

THE THEORY OF NURSING KNOWLEDGE (Editorial)

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For decades, nursing educators have invested heavily in developing a philosophy and conceptual framework specific to a given school of nursing, regardless of the level of nursing education. Consequently, there is a great deal of variability, and often opposing schools of thought, across schools of nursing. A theoretical foundation applicable across nursing education programs, therefore, has emerged as a significant missing factor. This missing theoretical piece is of critical importance for the student seeking nursing education at a variety of colleges and universities and through multiple programs such as practical nurse, associate degree nurse, baccalaureate degree nurse, masters degree nurse and even as a doctorate prepared nurse.

Traditionally, the nursing profession had been a science subsumed from other disciplines with non-mathematical and non-computational research originating from nurses. Recently, however, nursing science has broken out of the traditional mold and has added a strong scientific and theoretical foundation and mathematics are becoming an integral component of nursing. Nursing scientists have recognized the value of using mathematics for graphically representing abstract conceptualizations, particularly for describing, explaining, and predicting nursing practice (Walker & Avant, 1995).

For instance, the Theory of Nursing Knowledge/Wisdom and Nursing Praxis, a mathematics based approach to nursing education, when utilized refines and enhances the structural foundation for nursing curriculum, nursing courses, and nursing textbooks, emerging a new viewpoint of the Science of Nursing in the most global perspective. Furthermore, this global perspective that The Theory of Nursing Knowledge/Wisdom and Nursing Praxis illustrates, subsuming the parts of the Nursing Knowledge/Wisdom and Nursing Praxis, creating a whole. The whole centered to the Human Being, the nurse as individual human being, and the implementation of this understanding in the community and in the Social Entirety Nursing Theory, creating The Complexity Integration Nursing Theory, a Nursing Metatheory. Paille M and Pilkington FB (2002) as-

sert that when one's perspective is the human science paradigm, and particularly, the human becoming theory, one person can and does make a difference in global health. As Metatheory, the Complexity Integration Nursing Theory evolves new viewpoints, approaches and creative tools in order to utilize the Human Being's perspective. In this way, the four metaparadigms of the Nursing Science, which is the person, the environment, the health and the nursing (Powers & Knapp, 1990), emerge within their interrelations as self-organized networks within the Nursing Science's network.

The Theory of Nursing Knowledge/Wisdom and Nursing Praxis

During the early 1990's, a unique opportunity to enhance and add to the theories of nursing science emerged with the advent of the supercomputer and its capabilities for dealing with terabyte-sized databases. A nursing scientist leading a transprofessional team resulted in new tools and methodologies necessary for analyzing large-scale databases and the development of a theory regarding nursing knowledge and nursing practice. The Theory of Nursing Knowledge/Wisdom and Nursing Praxis evolved during the development of Nurmetrics and computational nursing, which introduced a new era for nursing science with emphases on mathematical form, statistical analysis, and computer simulation. Serving as an initial foundation for Nurmetrics was the evolution of a nursing theory utilizing mathematical form (Meintz, et. al.). The Theory of Nursing Knowledge/Wisdom and Nursing Praxis expressed through mathematical form analyzes nursing science as it relates to nursing practice; whether it is clinical nursing practice, nursing education, nursing administration, or nursing research. The Theory is a revolutionary manner of understanding the intricacies of nursing knowledge with a mathematical statement. Development of the Theory delineates the diverse factors that constitute professional nursing practice, to explain the relationship between the separate elements, and to predict nursing practice patterns through examination of identified vari-

ables. The Theory of Nursing Knowledge/Wisdom (Appendix I, Figure 1) elucidates the uniqueness of the nursing profession by systematically identifying the fulcrums of practice

NF stands for the **Nursing Foundation**, a combination of knowledge from both the sciences and humanities. The sciences contribute the empirical knowledge base procured by the science of nursing and associated disciplines such as biology, the physical sciences, medical science, and chemistry. Behavioural, social or natural sciences supply abstract scientific theories. For example, the humanities contribute knowledge from the philosophical and cultural studies that investigate human constructs and concerns, as contrasted to physiological processes such as physics or chemistry.

