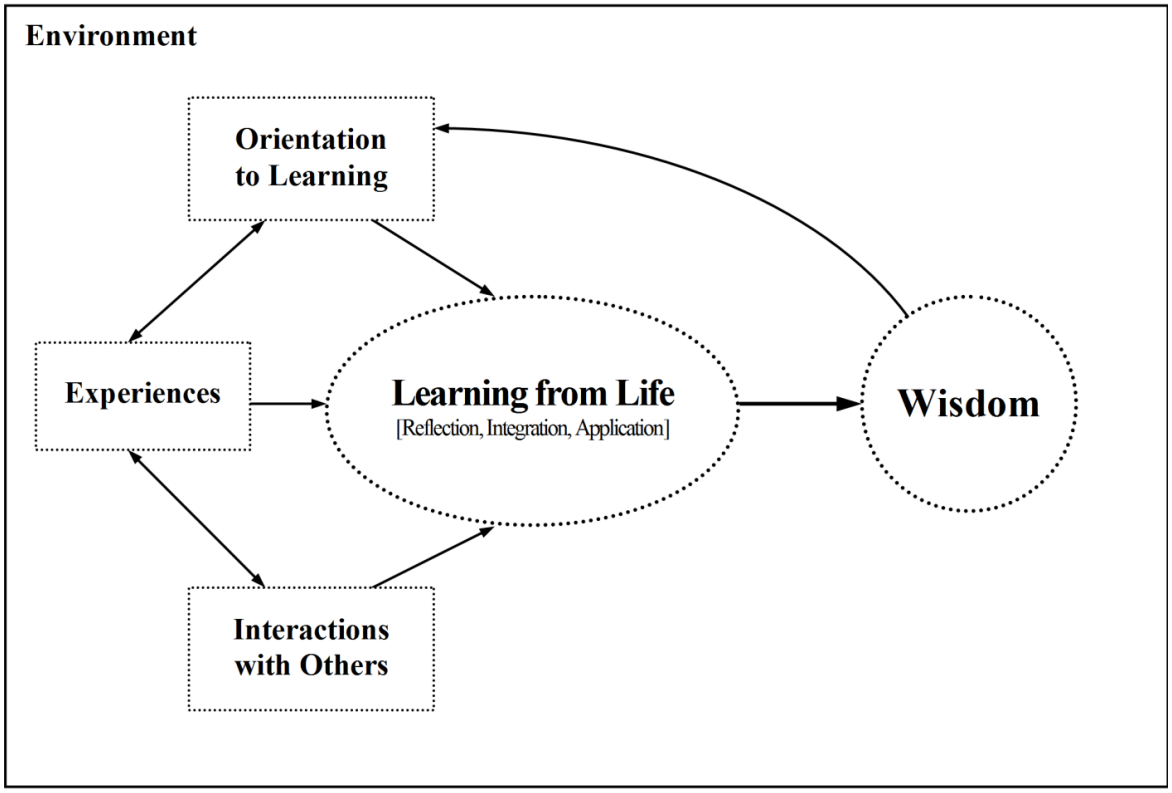


*Figure 5.4* Model of Wisdom Development. Copyright © 1999 Scott C. Brown. All rights reserved. Reprinted with permission.

(a) orientation to learning, (b) experiences, and (c) interactions with others. Orientation to learning describes how a person approaches specific knowledge-gaining experiences, and consists of motivation and a desire to learn. Experiences result in knowledge acquisition. Interaction with others requires a genuine caring and compassion for others, and a willingness to give of oneself to be of influence for the common good.

The final circle in the model, symbolizing the goal, is wisdom. Brown (2004) stated that wisdom is comprised of six interrelating characteristics: self-knowledge, understanding of others, judgment, life knowledge, life skills, and willingness to learn. Self-knowledge is a consciousness of one's own values, morals, ethics, talents, and abilities pertaining to both personal and professional life. To have self-knowledge a

person must have a clear understanding of him- or herself. Understanding of others is a true understanding of and interest in others at the individual, social, and cultural levels. Judgment is the ability to take in information and apply it to a person's life, i.e., the ability to assess and analyze a situation and to make a sound decision. Life knowledge is a person's reservoir of knowledge obtained from books and life experiences, including common sense, understanding, and an appreciation of life. Life skills are characterized by individual competence in life matters. Finally, willingness to learn requires an admission of not knowing everything (humility), the understanding of one's current level of knowledge, and the desire to know more.

## Derived Nursing Wisdom Antecedents and Characteristics

After the above models were analyzed, the BWP was selected as the core model because it contained the most concepts and relationships resonating with nurses. A model for nursing was developed that would eventually become a theory. The model contained the wisdom antecedents and characteristic concepts. The development process included the researcher's personal discussions with many nurse experts and a presentation at a professional conference (Matney, Avant, & Staggers, 2013), at which time feedback was received and incorporated into the theory.

Table 5.1, developed by the researcher, illustrates identified antecedents and characteristics of wisdom. The relationships between the concepts are described in Chapter 6, but readers can begin to see that a possible theory of wisdom for nursing can be created from the derived concepts.

Three of the antecedent concepts in the table pertain to wisdom in general: data, age, and openness to learning. In these cases, the concepts did not need redefining as they

Table 5.1

*Derived Antecedents and Characteristics*

| Wisdom Antecedents and Characteristics | DIKW[a] | BWP[b] | MORE[c] | MW[d] | Needs Nursing Definition |
|---|---|---|---|---|---|
| Wisdom Antecedents/Precursors | | | | | |
| Data | x | | | | |
| Information | x | | | | x |
| Age | x | x | | | |
| Education | | x | | x | x |
| Social Interaction | | x | | | |
| Values, Relativism, and Tolerance | | x | | x | x |
| Cognition | | x | | | x |
| Openness to Learning | | x | x | x | |
| Mentors/Role Models | | x | | | x |
| Life Experiences | | | | x | x |
| Wisdom Characteristics | | | | | |
| Rich Factual Knowledge | | x | | | x |
| Rich Procedural Knowledge | | x | | | x |
| Lifespan Contextualism | | x | | x | x |
| Knowledge Mastery | x | | x | x | x |
| Stressful Situation or Management of Uncertainty | | x | | | x |
| Judgment | | | x | x | x |
| Decision | | | | x | x |
| Application | | | | x | x |
| Reflection | | | x | x | x |
| Learning | | | | x | x |

[a]DIKW = Data, Information, Knowledge, Wisdom framework.
[b]BWP = Berlin Wisdom Paradigm.
[c]MORE = Mastery, Openness to Learning, Reflection, Expertise
[d]MW = Model of Wisdom.

are common to many theories and can be easily understood; however, all of the other concepts identified in the table needed the definitions modified to fit within a nursing context. Therefore, the next step in developing the Theory of Wisdom in Action for Clinical Nursing was to redefine the identified characteristics within a nursing context. The final step was determining the relationships between the concepts and the creation of a model. The redefined characteristics, relationships, and model are presented in Chapter 6.

## Discussion and Summary

The evaluation of the four derivation models resulted in the initial set of antecedents and characteristics, as well as the following insights. Knowledge was present in every model as a precursor to wisdom. Other precursors included data, information, age, education, values, cognition, openness to learning, mentors, and life experiences. The BWP model (Baltes & Staudinger, 2000) and MORE model (Glück & Bluck, 2013) both describe the wisdom-development process as the application of knowledge in a stressful situation or when dealing with uncertainty, as well as openness to and actual learning. Reflection was also required for learning. From informatics the researcher came to appreciate how data are structured into information, and how rules or logic are applied to this information to derive knowledge.

Psychology describes two types of wisdom, general and personal, and these also apply to clinical nursing. The implications here are that the antecedents and characteristics may be different for the two types of wisdom. General wisdom is evident when giving care. Compassionate practice focuses on individual patients and their loved ones; it is having the desire to give them excellent care and using professional expertise

when making clinical judgments. General wisdom may also be present in the moral and ethical decision-making process. Personal wisdom comes into play when, after the situation has occurred, individuals take time to reflect, study, learn, and ponder their own values and morals to gain understanding. The characteristic of knowledge overlaps both general and personal wisdom. Expertise used in caring is knowledge used in practice for another person and is considered general wisdom. Personal wisdom develops as the nurse gains knowledge after reflecting on a situation.

Wisdom in nursing practice is a complex phenomenon not completely understood through a single list of antecedents and characteristics. The characteristics of wisdom described above were taken from other disciplines' theories. The question that remains unanswered is, "How are wisdom antecedents and characteristics defined for nursing?" Thus, the nursing literature is further evaluated to define the characteristics within a nursing context and to determine if additional concepts are needed.

## Conclusion

This chapter has presented the foundation for the new Theory of Wisdom in Action for Clinical Nursing by outlining an analysis of wisdom models from other disciplines and identifying fundamental characteristics and antecedents for the concept of wisdom. Four models of wisdom from nursing, philosophy, psychology, and education were examined in an effort to determine the applicable characteristics and antecedents. Ten potential characteristics and 10 potential antecedents to wisdom were identified.

In Chapter 6, the identified characteristics are modified from their original theories to reflect appropriate definitions for the nursing context. A clearer understanding of wisdom in nursing practice could allow nurses both to teach the process of becoming

wise and to work toward achieving wisdom in their own practice. This understanding is also important for the nursing specialty of nursing informatics [NI], because NI works to provide needed support for wisdom in nursing practice. The manner in which these concepts describe wisdom in action for nursing, including the relationships between them and the revised definitions, is described in Chapter 6.

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# CHAPTER 6

# DEVELOPMENT OF THE THEORY OF WISDOM IN ACTION FOR CLINICAL NURSING


## Abstract

Practicing with wisdom is a goal for nurses, yet the concept and experience of wisdom in nursing has not been well defined. A theory of wisdom in action for clinical nursing was developed using derivation and synthesis based on models from other disciplines (described in Chapter 5) and nursing literature. Pertinent concepts and relationships were identified and evaluated, and nursing-specific definitions were created. The theory of wisdom in action (WIA) is comprised of four interrelated dimensions: (a) person-related factors, (b) environment-related factors, (c) knowledge, and (d) wisdom in action. WIA is an iterative process that includes applying knowledge based on skilled clinical judgment to a stressful or uncertain situation to produce a decision.

Once the decision is implemented, it initiates reflection, discovery of meaning, and learning, which is integrated back into knowledge and judgment. The theory can provide a working framework for translating wisdom in clinical nursing practice into theoretical and practical terms. The theory illustrates how knowledge mastery allows nurses to know what is needed in a stressful or uncertain situation and make appropriate

decisions about care for a patient.[3]

## Introduction

> A 50-year-old mom is admitted into the emergency room (ER) as a trauma one. She had been out riding her bike with her friend, had a helmet on, and was an avid road biker. She was in great shape. The story was that she kept riding while she was trying to adjust her helmet strap. She had taken her helmet off and was looking down and not watching where she was going. She veered and hit a sign head-on. She must have been going pretty fast because she had a huge head trauma. She was intubated, and just didn't look good. (Emergency room nurse)

The nurse caring for this patient wants to give the best care possible. She wants to practice using wisdom, but what does it mean to practice using wisdom, and how can she know that she is successful in doing this?

This chapter is the second of a two-part series describing the development of a theory of wisdom in action (WIA) for clinical nursing using derivation and synthesis. The first part, Chapter 5, discussed the derivation process and the models evaluated, and ended with concepts that pertained to wisdom in nursing practice (Matney, Avant, & Staggers, in press). This chapter describes the synthesis portion of the theory development, and includes discussion of pertinent nursing and other literature, additional wisdom antecedents and characteristics added from the nursing literature, definitions for the concepts, and a model illustrating the relationships between the concepts. The scenario presented at the beginning of the chapter describes the beginning of a situation in which a nurse felt she had made a difference during her practice; that is, she practiced using wisdom. The chapter will "walk through" the story as the theory is described to illustrate the concepts using a real-life example.

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[3] This chapter has been submitted to the *Online Journal of Issues in Nursing*.

## Theory Development

The Theory of Wisdom in Action for Clinical Nursing was developed using derivation and synthesis. The derivation process was described in detail in Chapter 5. Synthesis and the final theory are discussed here. Synthesis was described by Walker and Avant (2011) as the "process of transforming practice-related research about a phenomena of interest into an integrated whole" (p. 140). Walker and Avant's (2011) suggested three steps were used as the method. The first step was to identify the concepts of interest. Initially, the focal concepts were derived from the parent models from other disciplines. These concepts focused on both knowledge and wisdom. Additional concepts were identified within the nursing literature and are described and defined below.

The second synthesis step was to identify the related factors and define the relationships between the concepts, including the direction and types of relationships. For example, the relationship between the concepts of knowledge and wisdom published in the American Nurses Association (ANA) scope and standards for nursing informatics is unidirectional, with knowledge as a necessary factor enabling wisdom development (ANA, 2008). This relationship may in fact be bidirectional, with the converse also taking place: Wisdom might influence knowledge.

The final synthesis step was to develop an integrated representation or model. This is a diagram of the concepts illustrating the relationships between them. The concepts are also grouped according to their similarity. Some concepts were determined to be synonymous, and therefore were combined.

Synthesis included review of pertinent nursing literature, creating definitions for the concepts based on nursing context, and identifying additional concepts. Because the

literature is so intertwined with the theory, it is discussed and cited throughout the description of the theory of WIA. Benner and colleagues' work strongly influenced the theory of WIA, including the ideas of novice to expert, intuition, and wisdom (Benner, 1984; Benner, 2000a; Benner & Tanner, 1987; Benner, Hooper-Kyriakidis, & Stannard, 2011). Knowledge and wisdom go hand in hand; therefore, Carper's Fundamental Patterns of Knowing (1978) and Smith's (1989) work on personal knowledge development were also pertinent. Finally, Schön's (1983) writings on reflection were used to create a reflection feedback loop in WIA.

During synthesis further concepts arose. Five additional antecedents and one wisdom characteristic were added to those described in Chapter 5. Table 6.1 contains the final list of antecedents and characteristics and their definitions. The additional concepts identified from the nursing literature are tagged as "new." The antecedents added include clinical experiences and three setting-related concepts. Setting included the antecedents of setting type, culture, and the nurse's familiarity with the setting. One additional concept, insight and intuition, was added as a wisdom characteristic, and is discussed in the description of the theory. The concept of "judgment" was changed to "clinical judgment in context." The concepts with "not needed" in the definition column are not defined because the definition is implied by the name.

