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An Examination of Patient and Nurse Perceptions of Stressors During the Electrophysiology Study

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AN EXAMINATION OF PATIENT AND NURSE PERCEPTIONS OF STRESSORS
DURING THE ELECTROPHYSIOLOGY STUDY

By

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ABSTRACT

AN EXAMINATION OF PATIENT AND NURSE PERCEPTIONS OF STRESSORS DURING THE ELECTROPHYSIOLOGY STUDY

by

Donna Thurn

The purpose of this study was to (a) identify the perceived stressors of patients undergoing an electrophysiology study (EPS) and (b) compare them to the stressors identified by nurses caring for those patients.

A descriptive two group comparative design with a non-probability convenience sample was used. Data were obtained using self report questionnaires. The sample consisted of 25 patients undergoing an EPS and 25 nurse responses. Data analyses included a comparison of the ordering of stressors according to perceived concern by the patient and the nurse. While similar items were identified, there was a difference in the perceived order of concern of these items. A paired t test indicated a significant difference between the two groups' perception of illness related stressors.

The Wilcoxon matched-pairs signed test was used to analyze the difference in individual stressors identified by patient/nurse pairs. Seven stressors were identified as having a significant difference in perceived concern.

Acknowledgements

I give my heartfelt thanks to my husband, Kerry. Without his support and encouragement I could not have completed this thesis.

I thank Chris, my son, for giving me love and putting up with a Mom in school.

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CHAPTER ONE

INTRODUCTION

As advances in cardiac interventions have developed, the electrophysiology study (EPS) has become a more widely used diagnostic tool. Patients requiring an EPS are dealing with stress due to serious or life threatening arrhythmia problems. Nurses caring for these patients are in a position to identify and promote coping with these stressors through mutual goal setting with the patient.

Clinical cardiac electrophysiology is the study of disorders of the cardiovascular impulse formation and the conduction system (Singer & Kupersmith, 1993). Until the 1960s, electrophysiology was a research tool used to study the conduction system of the heart. In the mid-1960s, clinical electrophysiology began to emerge as a clinical discipline providing a link between basic and applied research. The knowledge gained from research was put to use in developing treatments for human cardiac conduction defects. These treatments included drugs, surgical techniques, and devices for treating either bradycardia or tachycardia dysrhythmias.

Early in the history of clinical electrophysiology, the EPS was used mainly as a diagnostic tool to guide the choice of pharmaceutical treatments. However, in the past two decades the purpose of the EPS has expanded from merely diagnostic to an interventional procedure for treating specific dysrhythmias.

The EPS is an invasive procedure performed by introducing one to five catheters into the heart to record and stimulate electrical conduction. The studies are performed to evaluate various electrophysiological properties such as automaticity, conduction, and refractoriness (Singer & Kupersmith, 1993). Diagnostic indications for an EPS are aborted sudden cardiac death, syncope of undetermined cause, recurrent wide complex tachycardia, ventricular tachycardia, recurrent tachycardia or syncope associated with Wolff-Parkinson-White (WPW) syndrome, symptomatic narrow QRS tachycardia

refractory to therapy, bundle branch block, bifascicular block, or second degree atrioventricular (AV) block with syncope, and preoperative evaluation prior to surgical ablation. Therapeutic indications include guidance of antiarrhythmic drug therapy for tachycardia, catheter ablation for AV nodal reentry tachycardia, WPW, ventricular tachycardia, confirmation of arrhythmia prior to device implant and for device testing, and acute termination of a hemodynamically unstable tachycardia (Singer & Kupersmith, 1993). Conduction abnormalities, such as many of the above, may lead to life threatening events.

Patients who must have an EPS are emotionally stressed because they must deal with a malfunction of their heart and its ramifications (Raphael, 1967). The patient and family must assimilate the length of the hospital stay, the invasiveness of the study, the need for several different types of medication (some of which have major side effects), the limited choice of options available, and the impact on life style and personal goals (DeBasio & Rodenhause, 1984). As a result patients are fearful, anxious, annoyed, depressed, and feel powerless.

The nurse in the acute care setting is the mediator between the patient and the technical aspects of the procedure (Vazquez, Engmanlaze, & Larson, 1992). The nurse must be aware of the stresses the patient perceives in order to intervene appropriately. It has been demonstrated in past studies (Davies & Peters, 1983; Davitz & Pendleton, 1969; Fielding, 1979; Raphael, 1967; Roslaniec & Fitzpatrick, 1979; Tank-Buschmann, 1979) that nurses' and patients' perceptions of patient stress differ. To prevent, control, or reduce the stressors, nurses need to engage in mutual goal setting with patients.

Statement of the Problem

The purpose of this study was to describe the stressors perceived by patients undergoing cardiac electrophysiology studies. In addition, this study compared these perceptions with those perceived stressors identified by the nurses.

CHAPTER TWO

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Conceptual Framework

The electrophysiology study has gained importance as a diagnostic tool for patients with potentially life threatening arrhythmias. As nurses come in contact with these patients it is important for them to know what an EPS patient perceives as stressful and how to engage in mutual goal setting to modify these stressors. This study used Lazarus' (1984) transactional model of stress and King's (1981) Theory of Goal Attainment as conceptual frameworks. Lazarus' conceptual framework of stress emphasizes the patient's primary appraisal of events to determine the level of stress experienced followed by the secondary assessment of the resources available to handle the stress (Lazarus & Folkman, 1984). King's (1981) Theory of Goal Attainment is also based on patient/nurse perceptions of situations. The theory instructs the nurse in developing perceptual accuracy with the patient in order for mutual goals to be set to obtain maximum benefits from the transaction. If the nurse and patient communicate and develop congruent perceptions of stressors associated with the EPS experience, an opportunity to develop mutual goals is established. Through this transaction goal attainment is enhanced.

Lazarus' Transactional Model of Stress Lazarus and Folkman (1984) define stress as a dynamic progressive relationship between the person and the environment. Through cognitive appraisal, the person judges both the nature of the environmental demands and the resources existing to meet these demands. It is an assessment activity that evaluates whether and to what extent the transaction is stressful to the individual.

Perception or cognitive appraisal is the key to understanding personal psychological responses to stress. The appraisal can come in three forms: judgment that

the transaction is (a) irrelevant, (b) benign positive, or (c) stressful. If the transaction is judged to be stressful, it can be classified as one of harm, loss, threat, or challenge.

