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Facilitating the Nursing Process for the Nursing Diagnosis "Alteration in Thought Processes"

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**FACILITATING THE NURSING PROCESS
FOR THE NURSING DIAGNOSIS
"ALTERATION IN THOUGHT PROCESSES"**

By

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A THESIS

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ABSTRACT

**FACILITATING THE NURSING PROCESS
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The purpose of this study was to determine if nurses who were given a tool to facilitate assessment of thought processes would collect more assessment data, diagnose "alteration in thought processes" more frequently, and include a care plan for this diagnosis more often. A quasi-experimental pre-treatment/post-treatment design was used. An inservice program about the Level of Cognitive Function Scale (LOCF) was the treatment.

Of the 40 randomly selected subjects from the 199 adult critical care nurses at a metropolitan hospital, 20 completed the study with pre-treatment and post-treatment data. Data were collected by scoring patient assessment/care plans pre-treatment and 4 weeks post-treatment. A demographic survey and Likert scale questionnaire were used to obtain other findings of interest.

Data analysis with paired t -tests revealed a significant increase in assessment, diagnosis and care plans after instruction in the LOCF scale.

DEDICATION

This thesis is dedicated to Vicente C. Gracias, M.D., and my family. For their constant encouragement and unfailing support for my educational achievement, I will always be grateful.

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CHAPTER 1

INTRODUCTION

Nurses working in every area of practice are challenged by the client with an Alteration in Thought Processes. Although clients with altered thought processes are also a concern of physicians, psychologists, and other members of the health care team, it is the nurse who daily incorporates into practice the cognitive processes of learning, remembering, and thinking with the physical concepts of consciousness, arousal, and awareness (Aspinall & Tanner, 1981). The nursing profession views mankind holistically, recognizing that physical health affects mental function and mental dysfunction may result in physical disorders. In addition, the nurse is expected to recognize early, subtle changes in cognitive and affective functions when brain dysfunction is still reversible and/or the underlying pathophysiological disorder can be successfully treated (Aspinall & Tanner, 1981).

The current emphasis of society on the prevention of illness makes it essential for the nurse to be proficient in identification of altered thought processes in the initial stages, prior to the onset of obvious deterioration. The nurse's capability to make an early and accurate nursing diagnosis of Alteration in Thought Processes does more than permit early treatment of underlying disease for cerebral salvaging. It allows the nurse to incorporate strategies for using

the intensive contact time opportunities in the acute care setting to incorporate the process of cognitive recovery into the nursing care plan.

Nurses competent to formulate a plan of care for clients with altered thought processes will be able to make appropriate referrals and request multi-disciplinary consultations and therapies early in the patient's recovery process. The nurse is the person in the health care team who usually knows the patient best since the time spent by the nurse with the patient is usually hours, not just a few minutes as with other health team members. The delegation of the neurological examination only to the neurologist, the assessment of cognitive and affective deficits to the neuropsychologist, and the evaluation of functional abilities for daily living to the physical and occupational therapists needlessly fragments and compartmentalizes client care and thwarts the holistic approach provided by a nurse.

Many nurses describe their personal technique for assessment of thought processes as their general impression of the appropriateness of the client's speech and behavior plus the evaluation of orientation to person, place, and time. Thus, the diagnosis of Alteration in Thought Processes is often not made by the nurse caring for a client with the etiological factors and defining characteristics identified by the North American Nursing Diagnosis Association (NANDA). This failure to diagnose creates a nursing problem.

The investigator verified that this problem exists by reviewing 29 randomly selected nursing history/care plans from four adult critical care units in a 450 bed metropolitan hospital. The nursing history form currently in use at this institution (See Appendix A) mandated

that the nurse assess the client's thought processes, specifically directing evaluation of memory (recent and remote), learning disabilities, and decision-making ability. The medical diagnoses for the clients whose plans were reviewed included head injury, stroke, hydrocephalus, multiple trauma, subarachnoid hemorrhage, hyponatremia, cardiac dysfunction, vascular disease, and pulmonary disorders. All of these conditions may be etiological factors in the occurrence of Alteration in Thought Processes (Aspinall & Tanner, 1981). Of the 29 nursing history/care plans reviewed, only 6 contained data in this area of mandatory assessment, 5 of the 6 responses stated "good" or "no problem" in this area, although elsewhere in the chart the client was documented to be confused or unreliable. If nurses were given a useful tool, would they collect more data on clients' thought processes, make the diagnosis of Alteration in Thought Processes more frequently, and identify goals and interventions for the clients' plan of care?

Problem Statement

The purpose of this study was to determine if nurses would collect more complete data about clients' thought processes if they were given a tool which facilitated this process. Also, this study examined whether more complete data collection resulted in the making of the nursing diagnosis of Alteration in Thought Processes more frequently and in documenting a plan of care. These findings would add to nursing's knowledge base in the area of the assessment phase of the nursing process.

Demographic data of interest were also collected to determine possible relationships with improved performance of the nurses in

assessment of thought processes, identification of the nursing diagnosis Alteration in Thought Processes, and the development of a plan of care. These variables were: educational level, certification in critical care nursing, and method of first instruction in nursing diagnosis.

CHAPTER 2

LITERATURE AND CONCEPTUAL FRAMEWORK

Review of Literature

The review of the literature pertaining to this study included: the nursing process with a focus on the assessment phase, the nursing diagnosis of Alteration in Thought Processes, and nurses' compliance in completing the nursing process. Potential instruments which could be used by nurses to organize assessment data and make an accurate nursing diagnosis as the basis for developing a plan of care were also reviewed.

The Nursing Process

The Nursing Process involves the problem-solving processes of data collection, planning, intervention and evaluation, used in a systematic way for the purpose of resolving, reducing, or preventing health problems, and/or promoting the client's adaptation to those problems (Aspinall, 1981). "Nursing diagnoses are terms used to summarize assessment data. They describe client's actual or potential health problems. Diagnoses represent clinical judgments made by professional nurses. The term nursing diagnosis is reserved for client problems which nurses by virtue of their education and experience are capable and licensed to treat. Nursing diagnoses are conditions primarily resolved by nursing care methods." (Gordon, 1982, p. 3). Therefore, making an accurate nursing diagnosis based on

collected assessment data is the first step in the nursing process and the necessary step for developing and implementing a plan of care.

Mental assessment by nurses may be interwoven with the acquisition of other parts of the nursing history. Memory, attention span, orientation, affect and mood, behavior and attitude, perception, thought content, general fund of information, judgment, insight, and abstract thinking may all be assessed while obtaining other elements of the nursing history, and thereby be less threatening to the client (Slater, 1981).

Alteration in Thought Processes

One possible nursing diagnosis resulting from analysis of mental assessment data is Alteration in Thought Processes. This is "a discrepancy between manifested cognitive operations and expected cognitive operations for chronological age" (Gordon, 1982, p. 46). For Carpenito, Alteration in Thought Processes is a "a state in which an individual experiences a disruption in mental activities such as conscious thought, reality orientation, problem solving, judgment and comprehension related to coping (personality and mental) disorders (Carpenito, 1984, p. 73-74). This differs from a Sensory-Perceptual Alteration, seen by Carpenito as "a state in which the individual experiences, or is at risk of experiencing, a change in the amount, pattern, or interpretation of incoming stimuli (p. 62). Thus Sensory-Perceptual alterations, for Carpenito, have a similar meaning to Alteration in Thought Processes for Gordon. Gordon's diagnosis of Alteration in Thought Processes should also be considered together with the diagnosis of Potential Cognitive Impairment, "at high risk for impairment in memory, reasoning ability, judgment, and decision

making" (Gordon, p.130). For the purpose of this research both of Gordon's diagnoses, Alteration in Thought Processes, and Potential Cognitive Impairment, and Carpenito's diagnosis of Sensory-Perceptual Alterations were considered together under the heading of Alteration in Thought Processes because their defining characteristics and etiological factors have many common features. These include: impaired attention span, distractability, non-reality based thinking, impaired recall ability, impaired ability to grasp ideas (conceptualize) or order ideas (reason and reflection), impaired judgment, perception, and decision-making, increased self-concern (ego-centricity), and hypervigilance or hypovigilance (Gordon, 1982, p. 146).

Etiological factors for Alteration in Thought Processes, in addition to "developmental lag and sensory overload (environmental complexity)" (Gordon, 1982, p. 146), include many forms of cerebral insult, considered to be any physical assault on the cerebral cortex or the reticular activating system of the brain. These assaults may be tumors or abscesses, cerebral vascular disorders, including infarct and hemorrhage, cerebral metabolism interference such as glucose and electrolyte imbalance and hypoxia and anoxia, trauma, seizures, or infectious/toxic disorders which affect cerebral function, including factors involved in the aging process (Aspinall & Tanner, 1981). Any of these etiological factors may result in altered thought processes.

Thought processes are a function of cognition and often regarded as an indicator of mental functioning. Cognitive or mental functioning of the patient is a term which may be applied anywhere on a continuum from total coma, defined as "profound unconsciousness in

which the person is incapable of carrying out any cognitive or affective mental functions, makes no response or voluntary movement, and reacts only with elemental reflexes, and from which the patient cannot be aroused," to complete consciousness, defined as "the state of awareness of oneself and one's surroundings ...an ability to perceive visual, tactile, and auditory cues, and to respond appropriately to them" (Pallet & O'Brien, 1985, p. 694, 384). Cognitive deficits are considered to be "problems with initiative, activity level, emotional tone, ...problems with attention and concentration; memory problems; problems with language, thinking, and communications, problem solving, judgment and inadequacy of roles" (Ben-Yishay & Diller, 1983, p. 175).