After the concepts were identified, they were clustered by commonality into groups called dimensions, and relationships were identified. The starting core model for the grouping and dimensions was the Berlin Wisdom Paradigm (BWP; Baltes & Staudinger, 2000), discussed in Chapter 5. The model of WIA for nursing changed during synthesis of the nursing literature and after discussion with nursing colleagues.

Table 6.1

*Antecedent and Characteristic Definitions*

| Wisdom Antecedents and Characteristic Concepts | New | Nursing Context Definition |
|---|---|---|
| Wisdom Antecedents/Precursors | | |
| Data | | Not needed |
| Information | | Data in context of care grouped together to provide meaning |
| Age | | Not needed |
| Education | | Instruction received, including in school and on the job |
| Social Intelligence | | The capacity to effectively handle complex social relationships and environments |
| Values, Relativism, and Tolerance | | An awareness that all clinical judgments are a function of and are relative to a given cultural and personal value system |
| Cognition | | Speed and accuracy of basic information processing in the brain and skills such as reading and writing ability |
| Life Experiences | | Things that have happened during life, wherein knowledge and/or skills were gained |
| Openness to Learning | | Awareness that there are multiple perspectives in every experience, and an interest in learning from new perspectives and from other people |
| Mentors/Role Models | | Those who lead and guide students to behaviors that promote self-awareness and engagement with clinical situations |
| Clinical Experiences | X | Past acts of clinical care |
| Clinical Training | X | The level of education a nurse has had regarding clinical care and competencies |
| Setting Type | X | The place where the situation occurs |
| Setting Culture | X | A way of thinking, working, behaving in a particular setting |
| Nurse Familiarity with Setting | X | Knowledge of the location of practice |
| Wisdom Characteristics | | |
| Rich Factual Knowledge | | The possession of an extensive knowledge base regarding the nursing process and care of the patient |
| Rich Procedural Knowledge | | Knowledge regarding clinical procedures, processes, and interventions required for care |
| Lifespan Contextualism | | Understanding others across the lifespan in order to provide age-appropriate care, as well as understanding across one's own lifespan |
| Knowledge Mastery | | An understanding of the situation and the steps required to care for the patient during the particular situation at the expert level |
| Stressful Situation or Management of Uncertainty | | An event during which the nurse feels worried or anxious regarding care of the patient or does not have clear knowledge of how to address the problem |
| *Clinical* Judgment *in Context* | | The process of data collection and interpretation to derive a plan of action |

Table 6.1 Continued

| Wisdom Antecedents and Characteristic Concepts | New | Nursing Context Definition |
|---|---|---|
| Wisdom Characteristics, Continued | | |
| Insight and Intuition | X | Intuition is a gut feeling or hunch about something that does not have concrete facts to support it. This feeling guides the nurse to perform some type of intervention. Insight is knowing and understanding without the conscious use of reason |
| Decision | | Making a choice regarding care |
| Application | | Putting the decision into action |
| Reflection | | Taking time to ponder and think about the critical thinking, judgments, and decisions used after dealing with uncertainty |
| Learning | | Gaining knowledge |

## The Theory of Wisdom in Action for Clinical Nursing

The "Theory of Wisdom in Action for Clinical Nursing" (see Figure 6.1) is comprised of four interrelated dimensions: (a) person-related factors, (b) environment-related factors, (c) knowledge, and (d) wisdom in action. The first two dimensions are antecedents to WIA. Knowledge is both an antecedent and a component of WIA. Each dimension is described below, and the nursing literature pertaining to the theory is interwoven through the narrative.

Many attributes of life contribute to the development and use of wisdom. These antecedents are grouped into dimensions of person-related factors and clinical factors.

### Person-Related Factors

The dimension of person-related factors contains two conditions that work in combination: personal factors and clinical factors. Personal-factor concepts include age, education, social intelligence, culture/religion, values, relativism and tolerance, cognition, life experiences, and openness to learning. The personal-factors dimension of the model

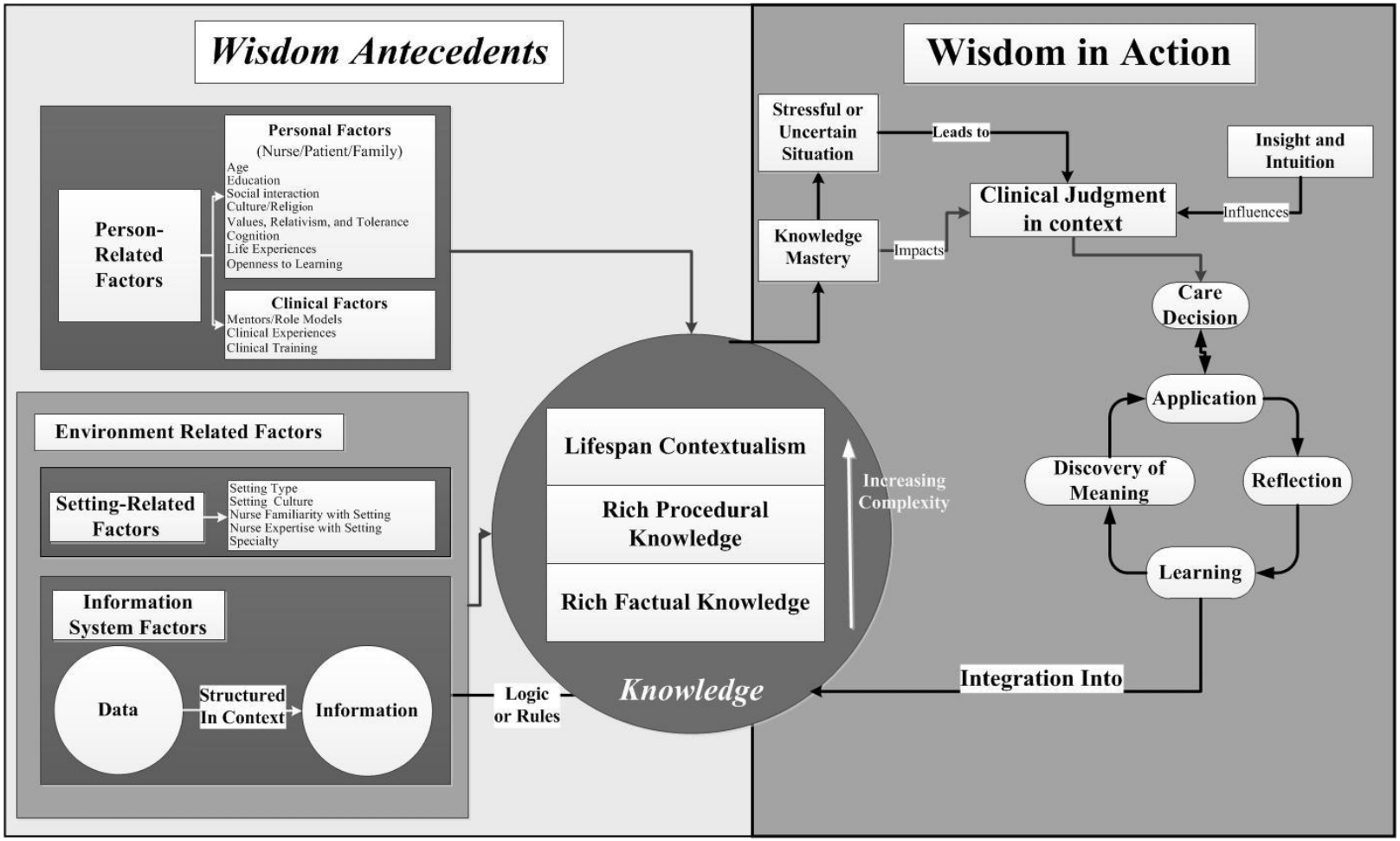


*Figure 6.1* The Theory of Wisdom in Action for Clinical Nursing

is the only section that includes the nurse and the patient or family. In contrast to psychology, in which wisdom is focused solely on the individual, wisdom instantiated by the clinical nurse is a distributed act rather than being located within a single person, and always takes the patient and family into consideration. General wisdom applies to the family as well as the patient.

Age and education are self-explanatory concepts that need not be defined. Social intelligence is the capacity to effectively handle complex social relationships and environments. Social intelligence is characterized by very good communicative skills, a high degree of empathy, and the ability to give advice (Staudinger, Lopez, & Baltes, 1997). Social intelligence, which is particularly valued in human interactions and relationships, is a vital attribute for nursing (McQueen, 2004).

Culture and religion concepts in this dimension are values and belief systems developed during a person's life. This does not include the setting culture, but does include acquired knowledge, behaviors, and understandings shared in the social settings in which the person was raised and lives (Morse & Richards, 2002). One definition for culture given by Merriam-Webster aligns specifically with wisdom: "The integrated pattern of human knowledge, belief, and behavior that depends upon the capacity for learning and transmitting knowledge to succeeding generations" (Culture, 2015). A key point regarding culture is that knowledge and beliefs are shared. Shared ideation makes it possible to include a finite number of individuals as cultural informants because each of them is accessing shared cultural knowledge (and probably some personal knowledge).

Values, relativism, and tolerance require an awareness that all clinical judgments are a function of and are relative to a given cultural and personal value system. They

include clinical heuristics or guidelines, because they can be contributing factors. The nurse must also consider the variations and life priorities of the patient within a particular situation (Pasupathi & Staudinger, 2001). Relativism requires an understanding of different philosophical positions regarding what is good and right. Openness to learning is required for knowledge acquisition and involves imagination, attentiveness to inner feelings, and intellectual curiosity (Glück & Bluck, 2013).

Cognition includes elements such as the speed and accuracy of basic information processing in the brain and skills such as reading and writing (Glück & Bluck, 2013). Wisdom and cognitive development are tightly linked (Brown, 2004). Cognitive theorists describe the increasing levels of complexity that individuals display when they make meaning of their experiences, focusing specifically on how meaning is structured rather than on what they believe or know.

Openness to learning is characterized by a confidence in what knowledge a person has, the humility to know that he or she simply cannot know everything, and a willingness to stumble in the pursuit of knowledge (Brown, 2004).

To follow along with the emergency room scenario, according to the nurse,

> She had a husband and five kids that came back to the room. It was a big family. I didn't get to ask them their ages, but they were probably from their mid-twenties to probably like a ten-year-old at the bottom.

In this scenario, the person-related factors pertained to both the nurse and the family. The nurse did not have time to assess the religion of the patient, but lived in a region with a predominant faith. She considered the social culture during communication. She felt she had the appropriate communication skills to explain to the family what was occurring in the situation. Things were happening very fast, so the speed and accuracy of

her cognition came into play, especially because she had to communicate with children of various ages.

The clinical-factors dimension includes experience-specific factors, mentors/role models, clinical experience, and clinical training. Mentoring in nursing involves leading and guiding others to behaviors that promote self-awareness and engagement with clinical situations (Haggerty & Grace, 2008). Becoming a professional nurse includes the use of mentors and clinical experience. Life experiences and clinical experiences become the building blocks of knowledge required for expertise development. Clinical training is an ongoing process necessary to stay abreast of the evolving knowledge and expertise required for practice.

In the emergency room scenario, the nurse relating the story was an experienced nurse with more than 5 years of experience. She was certified in advanced life support and advanced trauma support.

## Environment-Related Factors

The environment-related-factors dimension includes setting-related and information system factors. Setting-related factors are related to the clinical practice site or context of care (hospital, community, school, and so forth), policies, and site culture. The concepts within this dimension are setting type, setting culture, nurse familiarity with the setting, and nurse expertise with setting specialty. The setting is an important component of the situation. This factor aligns with situation awareness theory, related to perceiving and understanding elements in the environment and projecting their status (Endsley, 2000). Nurses working in stressful situations require the ability to perceive the activities in the environment, understand what they mean, and project the implications of

event-driven decisions into the future.

The setting culture pertains to the norms and values related to the social context of the situation. In this situation, it was the emergency department. Beals, Hoijer, and Beals (1977) identified five major components of a cultural system: (a) a group consisting of members; (b) members carrying out activities; (c) equipment used by members; (d) a tradition that represents historically accumulated decisions of the members; and (e) human activities or rituals emerging out of complex interactions. This clearly defined a team working together in a medical setting. How the team works together influences practicing with wisdom.

## Information System Factors

Information system factors include the use of computerized data, information, and knowledge. This dimension is comprised of data received from an electronic health record or other electronic devices. Information consists of data in the context of care grouped together to provide meaning (Matney, Maddox, & Staggers, 2014). During the act of providing care, nurses use data, information, and knowledge to assist in decision making.

Technological changes play a large role in the care of patients. The Institute of Medicine (IOM; 2011) stated that the landscape of nursing is changing so much that nursing is required to "undergo a fundamental shift" (p. 115). The technological changes, such as more advanced patient monitoring equipment and the shift from paper to electronic documentation, require a change in workflow and decision making. This means that clinical practice habits will need to be adapted to adjust to this change (Thede, 2009). It also implies new skills and behaviors will need to be acquired to locate data in

the computer instead of on paper. In addition, data capture from electronic devices such as automatic blood pressure cuffs and cardiac monitors provides massive quantities of data; those data need to be processed, either in the mind or electronically, to provide care. Therefore, utilizing this technology will require a change in how data, information, and knowledge are processed by nurses to provide wise care.

Continuing the emergency room (ER) scenario, the patient was connected to a cardiac monitor and blood pressure monitor that were giving the nurse a lot of information. According to the nurse, "Her blood pressures just kept dropping and dropping."

## Knowledge Dimension

The knowledge dimension of the model is comprised of three different knowledge types increasing in complexity: rich factual knowledge, rich procedural knowledge, and lifespan contextualism. Rich factual knowledge is the possession of an extensive knowledge base regarding the nursing process and care of the patient. Nurses must have the ability to collect and understand comprehensive data pertinent to the patient's health or the situation, and have an expert level of knowledge regarding assessment, diagnosis, outcomes identification, planning, implementation (including coordination of care), and evaluation related to the situation in which they are providing care (ANA, 2004).