Individual differences such as heredity, life experiences, and personality play a vital role in perception. Whether the coping mechanism is beneficial or detrimental depends in part on past experiences as well as the general ability of the person to cope. Other factors that influence the perception of stress and coping abilities include health and energy, positive beliefs, problem solving skills, social skills, support, and material resources.

Another important aspect of Lazarus' (1984) theory is that stress, coping, and adaptive outcomes take place at three separate but partly dependent levels of analysis: social, psychological, and physiologic. Although all three levels are important, the social transaction, that between the person and other people, is potentially the most pathogenic.

King's Theory of Goal Attainment King's (1981) Theory of Goal Attainment is an appropriate conceptual framework to use when identifying stress factors as perceived by patients undergoing electrophysiology studies and the nurses who care for these patients. The major elements of the theory are revealed in the interpersonal system in which two people, who are usually strangers, come together in a health care organization to help and to be helped to maintain a state of health that permits functioning in roles (King, 1981).

The major concepts in this theory are: interaction, perception, communication, transaction, self, role, stress, growth and development, time, and space. The schematic diagram of the theory of goal attainment depicts the interactions of the concepts (Figure 1). The basic proposition of the theory is that if nurses and patients hold and communicate congruent perceptions, it allows them to set mutual goals thereby enhancing goal attainment (King, 1981).

Interaction is defined as a process of perception and communication between person and environment or person and person. This may include verbal or nonverbal

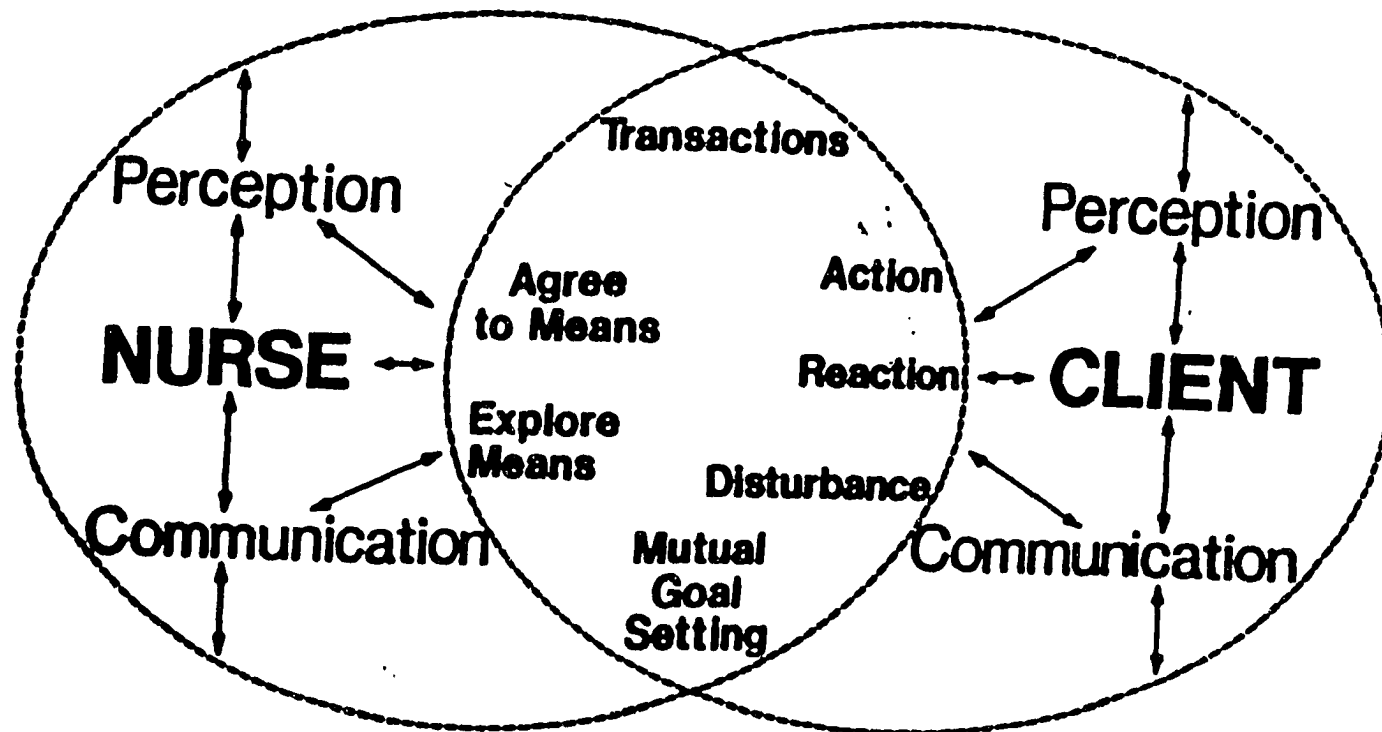


Figure 1: Schematic Diagram of a Theory of Goal Attainment.

From: I.M. King A Theory for Nursing: Systems, Concepts, Process, 1981
New York: John Wiley & Sons.

behaviors. Influences on interactions are individual knowledge, needs, goals, past experiences, and perceptions. Figure 2 represents the process of human interactions.

Perception is each person's representation of reality. Influences on perceptions are educational background, past experiences, socioeconomic and biological background, and views of self. Perception is an active process. King (1981) defines perception as a process of organizing, interpreting and transforming information from sense data and memory. It is a process of human transactions with the environment. In the nurse-patient encounter, perceptual accuracy is most important.

Transactions are defined as the observable behavior of human beings interacting with their environment (King, 1981). Transactions involve sharing information, bargaining, negotiating, identifying commonalties, and then mutually setting goals. Transactions occur on the nursing unit as the nurse assesses the patient and initiates effective communication. An important aspect of a transaction is mutual perceptions (King, 1981). When transactions are carried out, tension and stress are reduced as goals are obtained.

Communication is a key element in any transaction. Communication is defined as a process whereby information is given from one person to another (King, 1981). This may be done face to face, in writing, or indirectly. Communication is essential to mutual goal setting and goal attainment.

It is essential that nurses communicate with their EPS patients to understand the patient's stressors. Through this process, mutual goals can be set and an educational process initiated directed at reducing the stressor, thereby reducing the stress.