Methodology (M) applies a methodology for problem solving to a specific practice domain such as in clinical practice the staff nurse uses the nursing process or Outcome, Process, and Test (OPT) model, strategic thinking for nursing administration, scientific inquiry for nursing research, or adult learning theory for nursing education.

Nursing Essence (NE) represents the evolution of nursing as a profession and is defined according to the practice domain. NE includes the principles of the science of nursing, legal parameters, the definition of person, environment, health, and nursing; technical skills; and all other esoteric components of nursing practice. Additionally, nursing essence accounts for the various existing nursing conceptual models and nursing theories. The conceptual models and the nursing theories may provide the basis for clinical practice for some nurses (i.e. Johnson's Behavioral System Model, King's General Systems framework, Levine's Conservation Model, Neuman's Systems Model, Orem's Self-Care Framework, Rogers' Science of Unitary Human Beings, Roy's Adaptation Model, Leininger's Theory of Culture Care Diversity and Universality, Newman's Theory of Health as Expanding Consciousness, Parse's Theory of Human Becoming, Orlando's Theory of the Deliberative Nursing Process, Wiedenbach's Clinical Nursing: A Helping Art, Henderson's Nature of Nursing, Travelbee's Interpersonal Aspects of Nursing, Peplau's Theory of Interpersonal Relations, Watson's Theory of Human Caring, and so forth). Thus, Nursing Essence is defined differently for each of the nursing practice domains, including clinical nursing practice, nursing education, nursing administration, and nursing research.

Disciplined Inquiry (DI) refers to investigation or experimentation aimed at the discovery and interpretation of facts, revision of accepted theories or law in the light of new data, and the practical application of new or revised theories or laws. Nursing knowledge is influenced by disciplined inquiry (or research) from the nursing sciences and associated disciplines.

NKW is Nursing Knowledge/Wisdom, the understanding of nursing as a science and an art. Therefore, nursing knowledge/wisdom equals the nursing foundation (derived from the combination of knowledge from the sciences and the humanities), plus the nursing essence, plus methodology, and plus disciplined inquiry.

The Theory of Nursing Knowledge/Wisdom is applicable to practice through the following formula:
(NKW) (IB) = P

Here, (IB) represents the individual nurse's integration and synthesis of nursing knowledge through cognitive, psychomotor, and affective/spiritual domain of self. Whereas, (P) represents the depth and breadth of nursing praxis, which increases or decreases according to the application of nursing knowledge to this integration.

The depth and breadth or nursing praxis (P) is determined by the individual nurse's Being (IB) and the integration and synthesis through domains of cognitive, psychomotor, affective/spiritual domains of self, times nursing knowledge/wisdom (NKW). Therefore, if $P = Y$, and $(NKW) (IB) = X$, then the greater the X, the greater the Y. As X increases (or decreases) Y increases (or decreases). X is positively (or negatively) related to Y. The reverse is not true because this is a nonreversible, or unidirectional causality.

The final synthesis statement of the Theory of Nursing Knowledge/Wisdom and Nursing Praxis affirms that: *The degree of change in Nursing Praxis, which an individual nurse emits, is directly related to the degree of integration and synthesis of Nursing Knowledge/Wisdom, which includes: nursing foundation (science and humanities) plus nursing essence plus methodology plus disciplined inquiry.*

The Theory of Nursing Knowledge/Wisdom and Nursing Praxis was developed utilizing inductive reasoning from a historicist perspective. Inductive reasoning is the process of combining discrete concepts into a more global abstraction. This theory

links psychometric variables pertaining to nursing knowledge and practice to create a more pervasive understanding of the nursing phenomena.

The historicist perspective embraced in the development of the Theory of Nursing Knowledge/Wisdom and Nursing Praxis was a relative new philosophical stance in nursing theory construction. Traditionally, science had been dominated by logical empiricists, who concerned themselves primarily with logical problems, particularly the structure of theories, and the relationship between statements, which describe observations, and the laws, and theories that these statements confirm or refute (Brown, 1977). Questions, which were not amenable to formal analysis, were dismissed as non philosophical (Brown, 1977). Thus, the logical empiricists frequently shunned inquiry into the basis of nursing knowledge because it is not comprehensible within their philosophical parameters.

