

Metatheory for Unifying Nursing: Complexity Integration Nursing Theory

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Abstract

The Complexity Integration Nursing Theory is a metatheory comprised of four grand nursing theories, the Complexity Integration Nursing Theory (CINT) integrates the Human Being Nursing Theory, the Social Entirety Nursing Theory, the Theory of Nursing Knowledge/Wisdom, and the Theory of Nursing Praxis/Practice. CINT provided a unifying nursing metatheory for professional nursing practice, nursing education, and nursing research. CINT evolved as a new paradigm, applying new descriptions, viewpoints, and creative techniques to the four components of the nursing metaparadigm of nursing science. Discussed was the CINT background, influences, theoretical underpinnings, metaparadigm, as well as strengths and weaknesses of the nursing metatheory. Provided are suggestions for applications to nursing practice for nurses of all levels and practice settings.

Introduction

The Complexity Integration Nursing Theory (CINT) developed by Van Sell and Kalofissudis (2002) incorporates the wholeness of nursing theory into a single meta-theory that serves to guide professional nurses as they fulfill the responsibility of providing evidence-based patient-centered-care, and informs about the theoretical foundation of nursing practice [1]. Complexity is composed of large pieces that can be broken down into smaller units that are more manageable. "Complexity is the result of the procedures, which lead the Human Being to self-organization, and to receiving and utilizing the highest level of information" [1, p. 40].

Comprised of four grand nursing theories, the Complexity Integration Nursing Theory (CINT) integrates the Human Being Nursing Theory, the Social Entirety Nursing Theory, the Theory of Nursing Knowledge/Wisdom, and the Theory of Nursing Praxis/Practice. The Complexity Integration Nursing Theory is the only nursing theory to account for all nursing theories, past, present and future. Meta-theory for nursing, such as the Complexity Integration Nursing Theory, is the key foundation for professional nursing practice, nursing education, and nursing research.

Nurses are educated about many theories. A review of theories taught in the Texas Woman's University (USA) graduate nursing programs, for example, identified 42 different theories taught among six graduate nursing programs. Moreover, perhaps specific to nursing is a hierarchy of nursing theory with meta-theory viewed as the highest level and most abstract, where as practice theory is the lowest and least abstract. Meta-theory constitutes "the body of knowledge about a body of knowledge or about a field of study" [1, p. 19]. A meta-theory in nursing identifies views and evaluates critical nursing phenomena uniquely and abstractly. The CINT nursing metatheory provides the meanings, sentences, and structures interconnecting "situations and events observed by nurses on a global scale" [1, p.19]. The challenge of testing meta-theories are their abstractness and their interconnectedness; nonetheless, meta-theories have the greatest potential for guiding professional nurses. In considering the variety of theories and their levels, Van Sell and Kalofissudis developed CINT, a meta-theory, to bring all theories together under one umbrella for application to all nursing challenges [1]. The significance of CINT is that this meta-theory can be applied to the individual, the group, the context, or the whole because it encompasses all other theories.

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As a true metatheory, CINT emerges as a superstructure with multiple practical applications and extensive opportunities for researchers to discover grand theories, mid-range theories, practice theories, interconnected paradigms, and models, as well as explore how nursing reconstructs and is reconstructed.

An idea begins the theory development process, which entails time-consuming inquiry, extensive reflection, all-encompassing and thoughtful collaboration, as well as mind-numbing analysis, synthesis, judgment, and evaluation before dissemination of a new nursing theory. Interestingly, the collaboration between Van Sell and Kalofissudis also involved the integration of professional nursing across national boundaries, across cultures, across educational platforms, and across language barriers. Professional nurses have significant amounts of information circulating within their mind that seeks clarification and enlightenment regarding nursing practice theories, and CINT provides the interconnection.

Origin of Thoughts and Influences

Van Sell and Kalofissudis desire to help others is evident in CINT, as the theory strives to provide: "a different pathway in order to socialize nurses into the profession, creating a world that can be perceived as objective and real by reaffirming the whole and real nature of our existence, by decoding the unconscious and promoting the meaningful interconnectedness with the others" [1, p. 6]. An intrinsic value included finding the truth and scientific supportability of that truth in nursing. The CINT origin of thoughts and influences embraced: (a) mathematics as the language of science, (b) nursing as both a science and an art, (c) nursing science as within the whole philosophical tree, not just a branch, (d) the Historicist perspective for outer limits of theory discovery, and (e) questioning as a method of learning and teaching.