The primary purpose of nursing is to assist a patient in coping with health problems. The nurse identifies needs or concerns during the assessment phase through communication, observation, and physical assessment. Through effective communication and validation of perceptions the nurse can interact with the patient to set mutual goals.

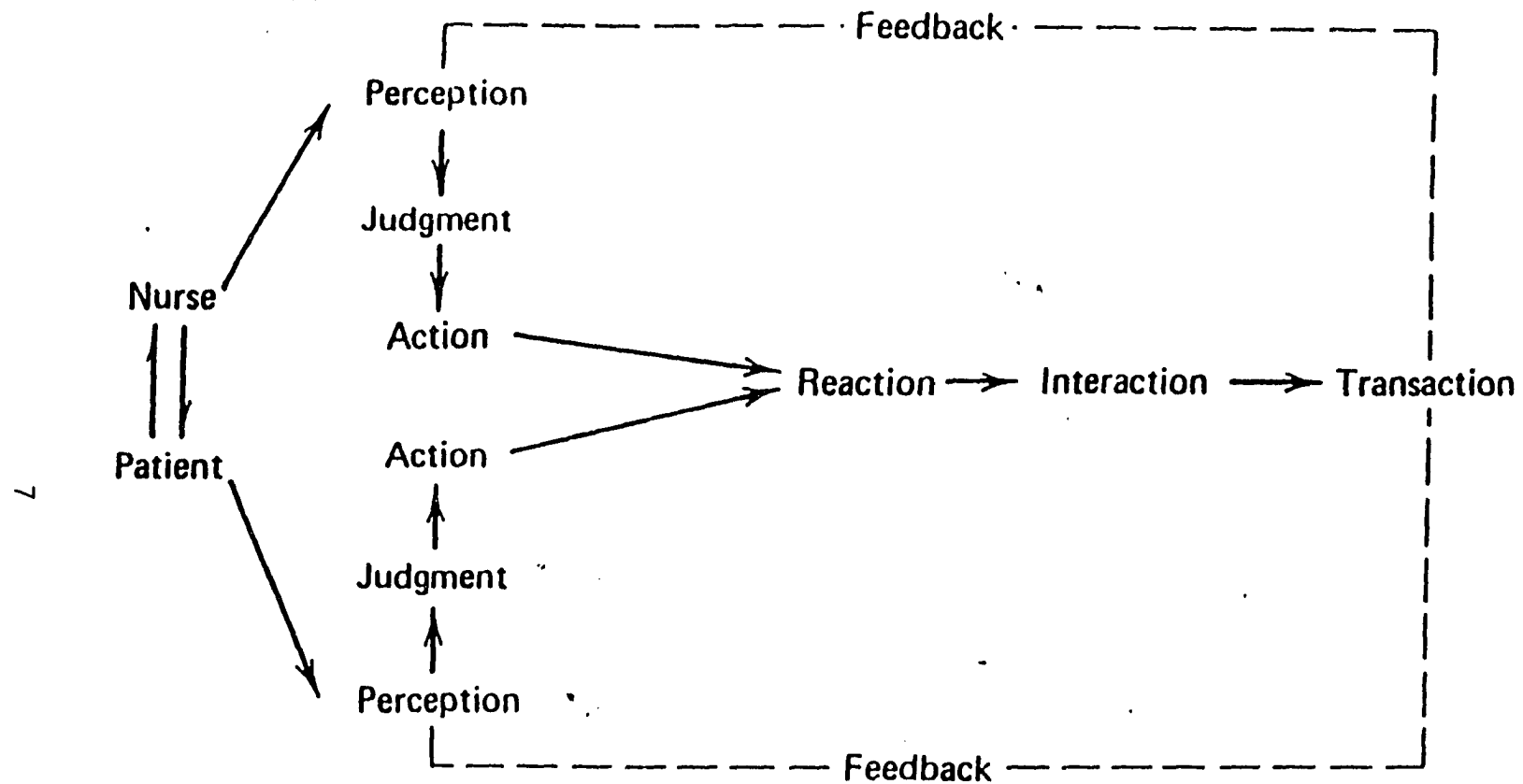


Figure 2: A Process of Human Interaction

From: I.M. King A Theory for Nursing: Systems, Concepts, Process , 1981
New York: John Wiley & Sons.

When mutual perceptions are established, transaction can occur leading to attainment of mutual goals (King,1981).

Stress must be viewed as a psychological response as well as a physiologic concept. Perception of a stressful situation plays a major role in how a person responds to that situation. Coping mechanisms that have been learned throughout an individual's life will determine whether stressors will be handled in an effective manner and be resolved or be handled in an ineffective manner, allowing a crisis to develop (Lazarus & Folkman, 1984).

Electrophysiology studies (EPS) present both physiological as well as psychological stressors. Many patients have already experienced major stress due to having survived a sudden cardiac near death experience. Hospitalization, invasive testing, and the loss of personal control over one's life significantly influences a patient's stress level.

According to Teplitz, Egenes, and Brask (1990), a patient faced with the threat of a recurrent cardiac arrest experiences anxiety, feelings of loss of control, and helplessness. Depression regarding the illness and unpredictability of the dysrhythmia plus doubts about returning to a functional life style are common. Some patients even feel guilty about the dysrhythmia; ultimately experiencing loss of self worth.

Nurses who are in contact with the patient on a 24 hour basis, are in an excellent position to assess and intervene with patients undergoing an EPS. It is essential for nurses to know how their patients perceive the stressors associated with the EPS study in order to mutually develop goals to resolve stressful situations. A plan of care should then be established that is need specific and incorporates the patient's values, health benefits, self efficacy, and priorities. Integrating the patient's values and belief system and acknowledging a readiness to change are important when speaking about psychophysiologic variables.

Mutual goal setting is critical in creating an environment in which patients make the commitment to change and are successful in bringing about the change. Patients need to acknowledge what this event means to them, be able to identify what adverse life style behaviors they need to change, make a commitment to do what is necessary for healing, and begin to assume a greater level of participation in their care. Patient's perceptions toward their illness and recovery are of utmost importance.

Carrieri, Lindsey, and West (1986) state that stress is a composite of behavioral, metabolic, and other physiological responses to a stressor (or stressors) of endogenous or exogenous origins. The individual response to stress is graded. It serves a protective, adaptive function. Man's perception and interpretation of the stressor affects the response. Many factors influence this response such as age, gender, concurrent illness, previous experience, and social support. Those at greatest risk for a strong response to stressors are those already compromised by sociological, psychological, or pathophysiological problems. It is important to address stress because of its potential to influence concurrent illnesses.