The concept of consciousness must be viewed as the sum of two components: "arousal, the 'awakeness' of the person, and content, the interpretation of internal and external environment or the thinking processes. In practice, very often 'consciousness' or 'level of consciousness' refers only to the arousal component, and not to content, even though both components reflect aspects of consciousness" (Crigger & Strickland, 1985, p. 156). Arousal, measured by the awakeness a client demonstrates to various stimuli, is a function of the ascending reticular activating system, a pathway of neurons and neuronal connections located in the mid-ventral portion of the medulla and mid-brain, with projections into the thalamus, hypothalamus, and cerebral hemispheres. The ascending reticular activating system or "RAS" acts to modulate incoming stimuli and maintain arousal (Crigger & Strickland, 1985).

The other factors which affect alertness and wakefulness are naturally occurring neurotransmitters, serotonin and noradrenaline, as well as external factors of drugs, stress, and emotional states which may heighten or depress arousal. The RAS stimulates or depresses higher brain functions for interaction with the environment. Arousal is one of the earliest and most sensitive indicators of brain dysfunction (Crigger & Strickland, 1985). Thus, nursing assessment of thought processes must begin with an evaluation of level of consciousness or arousal in response to stimulation and proceed to thought content evaluation. It is in this second part of the cognitive evaluation, thought content, where there is an apparent discrepancy between a needed area of assessment of thought processes and completion of the nursing process for persons with Alteration in Thought Processes.

Compliance

For patients with the defining characteristics and/or etiological factors for the diagnosis Alteration in Thought Processes to benefit from a care plan, it is important that nurses complete the nursing process for this diagnosis, beginning with assessment. Lack of nursing response to the hospital's mandate of thought processes assessment therefore, was a significant problem.

Nurses at this metropolitan hospital were not assessing thought processes for patients and not making the nursing diagnosis of alteration in thought processes very often or appropriately even though they had been mandated by nursing administration to do so. Therefore literature on motivation and compliance was reviewed. Compliance with the nursing process was the central focus. No studies

dealing with nursing compliance in making a nursing diagnosis were found in the literature. Medical models and studies have dealt only with patient compliance, finding age (very young and very old) and mental status (paranoid schizophrenia) to be risk factors for problems of noncompliance. Additionally, type of patient illness, prognosis, complexity, duration, pain and cost of regimes may be factors in patient noncompliance which are not applicable to nurses' noncompliance in making a nursing diagnosis. However, the Health Belief Model of Compliance is applicable to both patients and nurses. "It is founded on the assumptions that an individual will decide to choose to enact a behavior if it is attractive, if the person believes it has a reasonable chance of attaining the goal, and if it has been called to attention by a cue" (Ryan & Falco, 1985, p. 686). Behavior which can be called to attention by a cue may be assessment of thought processes if an appropriate, usable cue in the form of an assessment tool is provided.

Instruments

An observational tool which allows evaluation of patients' cognitive function at all levels of recovery is the Levels of Cognitive Functioning (LOCF) Scale developed by an interdisciplinary group at the Rancho Los Amigos Hospital in Downey, California. The LOCF scale provides a means of assessment even when the patient is unable to cooperate, an advantage lacking in most standardized tests; it assists in determining primary causal factors and secondary compounding factors affecting behavioral performance. The purposes of the LOCF Scale as a clinical tool are to provide: 1) a means of assessment that does not require the patient's cooperation; 2) a wide range of

behavioral descriptions; 3) a common, descriptive vocabulary; 4) a means of increasing the understanding of brain injured patients' behaviors by professionals and family members; 5) predictive information; and 6) a baseline for establishing objectives to facilitate further recovery (Dowling, 1985). The LOCF Scale (Appendix B) classifies observable behavior on a scale from I, coma, through VIII, appropriate, independent behavior. There is a strategy for therapeutic management of behavior at the various levels of function, which is based "upon the assumption that recovery of cognitive structures follows a definable and predictable pattern, and that changes in behavior are viewed as indices of structural recovery" (Dowling, 1985, p. 130).

Dowling's research to evaluate interrater reliability of the LOCF Scale utilized a non-probability convenience sample of 22 senior undergraduate students and 10 first year graduate students from a school of nursing. After providing instructions and collecting demographic data from the subjects, the 32 subjects viewed segments of a videotape portraying patients in different levels of cognitive functioning and rated the patient on the score sheet. There was no prior training. Dowling used statistic G which is based on the likelihood ratio statistic between sampled and expected frequencies and tests goodness of fit (Sokal & Rohlf, 1969, p. 193). They found ($G=11.277$, $p < .001$) "that the overall subject agreement relative to the correct LOCF was far greater than that which would occur randomly. The maximum possible value of G (i.e., total agreement with the standard) is 16.971. Hence the G obtained from the data represent 66% of the maximum." (Dowling, 1985, p. 132). Dowling discussed the

advantages and disadvantages of the videotape technique, including the fact that the content validity of the videotape was not documented. Dowling also reports that the inexperience of undergraduate students, lack of training in use of the LOCF Scale, and lack of opportunity to clarify a patient response as factors which may have limited the study. The sample number (32) and convenience sample for subject selection were also mentioned as constraints to generalization of the results of the study. However, the study does indicate that the tool has clinical usefulness. It serves as a system of categorizing observable behaviors in the patient with a cerebral insult to permit reliable assessment on which to base a plan of care.

A summary of the literature demonstrates a poverty of tools for objective cognitive assessment which may be used by nurses in acute care. The LOCF scale emerged as the one which appears most suitable. It has been shown to have high interrater reliability and is an observational tool which facilitates objective evaluation of clients' cognitive function at all levels of recovery. Additionally, the LOCF Scale allows assessment of the client who has suffered a cerebral insult by persons in various disciplines, including nursing, using the same criteria. It defines behaviors which will be the basis for an accurate nursing diagnosis. The plan for therapeutic management at each level provides opportunities for the nurse to set realistic goals for progress and to successfully teach steps of recovery to families. No other studies pertaining to tools which may be used by nurses to arrive at the diagnosis of Alteration in Thought Processes by objective cognitive assessment were found in the literature. No

studies were found which would correlate completion of the nursing process with having a tool for assessment.

Strategies for successful nurse-patient interactions may be planned, as well as attainable behavioral achievements necessary for cognitive recovery. The LOCF Scale is useful to the nurse interested in positively impacting on the patient's progress by therapeutically structuring the environment and teaching families and staff members expectations for each level of recovery, for example, the level of function appropriate for bowel and bladder training.

Conceptual Framework

The conceptual framework for this study examined the concepts of cognition and consciousness based on Betty Neuman's theory (Neuman, 1985) and cognitive evaluation. It attests to the human needs of clients and nurses which may be met by providing a mode for successful cognitive assessment.

Cognition can be considered a function on a continuum, dynamic, and capable of growth and regression. The cerebral cortex is "a dynamic process of neurological organization" that can be completely halted or slowed by injury or greatly enhanced by planned stimulation. The functions of the cerebral cortex are therefore considered to have plasticity and capacity for recovery (Crane & Gudeman, 1981). The state of health or well-being of cognitive function, influencing its position on a continuum, is impacted either negatively or positively by continual internal or external stressors. Nursing theorist Betty Neuman has developed a conceptual model which provides this multi-dimensional view of individuals and groups who are in constant interaction with environmental stressors. The Neuman

model focuses on the client system's reaction to stress. Each "client system" is based on the philosophy that the human being is a total person who is a composite of biological, psychological, sociocultural, and developmental variables. The "environment" providing stress to the individual is seen by Neuman as made up of internal and external forces at any given time. Neuman views health as a continuum which may be influenced by the environmental stressors' impact on the client system's "line of defense", an internal set of resistance factors. According to Neuman, the nurse may implement primary, secondary, or tertiary prevention measures, depending on when the stressor is recognized (Neuman, 1985).

Neuman views the normal line of defense for the individual as the state of wellness, the adaptational state over time that is considered "normal" for the individual. The surrounding line of defense, the flexible line, as Neuman refers to it, is the dynamic state of wellness. The individual's current, immediate state is particularly susceptible to situational circumstances. Neuman defines a stressor as any problem or condition capable of causing instability of the system by penetration of the normal line of defense. This results in varying degrees of reaction: the amount of system instability caused by penetration of the stressor through the normal line of defense. Lines of resistance are internal, resistant forces encountered by a stressor which act to decrease the degree of reaction in Neuman's model.

Thus using the Neuman model, consciousness can be viewed as a client's line of defense, which may be stressed by physiologic factors, such as trauma, neoplasm, anoxia, infection, hemorrhage,

etc., psychologic factors, such as anxiety or depression, sociocultural factors of family resources, education, etc., and developmental variables, such as mental retardation. Lines of resistance may be the individual's neurons, neuronal connections, neurotransmitters, blood/brain barrier, vascular supply, etc., which attempt to stabilize the individual in the process of returning to the normal line of defense should a stressor break through it.

Neuman's theory focuses on a stress/adaptation system, which can be applied to the difficulty of nurses in identifying the nursing diagnosis of Alteration in Thought Processes. Neuman theorizes that "nurses are expected to synthesize and conceptualize knowledge in their own way, which may account for inadequate communications and poorly defined goals that are commonplace in nursing today. Providing meaningful definitions and conceptual frames of reference for those situations basic to nursing practice seems to be an essential beginning for establishing nursing as a science" (Neuman, 1980, p.125). Neuman establishes the importance of an assessment tool related to the total person before interventions to stabilize or strengthen the patient's line of defense can be instituted (Neuman, 1980).

This conceptual framework views the need for assessment of thought processes and completion of the indicated nursing process as a need of both the client and the nurse. It is recognized in this framework that both the nurse and the patient are persons with a common human need for rationality, conceptualization and problem-solving.