In contrast, the historicists consider science a process of knowing, a process of challenging, and a continuing revolution (Silva & Rothbart, 1983). The historicists' focus is on exploring the outer limits of cognizance and theory discovery, rather than on repetitive and sterile theory validation. The emphasis on process (not product) and revolution (not pure logic) is a noticeable shift in viewpoint from logical empiricism to historicism. According to Einstein (Smelts & Ehnebuske, 1979), "The deeper we penetrate and the more extensive and embracing our theories become, the less empirical knowledge is needed to determine those theories."

The Theory of Nursing Knowledge/Wisdom and Nursing Praxis is based on several inductive and deductive premises, including inductive premises:

1. *The collective universe of knowledge from nursing scientist far exceeds the individual nursing scientist's universe of knowledge, meaning that the existing nursing theories must be recognized and given a place in a theory of nursing knowledge.*

2. *The nursing professional must be a crusader for nursing science by asking the questions "why" and "how", meaning the only consistency in nursing science is its inconsistency or diversity and fluidity of change.*

3. *There is a lateral transfer of foundational knowledge from associated disciplines to nursing science, meaning the autonomy of nursing science is linked to associated disciplines which influences nursing science and its six branches of Nurmetrics, medical nursing, surgical nursing, obstetrical nursing, pediatric nursing and psychiatric nursing.*

4. *The uniqueness of the individual nursing scientist influences the depth and breadth of clinical practice, meaning the individual nursing scientist processes information through cognitive, psychomotor, and affective/spiritual domains of self by integration and synthesis in order to selectively determine clinical practice depth and breadth.*

In addition to the four inductive premises, the theory utilized two deductive assumptions, including:

1. *Nursing research and associated disciplines research can be accepted or rejected by measuring the scientific supportability, meaning that scientific supportability is defined as valid information (in the abstract sense, not to be confused with psychometrics) that is sound, well grounded on principles or evidence and able to withstand criticism or objection. From the definition of scientific supportability, measurement criteria can be developed to objectively judge nursing science research or the research of associated disciplines before accepting or rejecting such research. Therefore, all research should be evaluated for scientific supportability before acceptance by nursing science (Meintz, 1986).*

2. *Nursing science is linked to philosophy and associated disciplines through universally accepted axioms, meaning an evolutionary process has occurred which has resulted in a scientific base from science to nursing science (Meintz, 1986).*

Moreover to the inductive and deductive premises of the theory, the question revolving around the issue of professional nursing being either an art or a science was resolved by adopting the thoughts of Albert Einstein when he said:

1. *Where the world ceases to be the stage for personal hopes and desires, where we, as free beings, behold it in wonder, to question and to contemplate, there we enter the realm of art and of science.*

2. *If we trace out what we behold and experience through the language of logic, we are doing science;*

3. *If we show it in forms whose interrelationships are not accessible to our conscious thought but are intuitively recognized as meaningful, we are doing art.*

4. *Common to both is the devotion to something beyond the personal, removed from the arbitrary.*

Therefore, nursing integrates both art and science into the practice of nursing when nursing education teaches the logic of critical thinking and the intuitiveness associated with professional nursing judgment. For example, most expert nurses have experienced the "gut rendering feeling" (recognizing intuitively)

tively) that a specific patient was going to “crash” before the interrelationships of changing scientific evidence (or science) emerged.

The model for the Theory of Nursing Knowledge/Wisdom and Nursing Praxis is a broken-line circle, with disciplined inquiry on the outer rim, because disciplined inquiry is viewed as being never ending and with no beginning or end. Three broken-line arrows represent the nursing foundation (a combination of scientific foundation and scientific theories,) methodology, and nursing essence. The arrows will vary in size depending on the degree of integration and synthesis, and therefore varies by individual nurses scientist which is represented by a triangle

The theory is appropriate for professional nursing domains of nursing clinical practice, nursing administration, nursing education and/or nursing research.

The Theory of Nursing Knowledge/Wisdom and Nursing Praxis is a new perception of nursing reality. A means to define the parameters of practice through mathematical form so that nursing scientist can effectively direct the further development of the nursing profession.