Physiological stress can induce many adverse reactions to a patient suffering from dysrhythmias. Stress stimulates sympathetic nervous system responses causing vasoconstriction, accelerated heart rate, increase in adrenergic activity, and a shift in flow of substrates from an anabolic pattern to a catabolic pattern. Since anxiety, depression, and hostility can increase sympathetic reactivity, it is reasonable to speculate that these emotional states might contribute to cardiovascular pathogenesis (Medich, Stuart, Deckro, & Friedman, 1991).

Review of the Literature

Patient perceptions Patients' perceptions of what is stressful during a hospital experience determines how they will respond to various nursing interventions. It is important for the nurse to be aware of what a patient views as stressful when developing a

plan of care to meet those needs. The literature gives information on what factors influence patients' perceptions and items that patients identify as stressful.

White, Richter, and Fry (1992) found in their study of 193 women with a chronic illness that when the demands of life, including that of a chronic illness, are appraised by the individual as exceeding available resources, the result is a disturbance in the psychosocial adjustment to illness. These individuals view the situation as out of their control and will apply coping techniques to manage. The authors reported health status significantly influenced perceived social support ($\beta = .28$, $R = 8\%$). The results indicated stressful life events, health status, palliative coping, and perceived social support had a direct impact on psychosocial adjustment and accounted for 50% of the variance.

Hawthorne (1994) conducted interviews with six men and 10 women, who underwent coronary artery bypass surgery, to explore how gender and role expectations may influence a patient's interpretation of the cardiac surgical experience and recovery. The author stated that a patient's perception of events can significantly affect outcomes after major cardiac illnesses. Thus for the patient to successfully pass through the recovery phase of their illness, it is crucial for the nurse to understand the patient's perception of their illness. The data suggested patients' perception of their illness is profoundly influenced by three gender related factors: (a) differences in life span development, (b) differences in world view, and (c) differences in roles and associated life experiences. The findings indicated that the surgery constitutes a major life crisis for men, while for women the experience is minimized.

Using survey research, Patacky, Garvin, and Schwirian (1985) examined the relationship between the patients' perception of psychological stress and the use of the intra-aortic balloon pump in the Coronary Care Unit (CCU). Twenty seven patients admitted for myocardial infarction (MI) or suspected MI were interviewed using the Coronary Care Stress Measurement tool. Despite a very limited patient population, the study did support earlier research on patients' perception of stressors in the CCU.

The three primary stressors identified were poor communication between staff and patients, abrupt hospitalization, and recognition of the grimness of their illness. The study revealed that abrupt hospitalization was the highest stressor. A lack of knowledge or understanding of the illness, its severity and mobility limitations, due to equipment, induced the second highest level of stress. The authors concluded that nurses must establish an atmosphere of communication that provides ample opportunity for patients to voice both their concerns and discomforts, thereby making the situation less stressful for them. They concluded that whether the stimulus is perceived by the patient as stressful or nonstressful will determine the patient's response.

DeBasio and Rodenhausen (1984) presented findings related to meeting the psychological needs of patients with ventricular tachycardia (VT). Many patients are admitted to the hospital on an emergency basis after being successfully resuscitated. Patients must deal with a malfunction of the heart and the ramifications for future survival. The authors found hospitalized individuals and spouses/significant others are often surprised and overwhelmed by several factors including: (a) length of hospital stay, (b) invasive studies, (c) need for several different types of medications which are often experimental, (d) limited choice of options available, each of which has a unique risk-benefit ratio, and (e) the impact of VT on life and personal goals. The psychological implications, rather than the physical discomfort of the VT, seem to have a more profound impact for the patient and family. A lack of control contributes to a sense of powerlessness which in turn leads to increased anxiety, anger, depression, and in some cases, guilt. Patients are subjected to invasive procedures over which they have little or no control, and placed on medication trials that cause unpleasant and sometimes serious physical side effects. Patients often state the treatment is worse than the disease itself. Patients with VT present major issues related to powerlessness and a lack of control over many facets of their illness, treatment, and future life style.

Dunnington and Finkelmeir, and Kehoe (1988) studied 136 survivors of sudden cardiac death using clinical data and completed questionnaires. Data clearly demonstrated that cardiac arrest survivors, as well as patients with serious cardiac rhythm disturbances are at risk for psychological distress that may persist long after the dysrhythmia episode itself. Although cardiac arrest survivors may have certain unique emotional responses, the presence of cardiac rhythm disturbances, as opposed to an arrest event itself, may be responsible for significant psychological distress. Three risk factors associated with elevated psychological distress are (a) medical treatment of dysrhythmia (as opposed to surgical or no treatment), (b) forced modification of work status, and (c) more advanced functional impairment. Three factors determine individuals' psychological vulnerability: (a) perception of events, (b) situational supports, and (c) coping skills.

Patient nurse perceptions Research studies have been conducted to compare the nurse and patient perceptions of stress during hospitalization. Congruency of perceptions is an important aspect of mutual goal attainment. The literature indicates there are differences between what patients and nurses perceive as stressful as well as the degree of stress experienced.

Davies and Peters (1983) interviewed 25 patients and their nurses regarding the patients' perceived stresses during hospitalization. They found thinking about home to be the most severe stress identified by both patients and nurses. The particular stress experienced by an individual patient will depend on many factors, including the demographic, personality and illness characteristics of the patient, the nature of the admission process, the time at which the stressors are assessed, and the physical and social environment of the hospital. The study found nurses' ratings did not reflect the degree of stress reported by patients and that patients reporting high or low levels of stress were not distinguished as such by their nurses. Patients used the scale conservatively, consistently indicating low values while nurses used the whole range of the scale to rank stressors.

Nurses and patients were not in concordance over their ratings of total stress. The data indicated stress types differed significantly. The physical aspect of illness (discomfort, x-rays, physiotherapy, drugs, worries about discharge dates) had the least discrepancy between nurses and patients. The highest variance was noted on hospital environment and routine items (noise, privacy, early morning routines, toileting).