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The stimulus for the CINT theory development involved four significant components. First, the philosophical foundation evolving from the mechanistic worldview of Descartes and Newton to a philosophy rooted in Deep Ecology, which is driven to ask deeper questions and whereby all phenomena are interrelated and dependent upon the cyclical processes of nature. Second, the belief that the interrelatedness of phenomena and a cross-section of scientific disciplines is better equipped to solve complex nursing problems than is nursing alone. Third, advances in computational power, mathematical modeling, and computer simulation of nonlinear systems to define new relations and patterns, thus complexity mathematics has shown potential in solving increasingly complex nursing problems and in predicting and explaining complex interrelationships [2]. Third, human beings as complex, self-organizing systems. Fourth, the autonomy of the professional nurse determines the interpretation of human beings focused on health and wellness for all through excellence in nursing practice. Each of the four stimulus components unified to facilitate the comprehensive development of the CINT.

Eleven theoretical influences impacted the CINT. The theorist included: Einstein's analysis of art and science, Capra's *Web of Life*, Descartes philosophical tree, Socrates questioning, Aristotle portraying the human being as a political entity; the Platonic thought of the real and objective world, based upon Plato's *Allegory of the Cave*, as well as Naess' Deep Ecology [4-10]. Additional theoretical influences were Biomedical Computing with Nurmetrics and Computational Nursing, the Historicist perspective, Self-observation Methodology to ask deeper questions, and Kuhn's paradigms [2, 11-12].

Nursing theory evolves from a foundation established overtime. CINT nursing theoretical influences included: Florence Nightingale for nursing as an art as well as theory and research, Virginia Henderson for a definition of nursing, Martha Rogers for the Science of Unitary and Irreducible Human Beings, and Jean Watson for the philosophy and science of caring [13-16]. The concept consistent from Florence Nightingale to current nursing practice is the Human Being.

Nursing, caring, and healing exists as natural processes. Furthermore, the nurse is an important part of the interaction with the patient and in the healing process. Similarly, self-observation, a problem-solving methodology, is an inner awareness to ask deeper questions and to approach patient care in a nonlinear fashion, involving more than just getting the work done.

The historicist perspective emphasizes exploring new scientific knowledge. Historicists view science as a process of knowing, a process of challenging, and a continuing revolution with a focus on exploring the outer limits of cognizance and theory discovery, rather than on repetitive and sterile theory validation.

Additionally, both Van Sell and Kalofissudis strongly believe the nous, body, and psyche, must be in alignment to achieve the highest state of health. Nursing as both Science and Art incorporates all the useful criteria giving to nurses the logic, the analysis, the evaluation, the experience, the reflection, the intuition, and the transcendence.

Underlying Premises

Several premises or assumptions underlie the CINT. First, individual nurses do not know all nursing knowledge. Second, nursing professionals must continue their inquiry into nursing knowledge by continuing to ask how and why; therefore, nursing science continuously changes as knowledge expands and changes. Third,

nursing is not a stand-alone science; other disciplines influence nursing. Fourth, Meintz et al. [2] noted that each nursing scientist is unique and determines the depth and breadth of his or her nursing practice through a variety of input mechanisms and the ability to integrate and synthesize information. Finally, research in nursing science should be scientifically supportable; further, nursing science is linked to the humanistic disciplines such as philosophy through universally accepted axioms, which have resulted in an evolving field of study [3].

CINT, based on the premise that nursing is both science and art as explained by Albert Einstein: "If what is seen and experienced is portrayed in the language of logic, we are engaged in science. If it is communicated through forms whose connections are accessible to the conscious mind but are recognized intuitively as meaningful, then we are engaged in art" [4]. Florence Nightingale proposed that "Nursing is an art, and if it is to be made an art, it requires an exclusive devotion and as hard a preparation, as any painter's or sculptor's work, for what is having to do with the living body-the temple of God's spirit?" [16, p. 501]. CINT integrates both the science and the art of nursing.

Metaparadigm Definitions in Complexity Integration Nursing Theory

A nursing metaparadigm is one component used to define, describe uniquely, and separate contemporary nursing knowledge from other disciplines [17]. The nursing metaparadigm defines a person, health, environment, and nursing, however, an agreed unified definition of the four metaparadigm components has not surfaced in the nursing literature. Therefore, the nurses, as individual beings with absolute autonomy over their practice, determine a personal but professional definition for the nursing metaparadigm components of person, health, environment, and nursing.

