◆招聘講演◆

「Theory and Research for Clinical Knowledge Development」

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IT IS INDEED ON HONOR TO BE HERE TO ADDRESS THE 16th ANNUAL MEETING OF THE JAPANESE SOCIETY OF NURSING RESEARCH. I thank you for your kind invitation to visit your beatutiful country and to be with the nurse scholars here.

INTRODUCTION

The strength of nursing today comes partly from its numbers, nearly 2 million in my country, and for your countrys the number is as high as 430,000. But more significantly from this, our strength is from our unity in our common beliefs about people and beliefs about nursing and the purpose of our professional service. So many aspects of our global society today cry out with health care, economic, political, moral crisis to which each profession must respond. AIDS, as a worldwide epidemic, is a growing force that we contend with even more in the 90's than in the 80's, because of the nature of the disease we will still deal with it well into the next century. We see on the international scene, drugs, terrorism, and a polluted environment and even the sudden fall of whole nations in the American cities, homelessness and hunger ; in Japan, the decline of rural life. The ineffective social political structures to deal with these issues leave us feeling shocked, and at the times determined to make a difference. In each of our countries, we have dealt with being disillusioned with the government, and confused by the fact that technology brings ethical questions beyond our moral capabilities to find solutions to them.

You may ask what does this have to do with nursing today ? And in particular, how are these issues related to the topic, theory and research for clinical knowledge development. As I read the literature in the field of nursing, perceive the cost cutting measure and other problems in the large city hospitals in the United States and in long term care facilities, and listen to colleagues from my country and around the world, I sence that this is truly a time of crisis ; a time of unparalled opportunity.

I believe that the United Satates health care crisis, and the problems identified in the newspaper headlines, have common roots and can be solved with related approaches. A profession involves a group of people who use specialized knowledge for the good of society. Nursing can provide a centering point for dealing with the issues of our modern world. A western philosopher in the 17th century, Descartes, looked for one stable, immovable point on which to base a new philosophical system. He found this in the conscious self. Nurses turn not within ourselves, but to our common beliefs about persons in society

and to our specialized practice for the common good. Clinical knowlege based on these beliefs is, I submit, is the particular kind of knowledge most relevant in dealing with the global, social, and health concerns of the 21st century.

Secondly, as a practice discipline we have a pluralism of models for practice, and clinical specialization that makes our knowledge effective in responding to the contemporary needs. There are now 47 organizations for specific clinical groups in the United States. In addition, nurse theorists have developed ways of looking at the person, as an individual and as a member of society, and at how nursing as a scientific and practice discipline can make a difference in today ' s society. Your own nurse thinkers look at Japanese society, within the global scene, and also describe how to conceptualize nursing. Both nurses in speciality practice and those develo ping models derive the theories and research of clinical knowledge development.

This paper provides a discussion of an emerging common perspective of nursing. The overview perspective includes current beliefs about nursing science and its philosophical bases asserted by nurse scholars throughout the United States. The relationship between this emerging unity of assumptions and the values about nursing and the Roy Adaptaion Model is noted. Theoretical progress and research studies using the Roy Model of nursing are described to illustrate one approach to developing the basic and clinical nursing science. Both the historical view and recent developments in the Roy model and its use in developing nursing knowledge out of, and in relation to, clinical practice are included. An agenda for future nursing science development based on the Roy Model is presented.

Current knowledge in North America is based upon the practice and education established by Florence Nightingale in the last century. More recently, in 1977, Donaldson and Crowley summarized the commonalities of nursing reflected in writings. Three key points they identified place an emphasis on the processes and patterns that lead to health. The last decade and a half have provided a rich literature on nursing ' s basic beliefs and focus from which we can derive further areas of common agreement. Current commonalities of the discipline can be looked at related to our view of persons and environment interactions, and to our evolving concepts of health and nursing.

Looking at the scientific processes related to persons in the environment, the following principles are noted in summarizing the thinking of nurse scholars : Holism or integrality is assumed ; secondly, open systems are exchanging energy ; and thirdly, patterns emerge from basic life processes. Some shared concepts concerning health and nursing include : if, for people, life changes, yet aspects of stability are rooted in human nature, health, in the words of the Nursing Theorist Group of the National Conference on Nursing Diagnosis (Roy, 1982, 220), relates to the expression of full life potential ; and third, we have a long tradition of caring that has been called the interpersonal process (by Peplau), emphathy (by Travelbee), and now such terms as transpersonal caring (Watson) and transcultu-rel caring (Lerninger).

