

1996

## Crisis Anticipation

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CRISIS ANTICIPATION

by

Janet A. Tucker

A THESIS

Submitted to  
Grand Valley State University  
in partial fulfillment of the requirements for the  
degree of

MASTER OF SCIENCE IN NURSING

Kirkhof School of Nursing

1996

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ABSTRACT  
CRISIS ANTICIPATION

By  
Janet A. Tucker

This study builds on two qualitative studies, one by Smith (1988) and one by Rew (1988a) which investigate the characteristics of crisis anticipation as defined by critical care nurses. A convenience sample of critical care nurses from three Midwestern hospitals was shown a random ordered list of thirty characteristics of crisis anticipation identified in the Smith (1988) and Rew (1988a) studies. The nurses scored each characteristic on importance to the concept of crisis anticipation. Nurses were divided into two groups by experience level, and group scores for each characteristic were developed using the Fehring (1986) technique. Group scores were compared to each other and to the ranked list developed from the Smith (1988) and Rew (1988a) results. Results showed essentially no significant difference between groups in this study. Comparison of group scores to the original list supported those characteristics as major and minor characteristics of the concept of crisis anticipation.

## Acknowledgments

I acknowledge the large amount of help given to me in preparing this thesis by Dr. Jean Nagelkerk. I also wish to acknowledge the patient and extensive assistance given by Linda Scott, RN, MSN. This thesis would have never been completed without their significant aid.

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## Chapter One

### Introduction

#### Introduction

Historically, nursing has valued the scientific approach to knowing. Now nursing is beginning to examine the importance and usefulness of a phenomenological approach to knowledge development. Knowledge can be gained through the rationalist approach which uses the scientific method to describe, test, and explain phenomena. Knowledge can also be gained through the phenomenological approach which uses a holistic methodology to explain phenomena. Both perspectives are important to nursing. Each perspective is essential for the most complete understanding of patients, nurses, and the discipline itself.

Within the phenomenological perspective, intuition is accepted as a valid and useful concept. Examining and clarifying intuition expands nursing's holistic perspective, and reflects back to Carper's (1978) basic pattern of personal knowledge. Young (1987) provided further support that nursing knowledge is a combination of both intuition and analysis, with both subjective and objective components. Rew, Agor, Emery, and Harper (1991) noted that practitioners of nursing use both analytical and intuitive patterns of

knowing when making clinical judgments. Rew and Barrow (1987, 1989) stated that intuition must be validated through analytical reasoning to be useful to the practitioner.

Benner and Tanner (1987) define intuition by listing Dreyfus's six aspects of intuitive judgment: "pattern recognition, similarity recognition, commonsense understanding, skilled know-how, sense of salience, and deliberative rationality" (p. 23). The six aspects include the component of analytical reasoning. Benner (1983, 1987, 1992) further describes intuition as a tool of the experienced or expert nurse. Intuition develops as a nurse becomes less dependent on rules and acquires a deeper understanding and mastery of the role. The inexperienced or novice nurse is too concerned with correct performance and meeting requirements to relax and allow knowledge of patterns to emerge. The expert nurse, with confidence in his or her self and experience in the situation, can quickly tap experience.

Margaret Newman's (1994) theory encompasses intuition as she describes humans as open patterns that interact with the environment, evolving unilaterally toward higher consciousness. The intuition of the nurse is a recognition of patterns in his or her self and others, and an understanding of where the patient is within his or her evolutionary journey. Nurses who are aware of their own patterns can more quickly recognize another's pattern and

its potential changes. This awareness grows as the nurse's experience grows.

Crisis anticipation is an example of intuition. Crisis anticipation is being studied as a way of investigating a portion of the larger concept of intuition. Crisis anticipation describes a situation that is more definable, more containable, and therefore more amenable to study. Crisis anticipation, like intuition, is affected by levels and amounts of experience, by relationships with patients, and by skills of pattern recognition. Crisis anticipation within Newman's framework is a specific recognizable pattern with common features across the patient spectrum.

#### Purpose

This current research built on two qualitative studies, one by Smith (1988) and one by Rew (1988a), which investigate the characteristics of crisis anticipation by critical care nurses. Smith's 1988 study generated a list of ranked characteristics descriptive of the concept of crisis awareness. Rew's 1988 study also reported some characteristics of crisis anticipation, slightly different from Smith's characteristics list. The purpose of this study was to validate the characteristics identified by Smith (1988) and Rew (1988a) and to investigate the effect of the nurse's experience level on how she scores these characteristics.

### Significance

This study further clarifies the concept of crisis anticipation. This study provided further validation of intuition as a useful type of knowing in nursing by providing evidence that crisis anticipation, as a subset of intuition, is a tool used by expert nurses. As the characteristics of crisis anticipation become clear, the pattern is more easily taught. Nurses can then learn to recognize an impending crisis more easily, providing a larger window of opportunity for intervention.

As support grows for use of both scientific and phenomenological approaches, educators will have support to teach the traditional and intuitive ways of knowing to nurses. Clients will benefit from a thorough assessment and evaluation of their problems as nurses use both rational and phenomenological approaches.

## Chapter Two

### Conceptual Framework and Literature Review

#### Introduction

The conceptual framework for this study is the Newman model. Margaret A. Newman's model provides a clear description of intuition and crisis anticipation, explains their importance to nursing practice, and validates the concepts. A literature review follows which presents research exploring intuition and crisis anticipation. The use of intuition and crisis anticipation by experienced nurses is discussed.

#### Conceptual Framework

Margaret A. Newman (1994) has developed a nursing theory based on a paradigm of nursing that specifies that human beings are unitary and indivisibly part of the larger unitary field in which they are found. Humans can neither be divided into parts nor examined separate from the field in which they live. Newman also regards change as something that happens all at once and transforms the object of the change, rather than a slow step by step process. (Newman, 1994).

Person In Newman's theory, a human is a unitary

system with fluid boundaries open and interacting with the environment. Pattern is the most important characteristic of the human being. The unified pattern is made up of many patterns such as the way one moves, talks, looks, works, or plays. The unified pattern is contained within the larger pattern of that person's immediate family. That pattern is contained within the larger pattern of a family's community (see Figure 1). The boundaries between person, family, community, and other groupings are artificial, however, and need to be eliminated as much as possible.

A central assumption of Newman's theory is the pattern of wholeness. The outward behavior of a person becomes an indicator of the underlying pattern. A second basic assumption is that the pattern, or person, is evolving unidirectionally, toward higher consciousness. Each person has a particular awareness of his or her own and other's patterns. As the person evolves toward higher consciousness, their understanding of his or her own pattern increases.

Newman's definition of person as pattern begins with her explanation of Bohm's theory of implicate order:

According to Bohm, there exists in our universe an unseen, multidimensional pattern that is the ground, or basis, for all things. This is the implicate order. Arising out of the implicate order is the explicate order, a kind of precipitate of the implicate order. The explicate order includes the tangibles of our



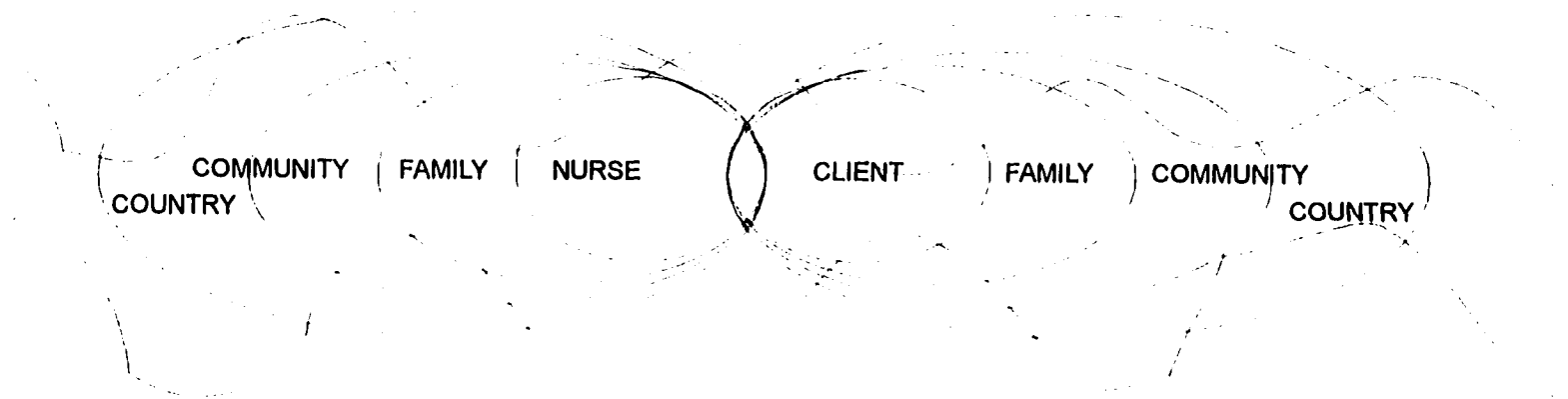


Figure 1. PICTORAL REPRESENTATION OF MARGARET NEWMAN'S MODEL: NURSE CLIENT INTERACTION WITHIN THE IMPLICATE ORDER

world. These tangibles. . .are so much more real to us than the underlying unseen pattern that we think the explicate order is primary--the real thing. Actually, according to Bohm, the implicate order is primary. . .The explicate, whatever form it may take, is a temporary manifestation of a total undivided pattern. . .(Newman, 1994, p. 10).

Environment Environment is an artificial delineation of that which is not the person. The environment is the rest of the pattern with which the person interacts. Environments vary, and are described in the terms most useful for a particular client. Examples include family, community, culture, and country. Each environment is a further explication or pattern of the implicate order. The relevant environment pattern is affected by changes in the person's pattern. For example, an illness, or energy pattern change, within one member of the family will often affect the whole family, and sometimes the larger community beyond the family. In Newman's theory, nursing's focus is all the different manifestations of person-environment. For most clients, the important unitary pattern is the one that encloses the patient within the family within the community. She adds health as the evolving aspect of this pattern, and caring as the moral imperative as nurses become involved with these patterns (Newman, 1994).

Health Health is the expansion of consciousness. Health is the evolving explication of the implicate pattern

of person-environment, which is in turn an explication of the greater pattern that is the implicate order. Each person, and the differing patterns he or she presents are explications of the larger patterns.