In 2002, CINT evolved as a new paradigm, applying new descriptions, viewpoints, and creative techniques to the four components of the nursing paradigm. CINT definitions include:

Person: defined as a human being with an open, complex, self-organizing system, incorporating four fundamental concepts (Philosophy, Science, Civilization embedded in Culture and the Being) as explained in the Human Being Theory [1, p. 47 and p. 58].

Environment: a natural and cyclical process with open and intelligent human beings embedded, dependent upon, and interacting with the environment by interchanging endlessly material energy and information with the environment [1, p.40].

Health: defined as the evolving society of man responsible for the health that human being achieves, and society charges the healthcare worker with facilitating a person's health within the society. The global health web and the nurse are integral components for health as described in the Social Entirety Nursing Theory [1, p. 59].

Nursing: defined as science and art, which involves a journey through a complex and interconnected web, comprised of patterns, networks within networks, and systems within systems [1, p. 69].

The Complexity Integration Nursing Theory

As a meta-theory, Van Sell and Kalofissudis designed CINT to be a superstructure rooted in philosophy that would consist of several grand nursing theories including:

- Theory of Nursing Knowledge/Wisdom

- Theory of Nursing Praxis/Practice
- The Human Being Nursing Theory
- The Social Entirety Nursing Theory [1].

The Theory of Nursing Knowledge/Wisdom and the Theory of Nursing Praxis/Practice places nursing in a global perspective and, if followed, enlightens nursing education through curriculum, courses, and textbooks. These grand theories lead to the consideration of the whole the human being as exemplified in the grand theory entitled the Human Being Nursing Theory. Noting that neither nurse nor patient functions in isolation, the Social Entirety Nursing Theory incorporate the community environment surrounding the nursing interaction and involving political and society considerations. The assimilation of the four grand theories leads to the development of CINT, a nursing meta-theory.

The Theory of Nursing Knowledge/Wisdom

Expressing nursing theories mathematically began with Nurmetrics, nursing science enabled through analysis of large-scale databases [2]; therefore, the theory of nursing knowledge/wisdom is expressed mathematically by the following equation:

$$NF + M + NE + DI = NK/W$$

In CINT Nursing Knowledge equation, nursing knowledge delineated as the Nursing Foundation (NF), which combines nursing knowledge derived from humanities philosophy, culture, and language and science empiricism and social and behavioral sciences. NF added to methodology (M) for problem-solving. CINT proposes the non-linear Self-Observation Methodology as the preferred means of problem-solving even though many staff nurses use the linear nursing process methodology for problem-solving. The next item added to the equation, nursing essence (NE), “represents the evolution of nursing as a profession and is defined according to the practice domain” [1, p. 27]. Nursing essence (NE) accounts for all the theories and practices within the nursing profession and applies to all nursing practice domains. The last element to be added to the equation is disciplined inquiry (DI), the way nurses approach, research, and interpret facts; revise theories as new information becomes available; and apply new theories. As shown in the equation, the combination of these four

elements, nursing foundation, methodology, nursing essence and disciplined inquiry, results in nursing knowledge/wisdom (NK/W), which is “the understanding of nursing as science and art” [1, p. 28].

Jeffery, Mutsch & Knapp used the theory of nursing knowledge and nursing praxis to explain the correlation between knowledge and practice [18]. The two theories were used as the organizing framework for a study to determine knowledge and recognition of systemic inflammatory response syndrome and sepsis among pediatric nurses and the resulting quality of nursing practice.

The Theory of Nursing Praxis/Practice

How then is nursing knowledge/wisdom applied to practice? Van Sell and Kalofissudis developed a formula to include the nurse himself or herself in the equation of the Theory of Nursing Praxis/Practice [1, p.28]:

$$(NKW)(IB) = P$$

The nurse is the individual being (IB), with life knowledge and life experience, times nursing knowledge (NKW), which “IB represents the individual nurse’s integration and synthesis of nursing knowledge through [the] cognitive, psychomotor, and affective/spiritual domain of self, times nursing knowledge/wisdom (NKW)” [1, p. 28]. The result is the depth and breadth of practice (P), which may then fluctuate because of the knowledge/wisdom brought into the equation. As an integration, if $P = Y$ and $(NKW)(IB) = X$, then as X increases or decreases, Y also increases or decreases; therefore, X positively or negatively correlates to Y in this nonreversible, unidirectional causal relationship [1, p. 29].