Therefore, a person is:

"...a rational being who is interested in and capable of orienting himself in the world, able to navigate in social

situations, able to understand and interpret reality, capable of verbalizing a view of self and the world, competent in decision-making, and predictable and logical in actions and reactions. In short, the person is seen as a being with an intellect who seeks meaning and understanding of self and the environment." (Donley, 1983, pp. 85, 86).

Nurses typically view patients as having common human needs. The needs of the nurse as a person, however, are often overlooked in the analysis of the nursing process and may be a critical factor in the completion of the nursing process. It is seen that while clients' needs are often considered based on Abraham Maslow's theory of hierarchy of needs, the nurse also has needs which can be examined using the same theory. It is by examining these needs that the first step can be made in studying the problem of finding a tool which would motivate nurses to make the nursing diagnosis of Alteration in Thought Processes when appropriate.

The safety needs, for example, are synonymous for Maslow with the need for "security, stability, dependency, protection, freedom from fear, from anxiety and chaos, and need for structure, order, law, limits" (Maslow, 1954, p. 39). Although Maslow views the mobilizing factors for this need as including "disease, emergencies and brain injury," factors of "disorganization, breakdown of authority, and chronically bad situations" are also listed as mobilizers (Maslow, 1954, p. 42).

The critical care nurse experiences these factors when dealing with a severely injured or critically ill client in an environment which often includes high technological demands, inadequate staffing, rapid turnover due to "burn out", and authority conflicts between attending physicians, residents, nurses, managers, and supervisors in

the course of delivering nursing care. When the nurse's own safety or security needs remain heightened and unmet, it is unlikely that the higher level needs of client or nurse for love and esteem will be met. A tool which provides organization, structure, and order as well as techniques for dealing with the situation of brain injury or disease may meet the nurse's need for safety in the situation and thus permit the higher level needs of both nurse and patient to be addressed. The next level in Maslow's hierarchy is belongingness and love which include the need for affectionate relationships, contact, intimacy, belongingness. The love needs involve both "giving and receiving love" (Maslow, 1954, p. 43-45).

The critical care client with altered thought processes requires specific approaches by the nurse at different levels of recovery to promote a positive and loving nurse-client relationship. If the nurse has a mandate to assess and develop a plan of care for the cognitively-impaired client without a tool to provide a technique for this complex nursing process, the nurse-client interaction may proceed unsuccessfully, resulting in unmet needs of the nurse for giving and receiving love and ending in avoidance of the client in frustration.

As the love needs are met, the esteem needs emerge in priority. Maslow states, "All people ... have a need or desire for a stable, firmly-based usually high evaluation of themselves, for self-respect, or self-esteem, and for the esteem of others. These needs may, therefore, be classified into two subsidiary sets. These are, first, the desire for strength, for achievement, for adequacy, for mastery and competence, for confidence in the face of the world, and for independence and freedom. Second, are the desire for reputation or

prestige (defining it as respect or esteem from other people), status, fame and glory, dominance, recognition, attention, importance, dignity, or appreciation. Satisfaction of the self-esteem need leads to feelings of self-confidence, worth, strength, capability, and adequacy, of being useful and necessary in the world. Thwarting of these needs produces feelings of inferiority, of weakness, and of helplessness" (1954, p. 45) For the nurse faced with a client who has a cerebral insult, without a tool for organized assessment or plan for therapeutic interaction, the only alternative to feelings of inadequacy, inferiority, weakness, and helplessness may be avoidance of the nursing process and diagnosis of Alteration in Thought Processes.

The highest level need for self-actualization also may be met by providing knowledge and organizational tools to the nurse whose other needs have been adequately met. "Acquiring knowledge and systematizing the universe have been considered, as in part, techniques for the achievement of basic safety in the world, or for the intelligent man, expressions of self-actualization" (Maslow, 1954, p. 48). Thus, as the needs of the nurse are examined in light of Maslow's theory, it is apparent that these needs may be met on various levels by providing the nurse with an adequate tool for the assessment and plan of care for the client with impaired thought processes. This allows the nurse's personal needs to be met in the process. However, an examination of motivational factors of behavior is necessary if one is to understand the nurse's compliance or non-compliance with the

mandate for assessment and development of a plan of care for the client with Alteration in Thought Processes.

First, it must be recognized that "there are many determinants of behavior, other than the needs and desires" (Maslow, 1954, p. 53). Second, that "most behavior is multi-motivated ... any behavior tends to be determined by several or all of the basic needs simultaneously, rather by only one of them" (Maslow, 1954, p. 55). In David McClelland's theory of motivation, a motive is defined as "a recurrent concern for a goal state, based on a natural incentive, a concern that energizes, orients, and selects behavior. The goal state may be defined in terms of outcomes for certain acts, such as doing something better (for the achievement motive), or having impact (for the power motive), but the particular acts that lead to such outcomes are not part of the definition" (McClelland, 1985, p. 590).

McClelland further states that what a person will decide to do better will vary, depending on values (more affected than motives by social norms and by societal and institutional demands), which are the independent determinants of response strength or the tendency to act (McClelland, 1985). McClelland divides human motivation into three general need categories, in which one or another predominates or influences the others in any individual. "Understanding individual motivational needs taps into existing sources of energy" which can be channeled into activities which are more productive (Murphy, 1984, p. 60) for the critical care nurse working through the nursing process with the client who has Alteration in Thought Processes.

McClelland views the "basic human needs to belong, to accomplish, and to influence for the good" as the needs for affiliation, for

achievement, and for power (Murphy, 1984, p. 58). To people with a high affiliation motive, people are very important. "A positive bias toward people is strongly influenced by other factors, such as the expectation of success from reaching out to others" (McClelland, 1985, p. 353). Individuals with a high need for affiliation "believe that goodwill is more important than reason in solving human problems" (McClelland, 1985, p. 359) and have "a more active approach to interpersonal relationships, which goes along with the need for contact and reassurance" (McClelland, 1985, p. 362).

The achievement motive might have been named the "efficiency motive" because it represents a recurrent concern about the goal state of doing something better, getting greater output for the same or less work. People high in the achievement motive are attracted to situations where there is some possibility for improvement of this kind. They prefer situations in which they have personal responsibility for the outcome and that gives them feedback on how well they are doing (McClelland, 1985). "The achievement motive is a cognitive, rather than an affective disposition ... affect follows cognitive appraisal" (McClelland, 1985, p. 490). "An achievement incentive is one in which a person gets satisfaction from doing something better for its own sake, or to show that he or she is more capable of doing something" (McClelland, 1985, p. 229). "Customarily, nurses primarily sought affiliation ... while the affiliation motive still appears higher among nurses than among any other group in the hospital, the rapid ascendance of the achievement motive is rivaling its former precedence" (Murphy, 1984, p. 62). Since the focus for this researcher was critical care nurses, it was of interest to note

that "CCU nurses tend to have a high need for achievement, while nurses on geriatric units tend to have high needs for affiliation" (Murphy, 1984, p. 63).

The need for power represents a "recurrent concern to have impact, certainly on people, and perhaps on things as well. High motivational need for power is associated with many competitive and assertive activities and with an interest in attaining and preserving prestige and reputation" (McClelland, 1985, p. 596). The goal of the power motive is exerting influence and persons with a high need for power need interpersonal impact (McClelland, 1985).

McClelland's theory further states that motivational intent or choice of behavior is influenced by at least two non-motivational factors: probability of success and values (McClelland, 1985, pp. 544, 545). "Probability of success includes the 'perceived' probability of success, demonstrated skill at the task, one's general level of self-confidence or feeling of efficacy and also to the confidence one feels in reference to a particular task. It includes the feeling of whether one has voluntarily chosen to do something or whether one has control over the situation or not" (McClelland, 1985, p. 599). The incentive value of success is determined by the importance of the action, or whether it is necessary to get to subsequent goals. (McClelland, 1985, p. 599). Thus the "strength of motivation to perform some act is assumed to be a multiplicative function of the strength of the motive. The expectancy that the act will have as a consequence the attainment of an incentive, and the value of the incentive" (Atkinson & Feather, 1966, p. 13). The names given motives achievement, affiliation, power are "really the names of

classes of incentives which produce essentially the same kind of experience of satisfaction: pride in accomplishment, or the sense of belonging and being warmly received by others, or the feeling of being in control or influential" (Atkinson & Feather, 1966, p.13). Thus needs mobilize people into action. Goals challenge energy and focus effort to eliminate needs. "Drive results from peoples' assessment of how likely they are to succeed at goal attainment if considerable energy is devoted to this end. When people perceive success as nearly impossible, their drive toward goal attainment is usually diminished" (Lancaster, 1985, p. 17).

Since there is a relationship between human needs, the possibility of success, and motivation of behavior, the critical care nurse who may be motivated to perform the nursing process for the client with Alteration in Thought Processes may first envision the possibility of success in the nursing process with this patient. This success must be seen as having value and the nurse's personal needs for love and esteem or affiliation, achievement and power must be satisfied, not thwarted, by the process. The ideal tool to assist the nurse in this process should do more than assess level of consciousness or even cognition. It should outline steps to successful cognitive recovery, including techniques for personal interaction, realistic goals for achievement at each level of recovery, and guidelines for education, environmental structure, and influence by the nurse working with the client with altered thought processes. This tool should demonstrate concrete methods of meeting clients' needs, and in the process, also enable the nurse to satisfy his or her own needs. Providing the nurse with a tool for caring successfully for this client makes the nurse

feel like "a somebody". "Being a somebody is a fundamental, universal, and pervasive human need. When you feel like a somebody you want to do things, set new goals, take risks, achieve, and excel in whatever you do" (Lancaster, 1985, p. 18). Therefore, McClelland's motivational theory, built upon Maslow's human needs theory may be used by nurses to develop nursing care methods which decrease the effects of stresses upon the wellness of both patient and nurse, and thus strengthen the "lines of defense" for both of them.