Using a Likert-type questionnaire, Cochran and Ganong (1989) studied 20 ICU patients and 23 registered nurses to compare the patients' and nurses' perceptions of stressors in the ICU environment. In every comparison, nurses' ratings of the stressfulness of the events were higher than the patients' ratings. Patients appeared to be most concerned with items that directly related to physical stressors. The items ranked highest by patients were: (a) having tubes in your nose or mouth; (b) being stuck with needles; (c) being in pain; and (d) not being able to sleep. The four items ranked highest by the nurses were: (a) being in pain; (b) not being in control of yourself; (c) having tubes in your nose and mouth; and (d) being tied down by tubes. One limitation of the study was that the nurses completing the survey were not the individual nurses caring for the particular patient.

Carr and Powers (1986) conducted a study of 30 patients recovering without complications from coronary bypass surgery. The purpose of the study was to evaluate a tool to measure the incidence and severity of stressors associated with coronary bypass surgery and to assess the concordance between patient and nurse perceptions of such stressors. Significant differences were found between nurse and patient perceptions of the degree of stress experienced by these patients. Data indicated that the nurses rated items significantly more stressful than the patients ($p < .0005$). Illness related items were significantly more stressful than hospital related items ($p < .006$). There was a moderate correlation ($p < .001$) in the rank ordering of stressors between patients and nurses. Having cardiac surgery was ranked as the highest stressor by both patients and nurses. Patients rated the following stressors higher than the nurses: resuming previous life style, absence

from home/business, increasing activity, having a roommate, and needing pain medications. Nurses ranked the following items higher than the patients: monitors and other equipment, call light being answered, explanations of hospital procedures, and loss of income.

Connelly (1992) surveyed 28 patients who received electrophysiology studies and the 13 nurses who cared for them. The intent of the study was to (a) identify stressors that medically treated patients who undergo EPS experience from the point of view of patients and the staff nurses who care for them, (b) compare patients' and nurses' perceptions of such stressors, and (c) evaluate a tool (EPS Stressor Scale) designed by Connelly.

The investigator developed the EPS Stressor Scale by adapting Carr and Power's (1986) Cardiac Surgery Stressor Scale and Davis' (1978) Coronary Care Unit Stressor Scale. The scale has 38 items relevant to hospital-related stressors or illness-related stressors. Content validity of the scale was supported by four cardiovascular clinical nurse specialists, two with a specialty in EPS.

Demographic and medical diagnosis data were collected on patients only. The findings from the study showed nine out of 11 of the most stressful items to the patients were those related to their illness. In descending order of importance the items were: concerns of family, progress you are making, time spent in the hospital, being away from home, cardioversion during the EPS, resuming life style, having an EPS, pain/discomfort, dying due to illness, increasing activity, and having an intravenous. The nurses also identified items related to the patients' illness as the most stressful. The items ranked most stressful by the nurses in descending order were: cardioversion during the EPS, having an EPS, resuming life style, time spent in the hospital, pain/discomfort, dying due to illness, loss of income due to illness, concerns of family, absence from business, and progress you are making. There were significant differences ($p < .05$) between patients' and nurses' perceptions of the degree of stress produced by the 38 identified stressors. Nurses rated

items as being of greater stress to patients than patients did themselves ($p < .0001$). The illness stress score ($p < .0001$) and the hospital stress score ($p < .0001$) were also significantly higher for the nurses. The study showed moderate agreement between nurses and patients related to events and conditions of illness and hospitalization that were most stressful. Of the top 11 most important stressors the nurses and patients both identified eight items similarly, but with different rank order. Limitations of the study were the use of an untested tool and small sample size. The patients were selected by convenience sample rather than random sampling.

Nursing interventions The goal of nursing in the hospital setting is the restoration of health to those patients with whom they come into contact. This includes helping the patient use their resources optimally to adjust to stressors. The nurse needs to be aware of interventions that will be most productive in reducing stress.

Hoffman, Donckers, and Hauser (1978) conducted a study designed to assist nurses to intervene with and reduce stress perceived by patients in a CCU. The 100 patients entered into the study were divided into 2 groups of 50. Fifty patients were interviewed before the nurses were instructed on stress reduction techniques. The second 50 were interviewed after the stress reduction techniques were taught. Patient stresses identified by their questionnaire included: the illness, the loss of privacy, a fear of "what happens next," bedrest, interrupted sleep, and setting of visiting regulations. The nurses received instruction on the physiological nature of stress, identified stressors in CCU patients, and stressors in the preinterventional group. The findings of the study indicated that if nurses were aware of what is stressful for patients they could intervene effectively to reduce stress.

Chesla (1996) conducted research aimed at describing nursing practice with families in a naturalistic, interpretive study of general critical care nursing. Critical care units are equipped with modern medical technology. The purpose of the units is to apply the technology to the patient's illness to prevent death. Chesla's literature review indicated

that patients families want to be informed about their relatives status, to have access to the patient, and to be assured that everything possible is being done. One hundred thirty nurses of all levels of practice were interviewed. They were to relate cases of patient care in which they believed they made a difference in the care or that had some difficulties. The central finding of the study was that the critical care nurses showed a wide range of skills in dealing with delivering life saving functions and at the same time attending to patient and family needs. Chesla found how nurses interact with families has not received much attention. According to the author, nurses learn how to deal with families by trial and error.

Verderber, Shively, and Fitzsimmons (1992) studied different methods to reduce stress in patients scheduled for cardiac catheterization. Using an experimental design, they randomly assigned 60 patients to one of five groups (four treatment intervention groups and one control group). They found patient education strategies for adults emphasize the importance of providing information that is timely and at a level appropriate for education and language ability. This study demonstrated that modeling preparation is more effective than an information intervention for adult patients.

Summary

The review of literature regarding patient perceptions of stressors during hospitalization identified a variety of items viewed as stressors. Throughout the studies reviewed the importance of how the patient perceived the stress was most important in determining how they responded.

In the comparison of nurse-patient perceptions, it was evident that nurses rated the degree of stress experienced as higher than patients. The studies revealed a moderate correlation in the ordering of items perceived as stressors. The limitations of these studies are the small sample sizes and the lack of actual comparison of perceptions of patient and nurse caring directly for the patient.

The research looking at nursing interventions showed nurses can effectively intervene to reduce stress if they are aware of what the patient perceives as stressful. It was revealed that nursing education on how to intervene and what the patient perceives is not consistent.