Commitment to the good of the individual is expanded by our commitment as a profession to the good of society. A recent panel of educators described seven basic values in educating a nurse. In addition to liberal education and professional nursing practice, nursing education focuses on these essential values : altruism, equality, aesthestics, freed om, human dignity, justice, and truth. These

values then are noted in both the early development of modern nursing and in its expanding years in the United States. The common principles identified, then, together with a values basis, apply to nurses ' responsibility to persons in a social context.

Based on the emerging common philosophical and scientific assumptions in nursing, and the needs of society, a common perspective of nursing has been outlined. Nursing focuses on persons within the total ecology, that is, their is, human and social context environments. At the core of the person is the human life processes, such as homeostatic regulation, thinking, feeling, and relating. Out of these processes, acting within a given environment, the person develops individual patterns, such as being a sensitive and thoughtful person, perhaps a person with high energy and always active, a person who has pattern of being late, or who takes care of his or her health in each aspect of life, nutrition, exercise, and recreation.

I propose, then, that there are two brances of nursing science. These two branches stem from the inner core of the person or group. First, the basic Nursing Science deals with understanding these human life processes. Secondly, Clinical Nursing Science, studies the diagnosis and treatment of the patterning of life processes. This perspective is at the highest level of abstraction where the discipline can have a common focus.

In addition, the conceptual models for nursing have developed over the past couple decades and have the task of proving the reality of nursing to provide direction to our practice, to add to our knowledge for practive through research, and to direct nursing educaiton. Whether the framework be that of Peplau, Orem, Parse, Roy, King, Rogers, or others, each is a vehicle for developing the basic science of nursing and the practice discipline. They help us see the whole picture and also each help us direct our perspection of each nuance of our art and our science. They help us define and describe how we see the persons and that we care for in practive and study in nursing research.

As one of the conceptual models developed over the last 25 years, the Roy Adaptation Model is congruent with the common perspective of nursing desucribed. Furthermore, the model provides the basis for developing both basic nursing science and clinical nursing science. The model provides a view of the person and environment which identifies the basic life processes that enhance health. The concept of nursing and health, related to enhancing these life processes, are then the substantive knowledge used in the process of nursing diagnosis and intervention. Within the adaptation model, the key concept of basic nursing science is the life process of adaptation. For clinical nursing science, the central theme is enhancing patient adaptation. Let me describe now some of the theoretical work of the basic nursing science development based on this model.

The human life processes are the core of the basic nursing scietnce. For developing nursing knowledge based on the Roy adaptation model, this means understanding the person as an adaptive system. As I began to work on the model, as a graduate student with Dorothy Johnson at the University of California in Los Angeles, my efforts were to understand adaptation as a life process. In my clinical practice with children, I had seen the great resiliency with which they respond to the changing environment. Even life threatening health situations could be quickly reversed. A crying child might be in consolable at one minute, and then, could be sleeping

quietly only a short time later, being held in the arms of the nurse who rocked and sang to the child. It seemed that the concept of adaptation was rich for study as a way of looking at and expressing this innate human trait that could be useful in promoting health.

Looking for a way to define adaptation, I discovered the work of a physiological psychologist, Helson. Adaptation level theory (1964) forms the basis for understanding that the individual has the capacity to adapt and to create changes in the environment. Adaptaion is a process of responding positively to changes, and this ability is the funciton of the person's adaptaion level. Adapataion level is a changing point influenced by the demands of the situation and the resources that the person brings to the situation, that is, life patterns, capabilities, hopes, dreams, and motivations toward mastery. Helson's work provides a way of taking into account both the internal and external determinants of adoptive behavior.

Helson's basic premise is that individual's attitudes, values, ways of structuring experiences, judgments of physical, aesthetic, and symbolic objects, intellectual and emotional behavior, learning and interpersonal relations all represent modes of adaptation to the environment and organismic forces. Helson (1964, 53) spoke of sympathetic and parasympatheic systems acting to energize both the normal internal activities and sudden emergency responses; neuro and criculatory mechanisms were seen as a source of internly initiated change often triggered and guided by sensory and cognitive processing.

My reading of Helson was timely, but to push these notions further, it seemed appropriate to use a systems approach to describe the person from an adaptaion perspective. This model views the person or group as an adaptive system with coping mechanisms manifested by adaptive modes. The person, then, receives input both from the internal and external environment and processes that input by way of regulator and the cognator processes. Responses are made and are fed back into the system as additional input. The coping mechanisms are broadly defined as innate and acquired ways of responding to the changing environment.