Newman takes the ideas of pattern further to compare them to rhythmic phenomena. As the pattern of a person becomes increasingly disorganized, outside observers recognize the person as "sick". The illness causes the person's pattern to be reorganized, ideally on a higher level. Illness or disease become a meaningful aspect of health. The traditional approach is that health and disease are at opposite ends of a good/bad pole. Newman's theory shifts that view to recognizing health and disease as two kinds of neutral information. A statement about health is a statement about the relative organization of the pattern of the person. Health and illness are changes in the dynamic field of energy that is a person within a larger dynamic field of energy. Illness is a manifestation of change in energy organization as the pattern evolves toward higher consciousness. Illness is often the transformative catalyst that causes movement toward higher consciousness (Newman, 1994). A person who gains insight into the effects of the illness on his pattern, and uses that insight to grow and achieve or reorganize his pattern on a higher level, is evolving toward higher consciousness.

Newman also describes disease as a change in energy use within a person-environment pattern. Insight into the

energy pattern change can allow the person to create a new, more effective energy input and output balance, leading to a higher level of pattern organization, or higher consciousness. Consciousness is defined by Newman as "*the information of the system, the capacity of the system to interact with the environment.*" (Newman, 1994, p. 33). Patterns of information or consciousness can be shared among patterns within the same environment. Mind and matter are the same energy patterns expressed at different speeds and intensities, and are artificial divisions of a unitary wholeness. Food ingested is available for the energy needs of both mind and body. Events that change the energy pattern and use of body will also change the same for the mind, and vice versa. Life events (the intersection of another pattern) will cause pattern change at each level of the unitary pattern examined: body organ, body system, person, family, or community.

Conscious and thoughtful pattern recognition allows much more rapid evolutionary advancement. As the person becomes more capable in understanding and directing his pattern, he gains more control over the direction of change. More of the energy available can be harnessed to the movement toward higher consciousness.

Nursing Nursing is the discipline that can best interact with the patient and his or her needs. Medicine becomes one of the available tools to nursing for altering the pattern, but not the only one. The focus of medicine is

the traditional medical model: the effect of disease on the individual and possibly the effect on the individual's environment. The focus of nursing is the pattern of person within family within community within larger community, the evolving nature of that pattern, and the caring with which nursing interacts with the pattern (Newman, 1994) (see Figure 1). Newman describes the shift in thinking that is necessary to provide nursing care within her theory base. This shift is from diagnosis and treatment within the medical model to recognition of the pattern of the whole as an emerging phenomenon and evolving state that requires recognition, caring, reflection, and support. She acknowledges that this is not an easy shift to make, but regards it as the next step for nursing in its development as a profession. (Newman, 1994).

The role of the nurse is to be present with the person in crisis. The nurse must be first transformed by the theory into a person who recognizes his or her own pattern and that of others. The nurse can then, by his or her presence, become one who facilitates transformation in the client, moving patterns toward higher levels of consciousness (Newman, 1994).

Pattern, Caring, and Nursing The core assumptions of Newman's theory, in her own words, are "centered on pattern: wholeness identified in pattern, behavior as an indication of pattern; and expanding consciousness as seen in the evolving pattern [the process of health]." (Newman, 1994, p.

52). Her paradigm calls for action evolving out of pattern recognition, and challenges nurses to recognize patterns and the meanings patterns have for those persons in their care. Time, space, and movement become starting points for pattern recognition. For convenience, the unitary whole is broken into pieces that can be better handled in a mental model, such as person or family. It is important to remember that these are really not separate parts, but artificial divisions or aspects of a unified whole. The ever-changing relationships between these aspects of the unified pattern such as person or family as they undergo transformation is a key focus for pattern recognition (Newman, 1994).

Nurses who recognize and communicate patterns help patients find meaning and facilitate the reorganization of the pattern on a higher level. Patients come to nurses when the old rules of functioning no longer work, and new rules for life need to be learned. As the patient searches for new rules, the nurse can help the patient understand the patient's pattern. The nurse's interaction and sharing with the patient assists that patient to see new possibilities, and move to a new pattern (Newman, 1990). Nurses are present to help the patient find and explore patterns. Nurses help patients discover their own pattern, identify new rules (even if they are not the ones the nurse would have chosen), and help the patients implement them.

Caring is another critical piece within Newman's theory. "I believe caring is a moral imperative for

nursing. . . .Theory that does not take into consideration the caring dimension is not nursing theory." (Newman, 1994, p. 141). The nursing task or approach becomes the entrance ticket into a relationship with the patient. Without the caring relationship, the solid connection to pattern will never be made. Caring is also the factor that helps the patient choose his or her best possible pattern, instead of the pattern the nurse feels is best for that patient. Caring maintains autonomous choice.

Newman supports both rationalistic and phenomenological ways of knowing within nursing. In learning patterns, linear analysis is useful. Once the nurse is able to establish order to a pattern, intuition is useful to establish links between patterns. The nurse is able to accept the pattern as a whole all at once. An experienced nurse who is comfortable with her own pattern is more receptive to the larger pattern, and relies less on linear analysis. The expert nurse is skilled at pattern recognition and in implementing effective nursing interventions based on pattern recognition.

Intuition is the holistic and immediate grasp of an evolving pattern. Growing experience with pattern allows the nurse to more easily recognize pattern, and to recognize larger portions of the pattern at one time. The experienced nurse can grasp the patient's pattern as a whole. The experienced nurse is one who is very familiar with and accepting of his/her own pattern. The nurse is able to use

his or her expertise with pattern to help others learn their own pattern. The nurse and the client are also both pieces of a larger unitary pattern. The precognitive form of intuition is a grasp by the nurse of this larger pattern.

Crisis anticipation is recognition of a specific pattern within the individual patterns of the patient. Characteristics of the crisis anticipation pattern include lessening of movement, constriction of space, and potential ending in the time pattern. Crisis anticipation encompasses the total pattern of nurse-patient-environment. The characteristics of crisis anticipation are representative of this total pattern, not dependent on a particular patient pattern. Many of the characteristics refer to elements seen in patient patterns, but are elements common to patients in this situation. An intuitive grasp of this total nurse-patient-environment pattern is dependent on the nurse's abilities to recognize patterns as a whole, and on his or her experience with this particular pattern. Crisis anticipation is a sudden grasp of a closing pattern, a potential patient death, before linear analysis would give the same information and warning.

#### Review of Literature

Research Using the Newman Model A literature review found only a few studies conducted using Newman's conceptual framework. Lamendola and Newman (1994) conducted a qualitative study of men with HIV/AIDS to see if the disease functioned as a disorganizing event that moved these clients



toward a more highly organized state. The research method used the assumptions of Newman's health model. The nine subjects all reported an expanding consciousness as a result of the HIV/AIDS experience, changes that included "feeling good about themselves, being more in charge of their lives, opening up to a fuller expression of their own caring and sharing, taking advantage of opportunities in life they would have ignored before, and a deepening of their spirituality" (p. 19). The researcher also felt positively changed by the experience.

Schorr (1993) used Newman's conceptual framework to see if music could help bring about a desired pattern change in women with chronic pain from rheumatoid arthritis. Thirty women were assessed for levels of pain and then listened to a music tape of their own choosing for twenty minutes. The women were reassessed for levels of pain as the music continued. The researchers then turned off the music, and did a third pain assessment survey two hours later. Results indicated some lessening of the pain or achievement of more control over the pain while the music was playing.

Doctoral studies have also used Newman's model as the framework for research. The model has been more commonly mentioned in the literature, however, as a model for practise.

Practice Using Newman's Model Gustafson (1990) used Newman's theory to organize a parish nurse practice. Gustafson organized a practice around the concepts of caring

and presence instead of the concepts of diagnosis and treatment. The framework for the assessment pattern was the nine dimensions of person-environment interaction developed through the North American Nursing Diagnosis Association. This framework allowed her to begin to see her client's pattern (Gustafson, 1990).

Kalb (1990) describes a new management program for managing preterm labor based on Newman's conceptual framework. Starting with concepts about the importance preterm labor may have for the woman, as well as the patterns of pregnancy in general, a program was developed that gave back control of the medical therapeutics to the patient. The woman would be assisted in learning the patterns of her preterm labor. Together the client and nurse would set up a low dose subcutaneous medication program that the patient would initiate and administer at home based on these patterns. Responsibility and authority was handed back to the patient at home, avoiding weeks in the hospital tethered to an IV (Kalb, 1990).

Organizing a practise around the patient's unfolding and developing pattern gives the patient much more control over the medical and nursing therapies for that patient's specific problems. Newman's model keeps the nursing focus on the patient, not on the therapies or the system.

Concept Analysis and Research on Intuition In a literature review on intuition in nursing, Rew, Agor, Emery, and Harper (1991) recognized that nurses found talking about

intuition to be difficult, for at least three reasons. First, the feelings that are associated with intuition are difficult to explain or describe. Second, intuition has traditionally been considered "women's knowledge" with the implication that it has no validity because it has no scientific base. Third, nurses who communicate assessments and judgments to physicians or clinical instructors based on intuition usually encounter resistance and disbelief. As nursing moves away from a strict adherence to quantitative methods, intuition is finding more acceptance within the discipline.

Rew did a concept analysis of intuition in 1986, identifying three attributes of intuition: "(a) knowledge of a fact or truth, as a whole; (b) immediate possession of knowledge; and (c) knowledge independent of the linear reasoning process" (p. 23). She acknowledged that the scientific and analytical foundations of nursing have slowed the acceptance of intuition within nursing. Intuition is frequently ascribed to groups of individuals who have relatively little power in situations where rationality is of high value (Rew, 1986).

McCormack (1992), in a concept analysis of intuition, supported the complementary nature of decision making by the analytical linear nursing process model and a more intuitive holistic model. He presented four defining attributes of intuition, three of which echo Rew's defining attributes: immediate knowledge independent of linear reasoning,

immediate possession of the knowledge, and knowledge of the whole. He added that this knowledge represents synthesis, not analysis of the available situation.

Hampton (1994) described intuition as an understanding that immediately and easily happens when a pattern of similarities to earlier experience is recognized (p. 21). Intuition depends on a sound knowledge and experience base. Experience causes information stored as analytical steps to be reorganized into patterns. The expert accesses and compares these patterns.

Meerabeau (1992) preferred to talk about intuition as good practice, tacit knowledge, or associative knowledge. Tacit knowledge is a term she borrowed from Polanyi, and refers to knowledge that is expressed in practice, learned through experience, and very difficult to describe or pass on through words. Meerabeau sees practitioners' knowledge as an untapped resource for new knowledge. Practitioner's knowledge is difficult to study because it is difficult to describe accurately. There is no appropriate language developed for discussing it. The most common way to examine tacit knowledge is to elicit detailed recall of significant events. Reinterpretation and selective remembering of events can affect the validity of recall.

The most common form of nursing research on intuition has been literature reviews on the nature and usefulness of intuition. Only in the last twelve years have nurse researchers carefully examined intuition. Studies to date

have used qualitative designs with small convenience samples. The authors identify the material as preliminary work. A clear operational definition of intuition is still lacking. Only one study (Rew, 1990) defines the subject sample clearly enough to allow replication.