Rich procedural knowledge concerns clinical procedures, processes, and interventions required for care (Carper, 1978). These procedures are directed to the patient or family and include any type of intervention, from education to invasive procedures, including developing strategies and alternatives for care to attain goals and reach expected outcomes.

Lifespan contextualism is understanding others at different points in their lifespan, as well as understanding across one's own lifespan. The Joint Commission in the U.S. requires that any healthcare provider having patient contact be competent in meeting age-appropriate needs including developmental needs, cognitive development, and age-appropriate safety guidelines as well as awareness of social and individual differences (Wilson-Stronks, Lee, Cordero, Kopp, & Galvez, 2008).

The use of wisdom cannot occur without a foundation of knowledge. There are two types of epistemological knowledge: empiric and rational (Munhall, 2011). Empiric knowledge is gained through experience, observation of facts, and testing (Berragan, 1998). In contrast, rational knowledge is derived from practical reason. WIA also requires a high degree of technical and practical knowledge that may necessitate creative, innovative, and insightful solutions (Carper, 1978). This knowledge is influenced by cultural perception and beliefs.

In the ER situation, the nurse was receiving an abundance of information. She was cognitively processing that information into knowledge and making a clinical judgment to determine the next intervention. She was applying many interventions at the same time:

> We worked her and coded her, and we had put in about three of the big mass transfusion bags—you know, the coolers they bring up—and her pressures just kept dropping, dropping, dropping. We would get her into CT [computerized tomography] and she would code and we would work her. So she was already herniating when we got the CT back, and she just wasn't going to make it, and we knew that. We had her on pressors [vasopressor drugs used to elevate the blood pressure] and epi [epinephrine] drips and so she was alive, but we were literally doing CPR [cardiopulmonary resuscitation] every ten minutes because she would keep coding.

## Wisdom in Action

WIA is the final dimension of the model. The term "wisdom in action" was motivated by Benner, Hooper-Kyriakidis, and Stannard's (2011) and Schön's (1983) use of "thinking-in-action" and Schön's (1983) use of "reflection-in-action." "In action" implies that the process is occurring during the act of practice. The following is a high-level walkthrough of this dimension, with the concepts underlined and the relationships in italics: WIA requires knowledge mastery when dealing with uncertain or stressful situations. Knowledge *impacts* and insight and intuition *influence* the clinical judgment in context of the situation. The judgment *leads to* a care decision. After a care decision is applied, reflection, and discovery of meaning occur, which results in learning. Gained knowledge is *integrated back into* the knowledge dimension. Each of the WIA concepts is described below.

Knowledge mastery closely aligns with Benner's (1984) nurse at the expert level. Knowledge mastery is the ability to process information into knowledge at a highly skilled level. Knowledge mastery is present when nurses understand the situation and know the steps required to care for the patient at the expert level during the particular situation, including interpreting the situation to develop clinical judgment in context (Benner, 1984). Knowledge mastery often takes place using pattern-recognition-based knowledge gained from previous experience (Smith, 2009).

Nurses must be proficient and have an understanding of the "know-how" of clinical experience (Benner, 2000a). Benner (1984) described proficient nurses as those who learn from experience and adapt and modify plans as needed. Recognition and management of uncertainty acknowledge that one can never know everything about a

problem. WIA is the ability to either address the uncertainty or have the knowledge to enlist others in the decision making. If the choice is to manage the uncertainty, nurses need to decide what must be done in the situation to alleviate the uncertainty or stress. When the nurse encounters a stressful or uncertain situation, knowledge mastery impacts clinical judgment and wisdom is applied for the pursuit of the common good.

Clinical judgment in context is the process of data collection and interpretation to derive a plan of action (Benner et al., 2011). Judgment is a human skill requiring the ability to affect and influence situations, perception, skilled know-how, and reasoning about particular clinical situations (Benner, 2000b). Information systems can display knowledge but cannot process judgment. Context determines the type of knowledge and judgment used, the actions applied, and the know-how.

Insight and intuition influence clinical judgment in context. Insight and intuition are grouped because intuition is an insightful sense of knowing and understanding without the conscious use of reason (Benner & Tanner, 1987; Rew, 1986). The concept of intuition has been associated with the "art" of nursing because it is the use of the nonquantifiable characteristics of the nursing process. Smith (2009) described this as "resonant relating"; that is, tuning into the patient's energy field and gaining insight as to where to place attention or focus. Expert nurses have an intuitive grasp of clinical situations with highly proficient performance (Benner, 2004).

A care decision follows clinical judgment. The care decision is the conclusion reached regarding what is necessary to the health and welfare of the patient.

In the ER scenario, the team was resuscitating a young trauma patient. Many different interventions were occurring. The nurse was with the patient but when the

family arrived, she used her intuition; she "felt" she needed to care for the family, as well:

> We actually did something that we don't normally do. . . . We decided to let the family come back and watch so that they could see that we were doing everything that we could, since losing a young, healthy mom would be hard. You know, one day your mom is fine and out riding her bike, and then next she is dead, and you have no time to prepare. I think it helps families, and it made me feel better. We were all pretty upset, and it was a really sad loss to see her go, but I think it helps the family to come in and know that you [*sic*] literally did everything we could do. We had tried every avenue to help her survive this, but her injuries were unsustainable. I think them coming in and watching and then giving us the "it's okay, you can stop," and them having almost that control over at least, that last piece of it. I felt like I had made a big difference in asking the doctors and the trauma team if they could come back so that they could see that we were really doing everything that we can for this mom to help her live, even though she was not going to.

The nurse used knowledge regarding the patient's condition influenced by insight and intuition to make a decision to bring the family in and see their loved one being coded. She stated that she had a strong feeling to do so:

> I had seen enough trauma ones [the most seriously injured patients] that had passed away to realize that when the families could come in when they were still alive, technically, when they got that decision, it just seemed like the closure and the sense of knowing that everything had been done. It almost helps them to see the room torn apart, like you had really pulled out every last resource you had.

## Reflection Feedback Loop

The reflection feedback loop follows a care decision. This can occur during or after the situation. A diagram of the loop is created as a continual circle, indicating that the nurse can enter into and exit out of the loop at any point in the loop. The concepts include application, reflection, learning, and discovery of meaning. When new knowledge is gained it is integrated back into the knowledge dimension.

Application is acting upon the decision. This is usually some type of intervention,

such as administering, monitoring, communicating, and so forth.

Reflection is taking time to ponder and think about the judgments and decisions used after addressing uncertainty or an uncertain situation (McKie et al., 2012; Schön, 1983). Through reflection on the experience, new insights and meaning can be discovered. Nurses can evaluate faulty logic or inaccurate judgments and gain wisdom by reflecting on the mistakes and determining how to improve in the future.

Learning takes place and the knowledge gained is fed into nurses' clinical knowledge, thus increasing the level of expertise available when the next uncertain situation arises. Being open to learning and actually learning are important characteristics of WIA.

The ER nurse learned to consider the family during critical situations:

> I think it helps you in future situations [to] remember the families and extend that compassion. If this was my mom, would I want to be in the room? Would I want to see that they had done all that they could do for her?

The ER situation illustrates one scenario of WIA. The nurse caring for the ER patient exemplified wisdom. She used expertise and good clinical judgment to make care decisions for her patient. She was influenced by intuition when she decided to bring the family into the ER. Once the situation was over, she took time to reflect and learn. This learning was integrated back into her practice. The scenario demonstrates that WIA is not a destination; it is a process that can occur many times over a nurse’s career. Knowledge is always included during the use of WIA to make a nursing judgment. Reflection and learning are integral parts of the process, because nursing is a continual process of learning and gaining expertise.

## Discussion

The Theory of WIA can provide a working framework explaining the process of using wisdom in clinical nursing practice in theoretical and practical terms. This is illustrated showing the precursors to wisdom and the process of using knowledge to make care decisions in stressful situations. The theory illustrates how knowledge mastery allows nurses to know what is needed in a stressful or uncertain situation, and to make appropriate decisions about care for a patient. WIA requires nurses to reflect on those decisions, discover meaning, and learn how their decision affected patient care. This learning is applied to improve nurses' future practice. Reflection can be supported through debriefings after the situation.

The model of WIA is important and significant for patients and their families. Humans want and need to be cared for by nurses who consider their specific human values, have a high level of scientific knowledge, and have advanced technical skill. All of these characteristics are included in the theory of WIA.

The model has significance to nursing education because knowledge and wisdom go hand in hand. The Theory of Wisdom in Action for Clinical Nursing can provide a roadmap for care when in an ambiguous or uncertain situation. Understanding what knowledge is used by expert nurses when they practice wisdom can facilitate teaching around that knowledge. In addition, the model aligns with teaching using simulation, because a practice example is used and the students can reflect on their practice, gain understanding, and add new knowledge to their existing knowledge.

Nursing researchers may study different aspects of the theory. Relationships within the model could become potential research questions, such as (a) What type of

reflection is required for wisdom development? (b) How does knowledge reflected back into practice need to be validated? and (c) Is expert clinical judgment predictive of knowledge mastery, or vice versa?

The model may be applied to those who make decisions about administrative assets such as resource allocation, funds, salaries, and management strategies. The potential effects of learning more about and gaining greater understanding of clinical nursing wisdom could include the ability to evaluate how decisions are made about nursing skill management, scope of practice, workforce issues, economic decisions made by hospital administrators aimed at maximizing profit and minimizing costs (such as nurse labor), or other administrative issues.

Finally, the model can provide guidance to nurse informaticists who facilitate the use of knowledge within systems. Nurses have massive amounts of data at their fingertips within an electronic health record (EHR). The theory can provide a framework for nurse informaticists to understand what data and information are pertinent to specific situations in practice. Once the information is identified, it can be codified, organized, interpreted in systems, and transformed into information useful for practice. The information can be used for decision support, data analytics, and quality measures. These findings can ultimately be used to influence the evidence and circled back into the EHR as clinical guidelines.

In addition, advanced technology can enhance nursing practice through personal practice reports. When nurses can pull reports on the outcomes of their practice from the electronic record, they will be able to examine their practice, learn from their care, and gain knowledge that will ultimately be used in their future wise practice.

The next step toward WIA validation is testing. Once the theory has been tested, it may be possible to relate wise nurses to improved outcomes, although this connection is beyond the scope of this initial theory and its testing at this time.

## Conclusion

This chapter described the development of the Theory of Wisdom in Action. Nursing is a distributed act that requires general wisdom regarding the life and situation of the patient or family being cared for, as well as wisdom about the team around the nurse. Nursing is also an individual act; nurses must be attuned to their own beliefs and value systems, as well as have an understanding of their knowledge and abilities. The theory describes the concepts and relationships of general and personal wisdom used during practice. Wisdom is not an end point; rather, using wisdom in practice is a journey nurses can achieve and demonstrate multiple times. The model's greatest contribution is providing a working framework for translating wisdom in clinical nursing practice into theoretical and practical terms.

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# CHAPTER 7

# NURSES' WISDOM IN ACTION IN THE EMERGENCY DEPARTMENT


## Abstract

Nurses seek to better understand what practicing with wisdom means and how to apply wisdom to practice; however, the experience of wisdom in nursing has not been well defined or researched. This study was designed to understand how emergency department (ED) nurses construct the meaning of wisdom in their setting within the culture of clinical nursing practice. Using Charmaz's constructivist grounded theory methodology, a preliminary theory was developed, capturing the experience of wisdom in practice. The core theoretical model focuses on two juxtaposed processes, technical and affective, grounded in expertise. Significant findings were the affective categories, such as emotional intelligence, required to practice using wisdom. Results reinforce and extend the current wisdom literature and provide a new perspective on wisdom in practice in a nursing context.


## Introduction

Human beings seek to better comprehend wisdom and to apply it in daily life. Two types of wisdom are described in the psychology literature, general and personal (Staudinger & Glück, 2011). General wisdom is directed toward other individuals from a third-person perspective as a

trait manifested by caring for others. In contrast, personal wisdom is individual, focused on advice and judgment that is based on insight gained from experience (Mickler & Staudinger, 2008). Personal wisdom is about one's own life and problems seen from a first-person perspective.

Few authors have explored or modeled the concept of wisdom in a nursing context. A search revealed characteristics of wisdom discussed in the literature, with wisdom described as cognitive, ethical, intuitive, and emotional processes. Cognitive attributes of wisdom include expertise, proficiency, and knowledge (Benner, 1999; Benner, 2000; Matney, Brewster, Sward, Cloyes, & Staggers, 2011). Having these traits requires nurses to understand the problem, make distinctions between alternatives, and think creatively about the solution (Nelson, 2002). Wisdom concerns ethics and involves values and the desire to achieve a common good (Haggerty & Grace, 2008; Uhrenfeldt & Hall, 2007). Finally, wisdom encompasses intuition and emotion (Edmondson & Pearce, 2007). These attributes link wisdom to human acts or behavior, leading one to believe that wisdom is a label that one might choose to apply to certain actions (Haggerty & Grace, 2008; Litchfield, 1999).

Wisdom gained attention in nursing when the concept was added to the definition of nursing informatics in the 2008 edition of the American Nurses Association's (ANA) *Nursing Informatics: Scope and Standards of Practice* (ANA, 2008). Early definitions of nursing informatics (NI) outlined data, information, and knowledge as foundational concepts for the specialty. Building upon early work in the fields of information science, wisdom was added to the NI definition, aligning with the data, information, knowledge, wisdom (DIKW) framework. The NI scope and standards indicated that nursing informaticists support the development of wisdom for all types of nurses (ANA, 2015). The ANA scope and standards defined wisdom as

"use of knowledge," but from foundational literature it is known that wisdom has many aspects beyond a cognitive/knowledge sphere. Because all nurses have a desire to be wise within their own clinical practice, it is imperative that they understand what the concept of wisdom represents in the context of clinical nursing practice.