The person is an extremely complex being in how he or she interacts with the changing world. It seems useful to categorize some of this complexity so that it is meaningful for nurses. The regulator, then, is one way of describing how a person responds automatically to many changes in the environment. The regulator receives input from the external environment and from changes in the person's innate state. It then processes the changes through the neutral-chemical-endocrine channels to produce responses.

The cognator on the otherhand uses both conscious and unconscious, cognitive and emotive processes. It responds through complex mechanisms of perceptual information processing, learning, judgement, and emotion.

By the year 1970 the first educational program based on this model was implemented at my home institution, Mount St. Mary's College in Los Angelas. As teaching materials were developed, the need for finding a "window" on the inner coping mechanisms was recognized. Students needed tools for nursing assessment that were less abstract than cognator and regulator effectiveness. The four adaptive modes originally were identified by content analysis of 500 incidents of patient behavior in all areas of nursing practice. The resulting categories of the ways or modes by which cognator and regulator adaptation are expressed are : physiologic needs, self

concept, role function, and interdependence . These four adaptive modes are used to study types of human responses.

The person as an adaptive system takes in stimuli that are focal, contextual, and residual. These stimuli, whether internal or external, are processed by the cognator and regulator. The resulting behavioral responses are either adaptive or ineffective for the pers on in meeting the goals of adaptation. For the individual these goals include survival, growth reproduction and mastery. However, the person within society poses broader concerns. Difficult issues of the individual need and rights, and of the good of society as a whole, must be resolved.

Theoretical development has expanded to build adaptive systems on the group level such as the prototype of the Person as an Adaptive System. Publications included discussions of the family, community, and social organization as adaptive systems. For social organizations, such as a nursing service administration, it is suggested that the subsystem coping mechanism can be called the stabilizer and innovator subsystems.

To develop further basic nursing science derived from the Roy Adaptation Model, substantive knowledge related to each of the adaptive modes was developed and published in several text books, the latest of which will be available in November of this year.

Through many revisions, and with input from educators, clinicians, and theory critics, the following organization of the physiologic mode is the one that has proved usuful for nursing assessment and for curriculum organization. There are Five Basic Needs : oxygenation, nutrition, elimination, activity and rest, and protection ; and Four Regulator Processes : the senses, fluid and electrolytes, neurological function, and endorine function.

The self concept mode deals with psychic integrity. Self concept has been defined as the composite of feelings and beliefs that one holds about oneself at a given time. It is formed from internal perceptions and perceptions of others ' reactions. A person ' s self-concept is significant in directing one ' s behavi or.

Roles have been called the functioning units of society. To maintain social integrity, the person needs to know the societal expectations of the roles they have so that they can act appropriately.

Interdependence, after some revision of our view of this mode, it was defined as close relationships of people that involve the willingness and ability to love, and respect, and value others, and to accept and respond to love, respect and value given by others. The basic need underlying the mode is affectional integrity . We describe affectional integrity as a feeling of security in nuturing relationships with others. Nurturing means providing growth-producing care and attention . You will see that this notion is related to nusing ' s heritage of being the caring component of health care and of current enphasis in exploring further the concept of caring.

Concept and theory derivation based on the four adsptive modes has led to greater understanding of the patterning of peoples ' adaptive responses and to useful ways to organize nursing knowledge for teaching.

For example, factors influencing each mode were described, that is, the focal, contextual, and residual stimuli most likely to be related to behavior manifested in the mod es. As an illustration, note that factors influencing behavior in the sub concept mode includes : perception, learning, reactions of othe rs, and growth and development.

In addition, Roy and Roberts have dev-

eloped a total of 97 propositions that described relationships between and among the concepts of the regulator and the cognator, and the four adaptive modes.

Our period of defining the adaptive moves seem to be complete. 1,500 faculty and students have used this approach successfully for 10 years. At the same time numerous other educational and practice institutions were implementing the basic model elements, including the four adaptive modes as organizing concepts The current stage of develoment seeks to look further at the interrelatedness of the modes. Theories most relavant in understanding the core adaptive human life processes will then be further derived and tested for a basis for developing clinical nursing science.

We can summarize this section on the adaptive system as the core knowledge of the basic science of the adaptaion model by listing the philosohical assumption that are used with the scientific assumptions of systems theory and adoptation level theory.

The philosohical basis for my later work was begun during baccalaureate studies, including extensive course work in the liberal arts, philosophy and theology.

Likewise, my lifelong commitment as a Christian has embued me with a deep belief in a loving, creator God and in the gospel message of the value of persons and our interrelatedness to each other. The opportunity to explicate more clearly the philosophical asssumptions of the model came when I was asked to give a paper on values for science. This philosophical aspect of the development of the Model late was more clearly treated in a publication in Nursing Science Quarterly.