Refer to Figure 1 for a model of the Theory of Nursing Knowledge/Wisdom with application to nursing practice. The model “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 nurse scientists, which is represented by a triangle” [1, p. 31].

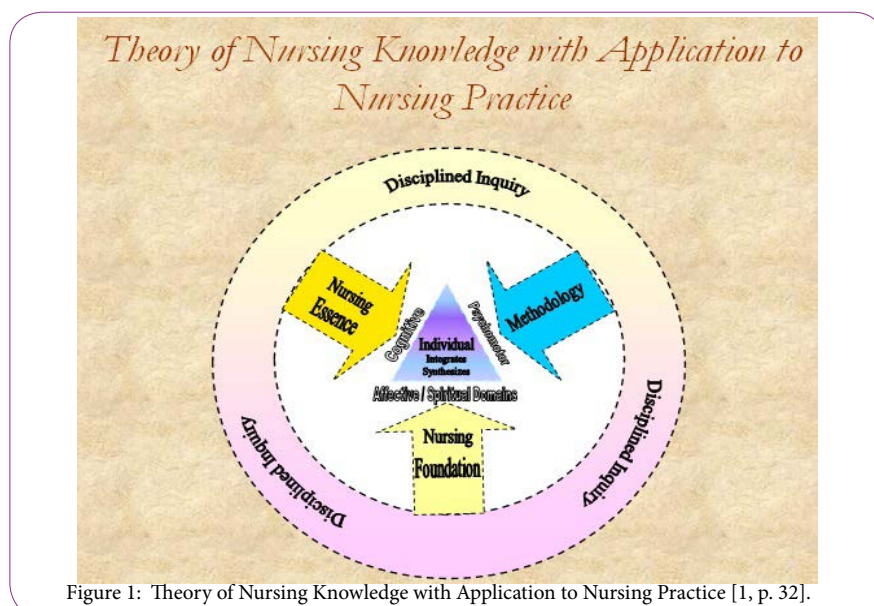


Figure 1: Theory of Nursing Knowledge with Application to Nursing Practice [1, p. 32].

In research, CINT explains the relationship between nursing knowledge and nursing practice. For example Binner, Ross & Browner used CINT as a theoretical framework to explain the relationship between nursing knowledge and nursing practice to identify best practices, knowledge-practice gap and knowledge deficit with practice deficit in regards to an assessment of oncology nurses' knowledge and practice relating to chemotherapy-induced peripheral neuropathy [19].

The Human Being Nursing Theory

The Human Being Theory recognizes the Human Being as an open complex self-organizing system incorporating four fundamental concepts of Philosophy, Science, and Civilization embedded in Culture, and The Being interconnected between Ontology and Metaphysics. "The Human Being based on fundamental concepts of continuous energy flow to sustain life and drive life cycles involving observation, development, application and evolution" [1, p.47]. Philosophy is an observation in science for the development of civilization embedded in culture for application to the Being, thus resulting in Evolution. Civilization is exclusively the man himself. Refer to Figure 2 for a model of the Human Being. "The Complexity Integration Nursing Theory evolved the interconnectedness of the suffering patient to the environment in order for the patient to have his own identified reference to the environment for self-organization" [1, p.48].

"The local, national, ethical, religious, intellectual and aesthetic character of civilization incorporated in culture can determine limits and needs that stem from possible or existing illness. Nurses use the determined limits and needs from culture to facilitate the health of the patient and to understand the patient's normal cultural environment" [1, p. 55]. "For example, cupping as the vigorous rubbing of an ill child to ward off evil spirits is common practice in many cultures; however, in the emergency room, the presence of multiple red, raised marks on a child may result in suspected child abuse. Clinical nursing practice routinely cares and heals people of different cultures without thinking about or approaching the eccentricities originating from various cultures" [1, p. 55].

Refer to Figure 3 regarding the model of the Human Being Nursing Theory. "The foundational concepts of philosophy, science and culture are interconnected and represented in the center of the Being as overlapping circles with no beginning or ending. The atomic representation of the Being, which floods the human conscience in order to indicate its own existence, sustains the human being as a complex open living system within the HOLON (whole or entirety) represented by the solid encompassing circle. The HYPER-HOLON, space outside of the HOLON circle, represents the transcended individual who as a human intellect of the world and simultaneously as a separate observer of the world can perceive the thinking for the existence of the HYPER-HOLON" [1, p. 58].