Pyles and Stern, in 1983, did the first nursing research study that looked at intuition and pattern recognition as tools used by experienced critical care nurses. In-depth interviews of a convenience sample of twenty-eight medical intensive care nurses employed at eight different Louisiana hospitals were conducted through grounded theory method. Pyles and Stern found that the cognitive process they named the Nursing Gestalt is a complex mix of a sound knowledge base, varied past experience, cue identification, categorization, differentiation, pattern recognition, and "gut feelings" or intuition. They acknowledged the importance of both intuition and logic working together to reach the best nursing solutions.

Young (1987) also used a grounded theory approach to study 41 subjects, 39 of whom were nurses. She used in-depth interviews to collect descriptive incidents of intuitive experiences. Her research question was investigating the functional dimension of clinical intuition. She used two categories to code data: the judgment process and the intuitive knowledge scale, which were coded into three subcategories: cues, judgment, and

validity. Her results suggested that intuition, as well as deliberation, is essential in diagnosing human responses to illness. Intuition is grounded in both knowledge and experience.

Agan also conducted a small qualitative study in 1987 with seven nurses using Reinharz's model of experiential analysis. All subjects reported the importance of intuitive knowing and of taking in information without being consciously aware of it. Three of the nurses interviewed brought up the idea that this unconscious information was possibly drawn from the collective consciousness or a greater whole. Margaret Newman's theory would call this Bohm's implicate order.

Benner and Tanner, within their ongoing investigations of expert nurses, did a study in 1987 attempting to identify "the nature and role of intuition in expert clinical judgment" (p. 23). A convenience sample of twenty-one nurses, identified by their peers as experts, were both interviewed and observed in their clinical settings. Benner and Tanner, using Dreyfus's six aspects of intuitive judgment as the framework, found many examples of each aspect. The final aspect of deliberative rationality was used by the expert nurses to prevent tunnel vision, to double-check intuited knowledge. These nurses also reported that when they ignored their intuitive knowledge due to lack of concrete evidence, they regretted it later. The synthesis from intuitive knowledge was distrusted as not

legitimate, although it was then shown to be correct. The discussion of the study includes critiques of information-processing and statistical-decision models. Benner and Tanner emphasize the importance of intuition and analytic reasoning used together for the best clinical results.

Crandall and Getchell-Reiter (1993), working from Benner's expert nurse model, used cognitive task analysis techniques to look at neonatal intensive care nurses. The study investigated what concrete assessment cues were being used by these nurses in their intuitive grasp of impending crisis in their infant patients. The investigators found that most of the cues were comparing current status to previous status, noting development of significant cue clusters, and tracking assessment changes over time. The signs and symptoms used as cues by the nurses were developed through experience with previous similar cases. The cues used were much earlier signs than those in the textbook description of the same problem.

Rew has done most of the writing and researching on intuition since the late 1980's. She did two related studies in 1988 (1988b). The first one was a pilot study done primarily to develop an interview instrument for investigating intuition. This study used 11 participants. Data were collected through in-depth interviews and analyzed along the three attributes Rew had identified earlier: knowledge of a fact or truth as a whole, immediate possession of knowledge, and knowledge independent of the

linear reasoning process (Rew, 1986). She found three additional attributes of intuition in this study: inner knowing, sensing/feeling/perceiving, and strength of feeling that affects perception (Rew, 1988b). Intuition in clinical practice meant that nurses knew how to do what needed doing, when something further needed to be done, and what that action should be.

The second study followed the same procedure as the first. It used the same instrument with a convenience sample of twenty-six nurses in five home health settings. Earlier results were confirmed. All the nurses said that they used intuition in the nursing process, especially during assessment, planning, and implementation. Many of these nurses found ways to share their intuitive experiences with their patients and patients' families. (Rew, 1988b). Both studies brought out the dimension of physical feelings of discomfort and unease that many nurses felt accompanying the intuitive experience.

Rew did another study in 1990 with a convenience sample of twenty-five experienced critical care nurses using interviews in a qualitative descriptive design. The research questions were to examine how these nurses described intuitive experiences in their practice, in using the steps of the nursing process, and what physical sensations and feelings those experiences caused. Results indicated that the nurses felt intuition was an important tool in evaluating patient responses to interventions.



Intuition was also used by these nurses in the assessment and planning stages of the nursing process. Feelings were reported in three categories: feelings about their patients, feelings about the future, and feelings about themselves as nurses. Feelings about the future were the most uncomfortable. In her discussion, Rew stated that she felt this study supported earlier studies such as that conducted by Young (1987), who found intuition to be a valuable clinical tool. All these studies tend to reach the same conclusion: intuitive knowing is real, valid, and useful, especially when used in conjunction with analytical reasoning.

Crisis Anticipation Crisis situations are familiar to every nurse. Common features are high levels of uncertainty with no precedents for action, and variables that are often scientifically unpredictable. In these situations, time is limited. There is also intense pressure to make a correct decision when several plausible alternative solutions with good arguments for each exist (Rew, Agor, Emery, & Harper, 1991). In the face of limited time to decide and rapid change that quickly depletes the resources available, the nurse must usually initiate a course of action with incomplete information. Observable data may even be inconsistent with other information.

Rew, Agor, Emery, and Harper (1991) state that the use of both sensory and intuitive data improves the ability of the nurse to anticipate and prepare for emergencies before

they actually occur. The awareness of both kinds of cues allows for the most appropriate preparation while the nurses still have time to plan for or circumvent the crisis. The expert nurse can postulate different futures and work toward the most desired one while options are still open. Rew emphasizes that both linear analysis and intuitive grasps of the whole are important in this situation. Expertise is a critical factor, as responses must be automatic and effortless, adapting to rapidly changing conditions.

The study by Smith (1988) on which this study is in part based looks at crisis anticipation as a particular kind of intuitive knowing. Crisis anticipation is the nurse's awareness that the patient is about to suddenly get much worse, before clear clinical signs and symptoms are present in that patient.

Smith (1988) interviewed six experienced critical care nurses, using two open-ended questionnaires and one three point scale developed by the investigator. Analysis of data for themes and significant descriptors was done under a grounded theory approach. She describes crisis anticipation as the phenomenon of deterioration, "a dynamic state of health-illness patterning in persons experiencing life-threatening health problems" (Smith, 1988, p. 14) She found that each nurse used similar terms in describing the phenomenon. First, each nurse felt that "something" was wrong or disrupted in the patient, without being able to clearly describe that "something". Second, each nurse was

aware that change was imminent, in the direction of deterioration or crisis. Third, the nurse needed to be with the patient to have these realizations. Each nurse in the study ranked the same four items as most important to the concept of deterioration: sense that something is wrong, feeling of concern, sense that something is changing, and overall feeling about a patient. Each nurse also mentioned the importance of looking for objective data to back up the feelings of impending crisis, and the difficulty of communicating the impressions to skeptical physicians and colleagues.

Rew (1988a) did a study that looked at more general research questions about intuition. This study also gathered information specifically related to crisis anticipation as a common clinical experience of intuition, and is the second study important to this research. She interviewed fifty-six nurses of varying backgrounds, with an average of 12.7 years clinical experience. The data were analyzed through the Ethnograph computer program, with further analysis by hand, using Loye's three types of intuition (cognitive inference, Gestalt intuition, and precognition) as one of the frameworks. The research questions concerned how nurses experience intuition in the nursing process in clinical practice, and what behaviors immediately follow those experiences of intuition in the clinical setting (Rew, 1988a, p. 151).

Results suggested that intuition was most helpful in the assessment and intervention stages of the nursing process. Most of the clinical experiences with intuition reported, especially by the acute care nurses, were incidents of crisis anticipation. These experiences fit all three intuition types described by Loye, including precognitive intuition. Critical care nurses would also take their patients' intuitions about their status into account. Four behavioral themes were identified for dealing with the intuitive experience: (a) gathering additional data to support the intuition; (b) attempting to validate or corroborate the intuition through discussion with a peer; (c) reporting findings and feelings, usually to the patient's physician; and (d) performing specific interventions based on the intuition and additional information gathered. Rew believes that this study reinforces the importance of both intuitive knowing and analytical reasoning. While the Rew (1988a) study did not culminate in a specific list of characteristics as did the Smith (1988) study, Rew's study found many of the same characteristics described in similar terms.

Another common feature identified in these studies was the importance of experience in the nurse. The nurses who most successfully used intuition and linear analysis together were those nurses identified by various criteria as expert nurses in their clinical area.

Expert Nurse Benner has collected many of the anecdotes about the expert nurse's use of intuition in developing crisis situations. Benner bases her work on expert nurses on Dreyfus' model of skill acquisition. This model describes five stages of proficiency through which everyone passes as they acquire a new and complex skill: novice, advanced beginner, competent, proficient, and expert. As learners move through the five stages, they change in specific ways. The learner changes from dependence on abstract principles to using patterns drawn from a variety of experiences. The learner changes from a slow piece-by-piece analysis of a situation to a holistic grasp with recognition of salient features. The learner changes from outside observation of the situation to comfortable and thorough involvement in the situation. (Benner, 1984, p. 13). The expert nurse is one who successfully and competently uses both ways of knowing.

The expert nurse, with an enormous background of experience, now has an intuitive grasp of each situation. The nurse zeroes in on the accurate region of the problem without wasteful consideration of a large range of unfruitful, alternative diagnoses and solutions. (Benner, 1984, p. 32). Highly skilled analytic ability is necessary for those situations with which the nurse has had no previous experience. Analytic tools are also necessary for those times when the expert gets a wrong grasp of the

situation and then finds that events and behaviors are not occurring as expected (Benner, 1984).

The expert nurse works in a different world than less accomplished practitioners. In a familiar setting, the expert will understand a situation immediately and directly, and know he/she has a good grasp. The expert feels uncomfortable and acknowledges it when her understanding is not congruent with the situation. The expert has a large capacity for pattern recognition. Past experience combined with pattern recognition will shape the sense of urgency in similar new situations. The expert is comfortable maneuvering in complex and quickly changing situations, and is able to keep the focus broad enough to enclose the whole picture. The expert nurse's sense of agency and responsibility for the patient's well-being is more realistic. This nurse can manage the physician's response to the situation, help out less skilled nurses on the clinical team caring for the patient, and still maintain his/her advocacy role for the patient and family (Benner, Tanner, & Chesla, 1992).

The expert nurse is not just defined in years within a clinical field, but in a qualitatively different approach to patients. Experience is an important component of expertise. Expertise also involves an ability to grasp situations as a whole, avoiding wasteful consideration of irrelevant options. (Benner, 1983).