A model of wisdom in action (WIA) was previously developed for clinical nursing using a deductive approach. The concepts and relationships in the model were derived from theories of wisdom in other disciplines, and then synthesized using nursing literature (Matney, Avant, & Staggers, in press; Walker & Avant, 2011). The WIA model describes why wisdom is important for all areas of nursing and illustrates wisdom as an iterative process applying knowledge mastery, based on clinical judgment, to a stressful or uncertain situation to produce a decision. Once the decision is applied as an action, wisdom development includes reflection, discovery of meaning, and learning, all integrated back into knowledge and judgment (Matney, Avant, & Staggers, 2013). The derivation and synthesis work reiterated the idea that wisdom is more than knowledge application, and literature indicates that wisdom includes emotions, intuition, expertise, and other aspects. Therefore, it was felt important to augment the previous work by examining nursing wisdom using an inductive approach to uncover aspects that emerged as important, but were not well explained or accounted for in the first model.

The purpose of this grounded theory study was to understand how emergency department (ED) nurses construct meaning around the concept of wisdom in the ED setting within the culture of clinical nursing practice. ED nurses were chosen because they have the autonomy to make decisions and perform interventions during critical situations. The researcher was interested in an insider perspective of what wisdom means to nurses, and those experiences are represented through categories and processes grounded in the data.

# Methods

## Design and Approach

Wisdom is intrinsically a social-cultural shared construct or experience, something perceived and difficult to define. Thus, the actions, perceptions, decision making, and human interactions of clinical ED nurses were examined using a constructivist grounded theory (CGT) approach. CGT is a logically consistent inductive research approach used for generating formal midrange theory of human behavior in a social context (Charmaz, 2006; Jeon, 2004; Morse et al., 2009). This contemporary grounded theory (GT) method draws on strategies from early approaches to GT, such as coding, memo writing, and theoretical statements, but shifts its epistemological foundations to an interpretive/constructivist paradigm (Charmaz, 2006, 2014). One of the main reasons CGT was chosen was that the researcher already had involvement and interactions with this research topic and CGT acknowledges this subjectivist stance. Charmaz (2014) stated that the researcher should not be theoretically innocent, but rather should be theoretically agnostic.

The theoretical perspectives of CGT are symbolic interactionism and interpretivism. Symbolic interactionism (SI) supports and informs the research methodology of CGT because actions are performed in the environment, or culture, on the basis of meanings (Oliver, 2011). In SI the focus is on how one interprets the situation and chooses one type of action. Interpretivism is the study of social life and aligns with CGT, which aims toward an understanding of an individual's actions and the meaning of those actions (Charmaz, 2006; Crotty, 1998). The epistemology that informs both theoretical perspectives is constructivism, wherein meanings are constructed by human beings as they interact with the world they are interpreting.

## Sample and Setting

Institutional review board approval was obtained from the study setting. Practicing ED nurses were recruited through a flyer sent to their work email and posted in the department. The inclusion criteria for nurse participants were: (a) employed within the ED setting within the previous 5 years; and (b) a registered nurse or advanced practice registered nurse (APRN) at any level of education, associate through doctorate degree, with at least 5 years of nursing experience. ED nurses were chosen because they deal with stressful or uncertain situations and are required to possess a high degree of knowledge across myriad patient conditions. In addition, they have the autonomy to make care decisions (Laxmisan et al., 2007). The nurses practiced in a 452-bed tertiary center with a level-1 trauma center in an urban setting in the western United States. The trauma center had more than 82,000 ED visits in 2013 (U.S. News & World Report, 2013).

The convenience sample consisted of 10 nurses (7 females, 3 males), with an age range of 22 to 59 years. On average, they had 11.1 years of experience (range 5–35 years). Participants included associate degree ($n$ = 4), baccalaureate degree ($n$ = 5), and master's degree ($n$ = 1) nurses.

## Data Collection Methods

The researcher chose to obtain stories regarding nurses' practice because daily situations yield a certain kind of story readily analyzable using a grounded theory methodology (Lai, 2010). She elicited stories of clinical wisdom from the nurse participants through hour-long, face-to-face, individual, unstructured interviews that were audio recorded. The initial open-ended interview question was, "Tell me about a clinical situation in which you or someone else demonstrated wisdom in a clinical situation." This specific question was chosen because

previous psychology research used this question to investigate social and nonverbal behaviors people display when using wisdom in life matters (Kunzmann & Baltes, 2005). Nurses were allowed to tell their story from beginning to end without interruption.

The next step used "deepening" questions or probes to understand the process of decision making, the context, and what was happening within the situation. This went beyond the facts and explored the nurses' thought processes during the clinical story. Deepening probe questions in response to stories of clinical wisdom included:

1. What information did you use to make a decision?
2. What made this situation difficult?
3. What did you learn from this situation?
4. How did this influence your future practice?
5. What haunts you?

The final question was entirely focused on defining wisdom: "Describe the characteristics, or attributes, of the wisest nurse you have ever worked with." The researcher solicited as many stories as the nurses wanted to give. Each nurse provided one description of a wise nurse (total of 10) and three to four stories describing stressful situations (total of 30).

## Data Analysis

Analysis methods were consistent with Charmaz's (2014) recommendations for CGT and included three coding phases: open coding, axial coding, and selective coding. Coding was inductive/deductive, comparative, interactive, and iterative. Memo writing occurred throughout the analysis process. The goal of analysis was to be fully immersed in the data by studying and restudying the data (Charmaz, 1996). Figure 7.1 is a representation of CGT modified to pictorially display the process. Each step is described and discussed below.

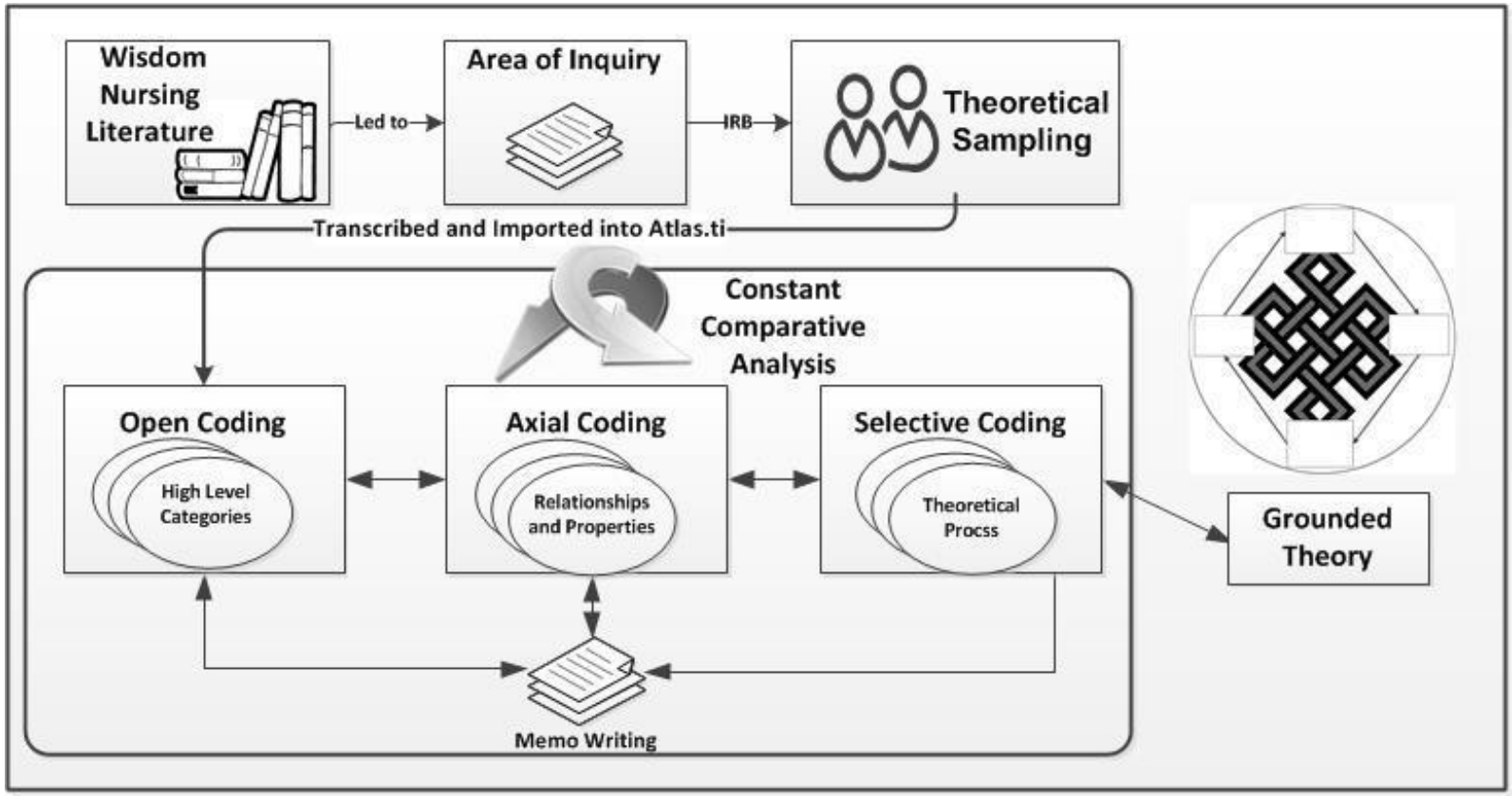


*Figure 7.1* Representation of Constructivist Grounded Theory Analysis Process

Open coding was performed on all of the transcripts. Because one of the research questions was to identify the processes used to practice wisely, the initial coding used gerunds describing the processes and actions occurring during the situation (Charmaz, 2014; Saldaña, 2009). The goal of open coding was to produce as many codes as possible to describe the meaning of the story, using line-by-line and action-by-action coding (Lieblich, Tuval-Mashiach, & Zilber, 1998). Examples of questions asked are:

1. What action is happening here?
2. What is the person actually saying?
3. What do these statements and actions imply?
4. What is the participant's understanding of the situation?
5. What social processes are occurring in the context of the data?
6. What category do these data indicate?

Several passes were made through the data during open coding until the initial concepts were identified (Corbin & Strauss, 2008). The properties, dimensions, and relationships to each other were determined in the axial coding phase. At this phase the interpretive and illustrative framework of the theory began to emerge (Mills, Bonner, & Francis, 2006). Constant comparison of the data was used to determine new categories and to refine all categories for interpretation (Charmaz, 1996).

An iterative process was used for open coding and axial coding. Higher-level concepts were represented as code families. Both cluster and network diagramming were completed to assist in analyzing the codes. Network diagramming allowed grouping of the open codes into code families for consideration as a category and to visualize co-occurring codes. After the categories began to emerge, clustering was used (see Figure

7.2) to aid in understanding the relationships between the categories. Charmaz (2014) described clustering as linked wheels with spokes. The researcher found that clustering represented interesting groups of ideas in linked categories. Clustering also illustrated the axial codes or relationships among the codes (inside the categories).

During selective coding, the theoretical process from the data was interpreted and high-level categories and subcategories central to the process were defined (Tweed & Charmaz, 2012). At the same time, memos were written throughout the analysis process, allowing intimacy with the data and increasing analysis (Charmaz, 2014; Lempert, 2007). After all categories, subcategories, and relationships were identified, the nursing and wisdom literature were reviewed to refine the properties and relationship(s) for each

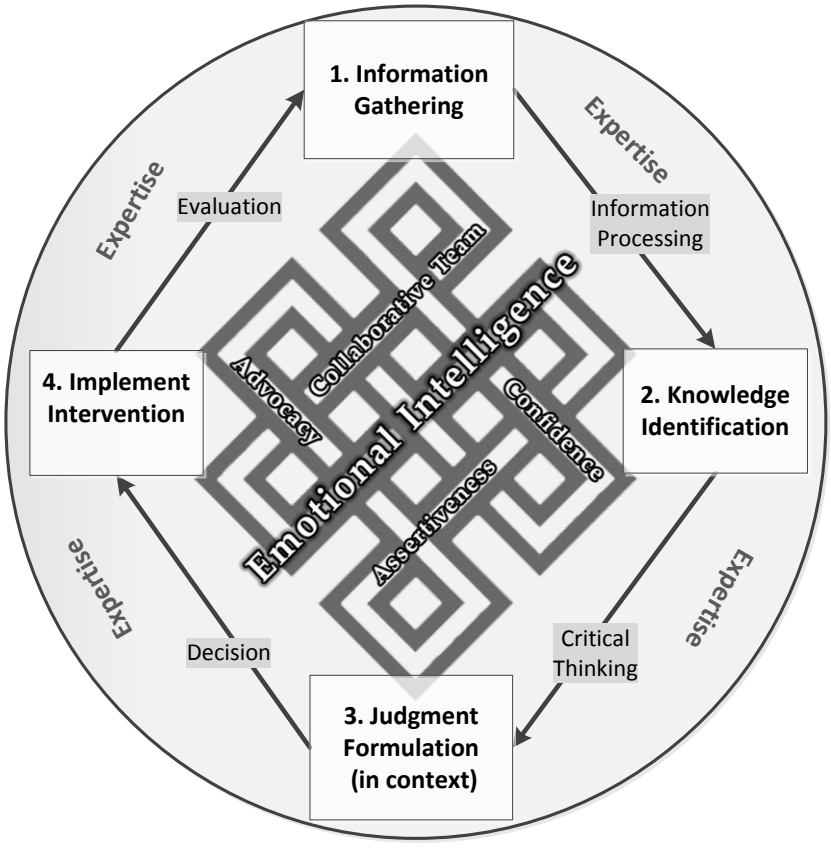


*Figure 7.2* The Process of Practicing With Wisdom

concept (Charmaz, 1996). By highlighting similarities between the findings of this study to previous theoretical constructs and concept analyses in the literature, it was possible to show potential transferability of the phenomenon of wisdom in action to similar situations in health care (Chiovitti & Piran, 2003).

The theory was diagrammed as concepts and relationships emerged (Lempert, 2007). Diagrams provided a visual display of what was known and assisted in understanding the meaning of the phenomenon. It was also possible to identify gaps where concepts were lost or not yet known. For example, during one of the early theory diagramming sessions, it was noticed that knowledge was missing. The researcher went back to the data and reevaluated knowledge as a key category. Concepts and properties were further refined and actual data were included to illustrate how the analysis is grounded in lived experience.