In conclusion, little has been written about patients undergoing EPS and their perceived stressors. In addition, the relationship between the electrophysiology patients' perception of stress and the nurses' perceptions of the stressors experienced by the patients for whom they are caring has not been examined in depth. This study was intended to examine both of these issues. The research questions and hypothesis for this study were:

Research Questions

1. What hospital and illness related events and conditions do patients who have undergone EPS consider to be stressful?
2. What hospital and illness related events and conditions do nurses perceive their patients, who have undergone EPS, view as stressful?
3. What differences are there between patients' and nurses' perceptions of identified stressors?

Research Hypothesis

There will be no significant difference between the patients' and nurses' perceptions of patient identified stressors.

Definition of Terms

Electrophysiology Study (EPS) is an invasive procedure performed by introducing one to five catheters transvenously into the heart to record and stimulate electrical conduction. The studies are performed to evaluate electrophysiology properties such as automaticity, conduction, and refractoriness. Activation and termination of cardiac dysrhythmia are accomplished utilizing these catheters.

Stress is a dynamic progressive relationship between the person and the environment. Through cognitive appraisal, the person judges both the nature of the

environmental demands and the resources existing to meet these demands. Cognitive appraisal is an assessment activity that evaluates whether and to what extent the transaction is stressful to the individual.

Potential stressors are illness and hospital related events or conditions that elicit physiologic and/or psychological reactions. These were measured by subjects' responses on the EPS Stressors Scale. Each item was rated on the degree of concern it posed for the EPS patient and nurse.

CHAPTER THREE

METHODOLOGY

Design

This study used a two group comparative design to identify the perceived stressors of patients undergoing a primary electrophysiology study (EPS) and to compare them to the stressors identified by the nurses caring for those patients. Data were obtained from self report questionnaires.

Sample and Setting

A convenience sample consisting of 25 patients undergoing an EPS and 25 nurse responses at a metropolitan Midwest hospital was used for this study. One nurse participated in the study twice with different patients.

Participants demonstrated a willingness to participate and could read, write, and speak English. Patients were not selected for inclusion if they were not alert and oriented. The inclusion criteria for participants was 20 to 85 years of age. Exclusion criteria for the study included having had an EPS in the past.

The nurse sample was limited to registered nurses with at least three months experience in the telemetry or critical care units working with patients undergoing EPS. The nurses were those who had directly cared for the participants in this study. The nurses were paired with their patients and asked to give perceptions of the individual patient. Nurses were asked not to participate more than twice.

Characteristics of Participants

Patient sample Twenty five patients participated in this study. The majority of the participants were Caucasian (84%) males (68%), who were either married (80%), widowed (12%), or divorced (8%). Thirteen (52%) of the patients were between the ages of 60 and 85, while 11 (44%) were between the ages of 34 and 59 years. Only one patient was between the ages of 20 to 33 years.

The education level of the respondents varied from some elementary school to completion of college. Sixty percent of the participants had completed some high school or graduated from high school. Thirty six percent had attended or graduated from college.

Nurse sample Eleven (44%) of the nurses were in the age range of 34 to 46 years. Twenty eighth percent (n = 6) were 20 to 33 years and seven (28%) were 47 to 59 years of age. The work experience of the nurses ranged from 56% (n = 14) having 6 to 15 years, 20% (n = 4) had 16 to 25 years, 12% (n = 3) had 0 to 5 years, and 12% (n = 3) had 26 to 34 years.

Thirteen (52%) of the nurses had an Associate Degree, eleven (44%) had a Bachelor of Science in Nursing. and one nurse (4%) had a Diploma. None of the nurse participants had a family member who had undergone an EPS.

Instruments

Three instruments were used for this study. The EPS Stressor Scale (Appendix A) identified perceived EPS stressors as indicated by the patient and nurse (Connelly, 1992). Permission to use the EPS Stressor Scale was obtained from the author (Appendix B).

Demographic data was collected for each group. The Patient Biographical Data Form (Appendix C) was a demographic data record completed by the participant. Information obtained was race or ethnic group, age, sex, marital status, and level of education of the patient. The Nurse Biographical Data Form (Appendix D) collected data on the nurses' age, years of nursing experience, level of education, and whether a family member had an EPS.

The EPS Stressor Scale (Appendix A) consists of a total of 38 items. Most of the items on the EPS Stressor Scale were taken from the Cardiac Surgery Stressor Scale (CSSS) developed by Carr and Powers (1986) and revised by Connelly (1992) to reflect the EPS experience, rather than the cardiac surgery intervention. Four items from the CCU Stressors Scale developed by Davies (1983) were added to the EPS Stressor Scale

by Connelly. Two EPS stressor items were reflective of the literature about ventricular arrhythmias, sudden cardiac death, and cardiac electrophysiology studies.

The stressors were divided into two categories: hospital related stressors and illness related stressors. A hospital related stressor was defined as a condition or situation that resulted directly from hospitalization. A condition or situation that was specifically related to the illness was labeled an illness related stressor. Of the 38 stressors identified in the EPS Stressor Scale, 21 were designated as hospital related stressors and 17 were illness related stressors. A 5 point scale, with 1 being "not concerned" to 5 being "very concerned," was used to rate each stressor.

Connelly (1992) validated the EPS Stressor Scale by having four cardiovascular clinical nurse specialists (two with a specialty in EPS) review the scale for content validity. Also, a patient reviewed the scale to confirm content validity from a patient's perspective. Internal consistency using Cronbach's alpha reliability for the EPS Stressor Scale was 0.96 for all items, 0.91 for hospital related questions and 0.91 for illness related questions.

In this study, the EPS Stressor Scale was completed by patients undergoing an EPS and the nurses caring for these patients. The alpha reliability coefficient from the nurse sample was 0.97. The internal reliability coefficient for the patient responses was 0.94. According to Polit and Hungler (1991), reliability coefficients greater than 0.70 are sufficient for making group comparisons. A reliability of 0.97, however, may reflect some redundancy among the items.

Human Subject Considerations

Approval to conduct this study was obtained from Grand Valley State University and the institution's Nursing Research Committee. Permission to approach patients and nurses was obtained from the electrophysiologists and the directors of the telemetry and critical care units.

As this research was noninvasive, there was no risk to the patients and nurses. All participants were guaranteed voluntary, risk free participation and could choose to

withdraw at any point. The electrophysiology staff, excluding the researcher, read the script (Appendix E and F), which contained the purpose and goal of the study and described the tools to be used, to the participants. The participants were given time to ask questions as necessary before they completed the forms. The researcher's telephone number was given to participants to call if they had concerns they wished to discuss. Consent was implied with the completion of the survey. Confidentiality of all responses was maintained. Names did not appear on any of the forms completed by the participants.