Hampton (1994) describes a similar profile of the expert nurse. She lists quality decision making, intuition, knowledge, adept psychomotor skills, and clinical specialization as important characteristics. Her expert nurse rapidly performs the required mental or physical activity accurately and with the fewest number of cues. Hampton (1994) also emphasizes the importance of experts having both experiential knowledge and theoretical knowledge. Experts need an ability to quickly sort out irrelevant information. Experts also need the ability to recognize when a situation does not fit the pattern and their knowledge is inadequate. Experts develop ways to make fast and accurate solutions to problems.

Expert nurses have more familiarity with pattern, and more experience at pattern recognition. An expert nurse is more comfortable using all the tools at his or her command. Crisis anticipation is a pattern familiar to expert nurses when presented and explained. This research study was designed, in part, to further clarify and describe the concept of crisis anticipation.

#### Fehring's Diagnostic Content Validity Methods

Fehring, in 1986, developed and published two frameworks for researching the validity of nursing diagnoses. In 1987 he published a refined and updated version (Fehring, 1987). Both frameworks are designed to generate a complete and appropriate list of valid characteristics for a given nursing diagnosis using a group

or series of groups of nurses expert in that topic. The first framework is called the diagnostic content validity model. This model uses expert nurse opinions to indicate to what degree a defining characteristic is important to a given diagnosis. At the end of the model process a given nursing diagnosis has major and minor characteristics listed, with the experts agreeing that the major characteristics are very indicative of that diagnosis.

The second framework is a clinical diagnostic validity model. This framework obtains evidence directly from the clinical setting for a given nursing diagnosis. The raters in this model are either clinical experts or patients themselves, working with the principal investigators.

The diagnostic content validity has only been applied in the literature to nursing diagnostic studies. However, the techniques and final results are appropriate to nursing concept development in the broader sense. The diagnostic content validity model starts with a proposed group of characteristics for a diagnosis or concept and performs a literature review and/or Delphi technique to obtain the most complete list of characteristics possible. The instrument developed is the list of characteristics, in random order, sometimes with distracters added, and options to add further characteristics. A group of expert nurses then scores each characteristic on the list as to its importance to the diagnosis or concept. The scores are compiled to create a ranked list of characteristics, in order of importance.



### Summary and Implication for Study

There is a growing body of evidence that indicates nursing knowledge is derived from the rationalist perspective and the phenomenological perspective. Margaret Newman views both ways of knowing as necessary for pattern recognition to occur by the nurse. Both Newman and Benner see the expert nurse as the practitioner with the experience and confidence to use both ways of knowing in situations where he or she needs more information. The novice has neither the experience with patterns nor the trust in his or her own nursing judgment to use holistic recognition of the whole comfortably, although experience and comfort grows daily. This study was designed to further clarify the concept of crisis anticipation, and to examine effects of experience on the recognition of the pattern of crisis anticipation.

### Research Questions

1. Will the list of characteristics of crisis anticipation identified by Smith (1988) and Rew (1988a) be validated as appropriate by experienced critical care nurses?
2. Will the list of characteristics of crisis anticipation identified by Smith (1988) and Rew (1988a) be validated as complete by experienced critical care nurses?
3. When a ranked list of characteristics is developed from the compiled scores of experienced critical care nurses in this study, how similar is that ranked list of

characteristics to the ranked list developed by Smith (1988)?

4. Is the order of the developed ranked list affected by the nurses' experience level?

#### Definition of Concepts

Expert nurse An expert nurse is one who has worked more than three years in a critical care unit.

Novice nurse A novice nurse is one who has worked three years or less in a critical care unit.

Crisis anticipation Crisis anticipation occurs when the critical care nurse recognizes an unfolding pattern of deterioration, instability, or impending crisis in a patient's physical and mental status which leads to nursing action.

Critical care unit A critical care unit includes any unit in a hospital that is set up for continuous monitoring of a patient, with emergency supplies at hand: ICU, CCU, ER, Burns, NICU, SCU, TCU, PICU.

## Chapter Three

### Methodology

Newman (1994) states that the content of nursing research is, or should be, nursing practice. Nursing research should focus on the realities of nursing practice, showing and describing the "emancipatory process of pattern recognition" (Newman, 1994, p. 92). The ideal study design within her conceptual framework searches for and examines the patterns of the topic studied. Examination of the patterns and their interconnections leads to insights useful to the researcher and study participants. Crisis anticipation is pattern recognition by the experienced nurse. Examination of the patterns that underlie crisis anticipation in current nursing practice will lead to new understanding for both participants and researchers.

#### Study Design

A simple descriptive design was used for this survey study of nursing practice. Respondents were initially divided into two groups of experience level based on demographic data. The two groups used were those nurses with three years or less critical care experience, and those nurses with more than three years critical care experience. Fehring's Diagnostic Content Validation (1987) model was

used to formulate a ranked list of the characteristics of crisis anticipation from the experienced group. The list generated from the compiled scores of the experienced group was compared to Smith's (1988) list and Rew's(1988a) added characteristics. The rankings of Smith's (1988) list were compared to the rankings of those twenty three factors on the list compiled from the scores given by the experienced group. Comparisons were made between the inexperienced group list against the experienced group list.

#### Limitations of Design

Several limitations occur with this design. A major threat to internal validity in this study was an inability to randomly select and assign respondents to groups. If differences were found between the two experience groups, the explanation may be due to factors other than experience level.

Several threats to external validity were identified. The concept of intuition as a valid source of knowledge in nursing is not universally accepted. Some nurses who reject the phenomenological approach may have elected not to participate in the survey. There was a potential in this study for the Hawthorne effect. Asking nurses to analyze what is essentially an ephemeral experience may have changed how they remembered or classified it. Answers may also be skewed by nurses with strong feelings either for or against crisis anticipation.

There may have been some interaction of history and treatment effects. Nurses who have experienced crisis anticipation may have their answers strongly affected by what they thought about the experience, whether or not they found it valid and useful, and how it was received by their colleagues. Presenting the ideas and asking for analysis of what might be considered a private experience may well have affected the answers given. Nurses who disliked completing surveys may have elected not to participate.

Because I wrote and presented the instrument and study, my personal thoughts on intuition, crisis anticipation, and my feelings may have communicated certain expectations to my subjects. Newman (1994) and Lamendola & Newman (1994) asserts that it is impossible to prevent the researcher from affecting the research on some level and suggests that researchers discuss this potential threat in their study recommendations.

#### Sample and Setting

The target population of this study was the population of nurses employed in critical care units in the United States. A convenience sample was drawn from nurses currently employed at three teaching hospitals in the Midwest.

The criteria for selecting subjects were that the nurse was currently employed in a critical care unit. Based on demographic information, subjects were sorted into two experience level categories for the analysis of the data:

three years and less experience, and more than three years experience.

A return rate of 25% is expected when administering a survey questionnaire. The total population of critical care nurses at the three hospitals was 544. One hundred sixty six total surveys were received, a return rate of 30.5%.

### Instrument

There were two instruments used. The first instrument was a demographics questionnaire. This questionnaire collected data about age, sex, nursing education, number of hours worked weekly, years of experience as a nurse, years of experience in critical care, and type of critical care unit. The question eliciting the number of years of critical care experience was used to sort subjects into one of two groups: nurses with three years or less experience in critical care units, and nurses with more than three years experience in critical care units.

The second instrument, developed according to Fehring's Diagnostic Content Validation (1987) model, presented a list of characteristics of crisis anticipation. Fehring's (1987) model was designed to systematically develop, through accessing and validating the knowledge of expert nurses, lists of major and minor defining characteristics of nursing phenomena. The model requires expert nurses to develop and validate defining characteristics of the diagnosis or concept (Fehring, 1987). The instrument used in the diagnostic content model was a random order list of all

characteristics identified in previous definitions and found in the literature review. This random order list was tied to a five point Likert scale: 1 = not important to the concept, 5 = very important to the concept. Options were given for the raters to add characteristics to the given list. The raters were groups of nurses expert in the relevant concept.

The foundation of the second instrument was the twenty three characteristics of crisis anticipation identified by Smith (1988). Wording of item statements of the twenty three characteristics was clarified, and permission was obtained from S. Smith to modify and use her results as published through personal communication with S. Smith, February 2, 1996. Use of Fehring's DCV model in instrument development dictates that a thorough literature search be done for other possible characteristics (Sparks & Lien-Gieschen, 1994). Rew (1988a) identified similar characteristics, with seven that were not specifically addressed in Smith's (1988) list. These seven characteristics were added to the original twenty three. The list of thirty characteristics was presented in random order. Newman (1994) supports offering the study subjects an opportunity to initiate dialogue within the study, as well as options to allow the subject to describe the pattern as they perceive it. Two "other" options support both these goals within the limits of a survey based study. A five step Likert scale was used to rate each item from "not important to the concept" to "very important to the concept".

Reliability of this instrument is supported by the results of Smith (1988) and Rew (1988a) when used with critical care nurses. Smith (1988) used only experienced critical care nurses in her study. Rew (1988a) used a varied group of experienced nurses, mostly critical care nurses. Both researchers identified similar characteristics for the concept of crisis anticipation. Further reliability was established as part of the study. Based on the 30 items and 138 complete cases, the Cronbach's alpha was 0.9328 for this instrument.

Content validity was established in the Smith (1988) and Rew (1988a) studies. Using two slightly different qualitative approaches, each study came up with a very similar list of characteristics for the concept of crisis anticipation. Content validity of the tool for this study was ascertained by having three critical care nurse experts review the tool.

### Procedure

Participants were asked to read a cover letter and fill out two instruments (see Appendix A). The cover letter explained the purpose of this study, defined crisis anticipation, discussed the issue of confidentiality, discussed the time commitment, and explained eligibility for participation in the study (see Appendix A).

I communicated with each subject pool by visiting the critical care units at shift change or at a scheduled staff meeting. I explained the study and time commitment, and



encouraged participation. For each unit, I displayed an informational poster and left surveys with a large envelope to contain completed surveys. Individual envelopes were given with each survey to protect confidentiality. Completed surveys were picked up one week later.

#### Risks to subjects

Risks to subjects in this study were minimal. The subject might have become tired, bored, frustrated by the survey, or not willing to take the time. There was no peer or supervisory pressure to participate. The subject matter should not threaten or stress anyone, did not inquire into legally risky areas, or cause distress. Potential subjects were free to decline to participate. Informed consent was implied by the participants filling out and returning the survey.

#### Approval Process

Approval was obtained from Grand Valley State University. Permission was obtained from the institutional review board of each hospital. In addition, each critical care unit manager of the subject units gave verbal permission for this study.