## Findings

The stories varied widely in a number of ways. The ages of the patients in the stories ranged from a premature newborn to the elderly, while clinical scenarios included behavioral, trauma, medical, and obstetrical patients. Some stories pertained to an individual and others pertained to families. Typical clinical stories of wisdom in action were nonroutine challenging events or situations that dealt with uncertainty.

As the researcher studied the data, she identified thoughts and actions performed when nurses felt they "made a difference." Two different juxtaposed processes were recognized in the data: a technical care delivery process and an affective process, with expertise interpreted as underpinning both processes. These processes were not sequential or mutually exclusive. The technical care delivery process (the outside ring in Figure 7.2)

included actions related to the science of nursing and aligned closely with the nursing process. The affective process consisted of emotion and human interaction characteristics that were woven through the entire situation. The affective categories co-occurred so frequently that they were almost inextricable from one another, and relationships between them could not be clearly identified. Therefore, affective categories are visualized within a Celtic knot which, by its interconnectedness, is a symbol for the union of wisdom and method. This may pictorially represent the art of nursing. From the data, the process of using wisdom in practice, henceforth called wisdom in action (WIA), can only occur when both processes exist, supported by expertise.

The categories and subcategories of the theory are discussed in the following sections. Table 7.1 illustrates the categories and subcategories to be discussed.

## Expertise

We coded all 30 stories and 10 descriptions of a "wise nurse" having expertise. This expertise foundation underlies and influences both the technical and affective wisdom processes. The expert nurse has an intuitive grasp of clinical situations with highly proficient performance. How the nurses handle emergencies and use available systems is a learned skill that demonstrated proficiency or expertise (Benner, 1984, 2000). As one participant shared, "I think that wisdom can really only be obtained through experience and the book learning and everything is important and a great foundation." Expertise is having an expert level knowledge, tenure and experience. Another nurse explained the rationale for performing an intervention as, "I was drawing from experience."

Table 7.1

*A Grounded Theory of Wisdom in Emergency Nursing*

| Categories | Subprocesses | Linking Concepts |
|---|---|---|
| Expertise | | |
| Technical Wisdom Process | | |
| Information Gathering | Obtaining Patient History<br>Assessing<br>Obtaining Pertinent Information | Information Processing |
| Knowledge Identification | Explicit Knowledge<br>Intuitive Knowledge | Critical Thinking |
| Judgment Formulation | | Decision |
| Intervention Implementation | | Evaluation |
| Affective Wisdom Process | | |
| Emotional Intelligence | Self-Awareness<br>Motivation<br>Self Regulation<br>Empathy | |
| Advocacy<br>Assertiveness<br>Confidence<br>Team Collaboration | | |

## Technical Process Wisdom Categories

The technical care process portion of the model is the scientific process of care. This process consists of four high-level categories: information gathering, knowledge identification, judgment formulation, and intervention implementation; and four linking concepts: information processing, critical thinking, decision, and evaluation (see Figure 7.2).

## Information Gathering

Information gathering occurs as soon as the patient enters the ED and reoccurs after interventions. During this process the nurses obtain information about the patient and the situation. The three subprocesses are types of information gathering: obtaining patient history, assessing the patient, and obtaining pertinent information from the care record. Information is data structured within the context of care, and was always obtained prior to the action of using knowledge or applying a judgment (Matney, Maddox, & Staggers, 2014).

### Assessing the Patient

The first type of information gathering occurred during assessment. When one patient was being wheeled into the ER, the nurse stated that she "immediately looked at the monitor and there was just a totally disorganized rhythm." She then gathered further information: "We analyzed the rhythm, and she was in VFib" [*sic*; ventricular fibrillation].

### Assessing Patient History

Often, the history was being taken by the nurse at the same time as the assessment was being made. This information came from the patient, the patient's family, or the ambulance crew.

### Obtaining Pertinent Information

Pertinent information was also gathered, and included information such as laboratory values, medications, and vital signs. The nurse continued: "We reviewed the cardiac profile."

### Information Processing

The nurses described the information they gathered and described the problem. This implied that the cognitive processing of information occurred in their mind. During information processing, relationships in the information are formalized and synthesized. The linkage between information gathering and knowledge identification is information processing.

### Knowledge Identification

Two types of knowledge, explicit and intuitive, were demonstrated within the stories.

### Explicit Knowledge

Explicit knowledge was coded when the nurses described pattern matching in their stories or described scenarios seen previously that they used to generate knowledge. One nurse described pattern matching when speaking about a patient: "She probably had anoxic brain as well. . . . I had previous experience where I saw a lot of people that were anoxic brain injuries, and she looked just like that." Explicit knowledge was also manifested when the nurse described the rationale for interventions: "One thing that that patient needed immediately was IV [intravenous] access. That is really the lifeline for any patient, especially a sick patient."

### Intuitive Knowledge

Intuition was coded when the nurses made clinical decisions with no concrete information available to explain their actions (Berragan, 1998; Rew & Barrow, 1987). The nurses described this as a "gut feeling" or "hunch" about something that did not have

concrete facts to support it. This feeling motivated the nurse to perform some type of intervention. One of the nurses said, “Something was just very wrong.” She sat close to the patient’s room because of her feeling, and soon after the patient began projectile vomiting of blood.

Critical Thinking

In the stories, critical thinking was used to define and understand a problem (physical or mental) and to establish a desired goal. The nurses determined the problem in the context of the situation. Critical thinking is the link between knowledge identification and judgment formulation, and is the act of cognitively analyzing, reasoning, predicting, and transforming knowledge (Scheffer & Rubenfeld, 2000).

Judgment Formulation

Judgment was coded when knowledge regarding the situation motivated some type of intervention. Judgment was also coded when the explanation was given as to why an intervention was performed. One nurse stated, “There was a totally disorganized rhythm on the monitor, so we defibrillated him.” In this situation, the nurse uses knowledge to determine a plan of action; this includes identifying the problem, goal(s), and possible interventions.

Decision

Decision is the linkage between judgment and intervention. During this time, the nurse in the ER made a determination as to what the right care options were for this patient (in context): “We got the crash cart there and we got her patched up with the defibrillator patches. . . . We made the decision that she needed to be defibrillated.”

Intervention Implementation

After the nurses made a decision, they performed an action in the form of an intervention. The next intervention given for the patient above was, "We charged the defibrillator and defibrillated her." Within the stories, the types of interventions included medication or oxygen administration, providing support or education, and performing a procedure such as monitoring the patient or starting an IV.

Evaluation

The final linking in the care process described by the nurses is evaluation. Evaluation leads back into information gathering and the process begins again. Evaluation was performed to determine the results of procedures or interventions. Types of evaluations were reviewing laboratory findings and evaluating vitals or equipment. After the above patient was defibrillated by the nurse, he stated, "She did not suffer any real negative consequences because of that early recognition and defibrillation of VFib."

## Affective Process Categories (The Celtic Knot of Nursing Care)

From the data, the researcher identified the importance of the concepts related to mood, feelings, and attitudes in the process of providing care. These concepts were encoded and grouped into the affective process categories. The stories indicate that these nontechnical categories were as essential as the technical categories.

Emotional Intelligence

Emotional intelligence encompasses four subcategories: self-awareness, self-regulation, motivation, and empathy (Codier, 2015; Kooker, Shoultz, & Codier, 2007). Therefore, the font for this category is the larger within the Celtic Knot of Nursing Care

(see Figure 7.2).

### Self-Awareness

The researcher coded self-awareness when the nurses recognized their own strengths and abilities. In one example, the nurse had previous experience as an IV nurse so he felt he was the best one to try and insert the IV on a premature baby: "I guess the point there is with a twenty-seven-week infant . . . having the skills and the confidence and the ability to place an IV line in such a small little child was something that was necessary and gave me a great feeling."

### Managing Negative Emotions

The nurses were motivated; they had a desire to recognize negative emotions and learn to overcome them. Negative emotions were most often mentioned when the patient was under the influence of drugs or alcohol or was a psychiatric patient. In the following story, the nurse was describing an intoxicated patient who fell off a porch and injured himself; she recognized the negative emotions and overcame them by staying calm and talking with the patient:

> He was drunk but he just would not comply with anything. He was ripping his gown off . . . throwing. . . . We put him in one of the behavior rooms. . . . He was trying to rip the rails off the bed. Anytime you came into the room he would be very aggressive. He would want to lunge at you and stuff. Dealing with this patient, you felt like you couldn't really do anything for this patient because he was being so aggressive and so abusive. I think that is a really high stress.
>
> So what did the nurse do to calm him down?
>
> Just talking to him and sitting down and keeping my distance, but just talking and letting him vent and letting him know that "I'm not going to hurt you. I'm not going to do anything without telling you" and stuff. I think that really helped defuse that situation. I
> think it does with a lot of patients.

Self-Regulation

The nurses described many emotions they felt during patient interactions of various kinds. Open codes for this subcategory included “feeling stressed,” “feeling uncomfortable,” “feeling frustrated,” and “feeling angry.” They portrayed self-regulation by managing their negative emotions, such as anger or anxiety.

Empathy

Empathy was evident when the nurses thought about each person as an individual and treated even the most minor injury as important to that specific person. Sometimes, it took “reading between the lines” to understand what the person was saying. This category included compassion that occurred when a nurse witnessed suffering, entered that person’s or family’s experience, was motivated to help, and shared the burden with them (Goetz, Keltner, & Simon-Thomas, 2010; Von Dietze & Orb, 2000). The following is an example of empathy from the nurses’ stories:

> I think about how everyone needs mothering. You have to listen to their story. You have to think it through. He didn’t even know what he needed. . . . There is a bigger picture than what is going on in the room. . . . I couldn’t have gone on with my life until I helped
> him figure it out.

Advocacy

Advocacy was treating every person with dignity and equality and alleviating suffering. When one nurse questioned a physician regarding the wrong dose in an order, she was being an advocate. In another story, a patient came in and admitted to his nurse that he was an alcoholic. The nurse stated, “I told him that if he was serious we could really get him help and that he was very brave, and that I was so proud that he could

admit that today." The ANA (2001) addressed the importance of advocacy in its *Code of Ethics*. The nurse described the ethical dimension of wisdom in action by pointing to advocacy as an element of wise practice.

Assertiveness

Several of the stories were cases in which the nurse had to take control of the situation. In one instance, the provider was an intern and the patient started "exorcist projectile vomiting blood." The intern "freaked out and left the room," so the nurse assertively stepped up to manage the situation. In another scenario, there was not a physician in the room but the patient needed to be defibrillated. The nurse stated, "I knew I had to do it but that was the first time I had ever defibrillated without a physician at the bedside."

Assertiveness was demonstrated when nurses suggested different types of interventions, such as a laboratory test, to the provider. Assertiveness is the ability to stand up for oneself or one's patients by expressing thoughts, feelings, opinions, or needs without being aggressive or hurting others (Hodgetts, 2011). Confidence co-occurred in all of the reported cases of assertiveness. These data indicate that confidence needed to exist for the nurse to be assertive.

Confidence

Confidence was discussed in two ways. First was practicing with confidence: "I had the skills and the confidence and the ability to place an IV line in such a small little child." Second was gaining confidence. Nurses gained confidence when they were successful in performing a skill: "It made me more confident in the future that I had the

knowledge of what I needed to do . . . when the 'shit hit the fan.'" Confidence is self-assurance and the realization of one's own knowledge and ability; it requires the capacity to believe in oneself.

### Collaborative Team

Team collaboration was present when nurses, physicians, and all ancillary members were working cooperatively together, sharing problems and making decisions to carry out a plan for the patient. Collaboration requires social skills and the ability to communicate effectively with others. In a stressful situation, team collaboration is crucial. One nurse said, "If you have it in your mind that this is for the good of the patient and that I am working with this physician as a team to have the best outcome that we can have . . . ."

The findings from this study, grounded in the data, illustrate that expertise and both technical and nontechnical skills are required to practice nursing with wisdom. The ability to perform patient care technical tasks will certainly impact nurses' success in practice; however, how nurses work with others, advocate for the patient, and incorporate self-awareness might play an even larger part than nursing skills. Nurses must possess the ability to communicate with members of the health care team and emotionally connect to their patients.

## Discussion

The use of storytelling as a way to understand nursing practice led to valuable insights about the complexities of contemporary practice in an ED setting. By telling a story about a few meaningful experiences, nurses had the opportunity to reflect on

wisdom within their own practice and to realize they practiced using wisdom (Lieblich et al., 1998). One nurse stated at the end of a session, "I feel like I just had a therapy session where the therapist validated that I was a good nurse." Participating in qualitative research can be transformative for some research participants.

This study adds to the research by providing specific insights about practicing wisdom in nursing. Wisdom includes expertise, technical, and affective categories. All of the affective categories identified in this study were previously mentioned in the literature, but they were never grouped as a whole, as illustrated in the Celtic knot model of practicing nursing with wisdom. These categories are important to the patient, and in practice, educational, and leadership settings.

The final grounded theory provides evidence for the categories needed to be a nurse. The theory is consciousness-raising for nurses. They can visualize the characteristics and actions required to perform wise practice and recognize the importance wisdom plays in practice. This is significant for nursing education because it provides the possibility of quantifying nurses' skill levels and monitoring the changes over time for each affective characteristic. Some tools are already developed that measure these categories, such as the Perceived Self-Confidence Scale (White, 2014), but further tool development is needed. Knowing how these categories make a difference in care could lead to changes in nursing curricula. The ultimate significance is that the increased skill level may increase the quality of care.

The earlier wisdom-in-action theory was deductively derived. In this study, additional categories were identified, including emotional intelligence, confidence, and assertiveness. The affective processes required to practice nursing are just as important as

the technical processes; hence, practicing nursing is both an art and a science.

Research about wisdom in nursing is still in its infancy. Clinical questions pertaining to the profession should be developed with a focus on personal qualities of relevance to practicing with wisdom. In reflecting on the memos, stories, and literature review, additional research questions emerged. Suggestions for questions to be addressed in future studies include the following:

1. What is the theory and research related to knowledge processing?
2. What is the relationship between cognition and emotions in nursing?
3. How are the categories in the Celtic knot different from and similar to the emotional intelligence domains?
4. If all of the categories in the Celtic knot have measurement tools, can these be a measure of wisdom in action?
5. Are there unique sets of wisdom categories that are optimal for different practice settings and levels of leadership responsibilities?