The society of man is responsible for the health that the human achieves. Professional Nurses charged with facilitating the person's health within society. Nurses networked within society, "are focused on detecting the interconnectedness of the human being by determining: (a) energy inflows and fluctuations of the Human Being as a complex open living system, which is reconstructed and is reconstructing, (b) self-organization of the Human Being, (c) bio-noetic-sociological and psychomotor ontogenesis of the Human Being, (d) spirituality of the Human Being, (e) dynamics of linguistics with verbal and non-verbal interactions between the Human Beings and with networks, and (f) impact of family as a special cultural characteristic" [1, p. 55-56]. "The nursing professional became society's facilitator of health by utilizing the determined interconnectedness of the Human Being, by assuming through philosophy observation, by interpreting scientific inquiry, and by reflecting cultural imperatives, thus resulting in progress toward health for the human being" [1, p. 56].

The Social Entirety Nursing Theory

The fourth CINT grand nursing theory is the Social Entirety Nursing Theory. Refer to Figure 4 for a model of the Social Entirety Nursing Theory. "Constituting a social paradigm, the Social Entirety Nursing Theory express concepts, values, perceptions, and practices shared by the global nursing profession, which shape a specific vision

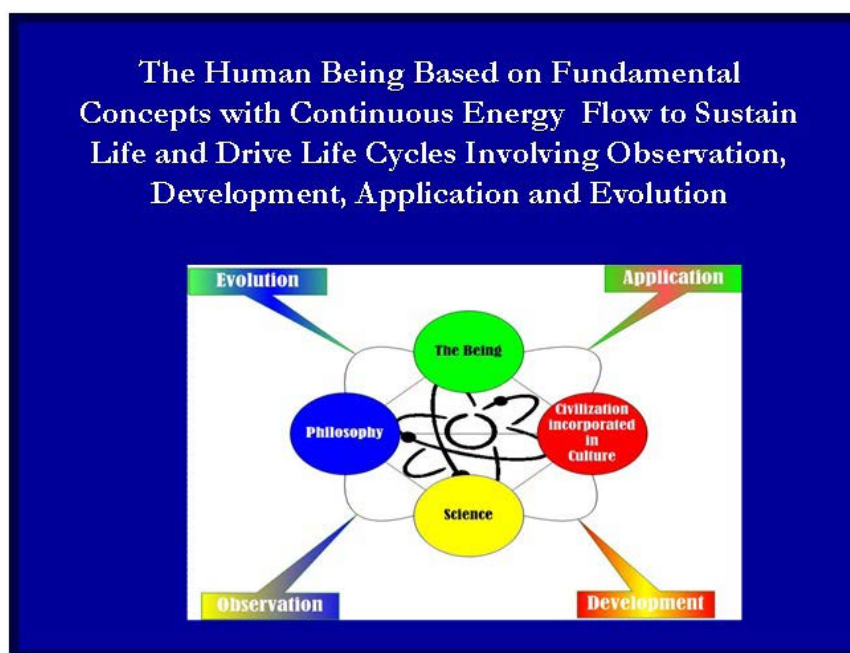
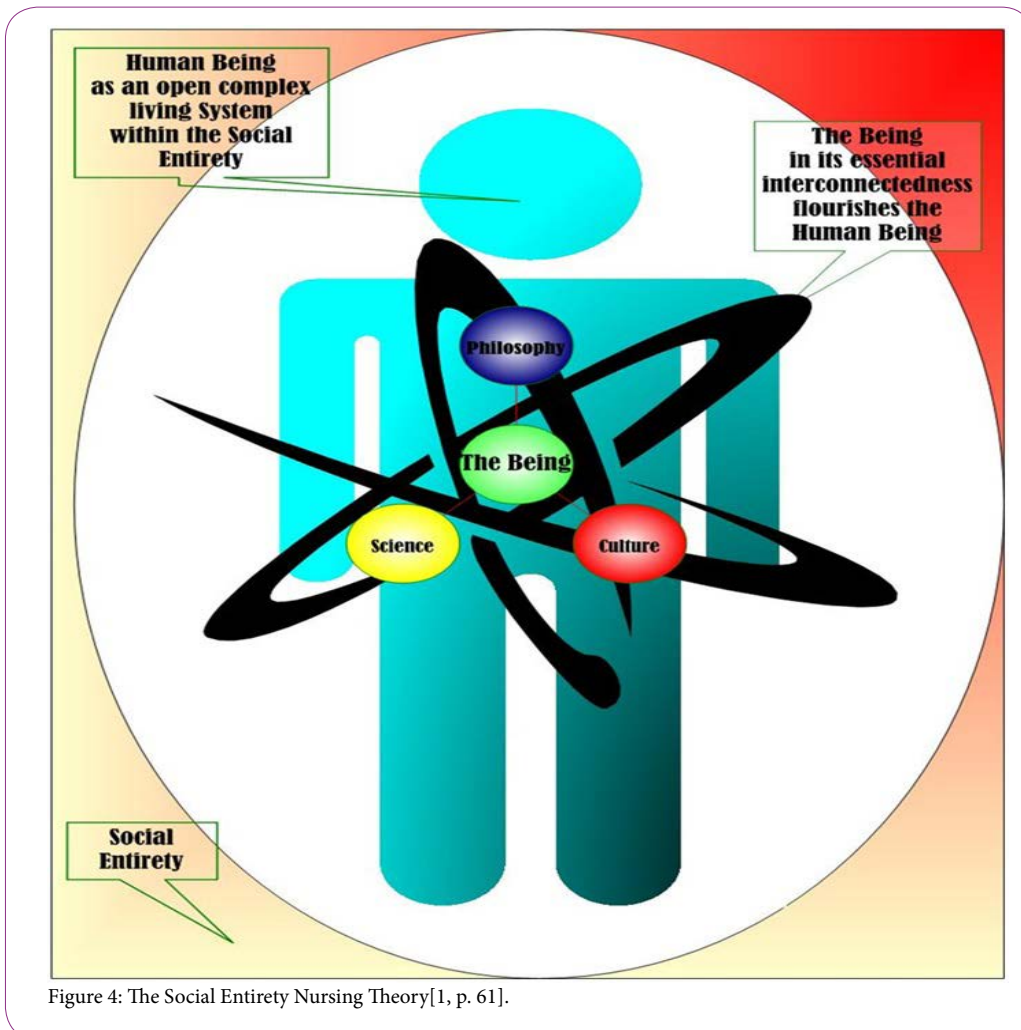
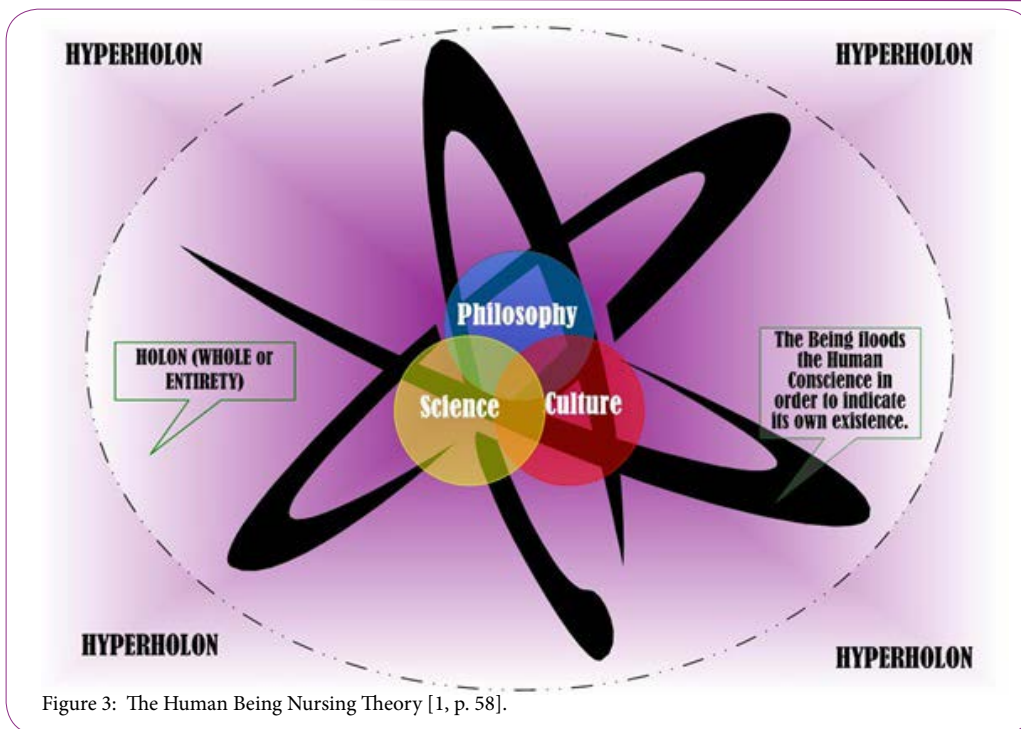