Data Collection Procedure

Potential participants were identified by the investigator as they were scheduled for their EPS. The patient participants were approached in their rooms after the effects of the sedation given during the EPS had worn off. The nurses were approached on the nursing unit after their patient had returned from the EPS. A member of the electrophysiology staff, excluding the investigator, approached potential subjects using a script. The EPS Stressor Scale and the Biographical Data Form were given to participants who expressed a willingness to consider participation. The staff member then read the directions to the subject and answered any questions. It was emphasized that participation was voluntary and would not affect their care. Participants were asked to base their response on their EPS experience and were encouraged to complete the EPS Stressor Scale and the Biographical Data Form. Confidentiality was maintained by having the patient place the completed forms in a sealed envelope. The patient was instructed to give the sealed envelope to their nurse who placed it in a large envelope labeled with the researcher's name. This envelope was kept in the medication area on the nursing unit. The researcher collected the sealed individual envelopes on a daily basis.

The study was explained to the nurses caring for the participants. They were guaranteed voluntary, risk free participation. The nurse was asked to complete the questionnaire using the perspective of the EPS patient. Each nurse was not asked to participate more than twice during the course of this research. If the nurse caring for the

patient had already completed two questionnaires, the nurse from the next shift caring for the patient was approached.

Consent was implied with the completion of the surveys. Confidentiality was maintained by having the nurse seal the surveys in an envelope upon completion and placing it in a large envelope labeled with the researcher's name in the medication area on the nursing unit. The researcher collected the sealed envelopes. The nurses were asked not to discuss the survey with other nurses as they may be asked to participate in the study at a future date.

The questionnaires for the patient were coded by number as they entered into the study (1-25). The number corresponding with the patient cared for was placed on the nursing questionnaire.

Benefits and Risks to Participants

The participants of this study did not directly benefit from this research. This research study may assist health care providers in understanding what patients undergoing an EPS perceive as stressful and thereby improve the care and education of these patients. This research study has the potential to assist health care providers develop interventions that can reduce the stress experienced by patient undergoing an EPS.

CHAPTER 4

RESULTS

The purpose of this study was to (a) identify what hospital and illness related events and conditions patients who have undergone an EPS consider to be stressful, (b) identify what hospital and illness related events and conditions nurses perceive their patients, who have undergone an EPS, view as stressful, and (c) to identify what differences there are between matched pairs of patients' and nurses' perceptions of identified stressors. Data analysis were accomplished using the Statistical Package for Social Sciences (SPSS) software.

Descriptive Analysis of Stressors

Data analyses included a comparison of the rank ordering of stressors according to perceived concern by the patient and the nurse. The initial rank ordering was based on the median response for each item. The median response on the majority of stressors identified by the nurses was 2 (a little concerned) or 3 (more than a little concerned). The patients ranked the majority at 1 (not concerned) or 2. The statistical mean of the stressors was used to identify the final rank order of concern for patients (Appendix G) and nurses (Appendix H).

The potential stressor receiving the highest ranking by the patients on the concern scales was being away from home, a hospital related stressor. Of the nine next highest items, seven were illness related concerns: dying because of your illness, resuming your life style, pain/discomfort, requiring cardioversion during the EPS, the progress you are making, time spent in the hospital, and increasing your activity. The top ten patient concerns also included two hospital related stressors. These stressors reflected concern about how their families were doing while they were in the hospital and concern about following a hospital schedule. Table 1 depicts the 10 stressors of most concern identified by patients by percent of concern and mean.

Table 1

Rank Order of the Top Ten Patient Stressors by Degree of Concern

Times	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< Very Concerned (%)	Very Concerned (%)	Mean
Being away from home	H	16	28	20	8	28	3.04
Dying because of your illness	I	24	16	24	8	28	3.00
Resuming your life style	I	24	16	28	8	24	2.92
Pain/ discomfort	I	24	20	24	24	8	2.72
Cardiovert during EPS	I	24	32	12	16	16	2.68
Progress you are making	I	28	16	28	20	8	2.64
Time spent in hospital	I	24	28	24	12	12	2.6
Family while in hospital	H	32	24	16	12	16	2.56
Increasing your activity	I	28	20	32	12	8	2.52
Following hospital schedule	H	28	32	24	4	12	2.40

Note. * I = Illness-related; H = Hospital related

The nurses ranked having pain or discomfort as the highest stressor, an illness related stressor. Six other illness related stressors were highly ranked by the nurses: being cardioverted during the EPS, resuming your life style, dying because of your illness, having an EPS, having an IV, and the progress you are making. The hospital related items ranked in the top ten stressors were sleep interruption, lack of privacy, and being away from home. Table 2 illustrates the ten stressors of most concern identified by nurses by percent of concern and mean.

Descriptive data analysis revealed that of the ten stressors of most concern identified by both patients and nurses, there were six similar items (Table 3). While similar items were identified, there was a difference in the rank importance of these items. The mean of the ten highest stressors identified by the patients ranged from 3.04 to 2.40 compared to 3.24 to 2.68 identified by the nurses.

The six stressors identified by both groups were being away from home, dying from your illness, resuming previous life style, pain/discomfort, being cardioverted during the EPS, and the progress being made. Resuming previous life style was ranked third by both groups. Of these six common stressors, five were illness related and one hospital related. The hospital related stressor, being away from home, was ranked first by patients but tenth by the nurses. Pain was ranked of most concern by the nurses while patients ranked it fourth.

Each group identified four stressors not ranked as a priority by the other group. The remaining stressors ranked by patients as most stressful included the amount of time spent in the hospital, increasing your activity, how your family is doing while you are in the hospital, and following the hospital routine. The first two stressors were illness related stressors with the last two being hospital related. The nurses included in their 10 highest stressors sleep interruption, lack of privacy, having an EPS, and having an IV. The first two stressors are hospital related stressors and the last two are illness related stressors.