## Conclusion

Practicing nursing with wisdom is a complex process. Wisdom categories clearly emerged from ED nurses' stories about their practice. Understanding these categories may be used both to help nurses demonstrate wisdom as they provide nursing care and to teach new nurses the process of becoming wise in nursing practice. It was humbling to see evidence of the art and the science of nursing threaded through the care given by emergency room nurses.

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# CHAPTER 8

# DISCUSSION AND CONCLUSIONS

## Summary

Nurses seek to better understand how to gain nursing *wisdom* and apply it in daily practice. The American Nurses Association (ANA) added wisdom as a core nursing metastructure that is supported by nursing informatics, and defined wisdom in a manner that is integrally connected to nursing actions, defining wisdom as the application or use of knowledge to solve human problems (ANA, 2008); however, the concept and experience of *wisdom in nursing practice* has not been well defined. Therefore, the purpose of this dissertation was to develop a theory of wisdom in action for clinical nursing.

The final theory was developed in three phases corresponding to the aims of this dissertation. The first phase was to develop an initial theory of wisdom in action using derivation and synthesis across existing wisdom theories or frameworks. The second phase was to create a theory rooted in clinical nursing, evaluating emergency department nurses' wisdom processes using a constructivist grounded theory (CGT) approach. In the third phase, the two theories were synthesized to produce the final Theory of Wisdom in Action for Clinical Nursing. This chapter includes a summary of each step and interpretation of the findings from the first two phases, which were described in previous chapters. This chapter also includes the final synthesized

theory, as well as discussion regarding significance, limitations, and future research.

## The Use of Derivation and Synthesis

The first dissertation aim was to descriptively define the construct of wisdom and to create a graphical representation (model) of wisdom in action within the context of clinical nursing practice. The research questions were: (a) what are the attributes of wisdom in clinical nursing? (b) What concepts are related to but distinct from wisdom in clinical nursing? and (c) What are the relationships between the attributes of wisdom, and between wisdom and related concepts, in the context of clinical nursing?

The study and findings were reported in Chapters 5 and 6 of this dissertation. The initial theory of wisdom in action (WIA) for clinical nursing was developed inductively using derivation and synthesis, as defined by Walker and Avant (2011). Methods entailed examining existing models or theories, selecting a core model or set of models from which to create a new theory, and specifying how existing models were adapted. Four models were used for theory derivation: the data, information, knowledge, wisdom (DIKW) framework from the computer science and nursing informatics discipline (ANA, 2008), the Berlin Wisdom Paradigm (BWP; Baltes & Staudinger, 2000), the MORE Wisdom Model (Glück & Bluck, 2013) from the discipline of psychology, and finally the Model of Wisdom (MW; citation, year) from the discipline of education (Brown, 2004). These models were chosen because they focus on knowledge as the core of wisdom, a central component in the ANA definition of wisdom (ANA, 2008).

Synthesis included review of pertinent literature, creating definitions for the concepts based on nursing context, identifying additional concepts, and defining the relationships between the concepts. The final synthesis step was to develop an integrated representation or model (see

Figure 5.1). The Theory of Wisdom in Action for Clinical Nursing was comprised of four interrelated dimensions: (a) person-related factors, (b) environment-related factors, (c) knowledge, and (d) wisdom in action. The first two dimensions are antecedents to WIA. Knowledge is both an antecedent and a component of wisdom in action.

The final research question for Aim 1 was to identify concepts that are related to but distinct from wisdom in clinical nursing. Two types of wisdom were described in the psychology literature: general and personal (Mickler & Staudinger, 2008). General wisdom is wisdom about life in general; it is directed toward other individuals from a third-person or observer's perspective, and is manifested by caring for others. In contrast, personal wisdom is individual and internal, developed based on insight gained from experience. Personal wisdom is about one's own life and problems seen from a first-person perspective.

Nursing wisdom pertains to both general and personal wisdom, and the two types of wisdom are juxtaposed in nursing care. Nursing is a distributed act that requires general wisdom regarding the situation of the patient or family being cared for, as well as the team around the nurse. Nursing is also an individual act and nurses need to be attuned to their beliefs and value systems when making clinical decisions, as well as have an understanding of their knowledge and abilities. The "Theory of Wisdom-in-Action for Clinical Nursing" describes the attributes and relationships of both general and personal wisdom in the context of clinical nursing practice.

## Emergency Room Nurses' Wisdom Processes

The first aim described concepts and attributes of wisdom as reported in the literature, examined from the context of clinical nursing. The second dissertation aim was to understand how nurses perceive wisdom in action, with emergency room nursing as the exemplar. Emergency room nursing was chosen because the emergency department represents a complex

environment in which nurses make frequent, critically important decisions (Laxmisan et al., 2007). The purpose of this aim was to understand how emergency room nurses construct the meaning of wisdom in the emergency room setting within the culture of clinical nursing practice. The research questions were: (a) What does wisdom mean to emergency room nurses? (b) What central processes are used to practice wisely and gain knowledge through practice? (c) What key concepts are involved in the processes? and (d) How are the processes related to each other?

The study and findings were reported in Chapter 7. Constructivist grounded theory (CGT) methodology was used to create a theory illustrating the process of practicing with wisdom in the emergency room setting. One theoretical sampling phase was used during which 30 wisdom stories and 10 descriptions of wise nurses were obtained. Analysis included open coding, axial coding, and selective coding.

The CGT model focused on two separate processes: a technical practice model and an affective practice model. The technical model resembled the nursing process and the affective model represented the interplay between emotional, social, ethical, and personal influences, including values and beliefs. These two models pictorially represented the art and science of nursing. The processes were related and occurred in parallel. Both need to occur for wisdom in nursing practice to take place.

Skill (expertise) underpinned both models. A novel finding was the affective expertise required to practice using wisdom, including emotional intelligence, confidence, assertiveness, advocacy, and collaboration. These categories were as important as the technical processes, which emphasized cognitive knowledge and motor skills. Results reinforced and extended the current wisdom literature and provided a new perspective on wisdom in practice in a nursing context.

## The Synthesized Theory of Wisdom in Action for Clinical Nursing

Two separate theories about clinical nursing wisdom in action were developed, and they appeared to be quite different from each other. The final composite Theory of Wisdom in Action for Clinical Nursing was a synthesis of both preliminary theories and is presented here. The initial derived theory, which had been vetted by expert nurses, could easily be explained and navigated; however, the affective process was an unexpected, novel finding in the grounded theory (GT). The commonalities between the two theories included expertise, the use of information and knowledge, and the nursing process.

The synthesized theory is illustrated in Figure 8.1.The antecedents and theory are described below. In addition, the modifications, changes, additions, and deletions, as well as the rationale for the changes, are discussed.

### Wisdom Antecedents

Antecedent factors are pre-existing conditions that influence wisdom development. The antecedents, located on the left side of the model, were aggregated into two dimensions, *person-related factors* and *setting-related factors*. Table 8.1 contains a list of the antecedent concepts with their associated definitions. Under the *personal factors*, *provider* was added alongside nurse, patient, and family. The providers played a negative or positive role in many of the situations. On a few occasions the providers were difficult to work with, and made dealing with the situation much more difficult for the nurse. Within *person-related factors* are *personal factors*, *knowledge factors*, and *clinical factors*. The antecedent concepts added to *person-related factors* were assertiveness and confidence. Assertiveness and confidence came from the CGT *affective categories* but were recategorized from attribution concepts to antecedents because they exist in the individual prior to the situation. The addition of *knowledge factors*

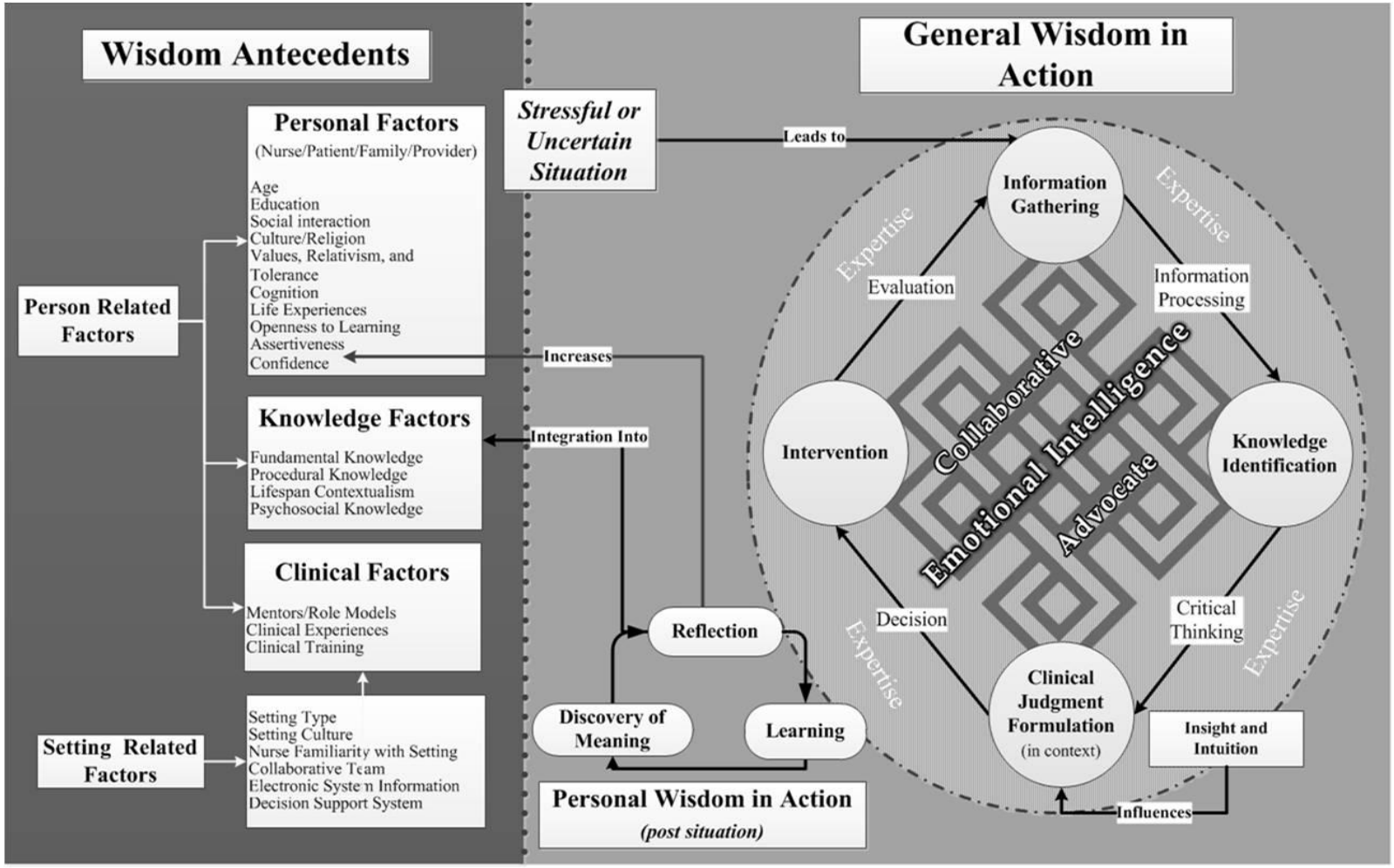


*Figure 8.1* The Synthesized Theory of Wisdom in Action for Clinical Nursing

Table 8.1

*Wisdom Antecedent Definitions*

| Wisdom Antecedent | Definition |
|---|---|
| Age | The length of time a person has lived |
| Education | Instruction received, including in school and on the job |
| Social Intelligence | The capacity to effectively manage complex social relationships and environments |
| Values, Relativism, and Tolerance | An awareness that all clinical judgments are a function of, and are relative to, a given cultural and personal value system |
| Culture/Religion | Acquired knowledge, behaviors, understandings, or beliefs shared by certain groups of people |
| Cognition | Speed and accuracy of basic information processing in the brain, and skills such as reading and writing |
| Life Experiences | Things that have happened during life in which knowledge and/or skills were gained |
| Openness to Learning | Awareness that there are multiple perspectives in every experience, and an interest in learning from new perspectives and from other people |
| Assertiveness | Standing up for oneself and one's patient, without hurting others, through honest expression of thoughts, feelings, opinions, or needs |
| Confidence | Self-assurance and realization of one's own knowledge and ability |
| Fundamental Knowledge | The possession of an extensive knowledge base regarding the nursing process and care of the patient |
| Procedural Knowledge | Knowledge regarding clinical procedures, processes, and interventions required for care |
| Lifespan Contextualism | Understanding others across the lifespan in order to provide age-appropriate care |
| Psychosocial Knowledge | Understanding of or relating to the interrelation of social factors and individual thoughts and behaviors |
| Mentors/Role Models | Those who lead and guide students to have or develop behaviors that promote self-awareness and engagement with clinical situations |
| Clinical Experiences | Past acts of clinical care |
| Clinical Training | The level of education a nurse has received in clinical care and competencies |
| Setting Type | The location and clinical specialty of the situation |
| Setting Culture | A way of thinking, working, and behaving in a place where the situation occurs |
| Nurse Familiarity with Setting | The degree to which the location is known where the situation takes place |
| Collaborative Team | Nurses, physicians, and ancillary services cooperatively working together and sharing responsibility for solving problems, as well as making decisions to formulate and carry out plans for patient care |
| Electronic System Information | The type and format of information provided by an electronic health record |
| Decision Support System | Computer programs designed to analyze data and assist with decision making |

as a grouping within the person-related factors is the largest change from the initial derivation model. The big circle of *knowledge* in the derived theory was modified because the CGT research indicated that knowledge, as an antecedent, was present and identified in the situation, but was not more important than other concepts in the model. One additional *knowledge factor* (psychosocial knowledge) was added. No additional concepts were added to *clinical factors*.

### Setting-Related Factors

The second dimension, *setting-related factors*, includes *electronic system information* and *decision support systems* as two new concepts that emerged from the GT. In addition, the concept of *collaborative team* was added from the GT.