Humanism, as we have defined it, is a broad movement in philosophy and psycholigy that recognizes the person and the subjective dimensions of the human experience as central to knowing and valuing as the basis of the four specific assumpions based on this knowing and valuingof the individual ; we identify that the individual shates in creative power, behaves purposefhlly, not in a sequence of cause and effect, possesses intrinsic holism, and strives to maintain integrity to realize the need for relationships.

Veritivity is a term coined that pertains to the principle of human nature that affirms a common purposefulness of human existence, a unity in truth. In veritivity, it is believed that the individual in society is viewed in the context of the purposefulness of human existence, unity of purpose of humankind, and activity and creativity for the common good, and value and meaning of life.

The knowledge developed to understand the adaptive processes and the scientific and philosophical basis for the adaptive person in society is the foundation for the content and process for the teaching and practice of nursing based on the Roy Adatation Model.

The practice of nursing uses the nursing process.

The nursing process within the Roy model relates directly to the view of the person as an adaptive system.

There are six steps of the process. They will be illustrated in one patient situation. The patient is a 30-year old woman whom I cared for in the neurosurgical ICU at the University of California, San Francisco Hospital two days after she had surgery for an arterial-venous Malformation. The first step of the nurisng process is assessment of behavior, that is, the human responses noted within the adaptive modes. Behaviors noted for this patient included :

In the physiological mode, her B／P was 170

／98 with uncontrolled even though she had a nipride drip, her pupils were sluggish to response, she had a facial droop on the left side, and she was oriented when she awake but quite drousy and sedated.
In the self concept role and independence made Self Role Independence, the patient requested her toilet articles and stated she want ed to be awake for her husband ' s visit.
Her husband requested clear information about his wife ' s recovery to proved to his Commanding Officer in the Army.

In the Roy Model, the second step of the nursing process is another stage of assessment, that is, assesment of stimuli ; the focal, the most immediate, contextual, other influencing factors, and residual, potential, but unrelated infiuences. For the patient I cared for the physiological behaviors were affected by the following stimuli.

Focal 2nd day post op repair of AVM causing IICP pressure on cracial nerves
Contextual patient described her pre-op condition as " walking around with a time-bomb in my head ". Nurse is constantly monitoring blood pressure and adjusting medications. Neurosurgeons and residents have 22hr. of surgery scheduled.
Residual Condition was created by developmental abnormalities.

For the other adaptive Modes the stimuli included :
Focal Desire to look her best and to interact with her husband.
Contextual Has been sleepy on all previous visits, Husband is in the Army on temporary leave Some supportive friends from Army base helped her during initial episode of illness one month ago.
Residual 30-year-old female. Family is out of state. Husband has been stationed in Korea prior to wife ' s illness.

Nursing diagnosis is the nursing judgement about the behavior and stimuli assesesd. These can be adaptive or ineffective conditions. Two major diagnosis are mode for the patient under consideration were :

Unstable neurological status related to her surgical condition. Stable B／P and no new neutrogical deficits.

Increasing awareness of self and the significant relationships. Positive self-image and satisfying interaction with husband.

Next, goal setting with the person or group involves setting expected behavioral outcomes. The two goals for this patient are : Intervention is carried out by managing all of the stimuli, influencing the situation according to the Roy Adaption Model. In this case there are a number of interventions, and let me just mention a few.

Monitor blood pressure in confident, reassuring manner. Collaborate with M. D. on medication adjustments. Check craial nerve q. 2h.

Provide cosmetics and assist with accustomed use schedule pain medication to maximize alertness for visit. provide privacy. Facilitate visit of husband with surgeon.

Finally the step of evaluation compatres the outcome behavior with the goals set. For this patient all the nursing actions contributed to maintaining neuologic stability in the post operative condition, however, blood pressure stability remained a problem, further medical intervention was needed.

Secondly, the patient expressed her appreciation in being able to get ready for and enjoy a visit with her husband. I want to point out the significance of nursing assessment in all four adaptive modes. Because the person is a whole being, the behavior of the partially sedated patient saying, "I wonder where my comb and lipstick are ; I haven't really seen my husband yet, " is as important as blood pressure reading if we believe that people have self concepts and interdependence relationships that affected as are physiological changes in health and illness. Recent theoretical development of the clinical nursing science includes : a typology of indicators of positive adaptation, and a revised typology of commonly recurring adaptation problems. Both are useful for nursing diagnosis.

In addition to theoretical development, a model has an important role in guiding ressearch both for a basic science of nursing and a clinical science of nursing.