Hypothesis

Nurses who are given instruction in the use of the Rancho Los Amigos Levels of Cognitive Function Scale as a tool for assessment will document carrying out the Nursing Process with patients with Alteration in Thought Processes more completely than they did prior to receiving instructions.

Research Questions

The researcher was also interested in the possible association of several variables in the nurses' backgrounds with the ability to complete the steps of the nursing process. The following research questions were developed: (1) Is there a relationship between a nurse's educational level, obtaining specialty certification in critical care nursing, and type of first exposure to the nursing diagnosis concept and performance improvement in assessment data collection, identification of the nursing diagnosis of Alteration in Thought Processes and formulation of a care plan for it after an educational treatment related to the nursing process for cognitive function? (2) What attitudes toward the nursing diagnosis, Alteration in Thought Processes and basic knowledge of nursing interventions for

it exist, which might affect performance of collecting assessment data, making the nursing diagnosis of Alteration in Thought Processes and formulating a care plan?

The independent variable in this study was the instruction in the use of the Rancho Los Amigos Levels of Cognitive Recovery Scale. The dependent variable was the nurses' compliance with the mandate to assess thought processes on the nursing history form and make the diagnosis and develop a care plan if the assessment data for Alteration in Thought Processes so indicated. Intervening variables studied were level of education, specialty (CCRN) certification and type of first exposure to the nursing diagnosis concept.

Definition of Terms

For purposes of this study, the nurse is defined as any registered nurse working on an adult critical care unit on a full or part time basis.

A patient is defined as a person over 18 years of age with one or more of the etiological conditions for Alteration in Thought Processes, who is admitted or transferred to an adult critical care unit in the study setting. The term "patient" may be used interchangeably with the term "client." The etiological conditions are defined in the review of literature (p. 7).

Completion of the nursing process is defined as the score obtained by a nurse for assessment of recent and remote memory, learning disabilities and decision-making, identification of a nursing diagnosis of Alteration in Thought Processes, identification of goals and interventions and use of level of cognitive function in plan.

(See Appendix C).

Educational levels of nurses are the level of education attained: associate's degree in nursing, diploma in nursing, bachelor's degree in nursing or a related field, and master's degree in nursing or related field.

Specialty certification is the CCRN (certificate in critical care nursing) which is optional for critical care nursing.

Type of first method of introduction to the concept of nursing diagnosis includes the basic nursing education curriculum, hospital inservice programs, or independent reading by nurses.

CHAPTER 3

METHOD

Design

A pre-treatment/post-treatment quasi experimental design was chosen to compare (1) individual nurse's completion scores for the assessment of thought process on the nursing history, (2) the nurse's identification of the diagnosis of Alteration in Thought Processes if the defining characteristics and/or etiological factors for it were present, and (3) the nurse's documentation of a plan of care for this diagnosis before and after the treatment of inservice education regarding the LOCF Scale.

The pre-treatment data were collected during the 14 days prior to the inservice education. The post-treatment data collection consisted of two scores for each subject during the 28 days after the inservice education, for a mean post-treatment score for each subject.

Additional data collection methods during the pre-treatment period were designed to answer the research question of whether a relationship exists between a nurse's educational level, obtaining specialty certification in critical care nursing, and type of first exposure to the nursing diagnosis concept and performance in documentation of the nursing process for patients with Alteration in Thought Processes. Data also collected during the pre-treatment period were used to answer the second research question, determining

what knowledge and attitudes toward this nursing diagnosis exist which might affect performance in documentation of the nursing process.

Instruments

The scoring instrument (see Appendix C) was devised to evaluate completion of the nursing process documentation on the nursing history and care plan form. It included a score of 1-4 for completeness of assessment. Mandated areas were memory, decision making, and learning disabilities, as well as an allowance for substitution of different areas of thought process assessment, such as communication patterns or personality traits. A score of 1 was ascribed if no mandated thought process assessment was documented. A score of 2 was given for nursing history/assessment compliance if areas different from but related to the mandated areas of thought processes were documented, such as communication patterns or personality traits. A score of 3 was given for the nursing history if the nurse documented one or two areas of mandated thought process assessment data: memory, decision making, or learning disabilities. The highest score of 4 was given if these mandated assessment areas of thought processes were completely documented. A second score was given for evidence that the nursing diagnosis of Alteration in Thought Processes was made if the assessment data supported such a diagnosis, with an accompanying nursing care plan for it. If no evidence of the nursing diagnosis or care plan was made, a score of 1 was given. If the diagnosis of Alteration in Thought Processes was documented, with one goal and intervention for it in the care plan, a score of 2 was given for the second half of the total score. If the care plan listed at least one goal and two interventions for the documented diagnosis of Alteration

in Thought Processes a score of 3 was given. The highest score of 4 was given if documentation was present of the diagnosis of Alteration in Thought Processes, with a care plan consisting of at least two goals and interventions for this diagnosis and incorporation of the LOCF Scale in the care plan. The lowest possible score for each subject was 2, if both the nursing history assessment and care plan documentation were scored as incomplete with a 1. The highest possible score was 8, if both the nursing assessment and care plan scored 4. The scores given for each of the two parts of the nursing process were added to comprise the total score for completeness of the nursing process for this diagnosis.

Another instrument, a 5 item demographic survey and 15 item four choice Likert scale questionnaire related to the diagnosis of Alteration in Thought Processes with one open-ended question at the end was developed. (See Appendix D). This Likert scale questionnaire was not pre-tested. It was reviewed by 3 experts for content and clarity for purposes of inclusion in this study. The demographic survey included questions about the unit on which the subject worked, educational level, certification in critical care nursing, type of first exposure to the concept of nursing diagnosis, and previous exposure to and knowledge of the LOCF scale. This survey was useful for obtaining demographic information which could be studied for a possible relationship with performance of documentation of the nursing process. The Likert scale questionnaire was useful for obtaining information regarding factors such as time constraints and attitudes which may affect compliance in carrying out the nursing process. Knowledge of the psychosocial and physical factors involved in

cognitive recovery, such as depression after cerebral insult (Rosenthal, 1983, pp. 204, 206) and knowledge of nursing interventions for particular stages of recovery, such as the use of a Craig bed and coma arousal techniques were included in questionnaire items 7, 14, and 15.

Setting

The research setting was composed of four adult critical care patient units in a 450 bed metropolitan hospital: a medical intensive care and intermediate care unit and a surgical intensive care and intermediate care unit. There were regularly assigned registered nurses at each of these four units as well as a float pool of critical care nurses who worked in any of the four units. All of the four units had patients with head injuries as well as other etiological factors for the diagnosis of Alteration in Thought Processes. All four units had copies of the LOCF scale in their file cabinets. The assessment of thought processes was mandated for each patient within the first 24 hours after admission and admission to or transfer between the units could occur at any time depending on patient condition. The nurse who did the assessment/care plan was identified by initialing the form.

Population and Sample

The population of critical care nurses was a group of 199, heterogeneous in educational preparation, experience, age, and gender. The staff had 23 members who were in an orientation period of less than one year, some were on leave, and some worked part-time while others worked full-time. The LOCF scale had been mentioned to the new orientees in a class as a tool existing on the units. No

other instruction regarding the LOCF Scale or its usefulness in nursing diagnosis and planning care was done.

Using a random numbers table, a sample of 45 of the 199 critical care nurses were invited to participate in the research study by completing a questionnaire and attending an educational inservice program. Each of the 45 nurses was approached personally and requested to participate. They were informed that the length of time required for participation would be the inservice class time of one hour or less and less than 5 minutes to complete the questionnaire immediately. All had worked in the 2 weeks prior to the scheduled treatment and planned to work for 4 weeks afterward. They were given a consent form and questionnaire to complete at the time they agreed to attend the scheduled inservice. (See Appendix D and E).

Procedure

University, human subject review and agency approval were obtained before the study began.

Determination of interrater reliability.

Initially 2 independent reviewers, registered nurses who worked in surgery, assessed 10 sample history/care plans to determine the level of inter-rater reliability, using a system (Appendix C) developed for scoring by this researcher. An acceptance level of 90% inter-rater reliability was established and no further education of the raters was implemented. These 2 reviewers then were used to score the nursing history/care plans used for data collection.

Pre-treatment score determination.

The raters gathered pre-treatment scores for the individual subjects by reviewing data on completion of thought processes

assessment and care plans from all of the charts of patients on all four critical care units for the 14 days prior to the treatment. The first assessment form and care plan initialed by each subject was identified and scored. A total of 265 patients' charts were reviewed. This was divided per unit with 106 patients (40%) from the Medical Intermediate Unit, 77 (29%) from the Medical Intensive Care Unit, 68 (26%) from the Surgical Intermediate Unit, and 14 (5%) from the Surgical Intensive Care Unit. The assessment/care plan forms were copied from each patient's chart and the nurse's initials changed to a numeric code prior to scoring for protection of the participants' privacy. The code numbers, beginning with 01 were assigned randomly for each set of individual's initials and were used in recording of scores. The code numbers were assigned by a research assistant who did not collect data and kept the coded initials confidential. The data reviewers used only the code numbers for identification of subjects.

Treatment.

After the raters completed their data collection, the treatment was applied in the form of an inservice program for all of the study participants. The program was offered 4 times, for the availability to participants working on each of the two 12 hour shifts, from 1:00-2:00 pm for the 7:00 am - 7:00 pm shift, and from 8:00 - 9:00 pm for the 7:00 pm - 7:00 am on 2 consecutive days.