The concept of *data* was deleted because, once data are structured and given context, they become information, and clinical data have already been transformed into information when used in the situation. The concept of *information* was moved to *general wisdom in action* and the name was changed to *information gathering*. The concept was moved because in the clinical setting the only *information* that matters is what pertains to the patient or family in that particular situation.

## The Theory of Wisdom in Action for Clinical Nursing

The theory illustrates two types of wisdom: general and personal. General wisdom in action occurs during the situation, as wisdom applied to the patient. General wisdom in action includes the technical process and the affective process; both processes are grounded in expertise. Personal wisdom in action takes place after the situation and is specific to the nurse. The reflection-feedback loop is personal wisdom in action and

involves the nurse pondering what happened, learning, and discovering meaning.

Two consequential relationships were added to the reflection-feedback loop: first, new knowledge is integrated into the knowledge factors, and second, confidence may be increased. Table 8.2 contains a list of wisdom attributes with associated definitions.

## General Wisdom in Action

The *general wisdom in action* portion of the theory replicates the GT, except for the addition of *insight and intuition*. The affective general wisdom in action process was

Table 8.2

*Wisdom Attribute Definitions*

| Wisdom Attribute Concepts | Definition |
|---|---|
| Stressful Situation or Management of Uncertainty | An event during which the nurse feels worried or anxious regarding care of the patient, or does not have clear knowledge as to how to address the problem |
| Information Gathering | Data in the context of care grouped together to provide meaning |
| Information Processing | Interpreting and transforming incoming information into knowledge |
| Knowledge Identification | An understanding of the situation and the steps required to care for the patient at the expert level during the particular situation |
| Critical Thinking | The use of cognitive skills and logical reasoning to analyze, predict, and transform knowledge (Brunt, 2005) |
| Insight and Intuition | Intuition is a "gut feeling" or hunch about something that may be based on experience but does not have concrete facts to support it. This feeling guides the nurse to perform some type of intervention. |
| Clinical Judgment Formulation | The process of interpretation to derive a plan of action specific to the situation |
| Decision | Making a choice regarding care |
| Intervention | Putting the decision into action |
| Evaluation | Judging the effectiveness of the intervention |
| Reflection | Taking time to ponder and think about the critical thinking, judgments, and decisions used after dealing with uncertainty |
| Learning | Gaining knowledge |
| Discovery of Meaning | Self-awareness, motivation, self-regulation, empathy |
| Emotional Intelligence | Emotional intelligence is the innate potential to feel, use, communicate, recognize, remember, describe, identify, learn from, manage, understand, and explain emotions. It includes subcategories, self-awareness, managing negative emotions, self-regulation, and empathy. |
| Patient Advocate | Preserving human dignity, patient equality, and alleviating suffering (ANA, 2001) |
| Collaborator | A person who willingly works jointly with the team |

illustrated with a Celtic knot. The technical aspects existed in the earlier-derived model, but the relationships between the concepts were better illustrated in the GT. *Knowledge mastery* from the derived model was subsumed into e*xpertise*; *expertise* underpins and pertains to both the technical and the affective process.

### Personal Wisdom in Action

After the situation is over, wisdom becomes personal as the nurse reflects on the situation, discovers new meaning, and learns new knowledge. The new knowledge is integrated back into *knowledge factors* and becomes part of the nurse's baseline (antecedent) knowledge. Consequences of wisdom in action include new knowledge and increased confidence. Several times in the interviews, nurses stated that their confidence had increased because of the situation and that they felt they could perform in the same way again.

## Interpretation of Findings

The preliminary theory of WIA for clinical nursing was created using derivation and synthesis. Three of the four contributing models (the Berlin Wisdom Paradigm, the MORE Model of Wisdom, and the Model of Wisdom Development) were research-based, with previous validation of the concepts; the fourth (DIKW) has extensive grounding in philosophy and has been widely adapted in multiple domains. The derived theory contained many more concepts and domains than the CGT of wisdom. One of the reasons for the higher number of concepts is that the derived theory depicted the antecedents and consequences, and the CGT did not. Antecedents and consequences not being identified or defined in the CGT was due to the small number of participants; for

example, it would have been difficult to determine if religion or education changed the outcome with such a small sample.

Another reason the CGT had fewer concepts was that both general and personal wisdom were depicted in the derived theory. This does not mean that personal wisdom was not revealed in the stories of wisdom from the emergency room nurses, because they did reflect on how the story influenced their future practice. Rather, the CGT research unintentionally focused on general wisdom because the coding of stories related more to the care during the situation than what was learned after the situation. Questions were asked in the interviews regarding reflection and learning, but only the actions occurring during the situation were modeled.

## Comparison to Other Nursing Theories

The Theory of Wisdom in Action for Clinical Nursing augments existing theories and frameworks. In this section, WIA is compared to Benner's (1984) novice-to-expert framework, Carper's (1978) patterns of knowing, and the DIKW framework.

### Novice to Expert

Benner (1984) defined five levels of nursing experience: novice, advanced beginner, competent, proficient, and expert. Each level is attained through years of clinical experience, education, and training. There are several similarities between Benner's concept and the Theory of Wisdom in Action. The *knowledge factors* in the theory antecedent section, listing the types of knowledge required to practice with wisdom, align with education and training in Benner's (1984) model. The WIA *clinical experiences* factor is equivalent to the clinical experiences that Benner (1984) described.

WIA requires *expertise* for a specific situation and includes evaluating information, identifying a problem, and creating and modifying plans as needed to provide care. This skill set requires, at the minimum, a proficient nurse who perceives and understands the whole situation. The important difference between the Theory of Wisdom in Action for Clinical Nursing and the novice-to-expert concept is not the extent to which things are fleshed out or defined; it is that this research was focused on wisdom and Benner's (1984) research was focused on expertise. Expertise is only a subset of WIA.

## Types of Knowing

Carper (1978) described four types of knowing: (a) empirics, (b) esthetics, (c) personal knowledge, and (d) ethics. The model of WIA can be aligned with Carper's types of knowing. Empirics is the science or cognitive aspect of nursing. This aligns with the technical care process in the Theory of WIA. Nurses look at the facts (information) to systematically determine the problem, make a decision, and perform an intervention. Carper (1978) described esthetics as the *art* of nursing and described it as a tacit process where the nurse "perceives" what is happening to the patient. This pattern aligns with the affective process (the Celtic knot) in the middle of Figure 8.1. *Emotional intelligence* includes empathy and understanding and the ability to deal with the emotional aspects of the patient and family. The Theory of WIA also aligns with Carper's (1978) insight and intuition because they are a type of perception.

Carper (1978) described personal knowledge as understanding the individual self. Once that is known, it can be extended to others. This type of knowing aligns with the concept of personal wisdom, with knowledge extended to understanding. Nurses must understand who they are, how they deal with emotions, and be comfortable in that before

they can care for others. To do this takes reflection, understanding of meaning, and learning. Discovery of self for the nurse is visually demonstrated in the reflection feedback loop of the model. The consequences coming out of the loop are illustrated as increased knowledge and confidence. Future work investigating the link between personal wisdom and personal knowledge could reveal additional consequences in this part of the model.

Ethics was Carpers' (1978) fourth pattern of knowing; she described ethics as the moral component. In the Theory of WIA, ethics plays a large part in clinical judgment, and decision making is mediated by moral values. Wisdom and ethics share similar attributes and are closely related.

## The DIKW Framework

The Benner (1984) novice-to-expert framework and Carper's (1978) types of knowledge (ways of knowing) are similar to WIA but have subtle differences in focus and purpose. The alignment of the WIA theory with the DIKW framework was initially very tight, but decreased as the WIA theory evolved. Data were removed from the model because wisdom in action involves contextual data, which by definition equals information. The researcher's thinking about DIKW and wisdom in nursing changed because of this research. WIA expands well beyond what is encompassed by the processing and transformation of data to information, and synthesis of information to uncover knowledge. Having knowledge supports decision making regarding the science of nursing, but those components are insufficient when it comes to the affective emotional processes that occur simultaneously with technical processes during wisdom in action.

## Significance and Implications

This research developed a theory of wisdom in action for clinical nursing. The theory may be significant to the patient, practicing nurses, nurse leaders, nurse educators, nurse researchers, nurse informaticists, and the healthcare system in general.

First and foremost, the theory has significance to patients. They could visualize the type of care they should be receiving from a wise nurse by looking at the general wisdom processes illustrated in the model of the Theory of Wisdom in Action for Clinical Nursing (Figure 8.1). When they are cared for by a nurse who understands and practices using wisdom, they will receive the most benefit. The theory can also contribute to development of a sophisticated type of patient satisfaction evaluation tool.

The theory is consciousness-raising for nurses and nursing students who can visualize the characteristics and actions required to perform wise practice and who recognize the importance wisdom plays in practice. The theory validates how intimate and difficult it is to care for patients. The theory extends the literature by illustrating that the process is not just clinical skills, experience, and knowledge; it is more, and the "more" is the human, spiritual, intuitive part that becomes characteristic of the experienced nurse. WIA connotes in a clear way the complex, multifaceted, interminable actions nurses take to save and heal lives. Nursing administrators can use the theory to illustrate the complexity of nursing. This work provides a means to articulate the art of nursing, which is comprised of aspects that cannot usually be documented for the purposes of costing nursing services.

The theory is significant for nursing education because it provides the potential of quantifying a nurse's skill level and monitoring the changes over time for each affective

characteristic. Some tools have already been developed that measure aspects of these, such as the Perceived Self-Confidence Scale (White, 2014), but further tool development is needed. Knowing how these factors make a difference could lead to changes in nursing curricula.

Illustrating the attributes and complexity required to be a nurse practicing with wisdom elevates the role of the nurse. For the nurse educator, the theory shows the cognitive and emotional skills required to be a "wise nurse," and could potentially motivate nurses to continue to higher levels of education and lead to changes in the curricula.

This theory can provide a framework for other nursing research. The theory can guide informaticists regarding the use of the types of information accessed and knowledge needed. This will be of importance to nurse informaticists who need to understand and articulate what is valuable information within an electronic health record. Finally, for the general public, the theory helps people see who nurses are and what their role is in the healthcare system—not just in their actions, but also in the theory behind them.

## Strengths and Limitations

### Theory Strengths and Limitations

This dissertation led to the development of a new midrange theory of wisdom in action for clinical nursing. The criteria for a good theory are significance, internal consistency, parsimony, testability, empirical adequacy, and practical adequacy (Fawcett, Watson, Neuman, Walker, & Fitzpatrick, 2001; Walker & Avant, 2011).

Context and the content of the theory were examined to evaluate internal

consistency. The concepts within the derived theory were from other disciplines and had previously been validated. This gave credibility to the initial set of concepts and relationships. All of the concepts and relationships were defined within a nursing context. The definitions throughout the dissertation and study phases were consistent, or had documented rationale for modifications. The directions of the relationships flowed in the direction of care process.

Parsimony was evaluated by determining if the phenomenon was presented in the most efficient way possible without oversimplification. The theory was parsimonious, given what is known now; however, like any new theory, the WIA theory is evolving. Therefore, new knowledge might allow more parsimony in the future.

One determination of midrange theory testability is the research methodology. The theory's greatest strength was that development was approached inductively, deductively, and abductively. Determining if the concepts were observable through instruments is another means to determine testability. Many of the affective concepts, such as confidence and assertiveness, have pre-existing measurement instruments; however, not each concept has a corresponding data collection instrument. Therefore, instrument development for measuring the levels of each concept is an area for future research.

Empirical adequacy was determined by evaluating whether or not the assertions made by the theory were congruent with scientific evidence. The theory was tentatively accepted as reasonable by external evaluation; however, alternative theories should be taken into account as well. For example, empirical adequacy evaluation revealed that this theory has some similarity to situational awareness (SA) theory (Endsley, 1995). The two

were compared to determine if this theory is indeed new knowledge. SA is similar to WIA in that both have the concepts individual factors, decisions, and the performance of actions; however, additional actions performed during nursing practice, such as expertise and reflection, were articulated in WIA but are not part of SA.

Finally, pragmatic adequacy required evaluating the utility for the theory for nursing practice. This was tentatively evaluated as adequate, because all actions from the 30 stories obtained during the CGT phase were represented within the theory.

## Study Strengths and Limitations

Like any research, this work had strengths and limitations. A significant strength was triangulation, with multiple approaches and deep examination of the concept. The strengths of the theory developed using derivation and synthesis are the origin, meaning, and usefulness (Walker & Avant, 2011). The derived Theory of WIA was developed deductively from previous validated theories and the nursing literature. The meaning was understandable, with clear antecedents, attribution concepts, relationships, and definitions. The theory was useful and provided new insights into the phenomenon. The initial theory was presented as a poster at a national conference and was well accepted, winning first place (Matney, Avant, & Staggers, 2013). In addition, the derived theory was published as an emerging theory in the most recent release of *Nursing Informatics: Scope and Standards of Practice* (ANA, 2015).

Storytelling and CGT were effective approaches that verified and augmented the initial theory, providing the perspective of clinical nurses. This approach allowed nurses to identify and describe the phenomenon of practicing with wisdom. Using detailed and systematic procedures for data collection, analysis, and theory generation, the resulting

theory and hypotheses may help guide future investigation into the phenomenon of wisdom.

A limitation of the CGT phase was potential researcher bias when performing the data collection and data analysis. Having a background in nursing brought preconceived notions regarding how practicing with wisdom should look. This was mitigated in part, as the researcher attempted to remain neutral and bracket prior knowledge and experiences through memos and journaling, as suggested for grounded theory research (Morse & Richards, 2002).

Another limitation of the CGT study was the sampling. The study was limited to one nursing clinical specialty from a single hospital setting. The sample size was somewhat small and obtaining participants was difficult. The nurses agreed to be interviewed offsite during nonwork time, and so may overrepresent nurses who have an altruistic personality type. Therefore, the findings may not be applicable to other nursing specialties or institutions.