Figure 2: The Human Being [1, p. 47].



of reality that is the underpinning of the way the nursing profession organizes itself” [1, p. 59]. Everyone in the nursing profession is working towards the same goal—that is, health for all—with the human being at the center. Thus, the global concept of including the entirety of the environment within CINT leads to the inclusion of networks that include other networks and so on. The concept of social entirety may, therefore, be viewed both as a cycle and as a cyclone, spiraling without end. The Social Entirety Nursing Theory consists of two parts, the society as a political entity, and society comprised of individual human beings.

Aristotle introduced the concept of society as a political entity. Required of political entities active participation in the concerns of society. However, knowledge as a political entity does not guarantee action on the part of the citizens of society. Nurses are political entities. Nevertheless, the majority of nurses choose not to participate in social actions to maintain the health of all human beings. Consider, how many nurses as a political entity vote in each political election?

The second component of the Social Entirety Nursing Theory identified society as comprised of individual human beings, and humanity as a network within the Social Entirety network. The Social Entirety is not a measurable structure, but a pattern of networks. To understand a pattern requires mapping a configuration of relationships [5]. Van Sell and Kalofissudis indicated that:

Recognizing the patterns of the Social Entirety as a network allowed identification of nursing relationships within the Social Entirety to be mapped on three levels. The levels of configuration do not communicate with predetermined structures but are interconnected, free, dynamic, complex, and evolving. The levels of configuration include:

1st Level of configuration:

The nurse's interpretation of the Human Being as an open complex living system

2nd Level of configuration:

The nurse acknowledges the connecting links of philosophy to science, science to culture, culture to the being, and the whole to the being, as primary relationships necessary to achieve “Health for All” within the Social Entirety.

3rd Level of configuration:

The individual nurse applies meta-holistic care for the healing of the human being to achieve progress toward health for all [1, p. 62].

“An individual nurse with knowledge of the Social Entirety identifies the social model consisting of the Human Being and incorporates the following concepts: (a) Human Being's self-reference environment, (b) Language as communication tool, (c) Experiences, (d) Social status, (e) Religion, (f) Ethical and spiritual horizons, (g) Family, (h) Level of literacy, and (i) Psychological layer” [1, p. 63]. To complete the application of the Social Entirety Nursing Theory, the Human Being and the nurse must interact, providing feedback to one another, as the nurse attempts to provide appropriate care. The carrier of the interactive feedback defined in CINT as energy that is transformed and reborn as it moves between the Human Being and the nurse. The ebb and flow of energy become the transformative Nursing Essence healing and health.

Strengths and Weaknesses of Complexity Integration Nursing Theory

As with any nursing theory, strengths and weakness of the theory emerge, and CINT is no different. Strengths emerging in the CINT include:

1. **Incorporating existing nursing theories, the past, present and future, to create a more comprehensive understanding of nursing as a whole.** Nursing essence encompasses many major nursing theorists, such as Parse, Roy, Watson, Newman, King, Orem, Rogers, CINT and much more [1]. Nursing essence allows many concepts to unite into the CINT theory.
2. **Accounts for individuality.** The philosophical approach of the theory applies to the nurse as an individual human being and as a professional, as well as to nursing as a body of science and art.
3. **Pioneers for a new method of practice.** CINT represents a metatheory for unifying the nursing profession.

Strengths of a theory acknowledge the positives and the growth within CINT. Likewise, weakness suggests areas for growth as well as alerting nurse researchers to topics for future research studies.

The CINT weaknesses may in actuality represent strengths and include:

1. **Mathematical concepts are difficult for the average nurse to understand.** The mathematical representations are not typical for a nursing theory. The reader must be focused and have a basic knowledge of algebra to understand the relationships between the concepts in the theory.
2. **The traditional nursing process is not followed.** In the CINT, the theory of nursing knowledge recommends self-observation as the methodology for problem solving, which facilitates a non-linear process for patient care.