Given the generic perspective for nursing knowledge described earlier , a structure for knowledge based on the Roy Adaptation Model is derived. This includes the broad categories of the basic and clinical science of nursing. Major subdivisions of the basic science of nursing are the personal group as an adaptive system or adaptation related to health. In looking at the person or group, both adaptive processes and the adaptive modes are for side. Topics to consider within the adaptive processes are : cognator and regulator activity for the individual, and stabilizer and innovator activity for the group ; stability of adaptive patterns in dynamic, evolving adaptive patterns . In looking at adaptive modes, one studies development, interrelatedness, and cultural and other influences. The second major category , adaptation related to health, is divided into research related to person and environment interaction and integration of the adaptive modes.

The clinical science of nursing based on the Roy Model is divided into changes in cognator-regulator and stabilizer-innovator effectiveness, changes within and among the adaptive modes, and nursing care to promote adaptive processes . Studies in the latter category focus primarily on times of tramsit on, during environmental changes, and during acute and chronic illness, injury, treatment, and technological threats.

The research that I have been involved in lately is clinical nursing science research. I will quitequickly summarize two studies in this area.

The clinical problems of recovery form head injury concerns me. We are seeing incr-easing incidents and I recognize the devasting effect that even mild injury can have. Understanding of cognator processes, including the complex organezations and functioning of the brain, can be used to provide new clinical knowledge for this patinet population.

In the first study, the methodology involved descriptive repeated measures design. Data was collected for 50 patients at times that would maximize evidence of cogative recovery from head injury, that is, when the patient was first verbally reponsive, at one week, one month and six monthes. The data included seven valid and reliable tests on simultaneous and successive information processing. These were made simply for use at the bedside of an injured patient. There was support for the notion that the first month following head injury is a critical period.

The second study drew upon the first and used an information processing practice protocol, and used it with a group of patients who were compared with the patient who did not receive this.

The criterea for admission, they were matched on the same criteria.

The intervention protocol included the understanding of information processing and the processing practice sessions, using cognator skill, were held twice a day in the hospital for 10 to 20 minutes and twice a week at home for up to one hour. Each patient had at least 8 practice sessions were held during the first month , with a prescribed distribution of approximately 20 percent simultaneous tasks, 30 percent successive, and 50 percent planning tasks. The outcome measures of this were at the same points in time as the earlier study.

The next few slides are examples of the tasks. I will give simply their names. This is simultanrous. This slide shows the recovery over time of a memory task of remembering words which is a successive broad task. This is when the patient is first injured. At one month.

I will bring my temarks to a conclusion, by recalling the common perspective of nursing that I proposed, based on current beliefs in my country. Two branches of nursing science are included in this broad perspective, the basic science of nursing and the clinical science of nursing. The structure of knowledge based on the Roy Adaptation Model was derived from this perspective. Basic and clinical knowledge are the bassis of nursing practice. These two branches of nursing science were illustrated by showing how the essential elements of the Roy Adaptaion are used in knowledge development. Theory development and research have been the primary approaches ; ressearch continued in progress for knowledge development in specific categories, and also to show clinical studies related to basic nursing sceince understanding.

To place the role of theory and research for clinical knowledge development within the context of the issues of our society, I will tell you about a question I received recently from a young nurse in Alabama. She asked what advice I had for maintaining the ideals of practicing nursing the way we believe it should be when she is so busy with many patients and many procedures. I suggested that she be reflective, that is, that she thinks about her practice when she has time. For example, I told her of one patient from my head injury study. He is a young man in his 20s, and as I worked with him on practicing cognitive task , I wondered if anyone had ever helped him use his mind. His mother told me he had only had 7 years of education. When it was time for the 6 -month testing, he arrived a few days early to let me know where he could be reached because he lived on the streets of San Francisco. He showed me a small piece of paper he was in the adult education school taking reading and writing classes. This is no miracle. This young man still lives on the streets of San Francisco and faces many problems. However, perhaps he has a chance to use his own thinking processes in a better way. I invited this nurse and each of you to think about what it is you do in nursing. Fox example, on your commute, in the train or in the car, as you think of all the patients and so many needs of a busy day , remember the one patient for whom you helped one aspect of being a person to use human processes better.

Thus, I believe, that nutsing ' s understanding of basic life processes and their clinic al ability to enhance these processes is the knowledge most needed in today ' s world. Each nurse is called to make this commitment. Only then will we accept the accountability that is ours as a profession, to develop and use our knowledge for the common good.

We can then bridge the gap between theory and research and clinical practice, between what is and what ought to be in our world.