## Chapter Four

### Data Analysis and Results

#### Characteristics of Subjects

Descriptive statistics were used to describe the characteristics of the nurse sample. One hundred sixty six surveys were returned from a potential pool of 544 critical care nurses. Eight percent of subjects were male, 92% of subjects were female. The age of subjects ranged from 24 to 57, with a mean age of 40. Forty two percent of subjects were prepared educationally at the ADN level, 28% at the diploma level, 27% at the BSN level, and 3% at the MSN or higher level. Seventy five percent of subjects worked 35 hours each week or more, 19% worked between 24-34 hours each week, and 6% worked less than 24 hours each week. Table 1 shows subjects by type of unit worked. Years worked in critical care units ranged from less than one year to 35 years, with a mean of 12.5 years. Only 10 subjects reported working three years or less in critical care.

Type of Unit	Percentage of Subjects
CCU/CSU	15.7
Medical ICU	9.6
Surgical ICU/NCU/TCU	14.5
PACU/Recovery	15.7
ER	27.1
Burns	0.6
PICU	4.2
NICU	11.4
missing	1.2

Table 1 Type of Critical Care Unit Worked by Subjects

## Data Analysis

Data from the crisis anticipation characteristics instrument was divided into two groups by experience level: three years or less experience in critical care, and more than three years experience in critical care. Using only the scores from the group with more than three years experience in critical care, Fehring's (1987) Diagnostic Content Validity model was used to calculate a weighted score for each of the thirty characteristics. A weight was assigned to each Likert scale score, and the sum total of weights was divided by the total number of responses in each of the two groups. The assigned weights were: 5=1, 4=0.75, 3=0.5, 2=0.25, and 1=0. A ranked list was formulated for the experienced group, see Table 2. Characteristics with compiled weighted scores closest to 1.0 are at the top of the list. Compiled weighted scores closest to 0.0 are at the bottom of the list.

Fehring (1987) also uses the scores to divide the list of characteristics into major and minor. Major characteristics have a score of at least 0.80. Minor characteristics have a score of at least 0.50 but less than 0.80. He suggests that these characteristics be called "tentative major" and "tentative minor" until repeated studies have confirmed the findings, see Table 2. Only scores from subjects with more than three years experience were considered. This was the expert group in this study,

and the Fehring technique relies on scoring by expert nurses only.

Variable label	Description	Nurses with >3 years experience		Major or Minor Character.
		Rank	Score	
CA1	n. notes change in pt responsiveness	1	0.89	major
CA25	n. know something wrong	2	0.87	major
CA12	n.sense pt @ point of deterioration	3	0.86	major
CA4	n. notes change in skin coloring	4	0.85	major
CA5	n. has sense pt. is struggling	5	0.85	major
CA11	n. sense something wrong	6	0.85	major
CA7	pt. feel impending doom	7	0.84	major
CA3	nurse has overall feeling	8	0.84	major
CA24	n. knows something going to happen	9	0.83	major
CA30	n. senses impending doom	10	0.80	major
CA29	n. feels necessity to observe pt	11	0.79	minor
CA14	pt. says call my wife	12	0.79	minor
CA23	n. feel something going to happen	13	0.77	minor
CA28	n. senses something changing	14	0.77	minor
CA18	n. notes changes in heart rate	15	0.76	minor
CA8	n.feels necessity to be with	16	0.74	minor
CA13	n. has sense of uncertainty	17	0.69	minor
CA16	n. feels concern	18	0.68	minor
CA10	n. feels differently about pt	19	0.63	minor
CA2	n. has sense pt. is withdrawing	20	0.63	minor
CA27	n. feels worry	21	0.63	minor
CA21	n. has loss of control	22	0.61	minor
CA20	n. has strong feelings	23	0.61	minor
CA15	n. notes change in muscle tone	24	0.58	minor
CA22	n. has senses of disrupted order	25	0.55	minor
CA6	n. notes environment change	26	0.52	minor
CA9	n. notes temperature changes	27	0.52	minor
CA26	n. needs close relationship with pt	28	0.52	minor
CA19	n. note change in skin texture	29	0.50	minor
CA17	n. note not whole live person	30	0.49	

Table 2 Ranked List of Characteristics of Crisis Anticipation by Nurses with More than Three Years Experience, and Categorization of Characteristics on Fehring's Scale of Major and Minor Defining Characteristics

## Analysis of Research Questions

Research Question Number One 1. Will the list of characteristics of crisis anticipation identified by Smith (1988) and Rew (1988a) be validated as appropriate by experienced critical care nurses?

The ranked list of characteristics generated from the compiled scores given by the experienced group were compared to the combined Smith (1988) and Rew (1988a) list; see Table 3. Starred characteristics are those characteristics taken from Rew (1988a). Rew did not rank or score the characteristics developed in her study. These characteristics were considered to be important to the concept of crisis anticipation by Rew. These characteristics were therefore placed near the top of the combined list of characteristics of crisis anticipation.

All characteristics but variable label CA17 received a Fehring score of at least 0.50 (see Table 2). These scores qualified them as tentative minor or major characteristics of crisis anticipation. This suggests that the basic list combined from the works of Smith and Rew is appropriate.

Research Question Number Two 2. Will the list of characteristics of crisis anticipation identified by Smith (1988) and Rew (1988a) be validated as complete by experienced critical care nurses?

Several study subjects contributed "other" characteristics. The list of "other" characteristics

Variable Label	Description	Smith and Rew characteristics		Nurses with >3 years experience	
		Rank	Score	Rank	Score
CA11	Nurse senses that something is wrong	1	1.00	6	.85
CA16	Nurse has feelings of concern	2	1.00	18	.68
CA28	Nurse has sense that something is changing	3	1.00	14	.77
CA3	Nurse has overall feeling about a patient	4	1.00	8	.84
CA7	Patient has sense of impending doom	*	*	7	.84
CA14	Patient : "Call my wife/husband" or "I'm going to die."	*	*	12	.79
CA20	Nurse has deep strong feelings	*	*	23	.61
CA23	Nurse has feeling that something is going to happen	*	*	13	.77
CA24	Nurse knows that something is going to happen	*	*	9	.83
CA25	Nurse knows something is wrong	*	*	2	.87
CA30	Nurse has sense of impending doom	*	*	10	.80
CA22	Nurse has sense of disrupted order	5	1.17	25	.55
CA29	Nurse feels necessity to observe patient	6	1.17	11	.79
CA8	Nurse feels necessity to be with patient	7	1.17	16	.74
CA13	Nurse has sense of uncertainty	8	1.33	17	.69
CA27	Nurse has feelings of worry	9	1.50	21	.63
CA12	Nurse senses patient at point of deterioration	10	1.50	3	.86
CA10	Nurse feels differently about patient	11	1.67	19	.63
CA1	Nurse senses changes in patient responsiveness	12	1.67	1	.89
CA5	Nurse has sense that patient is struggling	13	1.83	5	.85
CA21	Nurse has sense of loss of control of or about pt.	14	1.83	22	.61
CA4	Nurse sees changes in skin coloring in patient	15	1.83	4	.85
CA19	Nurse senses changes in skin texture	16	2.00	29	.50
CA26	Nurse feels close nurse-patient relationship needed	17	2.00	28	.52
CA18	Nurse senses changes in heart rate/respirations	18	2.17	15	.76
CA15	Nurse senses changes in muscle tone	19	2.17	24	.58
CA9	Nurse senses changes in temperature	20	2.33	27	.52
CA2	Nurse has sense that patient is withdrawing	21	2.50	20	.63
CA6	Nurse has sense of environmental change w/ pt	22	2.50	26	.52
CA17	Nurse has loss of sense of pt as whole living person	23	2.83	30	.49

Table 3 Comparison of Characteristics Rank between the List Combining Smith (1988) and Rew (1988a) and the List Developed from Nurses with >3 Years Critical Care Experience. Smith's Scoring: 1.00=Most Essential to Concept -to- 3.00=Not a Part of the Phenomenon (Smith, 1988, p. 14). \* = Rew's characteristics, which had no ranking in her study.

**Additional Characteristics Contributed by Subjects**

1. Patient has increased restlessness and a shorter attention span.
2. Family identifies differences in patient responsiveness.
3. Full moon present.
4. Nurse feels fluttering in his/her chest.
5. Nurse is unable to convey feelings to the doctor.
6. Patient states "I don't feel right--something's wrong."
7. Patient has sudden restlessness.
8. Nurse feels necessity to notify the doctor.
9. Nurse trusts own judgment and intuition.
10. Patient has need to get "all his ducks in a row".
11. Nurse clears area around the patient after looking at him.
12. Nurse feels compelled to seek peer assessment of patient.
13. Nurse seeks consults from others as necessary.

Table 4 Additions to the List of the Characteristics of Crisis Anticipation from this Study--Results from the "Other" Options

contributed by subjects in this study were compared to the combined Smith (1988) and Rew (1988a) list for additions; see Table 4. Each listed characteristic received one mention in the study. Possible additions from this list include increased restlessness and changes in the patient's level of responsiveness. The nurse's need to consult with others over his/her concern also received mention by two subjects, as did the patient's own awareness of the impending pattern change in his life.

Research Question Number Three     3. When a ranked list of characteristics is developed from the compiled scores of experienced critical care nurses in this study, how similar is that ranked list of characteristics to the ranked list developed by Smith (1988)?

The ranked list of characteristics generated by the compiled scores from the experienced group was culled to the same twenty three characteristics listed by Smith (1988). The two lists were compared for similarities and differences

in order and ranking; see Table 5. Similarities are found mostly in groupings of characteristics. Nine of the first twelve characteristics are the same on each list, but in different order. Differences in the characteristics and the ranking of the first twelve, and throughout the list, show a slightly different focus by the critical care nurses. The nurses in Smith's study concentrated on, and ranked highest, their feelings about the patient and his state. Their pattern is strongly composed of emotional factors such as concern, change, wrongness, sense of disrupted order, worry, and uncertainty.

The nurses in this study emphasized more concrete and observable characteristics, while including some of the same feelings. Their pattern focused more on the patient, with nurse feelings of uncertainty, concern, and an awareness of occurring change. Ranked lowest on each scale was the loss of the sense of the patient as a whole living person. Newman's framework would support this finding, the living pattern of the patient is changing but still present and interactive with the pattern of the nurse.