The Rancho Los Amigos Hospital Levels of Cognitive Function (LOCF) Scale was explained in detail for the treatment. Each level of cognitive function from Level I, no response, to Level VIII, purposeful and appropriate, was described and discussed. Nursing

interventions for each stage were given, as well as suggestions for family teaching at each level. Timing of interventions such as a Craig bed, bowel and bladder training, etc. were included as well as level of cognitive function necessary for transfer to a rehabilitation program. Each level was discussed with the clinical signs, nursing interventions, and patient and family teaching needs corresponding to each level.

The content of the inservice was based solely on the explanation of the Rancho Los Amigos Hospital Levels of Cognitive Function Scale (Appendix B). A copy of the scale was given to each nurse in attendance. Specifically not included in the content was any reference to the importance of this nursing diagnosis, "motivational" reasons for presentation of the LOCF Scale or any other references to the nursing diagnosis of Alteration in Thought Processes. Only instruction in the use of the tool itself which would facilitate the nursing process was discussed.

Each nurse who agreed to participate and attend the inservice was asked to return the completed consent form and initialed demographic survey/questionnaire immediately. The initialed questionnaires were numerically coded with the initialed history/care plan forms to identify the respondents only by the numbers assigned to their initials when gathering pre-treatment data. Less than five minutes was required to complete the consent form and questionnaire and all were returned as requested. The volunteers indicated their informed consent by signing the form. They also signed an attendance sheet documenting their presence at the inservice program.

Data collection: post-treatment score determination.

All of the nurses who consented to participate in the study, completed the questionnaire, attended the inservice program, and had a pre-treatment score were included in the study. Only 40 of the 45 possible subjects received the inservice education treatment and met the criteria to participate. During the 28 day post-treatment data collection period there were 2 scores available for only 20 of the 40 subjects. This was related to the few number of new patients assigned to these subjects. In an effort to obtain multiple scores for each subject's mean post-treatment score determination, all of the patients' charts from admission to the four critical care units were reviewed for 28 days following the inservice treatment period, for a total of 403 patient chart reviews. Of these 403 patients, 205 (51%) were admitted to MIM, 98 (24%) to MICU, 83 (21%) to SIM, and 35 (9%) to SICU. The opportunities for patient assessments were not equivalent for all participants and partly accounts for the fewer number of subjects, only 20, with 2 post-treatment scores.

Two post-treatment scores were used for each subject to obtain a mean score for the typical post-treatment performance of each subject. The first chart identified for each subject during the first half and again during the second half of the 28 day post-treatment period was scored.

The initialed assessment and care plan forms were given the same numeric codes as the pre-treatment forms, and were scored by the 2 research assistant raters for completeness and evidence of the nursing diagnosis of Alteration in Thought Processes identified when the assessment data so indicated.

CHAPTER 4

RESULTS AND DATA ANALYSIS

Characteristics of Subjects

Of the 40 critical care nurses who planned to participate in the study, 20 were eliminated due to a lack of post-treatment data. Some reasons for attrition of subjects included personal and family illness, unplanned maternity leave, and change in employment (1 to nursing supervisor, 1 to instructor, 1 to transplant coordinator, 1 to recruiter, and 2 to clinical specialist positions working with physicians).

The completed questionnaires provided the following demographic information: of the 20 subjects, 3 (15%) were from MICU and 1 (5%) from SICU; 8 (40%) from SIM, 5 (25%) from MIM, and 3 (15%) were critical care float nurses. First exposure to the concept of nursing diagnosis occurred in the nursing education curriculum for 13 (65%), by hospital inservice education programs for 6 (30%), and by independent reading for 1 (5%). Familiarity with the LOCF Scale ranged from 6 (30%) who responded that they had never heard of it, 4 (20%) who had heard or read of it, 3 (15%) who had seen it at least once, 5 (25%) who were familiar with it but rarely used it, and 2 (10%) subjects who responded that they were familiar with the LOCF Scale and used it consistently. Educational degrees attained were 5 (25%) had an A.D.N. degree, 9 (45%) had a diploma, 5 (25%) had a

B.S.N., and 1 (5%) had a non-nursing master's degree. Two subjects were certified in Critical Care Nursing.

Hypothesis: nurses who are given instruction in the use of the Rancho Los Amigos Levels of Cognitive Function Scale as a tool for assessment will document carrying out the nursing process with patients with Alteration in Thought Processes more completely than they did prior to receiving instruction.

The paired t -test comparison between the pre-treatment and post-treatment scores of the nursing history and care plan documentation was significant for difference at the .05 level (See Table 1) (see Appendix F for individual scores). Nurses who were instructed in the use of the Rancho Los Amigos Levels of Cognitive Function Scale as a tool for assessment and planning documented completion of the nursing process more completely and frequently for patients with Alteration in Thought Processes. After instruction, nurses collected more complete assessment data of thought processes, made the diagnosis of Alteration in Thought Processes more frequently and identified goals and interventions based upon this diagnosis more frequently than before instruction in the use of the LOCF scale.

Table 1

Pre-Treatment v. Post-Treatment Paired t-scores

	<u>Mean</u>	<u>df</u>	<u>t-score</u>
Pre-treatment	2.75		
		19	2.223*
Post-treatment	3.57		

* significant at the .05 level (Alpha = 1.729)

N = 20 pairs

Research Questions

1) Is there a relationship between a nurse's educational level, obtaining specialty certification in critical care nursing, and type of first exposure to the nursing process and performance improvement in assessment data collection, identification of the nursing diagnosis of Alteration in Thought Processes and formulation of a care plan for it after an educational treatment related to the nursing process for cognitive function?

Data of subjects' educational level, type of first exposure to nursing diagnosis concepts, and critical care nursing certification was categorized for evaluation against performance improvement in documentation of the nursing process for this diagnosis. A Chi Square analysis was used for comparison of each of these variables with the amount of change in the mean score pre- and post-treatment. The Chi Square analysis of educational level with mean score change categorized educational level data as diploma, associate's degree,

bachelor's degree, and master's degree. The Chi Square analysis of type of first exposure to nursing diagnosis concepts with mean score change categorized the data as independent reading, hospital inservice programs, and nursing education curriculum content. Chi Square analysis of critical care certification with mean score change categorized the data as the presence and absence of Critical care nursing certification.

The Chi Square analysis of the factors of educational level attained, type of first exposure to nursing diagnosis concepts, and speciality certification (CCRN) were not significantly related to documentation of more complete and frequent carrying out of the Nursing Process at the .05 level. (See Appendices G - I).

2) What attitudes toward the nursing diagnosis, Alteration in Thought Processes and basic knowledge of nursing interventions for it exist which might affect performance of collecting assessment data, making the nursing diagnosis of Alteration in Thought Processes and formulating a care plan? Analysis of the responses on the second portion of the questionnaire varied widely as found in Table 2 (pp. 41, 42), between responses which indicated knowledge, feelings of competence to assess, manage care, instruct, and refer patients with Alteration in Thought Processes.

The first item, "Alteration in Thought Processes is one of the easiest diagnoses to make," was answered "disagree" or "strongly disagree" by 80% of the subjects. The second item, "Cognitive recovery is usually variable, unpredicted, and without particular pattern" was answered either "agreed" or "strongly agreed" with by 80% of the subjects, although 14 of the subjects had acknowledged reading

about, seeing, and/or using the LOCF scale, which demonstrates the usual pattern of cognitive recovery (Rosenthal, 1983, p.201).

The third questionnaire item, "I am competent to teach the families of patients with this diagnosis discharge instructions and expectations" was answered "disagree" by 60% of the subjects. The fourth statement "I try to avoid these types of patients, since they are usually management problems and frustrating to deal with" was "disagreed" or "strongly disagreed" with by 80% of the subjects.

The fifth item, "A special assessment tool is unnecessary since inappropriate and disoriented behavior is very obvious" was either answered "disagree" or "strongly disagree" by 95% of the subjects. The overwhelming majority did feel a special assessment tool of thought processes was necessary.

The sixth statement, "I would feel comfortable managing the care of a patient with this diagnosis, and would be able to initiate necessary referrals at the proper time" was answered "agreed" (14) or "strongly agree" by 75% of the subjects.

The seventh item, "Coma arousal programs may be accomplished on the nursing unit by leaving the radio on at the patient's bedside as much as possible and keeping pictures of the patient nearby" was answered accurately (Smith, R., 1983, p. 356) with either "disagree" or "strongly disagree" by 65% of the subjects.

The eighth item, "I feel competent to initiate cognitive rehabilitation measures in the acute care nursing setting," was answered "agree" or "strongly agree" by 60% of the respondents, consistent with the positive responses of the majority to item 6.

The ninth statement, "I am uncertain about when, what, and how to teach these patients; to me, their learning capacities are unclear," revealed that 70% agreed that they felt uncertain in patient education for persons with Alteration in Thought Processes which contrasts with the positive responses to items dealing with patient care management (no. 6 and no. 8).

The tenth statement, "I understand the Rancho Los Amigos Levels of Cognitive Recovery Scale for assessment of patients with cerebral insults was answered either "disagree" or "strongly disagree" by 65% of the subjects.

The eleventh item, "Nurses do not have time to do in-depth assessment that this diagnosis requires -- besides, this is the role of a neurologist or psychologist," was answered "disagreed" (10) or "strongly disagreed" by 85% of the subjects.

The twelfth statement, "I feel sorry for these patients, but nurses cannot do much to alter a patient's cognitive function," was answered "strongly disagreed" or "disagreed" by 95% of the respondents.

The thirteenth item, "I know that I am competent to do the assessment for this diagnosis thoroughly and accurately" was "disagreed" with by 40% of the subjects.

The fourteenth item, "Depression that is seen after cerebral insult is directly related to frontal lobe injury in most cases" found 70% "disagreed" or "strongly disagreed". The final item "A Craig bed is very useful for nursing care of the comatose patient," was answered by 75% accurately "disagreed" or "strongly disagreed".