## Future Research

Many opportunities exist for future research. The Theory of Wisdom in Action for Clinical Nursing provides an integrated framework for conceptualizing wisdom in action for nursing, thus providing common ground for future research. Expertise and knowledge underpin multiple aspects of the theory, so research should be performed to determine what information is important for nurses to have at hand to assist in judgment and decision making. Correspondingly, research should be conducted to determine the types of information requested at the bedside. There could be studies to evaluate how knowledge requests differ by specialty or practice level. Information and knowledge

needs can be supported by information systems; therefore, nurse informaticians should participate on or lead the research teams doing the research. Nurse informaticists can research what information facilitates improved outcomes and what information does not directly contribute to outcomes. In addition, the number and types of decision support alerts need to be evaluated to know how to block the "clutter" of information that is unimportant (i.e., does not matter in the particular situation).

Nursing research is sparse regarding emotional intelligence; therefore, aspects of emotional intelligence could be researched to investigate the impact that increased or decreased levels of various facets, such as assertiveness, may have on patient care. Each category in the affective process should be evaluated for tool development. Measurement of these factors can help to determine areas for development in a nurse. In addition, research could be conducted to evaluate if lower or higher levels of emotional intelligence impact patient satisfaction.

The theory can provide a theoretical framework for nursing education, especially in simulation laboratories. Future researchers might seek to understand how information is obtained and the types of media used to transmit knowledge (literature, media, clinical guidelines), so knowledge can be more easily accessible by students. The theory also reiterates the importance of allowing students time to reflect after simulation and clinical practice. Instructors might teach methods of reflection and notice when new knowledge has been integrated into the student's practice.

The theory itself needs further research. Each of concepts should be evaluated. In addition, the theory needs to be tested. The antecedents need to be evaluated to determine if they are correct, if they are comprehensive, and if they actually precede WIA. The

concepts and relationships need to be tested for semantic congruence with standard terminology systems; this would support integration of wisdom concepts into electronic health records and similar health information technology. The relationships between the technical and nontechnical attributes should be determined.

Specific portions of the theory and concepts in the theory need further development. First, the theory of personal wisdom in action needs further research and theory enhancements. Mezirow's (1981) concept of reflexivity describes six levels of reflectivity: reflectivity, affective reflectivity, discriminate reflectivity, judgmental reflectivity, conceptual reflectivity, and theoretical reflectivity. It would be interesting to study how each level affects personal wisdom and learning.

The concept of "setting culture" needs further development. First, what are the attributes of setting culture? Collaborative team was the only cultural attribute identified in the CGT research, and should be an area for future research to identify additional sociocultural attributes. After the attributes are determined, they should be evaluated to determine how they influence wisdom attributes such as decision making, confidence, or patient care.

## Conclusion

Wisdom is a complex phenomenon that cannot be easily understood. This research was initiated because wisdom was added to the scope and standards for nursing informatics. The study articulated wisdom as a crucial concept throughout nursing. For clinical nurses, wisdom appears to be integrally tied with actions. The model of wisdom in action for clinical nursing developed through this research illustrates multifactorial influences on how nursing wisdom develops and how nursing wisdom is demonstrated.

This study provides nursing informatics practitioners with a beginning understanding of the psychosocial process of wisdom in nursing practice; it clearly articulates that some aspects of wisdom are amenable to informatics methods and tools, whereas other aspects are personal and reflective. The theory has been developed and is being presented to the scientific community, ready for testing. Because of the importance of knowledge during wisdom in action, the addition of wisdom was an appropriate addition to the nursing informatics scope and standards. This model can provide a foundation for future research.

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# APPENDIX A

# RECRUITMENT FLYER

*Volunteer to Join*

# RESEARCH STUDY

On

## Practicing Wisdom-In-Action in an Emergency Room Setting

Susan Matney, a University of Utah PhD nursing student, is conducting the study.

### Why…

To learn how information and knowledge is used in practice to make a difference in stressful or uncertain situations.

### Who…

Emergency RN's between the ages of 20-70 with ≥ 5-years work experience.

### What…

You will take part in a one-hour interview by phone, Skype, or in person about your experience.

### If you are interested or have questions, contact:

Susan Matney

susan.matney@utah.edu

hm: (801)447-9294 cell: (801)680-2161

A $25 Amazon gift card to you to compensate for your time

# APPENDIX B

# NURSE DEMOGRAPHICS FORM

## Matney Wisdom-In-Action Study

## Nurse Demographics Form

Today's Date: ____/_____/_____

First name: _____ Last Name: _____

Street Address: _____

City: _____ State: _____ Zip: _____

Cell Phone: _____ Home Phone: _____

Date of Birth: _____/_____/_____

Degree Type: ADN, Diploma, BSN, MSN, PhD, Other_____ Graduation Year _____

Years of Clinical Practice: _____

# APPENDIX C

# INTERVIEW GUIDE

## Matney Wisdom-In-Action Study

## Interview Guide

Researcher: I'm going to turn on the tape recorder now. Is that OK with you?

1. Please describe an experience when you practiced in a stressful or uncertain situation where you felt like you made a difference.

Deepening/probing questions:

1. What information did you use to make a decision?
2. Describe the setting.
3. Did you seek guidance?
2. How does this story sum up practicing with wisdom?
3. Is there anything else you would like to share with me?

Thank-you for your time, I will give you an opportunity to read the transcript and add additional information you would like. Are you willing for me to contact you one time with any additional questions?

I will stop the recording now.

# APPENDIX D

# CONSENT AND AUTHORIZATION DOCUMENT

Intermountain Healthcare

**CONSENT and AUTHORIZATION DOCUMENT**
**INTERMOUNTAIN INSTITUTIONAL REVIEW BOARD**

**TITLE**: *Wisdom-In-Action in Emergency Room Nursing*

**PRINCIPAL INVESTIGATOR**: *Susan Matney, RN, MSN, PhD(c), FAAN*

**CO-INVESTIGATOR(S)**:
*Nancy Staggers, RN, PhD* (committee co-chair)
*Lauren Clark, RN, PhD* (committee co-chair)
*Kay Avant, RN, PhD (committee member)*
*Kristin Cloyes, RN, PhD (committee member)*
*Monisha Pasupathi, PhD (committee member)*

**INTERMOUNTAIN CO-INVESTIGATOR:** *Linda Hofmann, RN, MSN*

**LOCATION:** *Intermountain Medical Center*

**BACKGROUND:**

Informatics is one of the core competencies for nurses in all specialties and at all levels of practice. The Data, Information, Knowledge, Wisdom (DIKW) framework is one of the core conceptual frameworks for the study of nursing informatics; however, the wisdom concept within the framework has not been clearly defined. In order for the framework to be effective, nurses must understand how the practice and concepts of wisdom are represented in the context of clinical nursing practice. Wisdom has been modeled and defined in other disciplines, such as psychology and education, but the extent to which those models are useful in nursing is unclear. Similar concepts, such as expertise and various forms of knowledge and ways of knowing have been articulated in the nursing literature; but those concepts seem not to be quite the same as wisdom. It is therefore difficult to determine how nursing knowledge influences nursing wisdom, how the situation influences wisdom, or how wisdom relates to concepts such as clinical judgment, expertise, forms of nursing knowledge, empathy, and intuition.

Susan Matney, RN, MSN, FAAN is a doctoral student in nursing at the University of Utah College of Nursing. She has developed a construct of wisdom-in-action for clinical nursing. The construct is a formal definition of wisdom and describes the attributes of wisdom and the relationship between those attributes. The purpose of this study is to obtain a story, or multiple stories, from your practice that illustrate a stressful situation where you felt you made a difference. The ways in which you uniquely practice wisdom will be used to validate or enhance the construct. The data elements on the demographic form align with the antecedents within the construct of wisdom-in-action.

You are invited to participate in a dissertation research project she is conducting for the purpose of the exploring the use of nursing wisdom in an emergency room setting. You are being invited to take part in this research because you are an emergency room nurse with more than five years of clinical experience. Please take time to read the following information carefully and discuss it with friends, and relatives if you wish.

(This space intentionally left blank, do not remove

Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you volunteer to take part in this research project.")

**STUDY PROCEDURE:**

The study will involve one interview that asks questions about your clinical practice during stressful situations, including care decisions. The interview will last about 60 minutes. The interview will be at a time and place convenient for you. If it is OK with you, Susan may also contact you once by telephone in a few weeks after the interview for about 10 minutes to clarify what you told her.

Participation is entirely voluntary and you can refuse to answer any question and/or quit at any time. Should you choose to quit, no one will be upset with you and your information will be destroyed right away. Your interview will be audio-recorded, transcribed, analyzed, and studied in a manner that protects your identity. This means that a fake name (pseudonym) will be used instead of your real name. A transcriptionist (a person who types your words while listening to your audio recordings) will sign a pledge of confidentiality before doing this work. Any information provided and/or identifying records will remain confidential and safeguarded in a locked folder at the University of Utah for a minimum of five years.

**RISKS:**
The risks to you are minimal. You may feel emotional discomfort or distress during the interview or when thinking about it after.

**BENEFITS:**
I cannot promise any direct benefits from your being in this study. However, you may feel a sense of accomplishment as you reflect on your clinical practice and the decisions you have made for a patient during their care.

A larger benefit is to the nursing profession, and knowing that you were involved in the enhancement of the final theory of wisdom-in-action for clinical nursing.

**ALTERNATIVE PROCEDURES:**
The decision to take part in the study is up to you. The other choice is to not participate.

**PERSON TO CONTACT:**
You can contact Susan Matney if you have any questions about this research or related matters. She can be reached 24-hours a day at (801) 447-9294. You can contact her by email as well at susan.matney.utah.edu.

**INSTITUTIONAL REVIEW BOARD:**
If you have questions regarding your rights as a research subject, or if problems arise which you do not feel you can discuss with the Investigator, please contact the **Intermountain Office of Research at 1-800-321-2107.**

**VOLUNTARY PARTICIPATION:**
It is up to you to decide whether to take part. If you do decide to take part, you will be asked to sign a consent form. If you decide to participate, you are still free to withdraw at any time and without giving a reason. This will not affect the relationship you have with the investigator or staff nor your employment.

**UNFORESEEABLE RISKS:**
The only risk in this study is the risk of emotional distress.

**RIGHT OF INVESTIGATOR TO WITHDRAW:**
You may withdraw from the study at any time without

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penalty. Susan or her Intermountain co-investigator, Linda Hofmann, can withdraw you without your approval. One reasons for withdrawal would be if information in your story could damage someone's reputation.

**COSTS TO SUBJECTS AND COMPENSATION:**
The costs to you will be your time to participate. If you participate in the study you will receive an Amazon gift card worth $25. Once the interview has started, Susan will give you this card whether you decide to complete the interview or not.

**NEW INFORMATION:**
The results of the research project may be made public and information quoted in professional journals or meetings, but your real name will never be used.

**NUMBER OF SUBJECTS:**
We expect about 15 nurses from Intermountain Medical Center will be in this study. This study is not part of a national study or a Medical Center study.

**CONFIDENTIALITY/ AUTHORIZATION FOR USE OF YOUR PROTECTED HEALTH INFORMATION**

*Intermountain Healthcare has a commitment to protect your confidentiality. Federal regulations require that you understand how your protected health information (PHI) is used for this study.*

This is the information we will use:

- {Name}
- {Address}
- {Telephone number}
- {Date of Birth}
- {Nursing Degree Type: ADN, Diploma, BSN, MSN, PhD, Other}
- {Years of clinical practice}

***DISCLOSURE***

*We* may share your information within publications or presentations, but you will not be identified by name, social security number, address, telephone number, or any other information that would directly identify you

{In records and information disclosed within publications or presentations outside of INTERMOUNTAIN, your information will be assigned a unique code number. Susan Matney will keep the key to the code in a secure file.

Others who will have access to your protected health information for this research project include Intermountain's Institutional Review Board (the committee that oversees research studying people), University of Utah Institutional Review Board, and authorized members of the Intermountain workforce who need the information to perform their duties (for example: provide treatment, to ensure integrity of the research, and for accounting or billing matters), the Food and Drug Administration, and others as required by law.

Signing this document means you allow us, the researchers in this study, and others working with us to use protected health information about your health for this research study. You can choose whether or not you will participate in this research study. However, in order to participate you have to sign this consent form.

You may change your mind later and ask us to stop using or disclosing your protected health information.

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**This must be done in writing.** You must either give this notice, called a revocation, in person to the Principal Investigator, the Principal Investigator's staff, or mail it to Susan Matney, 1148 North Alice Lane, Farmington, UT 84025.. If you revoke this authorization, we will not be able to collect new information about you, and you will not be able to participate in the study. However, we can continue to use information we have already started to use in our research, as needed to maintain the integrity of the research.

Just so you know, if we send protected health information about you outside Intermountain, based on this or any other authorization you sign, we cannot guarantee that the recipient will not redisclose your protected health information to a third party. The recipient of the information may not be required to abide by this Authorization or applicable federal and state law governing the use and disclosure of your protected health information.

You have a right to information used to make decisions about your health care. However, your information from this study will not be available during the study; it will be available after the study is finished. This authorization lasts until this study is finished.}

For more information about my rights to my protected health information, how to revoke this authorization, and how Intermountain uses my health information, I may ask to see or obtain a copy of the Intermountain Notice of Privacy Practices.

I hereby acknowledge that I have received or been offered a copy of Intermountain's Notice of Privacy Practices.

**CONSENT:**

I confirm that I have read and understand this consent and authorization document and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. I will be given a signed copy of the consent and authorization form to keep.

**I agree to participate in this research study and authorize you to use and disclose health information about me for this study, as you have explained in this document.**

_____
Participant's Name (Print)

_____ _____
Participant's Signature Date

_____
Name of Person Obtaining Authorization and Consent

_____
Signature of Person Obtaining Authorization and Consent

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Patient Initials_____
Form Revised 03/22/2006

# APPENDIX E

# TYPISTS'S CONFIDENTIALITY PLEDGE

## Matney Wisdom-In-Action Study

## Typist's Confidentiality Pledge

I will be typing Susan Matney's typed notes from her transcriptions of her interviews for her dissertation research:

**Wisdom-In-Action in Emergency Room Nursing**

I promise to hold all individuals' interviews confidential and to maintain their anonymity. I will not talk of the interviews to anyone. To do so would otherwise be a serious ethical breach.

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Signature of Typist Date

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Signature of Principal Investigator Date