Five of the final seven characteristics are also the same, but again in different order. Neither group ranked highly the characteristic of the necessity of a close nurse-patient relationship. The nurses in Smith's study ranked all physiological observations in the lower half of their list. Nurses in this study spread those factors out. Changes in skin coloring and heart rate/respirations was



Ranked Results from Smith's (1988) Study		Ranked Results from This Study	
Rank	Characteristic	Rank	Characteristic
1	Nurse senses that something is wrong	1	Nurse senses changes in patient responsiveness
2	Nurse has feelings of concern	2	Nurse senses patient at point of deterioration
3	Nurse has sense that something is changing	3	nurse sees changes in skin coloring in patient
4	Nurse has overall feelings about patient	4	Nurse has sense that patient is struggling
5	Nurse has sense of disrupted order	5	Nurse senses that something is wrong
6	Nurse feels necessity to observe patient	6	Nurse has overall feeling about a patient
7	Nurse feels necessity to be with patient	7	Nurse feels necessity to observe patient
8	Nurse has sense of uncertainty	8	Nurse has sense that something is changing
9	Nurse has feelings of worry	9	Nurses senses changes in heart rate/resp.
10	Nurse senses patient at point of deterioration	10	Nurse feels necessity to be with patient
11	Nurse feels differently about patient	11	Nurse has feelings of concern
12	Nurse senses changes in patient responsiveness	12	Nurse has sense of uncertainty
13	Nurse has sense that patient is struggling	13	Nurse has sense that patient is withdrawing
14	Nurse has sense of loss of control of/about pt.	14	Nurse has feelings of worry
15	Nurse sees changes in skin coloring in patient	15	Nurse feels differently about patient
16	Nurse senses changes in skin texture	16	Nurse has sense of loss of control of/about pt
17	Nurse feels close nurse-pt relationship necess.	17	Nurse senses changes in muscle tone
18	Nurse senses changes in heart rate/resp.	18	Nurse has sense of disrupted order
19	Nurse senses changes in muscle tone	19	Nurse has sense of environmental change w/ pt
20	Nurse senses changes in temperature	20	Nurse sense changes in temperature
21	Nurse has sense that patient is withdrawing	21	Nurse feels close nurse-pt relationship necess
22	Nurse has sense of environmental change w/ pt	22	Nurse senses changes in skin texture
23	Nurse has loss of sense of pt as whole living person	23	Nurse has loss of sense of pt as whole living person

Table 5 Comparison of Smith's (1988) Results with this Study's Results, in Ranked Order from Most to Least Important to the Concept

felt to be important, with other physiological characteristics less so.

Research Question Number Four 4. Will the order of the developed ranked list be affected by the nurses' experience level?

The number of subjects submitting surveys with three years or less experience was ten. This group was too small to compare to the experienced group. The literature on characteristics of expert nurses offers a range of three to five years for expertise to develop in the nurse. Therefore, the subjects in this study were divided into two new groups. One was an inexperienced group of five years or less experience in critical care, and the other group one of more than five years experience in critical care. The experienced group of more than five years in critical care scored and ranked the characteristics very similarly to scores and ranks given by the experienced group of more than three years in critical care; see Table 6. The inexperienced group now numbered 22. To allow a more equal comparison, a new experienced group was made by a random selection of 25 subjects from the first 100 subjects of the experienced group. This group was very similar in composition to the full group of nurses with more than five years experience; see Table 7. The full ranked list developed from the compiled scores given by the new experienced group were compared to the full ranked list developed from the compiled scores given by the 22 subjects

Variable Label	Description	Nurses with >5 years experience		Nurses with >3 years experience	
		Rank	Score	Rank	Score
CA1	changes responsiveness	1	.89	1	.89
CA2	pt. is withdrawing	19	.64	20	.63
CA3	nurse overall feeling	7	.84	8	.84
CA4	change in skin coloring	4	.85	4	.85
CA5	pt. is struggling	5	.85	5	.85
CA6	environmental change	26	.53	26	.52
CA7	pt. feel impending doom	8	.84	7	.84
CA8	n. necessity to be with	16	.75	16	.74
CA9	temperature changes	27	.53	27	.52
CA10	n. feels differently	21	.63	19	.63
CA11	n. sense something wrong	6	.85	6	.85
CA12	point of deterioration	3	.87	3	.86
CA13	n. sense uncertainty	18	.69	17	.69
CA14	pt. says call my wife	12	.79	12	.79
CA15	change in muscle tone	24	.59	24	.58
CA16	n. feels concern	17	.69	18	.68
CA17	not whole living person	30	.50	30	.49
CA18	changes in heart rate	15	.76	15	.76
CA19	changes in skin texture	29	.50	29	.50
CA20	n. has strong feelings	23	.61	23	.61
CA21	n. has loss of control	22	.62	22	.61
CA22	n. disrupted order	25	.55	25	.55
CA23	n. feel going to happen	13	.77	13	.77
CA24	n. know going to happen	9	.83	9	.83
CA25	n. know something wrong	2	.88	2	.87
CA26	close relationship	28	.52	28	.52
CA27	n. feels worry	20	.64	21	.63
CA28	n. senses changing	14	.77	14	.77
CA29	necessity to observe pt.	11	.80	11	.79
CA30	n. sense impending doom	10	.80	10	.80

Table 6 Comparison of the Ranks and Fehring Scores of the Characteristics of Crisis Anticipation by Two Groups: Nurses with > Five Years Critical Care Experience and Nurses with > 3 Years Critical Care Experience

Nurses with 5 years critical care experience or less		Random selection group of nurses with >5 years crit care experience		Full group of nurses with >5 years crit care experience	
n=22		n=25		n=143	
Hospital	percent	Hospital	percent	Hospital	percent
A	27.3	A	40.0	A	40.6
B	13.6	B	16.0	B	20.3
C	59.1	C	44.0	C	39.2
Age	n	Age	n	Age	n
Mean	32.2	Mean	43.9	Mean	41.4
Minimum	24	Minimum	37	Minimum	28
Maximum	45	Maximum	57	Maximum	57
Sex	percent	Sex	percent	Sex	percent
Male	9.1	Male	4.0	Male	7.7
Female	90.9	Female	92.0	Female	92.3
Education	percent	Education	percent	Education	percent
ADN	36.4	ADN	40.0	ADN	42.7
diploma	31.8	diploma	40.0	diploma	27.3
BSN	31.8	BSN	16	BSN	25.9
Years Worked in Crit Care	n	Years Worked in Crit Care	n	Years Worked in Crit Care	n
Mean	3.3	Mean	17.7	Mean	13.9
Minimum	0.0	Minimum	10.0	Minimum	6.0
Maximum	5.0	Maximum	29.0	Maximum	35.0
Hours Worked in Week	percent	Hours Worked in Week	percent	Hours Worked in Week	percent
less than 24	4.5	less than 24	4.0	less than 24	6.3
24-34	13.6	24-34	20.0	24-34	19.6
35-40	81.8	35-40	72.0	35-40	74.1
Type Unit	percent	Type Unit	percent	Type Unit	percent
CCU-CSU	18.2	CCU-CSU	28.0	CCU-CSU	15.4
Medical ICU	9.1	Medical ICU	8.0	Medical ICU	9.8
NCU-SCU-TCU	13.6	NCU-SCU-TCU	8.0	NCU-SCU-TCU	14.7
PACU-RR	13.6	PACU-RR	8.0	PACU-RR	16.1
ER	36.4	ER	20.0	ER	25.9
PICU	4.5	PICU	8.0	PICU	4.2
NICU	0.0	NICU	16.0	NICU	13.3

Table 7 Demographics Comparison of the Three Groups Formulated for Research Question 4.

in the new inexperienced group. The Mann-Whitney U test was used to test for significant differences in rank.

Significance was set at  $p < 0.05$ ; see Table 8.

Only one characteristic was found to be scored significantly differently: nurse has an overall feeling about a patient. This factor was ranked 7, with a score of 0.84 by the experienced group. This factor was ranked 14, with a score of 0.83, by the inexperienced group. Although the ranks of this factor is significantly different, the score is such that both groups would consider this factor a tentative major characteristic of crisis anticipation. The large number of similarities between the different groups used in the study may also have affected the scoring, leading to few scoring differences.

The data collected fell into relatively similar groups that differed only by educational level. Three groups were formed from the total subject population based on educational level: ADN, diploma, and BSN. The full ranked list of each group was compared using the Kruskal-Wallis 1 Way Anova to test for significant differences in rank; see Table 9. Significance was set at  $p < 0.05$ .

Only one characteristic of crisis anticipation was ranked significantly differently among the three groups: CA1: nurse senses changes in patient's responsiveness. A Mann-Whitney U-Wilcoxon Rank Sum W Test was done to analyze

<b>Variable Label and Description</b>	<b>U</b>	<b>W</b>	<b>Z</b>	<b>2 tailed P</b>
CA1 Nurse senses changes in pt responsiveness.	250.5	552.5	-.6184	.5363
CA2 Nurse has sense that patient is withdrawing	234.0	487.0	-.9183	.3585
CA3 Nurse has overall feeling about a patient	172.5	425.5	-2.4539	.0141
CA4 Nurse sees changes in skin coloring in patient	231.5	484.5	-1.0879	.2766
CA5 Nurse has sense that patient is struggling	274.0	527.0	-.0251	.9799
CA6 Nurse has sense of environmental change w/ patient	229.5	482.5	-.8035	.4217
CA7 Patient has sense of impending doom	270.5	532.5	-.1091	.9132
CA8 Nurse feels a necessity to be with patient	233.5	464.5	-.6919	.4890
CA9 Nurse senses change in temperature	202.5	455.5	-1.4132	.1576
CA10 Nurse feels differently about patient	234.5	465.5	-.6446	.5192
CA11 Nurse senses that something is wrong	266.0	519.0	-.2225	.8240
CA12 Nurse senses patient at point of deterioration	209.0	462.0	-1.5643	.1178
CA13 Nurse has sense of uncertainty	203.0	456.0	-1.6278	.1036
CA14 Patient says "Call my wife (husband)" or "I'm going to die."	236.5	489.5	-.8815	.3780
CA15 Nurse senses change in muscle tone	245.0	498.0	-.6624	.5077
CA16 Nurse has feelings of concern	193.0	446.0	-1.8729	.0611
CA17 Nurse has loss of sense of patient as whole living person	275.0	528.0	.0000	1.0000
CA18 Nurse senses changes in heart rate/respirations	259.5	543.5	-.3544	.7230
CA19 Nurse senses changes in skin texture	271.0	532.0	-.0877	.9301
CA20 Nurse has deep strong feelings	241.0	494.0	-.5260	.5989
CA21 Nurse has sense of loss of control of or about patient	242.5	495.5	-.7153	.4744
CA22 Nurse has sense of disrupted order	258.0	545.0	-.3720	.7099
CA23 Nurse has feeling that something is going to happen	246.0	557.0	-.6546	.5127
CA24 Nurse know that something is going to happen	244.5	558.5	-.7212	.4708