Table 2

Likert Scale 15 Item Questionnaire Responses

<u>Likert scale items</u>	<u>Strongly disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly agree</u>
1. Alteration in thought processes is one of the easiest diagnoses to make.	2 (10%)	14 (70%)	4 (20%)	0 (0%)
2. Cognitive recovery is usually variable, unpredictable, and without particular pattern.	0 (0%)	6 (30%)	10 (50%)	4 (20%)
3. I am competent to teach the families of patients with this diagnosis discharge instruction and expectations.	0 (0%)	12 (60%)	8 (40%)	0 (0%)
4. I try to avoid these types of patients, since they are usually management problems and frustrating to deal with.	8 (40%)	8 (40%)	4 (20%)	0 (0%)
5. A special assessment tool is unnecessary, since inappropriate and disoriented behavior is very obvious.	12 (60%)	7 (35%)	1 (5%)	0 (0%)
6. I would feel comfortable managing the care of a patient with this diagnosis, and would be able to initiate necessary referrals at the proper time.	0 (0%)	5 (25%)	14 (70%)	1 (5%)
7. Coma arousal programs may be accomplished on the nursing unit by leaving the radio on at the patient's bedside as much as possible and keeping pictures of the patient nearby.	3 (15%)	10 (50%)	7 (35%)	0 (0%)
8. I feel competent to initiate cognitive rehabilitation measures in the acute care nursing setting.	0 (0%)	8 (40%)	10 (50%)	2 (10%)

Table 2 (continued)
Likert Scale 15 Item Questionnaire Responses

<u>Likert scale items</u>	<u>Strongly disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly agree</u>
9. I am uncertain about when, what and how to teach these patients; to me, their learning capacities are unclear.	0 (0%)	6 (30%)	14 (70%)	0 (0%)
10. I understand the Rancho Los Amigos Levels of Cognitive Recovery scale for assessment of patients with cerebral insults.	4 (20%)	9 (45%)	7 (35%)	0 (0%)
11. Nurses do not have time to do in-depth assessment that this diagnosis requires -- besides, this is the role of a neurologist or psychologist	7 (35%)	10 (50%)	2 (10%)	1 (5%)
12. I feel sorry for these patients, but nurses can not do much to alter a patient's cognitive function.	11 (55%)	8 (40%)	1 (5%)	0 (0%)
13. I know that I am competent to do the assessment for this diagnosis thoroughly and accurately.	0 (0%)	8 (40%)	11 (55%)	1 (5%)
14. Depression that is seen after cerebral insult is directly related to frontal lobe injury in most cases.	2 (10%)	12 (60%)	6 (30%)	0 (0%)
15. A "Craig bed" is very useful for nursing care of the comatose patient.	5 (25%)	10 (50%)	5 (25%)	0 (0%)

The last item provided an opportunity for gathering important information relating to the diagnosis which might not be revealed in the first 15 statements. It was an open-ended question: "When and if I do not make the diagnosis of Alteration in Thought Processes for patients who have the etiological factors and/or defining characteristics, my main reason is: "_____." The answers were: "another nursing diagnosis already covers it," "the situation is quickly reversible," "I believe this diagnosis will be phased out since it is based on a medical problem," "lack of time" (3), "don't think of it," "uncertain about timing of interventions," "other system involvement," "I need more teaching about these needs," "most of the time it is a chronic problem and there is not much I can do about it," "because I am not familiar with the correct process to use to feel competent," "Alteration in Thought Processes is not obvious." Five of these open-ended responses disclosed a lack of confidence in making the assessment or formulating interventions. Three cited lack of time. One respondent claimed to use another diagnosis in the place of Alteration in Thought Processes.

Other Findings of Interest

An additional finding of interest was the difference in nursing diagnoses identified and frequency based on data collected for assessment of thought processes. In the pre-treatment period, one subject identified the nursing diagnosis of "Alteration in Thought Processes," and one used "alteration in cerebral perfusion." In the post-treatment period, six diagnoses of "Alteration in Thought Processes" were made, with one diagnosis of "alteration in cerebral perfusion with the nursing diagnosis of alteration in communication and mobility and potential for injury."

CHAPTER 5

DISCUSSION AND IMPLICATIONS

Discussion

The hypothesis for this study: nurses who are given instruction in the use of the Rancho Los Amigos Levels of Cognitive Function Scale as a tool for assessment will document carrying out the Nursing Process with patients with Alteration in Thought Processes more completely than they did prior to receiving instructions was supported. The study demonstrated that the subjects improved significantly in documentation of the Nursing Process by charting assessment data of thought processes, identifying this nursing diagnosis, and including a care plan for it after instruction in the LOCF Scale.

The subjects' compliance with the hospital's mandate to complete the nursing history/care plan for patients with this diagnosis increased significantly after the educational treatment regarding the LOCF scale. This suggests that the instruction in the LOCF scale acted as a motivating force for documentation of the nursing process for Alteration in Thought Processes. Because it outlined use of the nursing process elements of assessment and planning care based on assessment, it demonstrated to the subjects how techniques could be implemented by nurses to improve patients "lines of defense" against the stressors upon the wellness of thought processes, as theorized by Betty Neuman (Neuman, 1985). By also describing steps for successful

nursing interactions based on clients' needs, it may be assumed that nurses' needs for power, achievement, and affiliation (McClelland, 1985) could be met through the same successful nursing process, and perhaps act as a line of defense against stressors upon the nurse as well.

No relationship between nurses' educational levels, obtaining specialty certification in critical care nursing, and type of first exposure to nursing diagnosis concepts and performance in documentation of the nursing process was found to be significant. Expectations that performance of nurses who had formal educational preparation regarding nursing diagnosis would surpass those who first learned nursing diagnosis concepts by informal or independent means was not borne out by this study. The expectation that nurses who demonstrated advanced professional achievement, such as specialty certification, or educational achievement, such as bachelor's or master's degrees would also demonstrate a higher score in nursing process documentation than those who did not have this professional or educational achievement was also not evidenced in this research.

A variety of attitudes toward the nursing diagnosis Alteration in Thought Processes and levels of basic knowledge of nursing interventions for it exist. It was interesting to note that the majority of subjects answered that they felt competent to manage care and initiate referrals, but did not feel competent to teach families discharge instructions or expectations. If the nurses were familiar with the Rancho Los Amigos Levels of Cognitive Function Scale, they could have the knowledge for teaching families reasonable expectations and instructions for the behavior at each level.

An understanding of the Rancho Los Amigos LOCF Scale could assist the nurse in meeting the patient's needs for education also in an appropriate way, such as the timing of bowel and bladder control teaching when the patient has memory for this. This was indicated by the Likkert Scale response of 70% of subjects who agreed that they felt uncertain in areas of patient education for persons with Alteration in Thought Processes as an area of the nursing process which would be significantly enhanced by use of the LOCF Scale. The Likkert Scale response to item number 12 indicates that the nurses felt that indeed nurses could impact on a patient's cognitive function. If nurses felt they could affect patients' cognitive function, the motivation to comply with the nursing process for these patients could be enhanced by demonstrating a tool for assessment and upon which a diagnosis and care plan may be developed.

Although statements 6 and 8 revealed that the majority felt competent to manage patient care for this diagnosis, teaching patients as reflected in item 9, or families, as in item 3, and assessment of patients in item 13 was indicated as a problem for many of the subjects. Since assessment is the foundation for planning and management of patient care as well as patient and family teaching, (Aspinall, 1981), this is an interesting disparity and underscores the need for assessment tools. The nursing process which needs to be done for patients with alteration in thought processes may be facilitated by a tool which promotes assessment of thought processes as demonstrated in this study.

Strengths

The study was strengthened by randomization of subjects and by using reliable data collectors from an independent nursing unit. A complete review of all charts of the critical care patients admitted for the study period was included for accurate inclusion of all possible subjects. An established assessment tool was used as the treatment. The survey could have been a clue to the study's focus, but probably was not an indicator to subjects of the compliance in nursing process documentation to be scored. It was found useful in the analysis of demographic variables and other findings of interest.

Limitations

No generalizations to other populations can be made regarding nurses' improvement in documentation of carrying out the nursing process from this study. The large loss of subjects due to inadequate opportunities to perform nursing process activities limited the sample size to 20 of the 40 original subjects. The attrition of 20 of 40 subjects due to a variety of causes which could not have been anticipated, resulting in a smaller than desired sample size. It is unknown if the subjects who changed employment for the positions described were more qualified in the nursing process than their peers, but evidence of their professional achievement in employment changes may be an indicator of a bias in these subjects toward intellectual and professional accomplishment. The presence in the critical care units of nursing students in a B.S.N. college-based program also limited the study, since evaluation of many patient assessments revealed that the thought process assessment, diagnosis and care plan were done by a nursing student, not the assigned staff person. This

contributed to a poverty of scores for each subject with a study done with only 20 subjects at its conclusion.

There also was an unequal distribution of subjects among the units of the random sample of nurses selected for the study. Since more than twice the number of patients were admitted to the unit with the fewest subjects represented as to the unit with the most subjects, each subject did not have an equal opportunity to do the assessment, diagnosis, and care plan process for patients who qualified for this diagnosis.

The subjects who volunteered to participate in this nursing research project were randomly selected from all nurses employed in the adult critical care department. However, of the 45 randomly selected nurses, there was a sense of self-selection in the group who agreed to participate whose motivation and interest cannot be generalized to other nurses.

In the Likert questionnaire the eighth item refers to initiation of cognitive rehabilitation measures, but it is not specified if this involves referrals for physical, occupational or speech therapy or actual behavioral and cognitive care planning by nurses. The ambiguity of this questionnaire item could confuse subjects and affect responses.