Applying the Complexity Integration Nursing Theory to Practice

Nurses rarely face situations comprising a single problem. Instead, nurses confront numerous problems on many levels, and such challenges usually have more than one solution. Clinical decisions are difficult and outcomes uncertain. Nurses must frequently make choices with little background information, limited knowledge, and serious consequences for nursing actions and patient outcomes. The nursing profession is extremely complex, requires the integration of many components in a variety of context, and strives to provide evidence based best practice. Nurses usually indicate that they choose the profession of nursing to help other human beings, and focus on procedures instead of nursing theories. Therefore, the question is how to apply the Complexity Integration Nursing Theory to explain practice?

To relate the Complexity Integration Nursing Theory to practice, consider: A patient on a medical-surgical unit has an order for a blood transfusion. When the nurse, as an individual being, integrated and synthesized nursing knowledge through her cognitive, psychomotor, and affective/spiritual domains of self, determined due to her spiritual belief not to transfuse blood or blood products; stepped back and refused to participate in the blood transfusion for her patient. The nurse had nursing knowledge about blood transfusions, and

successfully passed her nursing exams and licensure examination regarding blood transfusions. However, her belief as a Jehovah Witness (affective/spiritual domain of self) prevented her from using blood transfusions in her nursing practice.

The CINT applies to nursing practice by focusing on the nurse and their nursing knowledge, the individual nurse's cognitive, psychomotor, spiritual/effective domains of self to integrate the science and art of nursing in facilitating positive patient outcomes. Therefore, the nurse prior to practice already inherently possesses the needed values and belief system (spiritual/effective domains of self), has achieved a level of nursing knowledge (license to practice), the ability to perform safe and basic nursing procedures such as catheterization (cognitive and psychomotor domains of self). In this way, CINT can be a top down or bottom up theory, in which the nurse does not necessarily have to practice from it but can practice with it, by seeing how their practice relates to the CINT or how CINT relates to their practice. CINT is a "Chicken or the egg" theory, in that, it does not matter if the theory or the practice comes first, as both are interrelated.

One advantage of CINT is the emphasis on the whole being the patient, the nurse, the nursing manager, or anyone else in the environment who is affected by the phenomenon under consideration. To address the phenomenon or problem, the nurse needs to look within himself or herself to grasp the knowledge, theory, and essence that is his or her own. Through the Self-Observation Methodology, essentially reflecting and studying the individual within the situation, the nurse can form a non-linear plan of action to solve the problem. The individual nurse as a Human Being, is at the center of CINT, thus distinguishing CINT from other theories and giving CINT the ability to apply to all situations.

More important and inherent in CINT is the interconnectedness. CINT recognizes the nurse's knowledge/wisdom, leads nursing knowledge to practice, and then connects the nursing knowledge to the individual himself or herself. A major difference in CINT is that the individual human being in question may be the nurse, the patient, the nursing manager, or some other individual involved in the problem under investigation. For example, the nurse must recognize the daily rhythm of the hospitalized patient. If the patient has diabetes and is insulin-dependent, then the time of administration of insulin must remain consistent for the patient's blood glucose level to remain stable. A nurse who does not ascribe to CINT may not think to identify that the diabetic patient works the night shift; therefore, the patient's normal time of insulin injection might be close to midnight. The thought process involves centering on the nursing knowledge, the nursing essence, the discipline inquiry, the reality of the patient, and the Self-Observation Methodology that forces the nurse to consider himself or herself and the individual patient as an individual human being part of a social entirety, not as simply another insulin-dependent diabetic.

Consequently, the nurse understands needing to push nursing science forward. The responsibility of the science of nursing, through the nurse, is to study patterns and structures involving networks, networks within networks, and feedback loops which are self-organized, self-referenced, self-perpetuated, and autopoietic [self-created] in order to reconstruct and be reconstructed" [1, p. 69]. The study of patterns and networks is not enough because the professional nurse must act on the findings. You have learned about the Complexity Integration Nursing Theory. Now is the time to take action and apply CINT to your nursing practice.

Competing Interests

The author declares she is co-author of *The Evolving Essence of the Science of Nursing: The Complexity Integration Nursing Theory*.

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