CA25 Nurse knows something is wrong	247.0	500.0	-.7135	.4755
CA26 Nurse feels close nurse-patient relationship needed	259.0	544.0	-.3522	.7247
CA27 Nurse has feelings of worry	231.0	484.0	-.9817	.3262
CA28 Nurse has sense that something is changing	268.5	534.5	-.1518	.8794
CA29 Nurse feels necessity to observe patient	252.5	505.5	-.5262	.5988
CA30 Nurse has sense of impending doom	255.0	548.0	-.4716	.6372

Table 8 Results of Comparison of Two Groups: Nurses with 5 Years or Less Critical Care Experience and 25 Randomly Selected Nurses from the Group of Nurses with More Than 5 Years Critical Care Experience, Using the Mann-Whitney U - Wilcoxon Rank Sum W Test.  $p < 0.05$

Variable Label and Description	Chi-Square	D.F.	Significance
CA1 Nurse senses changes in pt responsiveness.	8.3633	2	.0153
CA2 Nurse has sense that patient is withdrawing	5.5684	2	.0618
CA3 Nurse has overall feeling about a patient	2.8267	2	.2433
CA4 Nurse sees changes in skin coloring in patient	.6222	2	.7326
CA5 Nurse has sense that patient is struggling	3.9744	2	.1371
CA6 Nurse has sense of environmental change w/ patient	4.5747	2	.1015
CA7 Patient has sense of impending doom	4.8509	2	.0884
CA8 Nurse feels a necessity to be with patient	1.4978	2	.4729
CA9 Nurse senses change in temperature	2.7426	2	.2538
CA10 Nurse feels differently about patient	1.7709	2	.4125
CA11 Nurse senses that something is wrong	.3173	2	.8533
CA12 Nurse senses patient at point of deterioration	1.3651	2	.5053
CA13 Nurse has sense of uncertainty	1.2506	2	.5351
CA14 Patient says "Call my wife (husband)" or "I'm going to die."	.4815	2	.7860
CA15 Nurse senses change in muscle tone	.7524	2	.6865
CA16 Nurse has feelings of concern	1.7937	2	.4078
CA17 Nurse has loss of sense of patient as whole living person	3.4009	2	.1826
CA18 Nurse senses changes in heart rate/respirations	5.1537	2	.0760
CA19 Nurse senses changes in skin texture	3.0460	2	.2181
CA20 Nurse has deep strong feelings	1.8688	2	.3928
CA21 Nurse has sense of loss of control of or about patient	.6244	2	.7318
CA22 Nurse has sense of disrupted order	.9431	2	.6240
CA23 Nurse has feeling that something is going to happen	.1479	2	.9287
CA24 Nurse know that something is going to happen	.8984	2	.6381



Variable Label and Description	Chi-Square	D.F.	Significance
CA25 Nurse knows something is wrong	1.6479	2	.4387
CA26 Nurse feels close nurse-patient relationship needed	.2510	2	.8820
CA27 Nurse has feelings of worry	.2857	2	.8669
CA28 Nurse has sense that something is changing	1.7403	2	.4189
CA29 Nurse feels necessity to observe patient	.6560	2	.7204
CA30 Nurse has sense of impending doom	.4845	2	.7849

Table 9 Comparison of Total Population Divided by Educational Level: ADN n=69, diploma n=46, and BSN n=44; Using the Kruskal-Wallis 1-Way Anova.  $p < 0.05$

Variable label and description	Compared groups	U	W	Z	2-tailed P
CA1 responsiveness	ADN and BSN	1131.0	2121.0	-2.6733	0.0075
	Dip. and BSN	771.0	1761.0	-2.2347	0.0254
	ADN and Dip.	1542.0	2623.0	-0.3277	0.7432
CA2 withdrawing	ADN and BSN	1141.0	2131.0	-2.0030	0.0452
	Dip. and BSN	930.0	1876.5	-0.1383	0.8900
	ADN and Dip.	1121.5	2066.5	-1.9396	0.0524
CA18 heart rate	ADN and BSN	1316.5	2306.5	-1.2547	0.2096
	Dip. and BSN	748.0	1738.0	-2.2730	0.0230
	ADN and Dip.	1386.5	2868.5	-1.2327	0.2177

Table 10 Mann-Whitney U Analysis of Significant and Near-significant Factors from the Kruskal-Wallis Analysis

the significant differences; see Table 10. There was a significant difference between how the BSN group ranked the importance of changes in patient responsiveness as compared to the rank given by the ADN and diploma groups. There was no significant difference between the ranks given by the ADN and diploma groups.

Two other characteristics of crisis anticipation scored very close to significance on the Kruskal-Wallis analysis, and were also further analyzed by the Mann-Whitney U-Wilcoxon Rank Sum W Test. The ADN group ranked the characteristic CA2: nurse senses that patient is withdrawing significantly different from the rank given by the BSN and diploma groups. There was no significant difference between the BSN and diploma groups on this characteristic. On the characteristic CA18: nurse senses changes in heart rate and respirations, there was a significant difference in the rank given by the BSN and diploma groups, but not between the other two pairings. There were no other significant differences in the ranks given by the three educational groups. See table 11 for a listing of the ranks and scores of the characteristics as developed from the three educational group division.

Variable Label	Description	ADN n=69		diploma n=44		BSN n=44	
		Rank	Score	Rank	Score	Rank	Score
CA1	n. senses changes in pt.responsiveness	1	0.91	1	0.91	3	0.85
CA2	n. senses patient is withdrawing	18	0.69	24	0.59	21	0.60
CA3	nurse has overall feeling about pt	8	0.84	5	0.85	11	0.79
CA4	n. sees changes in skin coloring	6	0.87	4	0.86	2	0.85
CA5	n. has sense patient is struggling	2	0.90	8	0.83	8	0.84
CA6	n. senses environmental change	25	0.59	28	0.52	27	0.48
CA7	patient has sense of impending doom	3	0.88	10	0.82	10	0.81
CA8	n. feels necessity to be with patient	14	0.76	16	0.72	15	0.73
CA9	nurse senses change in pt temperature	27	0.55	25	0.54	29	0.46
CA10	n. feels differently about patient	21	0.63	20	0.64	22	0.58
CA11	nurse senses something is wrong	7	0.85	6	0.85	7	0.84
CA12	n. senses pt. at point/deterioration	5	0.87	3	0.87	5	0.84
CA13	nurse has sense of uncertainty	17	0.70	18	0.68	18	0.65
CA14	patient says "call my wife"	10	0.80	14	0.78	12	0.78
CA15	n. senses change in pt muscle tone	23	0.60	22	0.60	24	0.56
CA16	nurse has feelings of concern	19	0.68	17	0.72	17	0.66
CA17	n. has loss of sense of pt/whole living	28	0.55	26	0.53	28	0.46
CA18	n. senses changes in heart rate/respir.	13	0.77	9	0.82	16	0.72
CA19	n. senses changes in skin texture	29	0.55	30	0.45	30	0.45
CA20	nurse has deep strong feelings	24	0.60	19	0.66	23	0.57
CA21	nurse has sense of loss of control	20	0.63	23	0.60	20	0.61
CA22	nurse has sense of disrupted order	26	0.57	29	0.52	25	0.53
CA23	n. feels something is going to happen	15	0.76	15	0.78	12	0.77
CA24	n. knows something is going to happen	9	0.82	7	0.84	6	0.84

CA25	nurse knows something is wrong	4	0.88	2	0.89	1	.87
CA26	n. feels close n/pt relationship needed	30	0.54	27	0.52	26	0.52
CA27	nurse has feelings of worry	22	0.61	21	0.63	19	0.65
CA28	n. senses something is changing	16	0.76	12	0.80	14	0.76
CA29	n. feels necessity to be with pt	12	0.78	11	0.80	9	0.81
CA30	nurse has sense of impending doom	11	0.79	13	0.79	4	0.84

Table 11 Characteristic List Showing Ranking Comparisons of the Three Educational Groups

## Chapter Five

### Discussion and Implications

The list of characteristics of crisis anticipation as identified by Smith and Rew were validated as appropriate. New but related characteristics are suggested as appropriate additions for the concept of crisis anticipation. Using Fehring's technique, this study should be repeated with another group of critical care nurses, adding in the new characteristics suggested by participants in this study.

The ranked list developed by the experienced nurses was similar to Smith's (1988) list; except that this group emphasized a more observable symptoms grounding than did Smith's participants. The order of the developed ranked list in this study was not affected by the experience level of the nurse, nor was it really affected by the educational level.

#### Results as Related to Existing Literature

This study used a large convenience sample, and was an attempt to refine the concept of crisis anticipation. Rew, Agor, Emery, and Harper (1991) said that nurses used both subjective and objective data in formulating and supporting intuitive leaps. This study supported that conclusion.

These nurses ranked both subjective and objective cues as important to the concept of crisis anticipation.

Benner, Tanner, and Chesla (1992) found that their expert nurses operated on a different level from less experienced nurses, with a wider focus and a broader grasp of the situation. The nurses in this study, both experienced and inexperienced, used that broad outlook. They included in their sources of information the objective signs of the patient, his/hers and their families' feelings, the nurse's own feelings, input from colleagues, and environmental cues. Noting the large similarities between the different groups used in the study, the less experienced group may have been experienced enough to take on more of the characteristics of expert nurse functioning than expected.

Critical care nurses participating in this study were comfortable thinking about intuition. They recognized the concept of crisis anticipation in ways similar to other nurses in the literature. They selected both subjective and objective characteristics as major characteristics. A few nurses added the characteristic of collaboration with peers. This may also reflect nurses' high level of comfort with and expectation of collaboration with colleagues. Nurses gathering information in these ways are gathering information in ways described in the literature as congruent with the clinical use of intuition in assessment of patients and situations.

### Results as Related to the Conceptual Framework

Results supported and expanded the pattern previously identified by Smith (1988) and Rew (1988a). Use of and comfort with this pattern depends on ease of pattern use. The subject population for this study was strongly weighted on the side of experience. Newman's model would suggest that nurses uncomfortable with the recognition and use of pattern in themselves and in patients would also not be comfortable with this study, selecting themselves out of the subject population. This study relied heavily on the nurse's recognition of the pattern of crisis anticipation, and a level of comfort that allows manipulation of the pattern. Inexperienced nurses, by definition those new to the use of pattern, would not feel comfortable trying to analyze the list of characteristics, and may have decided against participation.

The nurses that did participate felt comfortable enough with this pattern as a valid phenomenon to rank items in similar fashion to previous studies. This supports the concept as a pattern independent of particular patient patterns, and of relevance to nursing. These nurses were able to recognize and order characteristics into a pattern that other groups had also recognized, over a wide range of patient populations and educational experience. This supports the validity of crisis anticipation as a pattern recognized and used by experienced critical care nurses.