Application to Education, Administration, and Practice

Since, as discussed in the conceptual framework as theorized by Betty Neuman (1985), assessment is the basis for nursing diagnosis and the rest of the nursing process, providing educational experiences for staff and students in schools as well as hospitals which will facilitate patient assessment may assist nurses in identification of a

nursing diagnosis and in formulation a plan of care. Understanding the nurses' needs which exist according to Maslow (1954) and McClelland (1985), teaching staff members and students nursing interventions and patient/family educational needs based upon their assessment may allow nurses to meet their own needs of power, achievement, and affiliation in the nurse-patient relationship, and therefore motivate them to complete the nursing process for patients with a nursing diagnosis of Alteration in Thought Processes.

Type of initial exposure to the nursing diagnosis concept, certification, or even educational level may not significantly relate to improvement in documenting the nursing diagnosis after instruction with a tool of levels of cognitive function for patients with this diagnosis. However, in this study education of staff members in assessment tools and specific interventions for the diagnosis have been shown to significantly increase the collection of assessment data, identification of the diagnosis, and formulation of a care plan for it.

Administrators should note that lack of time to make this diagnosis, as cited by 3 subjects as a problem, as well as ambiguity with other diagnoses, such as alteration in cerebral perfusion or sensory/perception deficit, may contribute to the lack of identification of the nursing diagnosis, as mentioned in the subjects' questionnaire. Although the LOCF scale was filed on each unit prior to this study, teaching regarding its use had not been done. Only 7 of the 20 subjects responded that they were familiar with the scale. Therefore, filing of a tool or article on a unit is not enough to promote usage and familiarity with it; teaching staff is necessary.

The orientees alone had the scale mentioned in their orientation classes. Many of the subjects who were regular staff mentioned their surprise to find the scale in their files and had never heard of it before the treatment program of this study. Administrators can not reasonably "mandate" an assessment of thought processes without providing education for the foundation of knowledge to make this assessment.

Recommendations for Further Research

The first recommendation for further research based upon this study is to replicate the study using a larger sample and a longer time period to evaluate its impact. Use of a non-random sample selection process might be a modification which would allow for more data to be collected and less attrition of subjects. However, the objectivity of the random sample would be sacrificed. A "Hawthorne effect" would still have to be considered if the subjects were aware that they were chosen to be a special group under investigation. The institution in which this research was conducted has pursued study of the documented use of the LOCF scale by Critical Care nurses and has incorporated a section for it specifically in the nursing flow sheet.

Second, this researcher recommends investigation for development of an assessment/care plan tool which may be specifically used in the critical care setting, with integration of a teaching plan for patients and families for each stage of function. Although the LOCF scale emerged from the review of literature as an appropriate tool for use in acute care, there is a need for further development and refinement of assessment tools (and therefore care plans as well) with rehabilitation features, which may be instituted in critical care

areas and may promote nurses' maximizing of their contact opportunities with patients, for the benefit of both patients and nurses.

Third, research into other factors which may affect the nursing process, from assessment to care plan, including educational, motivational, and other issues, is recommended. Although this researcher determined that instruction in use of the LOCF scale did facilitate the identification of the nursing diagnosis of Alteration in Thought Processes, its assessment data, and care plans, it is recognized that other factors may exist which also can influence the facilitation of the nursing process.

Fourth, research of stressors upon nurses and methods to strengthen their "lines of defense" against stressors could be done. Investigation of the use of a patient assessment and planning tool such as the LOCF to specifically reduce stress upon nurses would be of interest.

Summary

This study has demonstrated that providing nurses with an assessment tool for thought processes significantly improved their documentation of the nursing process for this diagnosis in a specific setting.

This study has demonstrated the importance to nursing of not simply mandating that the nursing process be done. This study strongly supports educating nurses with methods and tools which provide them with techniques for assessment as the basis of this process and therefore enhance their motivation to accept the challenge of caring for patients with Alteration in Thought Processes.

APPENDICES

★ **TEETH:** Dentures? _____ upper _____ lower _____ partial plate _____ proper fit of dentures? yes _____ no _____
 Teeth status: _____ **NAILS:** changes in color, texture: _____
HAIR: changes in hair distribution, texture, color: _____

ELIMINATION: _____ **STRENGTH** _____ **CONCERN** _____
 Pattern: _____ stool characteristics: _____ ★ last BM: _____
 ★ Problems: circle: constipation, diarrhea, hemorrhoids, bleeding, incontinence: _____
 ★ Devices/Aids: _____
 ★ Urine: circle: dribbling, retention, pain, urgency, frequency, hesitancy, nocturia, discharge, sugar, incontinence: _____
 ★ Devices: _____ Lifestyle changes? _____

COGNITIVE & PERCEPTUAL: _____ **STRENGTH** _____ **CONCERN** _____
 Vision _____ ★ aids: _____ last exam: _____
 ★ Problems: blurring, tearing, diplopia, cataracts, glaucoma, surgeries, pupil asymmetry: _____
 Hearing: _____ ★ aids _____ problems: _____
 Taste: intact _____ deficit _____ Smell: intact _____ deficit _____ Touch: numbness, tingling: _____
 ★ Communication: aphasic, dysphasic, language barrier: _____
PAIN EXPERIENCE: describe pain threshold/tolerance on a scale of 1-5: _____
 How does pain change your behavior? _____
 What increases/decreases pain? _____
 ★ **THOUGHT PROCESS:** describe changes in memory (recent/remote), learning abilities, decision-making _____

What materials do you regularly read?
 ★ What methods help you learn (reading, demonstration, group, T.V., pictures) _____

SLEEP-REST: _____ **STRENGTH** _____ **CONCERN** _____
 ★ Sleep schedule Hrs./night: _____ times: _____ naps: _____
 ★ Problems: getting to sleep/waking early, dreams, nightmares: _____
 ★ aids/rituals: _____

RELAXATION: _____
 Do you practice any specific relaxation techniques (describe): _____
 ★ What would make the hospital environment more relaxing? _____
 What people, things, places help you relax? _____

SEXUALITY-REPRODUCTIVE: _____ **STRENGTH** _____ **CONCERN** _____
 Menstruation: _____ Last period: _____
 Breast exam: _____ Contraceptives: _____
 Pap smear: _____ Testicular check/prostate: _____
 ★ History: circle: amenorrhea, menorrhagia, dysmenorrhea, menopause, complications with pregnancy, douching, venereal disease, hot flashes, breast tenderness, dimpling, nipple changes, mammogram
 Do you think this illness may affect your sexuality (expression, femininity, masculinity)? Concerns? _____

SELF PERCEPTION: _____ **STRENGTH** _____ **CONCERN** _____
 How do you feel about yourself generally and physically? (selfworth, esteem, image) _____
 Describe personality, disposition, mood swings: (changes?) _____

Signature _____ Date _____
 Signature _____ Date _____
 Signature _____ Date _____
 Signature _____ Date _____
 Signature _____ Date _____

COPING-INDEPENDENCE: _____ **STRENGTH** _____ **CONCERN** _____
 ★ List major changes or stressors in life: divorce, grieving, marriage, new job _____
 What gives you your greatest sense of independence, control, stability, productivity, _____
 Who or what helps you handle stress or change? _____
 What symptoms do you display when stressed? _____

VALUES-BELIEFS: _____ **STRENGTH** _____ **CONCERN** _____
 How does this illness affect your goals/dreams? _____
 Accomplishments most proud of (home, work, social): _____
 ★ Religious affiliation: _____ Importance _____
 Would you like to have clergy notified? _____ Other Support: _____

GROWTH AND DEVELOPMENT/ROLE RELATIONSHIPS: ★ _____ **STRENGTH** _____ **CONCERN** _____
 Marital status: _____ Children/ages: _____
 Other dependents: _____

Housing arrangements/layout (stairs, multi-level) _____
 Living with: _____ Do you expect to return there? _____
 Occupation: _____
 Financial concerns: _____
 Community services used in past: _____
 Services anticipated upon discharge: _____
 Important people you depend on: _____
 Who are the people who rely on you? _____
 Anticipate changes because of this illness (job, family, housing) _____

Family data (describe unit, knowledge of your illness, available supports) _____

★ ~~What questions or concerns do you have about your illness?~~ _____

★ ~~What information, guidelines, materials, help do you need to help you adapt to your illness?~~ _____

Signature _____ Date _____
 Signature _____ Date _____
 Signature _____ Date _____
 Signature _____ Date _____
 Signature _____ Date _____

Appendix B

Rancho Los Amigos Hospital Levels of Cognitive Function Scale

- Level I:** No response: The patient is comatose and unresponsive to stimuli.
- Level II:** Generalized response: The patient is responsive to deep pain. The response may be delayed or inconsistent. The EEG shows cortical responses.
- Level III:** Localized response: The responses are more predictable. The patient may follow simple commands, i.e., squeeze hand, blink eyes withdraw from pain, eye tracking of bright colors. There is a vague awareness of self, with pulling at catheters, IV's,, NG tubes, etc, and the responses may be biased toward some persons and not others.
- Level IV:** Confused/Agitated: The patient is alert and highly active but cannot process information. He is frightened and has a blank, vague stare. The patient is primarily responding to his own internal confusion. Bizarre, non-purposeful behavior occurs often, i.e., crying out and screaming. The patient may become aggressive and hostile even after a stimulus is removed. Verbalization is frequently incoherent and inappropriate and may include confabulation. Memory span is short and the patient lacks short-term recall. Masturbation and self stimulation are not uncommon and the patient still needs maximum assistance for care.
- Level V:** Confused/Inappropriate/Non-agitated: The patient is alert and follows simple commands fairly consistently. Agitation may be shown, but it is not internally based; it is now usually a result of external stimuli and may be out of proportion to the stimulus. The patient is highly distractable and unable to focus attention to a specific task without frequent re-direction. Verbalizations are usually inappropriate, and confabulation may be triggered by present events plus the memory impairment. The patient may show inappropriate use of objects, such as using a toothbrush to comb his hair. The patient is constantly hungry, forgets that he may have just eaten, and may eat small objects such as soap or rubber bands. There is a tendency to wander and the patient has intentions of going home.
- Level VI:** Confused/Appropriate: The patient demonstrates some goal directed behavior but remains dependent on external input for direction. The patient does not initiate activities

Appendix B (continued)

but can follow simple directions consistently and show carry-over of relearned activities such as self-care, provided there is a structured consistent routine. Past memory shows more detail and depth, but short-term memory remains impaired. The patient may show an awareness of confusion and that he or she does not know an answer when questioned. The patient may acknowledge by name his nursing staff, therapists, etc. There is an increase in awareness of body and self at this level, so bowel and bladder consistency may be obtainable.

Level VII: Automatic/Appropriate: The patient is oriented and appropriate, and can perform daily routines automatically, although frequently robot-like in execution. The patient has an awareness of self, family and other people. The patient also interacts with the environment, with interest in social and recreational activities. Some tasks with structure may be initiated. Although the patient may have a superficial awareness of his or her injury, especially if physically handicapped, there is a lack of insight into the cognitive condition. Judgment and problem solving skills are impaired and the patient lacks realistic planning ability about the future. The patient may appear very "cocky" in behavior, wanting to drive, socialize with friends (including drinking), and return to work. Pre-vocational counseling may be indicated.

Level VIII: Purposeful/Appropriate: The patient is alert, oriented, and aware of his or her deficits. The patient may compensate for the deficits and has a good recall of past and present events. He or she may take a cautious approach to things. There is a capacity for new learning, and no supervision is needed once the activity is learned. The patient is independent in self-care in the home and community and is able to drive. There may be a decreased ability, relative to pre-morbid activity, in abstract reasoning, tolerance for stress, and judgment in emergencies or unusual circumstances. Vocational rehabilitation is indicated to determine the ability of the patient to return to and function in society, although perhaps nothing his or her pre-morbid capacity. This social impairment creates a barrier, and the patient needs to occupy his time off with hobbies, etc.

(Professional Staff, Rancho Los Amigos Hospital, 1979)

Appendix C

Scoring System for Completion of the Nursing Process

<u>Score</u>	<u>Completeness</u>	<u>Evidence of Nursing Diagnosis Made</u>
1	Incomplete -- does not include any of the mandated assessments of memory decision-making or learning disabilities.	No evidence of diagnosis made, no goals or intervention.
2	Other -- substitutes a different but related area of assessment such as communication patterns or personality traits.	Lists one goal and intervention for A. in T.P. diagnosis.
3	Partially complete: Includes one or two areas of thought processes assessment mandated -- memory, decision making, or learning disabilities.	Lists at least the goal and at least two interventions for A. in T.P. diagnosis.
4	Complete: Includes assessment of recent and remote memory, decision making and learning disabilities.	Lists at least two goals and at least two interventions for A. in T.P. diagnosis plus uses level of cognitive function in plan.

Appendix D

Alteration in Thought Processes Data and Consent Form

I. Demographic information -- please circle the correct answer.

A. What is your assigned unit?

- 1) SICU 2) MICU 3) SIM 4) MIM 5) Critical care float

B. What is your educational background? (Indicate all levels attained.).

- 1) ADN 2) Diploma 3) Bachelor's degree in Nursing
4) Bachelor's degree in other field
5) Master's degree in Nursing
6) Master's degree in other field

C. Are you certified in Critical Care?

- 1) Yes 2) No

D. How were you first exposed to the concept of nursing diagnosis?

- 1) Nursing education curriculum.
2) Inservice hospital programs.
3) Independent reading (books, journals).
4) Nursing meetings (local, regional, national).
5) Other (specify)_____.

Appendix D (continued)

E. What was your previous exposure to the Levels of Cognitive Functioning Scale?

- 1) Never heard of it.
- 2) Have seen it at least once.
- 3) Have read about it and/or received lectures describing it.
- 4) Familiar with it but rarely use it.
- 5) Familiar with it and frequently, consistently use it.

II. The following 15 statements refer to the specific nursing diagnosis. "Alteration in thought processes," as you see it. The five columns provide spaces for the following responses:

- SA strongly agree
 A agree
 D disagree
 SD strongly disagree

Please put circle the response which most closely reflects your feelings. There are no right or wrong answers.

- | | | | | |
|---|----|---|---|----|
| 1. "Alteration in thought processes is one of the easiest diagnoses to make. | SA | A | D | SD |
| 2. Cognitive recovery is usually variable, unpredictable, and without particular pattern. | SA | A | D | SD |
| 3. I am competent to teach the families of patients with this diagnosis discharge instruction and expectations. | SA | A | D | SD |
| 4. I try to avoid these types of patients, since they are usually management problems and frustrating to deal with. | SA | A | D | SD |
| 5. A special assessment tool is unnecessary, since inappropriate and disoriented behavior is very obvious. | SA | A | D | SD |
| 6. I would feel comfortable managing the care of a patient with this diagnosis, and and would be able to initiate necessary referrals at the proper time. | SA | A | D | SD |
| 7. Coma arousal programs may be accomplished on the nursing unit by leaving the radio on at the patient's bedside as much as possible and keeping pictures of the patient nearby. | SA | A | D | SD |
| 8. I feel competent to initiate cognitive rehabilitation measures in the acute care nursing setting. | SA | A | D | SD |

Appendix D (continued)

9. I am uncertain about when, what, and how to teach these patients; to me, their learning capacities are unclear. SA A D SD
10. I understand the Rancho Los Amigos Levels of Cognitive Recovery scale for assessment of patients with cerebral insults. SA A D SD
11. Nurses do not have time to do the in-depth assessment that this diagnosis requires -- besides, this is the role of a neurologist or psychologist. SA A D SD
12. I feel sorry for these patients, but nurses can not do much to alter a patient's cognitive function. SA A D SD
13. I know that I am competent to do the assessment for this diagnosis thoroughly and accurately. SA A D SD
14. Depression that is seen after cerebral insult is directly related to frontal lobe injury in most cases. SA A D SD
15. A "Craig bed" is very useful for nursing care of the comatose patient. SA A D SD
16. When and if I do not make the diagnosis of alteration in thought processes for patients who have the etiological factors and/or defining characteristics, my main reason is:

Appendix E

Consent Form for Participants.

I would like to invite you to participate in a nursing research project, as part of my Master's Thesis study of the nursing diagnosis of Alteration in Thought Processes. I would like to request your voluntary participation by answering the following questions for demographic data and the survey regarding this nursing diagnosis as it relates to your practice, and then bringing the completed questionnaire and this consent to a 1 hours inservice program about the Rancho Los Amigos Levels of Cognitive Function Scale, and how it may be useful to you. I will be contacting each unit for the times and dates of the inservice.

If you choose to be a volunteer, this will be the extent of your participation. All responses will remain confidential. If you choose not to participate, please do not sign the consent form or attend the inservice. If you choose to be a voluntary participant, please place your initials in the space provided.

Initial: _____

I am hopeful that this research will benefit the patients with alteration in thought processes and the nurses who care for them. I will provide each of the critical care units with research results and conclusions for your information.

Thank you,

Meridell Veen, R.N., M.Ed.
MSN Candidate

Please sign your name on the line below to document an informed consent if you agree to participate:

Consent: I agree to give this information voluntarily for Meridell Veen's thesis research and am aware that this information will be kept confidential.

Signed _____

Appendix F

Pre- and Post-Treatment Raw Scores, Means and S.D.

<u>Code</u>	<u>Pre-Treatment</u>	<u>Post-Treatment 1</u>	<u>Post-Treatment 2</u>
03	2	2	2
15	2	4	6
16	2	4	4
17	4	2	4
19	2	2	2
20	4	2	3
21	2	8	5
22	2	4	2
24	2	2	3
25	2	4	2
26	2	2	4
29	4	2	2
32	4	5	7
33	2	6	4
34	2	4	4
35	2	4	4
36	4	3	4
37	2	2	5
39	4	6	2
40	5	2	4
MEAN	2.75	3.5	3.65
S.D.	1.070	1.732	1.424
N = 20			

Appendix G

Comparison of Scores With Educational Level

Score of difference between pre-treatment and post-treatment mean scores

Educational level <u>attained</u>	Amount of mean score change	Amount of mean score change	Amount of mean score change
	<u>0-1</u>	<u>>1-3</u>	<u>>3</u>
Diploma	5	4	
ADN	2	1	1
BSN/BA	1	5	
MS	1		

df = 6

Chi Square is 9.964 (N.S.)

5% level is 12.6

1% level is 16.8

N = 20

Appendix H

Comparison of Type of Exposure to Nursing Diagnosis Concepts

Score of difference between pre-treatment and post-treatment mean scores

Type of <u>exposure</u>	Amount of mean score change <u>0-1</u>	Amount of mean score change <u>>1-3</u>	Amount of mean score change <u>>3</u>
Independent reading	1		
Hospital inservice program	3	3	
Nursing education curriculum	4	7	1

df = 4

Chi Square is 2.296 (N.S.)

5% level is 6.0

1% level is 9.2

N = 20

Appendix I

Comparison of Presence of Certification in Critical Care Nursing

Score of difference between pre-treatment and post-treatment mean scores

Presence of critical care nursing Certification	Amount of mean score change 0-1	Amount of mean score change >1-3	Amount of mean score change >3
No CCRN	10	7	1
Yes CCRN		2	

df = 2

Chi Square is 2.716 (N.S.)

5% level is 7.8

1% level is 11.3

N = 20

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