### Limitations and Implications for Further Research

As recommended by Fehring's (1987) process, this study was a valid second stage investigation of the concept of crisis anticipation. Further studies should be done, using the characteristics identified as major and minor in this study, and those characteristics added by participating nurses in this study. Expert critical care nurses would continue to be the population from which samples are drawn.

Using a convenience sample that allowed for self selection, very few inexperienced nurses as defined by this study participated. One of the hospitals used had recently reorganized, losing many of its inexperienced nurses. The other two hospitals still had a wide mix of experience in their critical care units. Differences between hospital conditions may have influenced self selection for the study, and possibly other factors. Using a large sample in this study gave valuable information and support to the initial grounded theory studies. Replication would be most valuable, however, with a more controlled sample distribution over the experience spectrum, keeping a large sample size.

The survey return rate was a little better than average. Various techniques were used to encourage participation at each presentation, but not all managers were able to schedule time for a presentation by the researcher. The informational poster was helpful, but all techniques were still vulnerable to different conditions on



each unit. The posters were often moved around as demands for informational space changed, possibly making some posters less available after the first couple of days. A more tightly controlled study would need a different approach to potential subjects.

The limited number of male participants is both a limitation of this study and a representation of the proportion of males in nursing. In another study, it would be valuable to see if there are differences in the ways males and females approach intuition and the concept of crisis anticipation. There were not enough males participating in this study to allow any examination of differences.

#### Significance of Results to Nursing Practice

This study supports the existence of intuition as a phenomenon recognized and used by nurses. The concept of crisis anticipation is a clinical tool familiar to the critical care nurses in this study. Critical care nurses can describe elements of this pattern in similar terms from study to study.

Fehring's (1987) process is a useful way to identify and clarify elements of patterns useful to nursing. Techniques such as Fehring's process allow description of concepts formerly thought to be undefinable, and therefore of little use to nursing. These techniques help validate for nurses the importance of both a scientific and phenomenological approach to nursing, providing a bridge of study from one approach to the other.

Margaret Newman has proposed a number of research approaches to her theory and to nurse activities in general. Other techniques are also valuable in approaching the study of patterns of nursing care and patient presentation. Her theory becomes practical and applicable for the experienced nurse who comfortably recognizes and works with patterns, his or hers and the patient's both.

As concepts or patterns of phenomena such as intuition become more clear and more widely accepted, nurses can teach these patterns to other nurses. Less experienced nurses can learn, in this case, to recognize an impending crisis more easily, allowing earlier intervention. Recognition and support of intuition as a valuable clinical tool grows, used in conjunction linear analysis. Administrators can more easily describe differences in experience level, justifying the money and resources to develop and keep those expert nurses. Continued research will support both the scientific and phenomenological approaches to nursing science, and give more tools to teach each nurse approaches to broadening knowledge, skills, and practice.

## Appendix A

## Appendix A

Dear Participant:

This study is investigating the concept of crisis anticipation. Crisis anticipation is best described as the nurse's awareness that a particular patient is about to deteriorate rapidly before there are objective signs and symptoms. This survey is designed to see if critical care nurses agree or disagree with a list of characteristics identified as belonging to the concept of crisis anticipation, and if the experience level of the nurse changes the way she defines the concept.

This study is being conducted in partial fulfillment of the requirements for my program of study toward a Masters of Science in Nursing through Grand Valley State University. The finished study will be offered for presentation and submitted for publication.

This study is open to all critical care nurses in your institution. Please do not identify yourself in any way on this letter, or the following two survey pages. Responses are anonymous. Your participation consists of filling out the following two page survey. Participation is completely voluntary. Once the data is collated, the individual surveys will be shredded. By completing this survey, consent is implied. You may seal your survey in the envelope provided before placing it in the gathering envelope.

The only risk to participation is the time it takes to complete this study. The benefits of participation will be your contribution to the body of knowledge of nursing.

Thank you for your participation. Results should be available three months after you take this survey. If you wish a copy of the results, or would like further information, please write to me at the address listed below.

Thank you very much!

Janet A. Tucker  
2024 Lauralwood  
Portage, MI  
49002-5750

### Demographic Information

1. Age \_\_\_\_\_
2. Sex \_\_\_\_\_
3. Education level achieved in nursing: ADN\_\_\_\_ Diploma\_\_\_\_ BSN\_\_\_\_ MSN\_\_\_\_
4. Years worked as a nurse \_\_\_\_\_
5. Total years worked in critical care: \_\_\_\_\_
6. Number of hours worked in typical week: less than 24\_\_\_\_ 24-34\_\_\_\_ 35-40\_\_\_\_
7. Type of critical care unit currently in: CSU/CCU\_\_\_\_ Medical ICU\_\_\_\_  
Neuro ICU/Trauma ICU/Surgical ICU\_\_\_\_ PACU/Recovery Room\_\_\_\_  
ER\_\_\_\_ Burns\_\_\_\_ Pediatric ICU\_\_\_\_ Neonatal ICU\_\_\_\_

### Possible Characteristics of Crisis Anticipation

Please circle the number that best expresses your opinion of the importance of each characteristic to the concept of crisis anticipation. Two spaces have been provided to allow listing of additional characteristics if you feel characteristics important to the concept of crisis anticipation have been omitted.

1 = not at all important to the concept    2 = very little importance to the concept  
 3 = somewhat important to the concept    4 = considerably important to the concept  
 5 = very important to the concept

1. Nurse senses changes in patient responsiveness	1	2	3	4	5
2. Nurse has sense that patient is withdrawing	1	2	3	4	5
3. Nurse has overall feeling about a patient	1	2	3	4	5
4. Nurse sees changes in skin coloring in patient	1	2	3	4	5
5. Nurse has sense that patient is struggling	1	2	3	4	5
6. Nurse has sense of environmental change involving patient	1	2	3	4	5
7. Patient has sense of impending doom	1	2	3	4	5
8. Nurse feels a necessity to be with patient	1	2	3	4	5
9. Nurse senses changes in temperature	1	2	3	4	5
10. Nurse feels differently about patient	1	2	3	4	5
11. Nurse senses that something is wrong	1	2	3	4	5
12. Nurse senses patient at point of deterioration	1	2	3	4	5
13. Nurse has sense of uncertainty	1	2	3	4	5
14. Patient says "Call my wife/husband" or "I'm going to die"	1	2	3	4	5
15. Nurse senses changes in muscle tone	1	2	3	4	5
16. Nurse has feelings of concern	1	2	3	4	5
17. Nurse has loss of sense of patient as whole living person	1	2	3	4	5
18. Nurse senses changes in heart rate/respirations	1	2	3	4	5
19. Nurse senses changes in skin texture	1	2	3	4	5
20. Nurse has deep strong feelings	1	2	3	4	5
21. Nurse has sense of loss of control of or about patient	1	2	3	4	5
22. Nurse has sense of disrupted order	1	2	3	4	5
23. Nurse has feeling that something is going to happen	1	2	3	4	5
24. Nurse knows that something is going to happen	1	2	3	4	5
25. Nurse knows something is wrong	1	2	3	4	5
26. Nurse feels close nurse-patient relationship needed	1	2	3	4	5
27. Nurse has feelings of worry	1	2	3	4	5
28. Nurse has sense that something is changing	1	2	3	4	5
29. Nurse feels necessity to observe patient	1	2	3	4	5
30. Nurse has sense of impending doom	1	2	3	4	5
31. Other:	1	2	3	4	5
32. Other:	1	2	3	4	5

## Appendix B



Appendix B

1 CAMPUS DRIVE • ALLENDALE MICHIGAN 49401-9403 • 616/895-6611

March 12, 1996

Janet Tucker  
2024 Lauralwood  
Portage, MI 49002-5750

Dear Janet:

Your proposed project entitled "*Concept of Crisis Anticipation*" has been reviewed. It has been approved as a study which is exempt from the regulations by section 46.101 of the Federal Register 46(16):8336, January 26, 1981.

Sincerely,

A black rectangular box redacting the signature of Paul Huizenga.

Paul Huizenga, Chair  
Human Research Review Committee





**METROPOLITAN  
HOSPITAL**

P.O. BOX 156  
1919 BOSTON AVE  
GRAND RAPIDS, MICHIGAN 49501-0156  
(616) 247-1000

April 23, 1996

Janet A. Tucker  
2024 Lauralwood  
Portage, MI 49002-5750

Dear Ms. Tucker,

I would like to take this opportunity to thank you for your interest in including Metropolitan Hospital in the development of your master's thesis research project. Education of future nurses is a priority at Metropolitan. With this, I grant approval for you to carry out your research project as outlined in your letter of intent and thesis proposal.

Sincerely,

Elaine Griffiths, RN, CNA, MM  
Vice President, Inpatient Services  
Nurse Executive

**BMH1049 Crisis Anticipation (JATucker)**

At the May 7, 1996 Meeting of the Expedited Review Committee Meeting BMH1049 was approved as EXEMPT from review.

[REDACTED]

Robert H. Hume, M.D., Chairman  
Bronson Methodist Hospital  
Human Use Committee  
252 East Lovell Street  
Kalamazoo, MI 49007  
(616) 341-7988

9 May 96

Date

cc: JATucker

Borgess Medical Center  
1521 Gull Road  
Kalamazoo, Michigan 49001-1640  
Telephone 616-226-7000

*Member of  
Sisters of St. Joseph  
Health System, Inc.  
Ann Arbor, Michigan*

**May 21, 1996**

**Jan Tucker  
2024 Lauralwood  
Portage, MI 49002-5750**

**BORGESS**  
Medical Center

**Dear Jan:**

**Congratuiations! The Nursing Research Committee of Borgess Medical Center has approved your request to conduct the study "Concept of Crisis Anticipation". The committee found it very well written. As we discussed over the phone, be sure to define crisis anticipation when presenting the study to staff. The other question concerned the tool you are using, but you clarified that by stating that you had developed the tool based on the information obtained from the Smith and Rew study.**

**The following managers/directors can give you the assistance that you need in conducting your survey. Please call them at your convenience. I will contact them to let them know about the study.**

**Surgical Trauma ICU/ Neuro ICU Director: Phyllis LaForge 226-8018  
Cardiac Surgical Unit: Director Darlene Vanderhill 226-8382  
Cardiac Care Unit: Director Darlene Vanderhill  
Post Anesthesia Recovery Unit: Director Sharon Hickman 226-7278 *BRAD GORDO*  
Emergency & Trauma Center Director: Pat Mayne 226-7355**

**Upon completion of the study please send me a copy of your abstract so I can arrange a presentation to our Quality Improvement Council.**

**If you have any questions, please call me at 226-6798. I look forward to working with you.**

**Sincerely,**



**Connie Pardee RN, MSN, CEN  
Chair Nursing Research Committee**

## List of References

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