Table 2

Rank Order of Top Ten Nurse Stressors by Degree of Concern

Item	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< Very Concerned (%)	Very Concerned (%)	Mean
Pain/ Discomfort	I	8	16	32	32	12	3.24
Cardiovert during EPS	I	12	12	32	28	16	3.24
Resuming Life Style	I	12	28	12	44	4	3.00
Dying because of your illness	I	20	20	24	12	24	3.00
Sleep Interrupted	H	8	28	28	32	4	2.96
Having an EPS	I	16	20	28	28	8	2.92
IV	I	16	28	24	16	16	2.88
Progress you are making	I	20	20	28	24	8	2.80
Lack of Privacy	H	16	28	28	20	8	2.76
Being away from home	H	20	20	32	24	4	2.72

Note. * I = Illness-related; H = Hospital related

Table 3

Comparison of Patients' and Nurses' Top 10 Stressors of Most Concern

Patients' 10 Stressors of Most Concern	Nurses' 10 Stressors of Most Concern
1. Being away from home	1. Having pain or discomfort
2. Dying because of your illness	2. Being shocked during an EPS
3. Resuming your life style	3. Resuming your previous life style
4. Having pain or discomfort	4. Dying because of your illness
5. Having to be shocked during EPS	5. Having your sleep interrupted
6. Progress you are making	6. Having an EPS
7. Amount of time spent in hospital	7. Having an IV in your arm
8. How your family is doing while you are in the family	8. Progress you are making
9. Increasing your activity	9. Lack of personal privacy
10. Following hospital schedule rather than your own	10. Being away from home

during visiting hours, monitoring equipment turned off, several nurses caring for you, being away from your business, not having things within easy reach, having heart monitors and other equipment, and having a roommate. The illness related stressors of least concern to the patients were losing income because of illness and needing pain medication. Table 4 illustrates the ten stressors of least concern identified by the patient with the least stressful item listed first.

The stressor of least concern identified by the nurses was having visitors only during visiting hours, a hospital related concern. Seven other hospital related stressors were identified by the nurses as least stressful: paying hospital and medical bills, not having things within easy reach, monitoring equipment turned off, doctors and nurses discussing your condition in front of you, problems other patients are having, following the hospital schedule, and several nurses caring for you. The illness related stressors of least concern were resuming sexual activity and losing income because of illness. The least stressful items ranked by the nurses are depicted in Table 5 in descending order beginning with the least stressful item. The mean scores were 1.44 to 2.16.

Both groups identified four items in common, however, with different rank order. Those of least concern are limited visitors, having several nurses care for you, loss of income, and taking the monitor off. One item, following a hospital schedule ranked by the nurses as one of the ten least important was found by patients to be one of the ten most stressful items.

In comparison with the Connelly study (1992), the patient identified concerns in this study were consistent, but with different rank ordering (Table 6). The nurse identified stressors from this research are not consistent with Connelly's findings. Sixty percent of the ten most stressful items were consistent in identification but not in perceived concern (Table 7).

Table 4

Rank Order of the Stressors of Least Concern Identified by Patients

Item	Not Concerned (%)	A Little Concerned (%)	> A little Concerned (%)	< Very Concerned (%)	Very Concerned (%)	Mean
Hearing staff discussing patients' problems	72	16	8	4	0	1.44
Visitors only during visiting hours	64	20	12	4	0	1.56
Monitoring equipment turned off	60	24	16	0	0	1.56
Several nurses caring for you	56	28	16	0	0	1.60
Being away from your Business	68	16	8	4	4	1.60
Losing income because of illness	64	20	8	4	4	1.64
Not having things within easy reach	56	20	12	12	0	1.80
Needing pain medication	52	24	16	8	0	1.80
Heart monitor and other equipment	50	29	13	4	4	1.83
Having a roommate	44	40	8	4	4	1.84

Table 5

Rank Order of the Stressors of Least Concern by Nurses

Item	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< Very Concerned (%)	Very Concerned (%)	Mean
Visitors only during visiting hours	68	20	12	0	0	1.44
Paying hospital and medical bills	48	28	20	0	4	1.84
Losing income because of illness	48	24	8	16	4	2.04
Not having things within easy reach	32	36	28	4	0	2.04
Resuming sexual activity	44	32	8	8	8	2.04
Monitoring equipment turned off	48	16	16	16	4	2.12
Drs. and nurses discussing your condition	32	28	36	4	0	2.12
Problems that other patients are having	36	24	32	8	0	2.12
Following hospital schedule	28	32	36	4	0	2.16
Several nurses caring for you	36	24	28	12	0	2.16

Table 6

Comparison of Patients' Top 10 Stressors of Most Concern with Connelly's Study (1992)

Connelly's Study (1992) 10 Stressors of Most Concern	Thurn's Study (1999) 10 Stressors of Most Concern
1. Concerns of family	1. Being away from home
2. Progress you are making	2. Dying due to illness
3. Time spent in hospital	3. Resuming life style
4. Being away from home	4. Pain / discomfort
5. Requiring cardioversion during EPS	5. Requiring cardioversion during EPS
6. Resuming life style	6. Progress you are making
7. Having an EPS	7. Time spent in hospital
8. Pain / Discomfort	8. Concerns of family
9. Dying due to illness	9. Increasing activity
10. Increasing activity	10. Following hospital schedule

Table 7

Comparison of Nurses' Top 10 Stressors of Most Concern with Connelly's Study (1992)

Connelly's Study (1992) 10 Stressors of Most Concern	Thurn's Study (1999) 10 Stressors of Most Concern
1. Cardioversion during EPS	1. Pain / discomfort
2. Having EPS	2. Cardioversion during EPS
3. Resuming life style	3. Resuming life style
4. Time spent in hospital	4. Dying from condition
5. Pain / discomfort	5. Sleep interruption
6. Dying from condition	6. Having an EPS
7. Loss of income	7. Having an IV
8. Concerns of family	8. Progress you are making
9. Absence from business	9. Privacy
10. Progress you are making	10. Being away from home

The Wilcoxon matched-pairs signed ranks test was used to compare the rating of individual stressors by patient/nurse pairs using the rank ordering of the differences in the pairs' ratings. Thirty one of the items showed no significant differences. Seven stressors were identified as having a significant ($p < 0.05$) difference in perceived rating of concern (Table 8). The seven stressors are: overhearing staff talking about other patients, having a roommate, having several nurses caring for you, sleep interruption, discussing EPS concerns with doctor or nurses, having blood drawn, and having an IV. Four stressors were hospital related and three were illness related. All the statements with statistically significant differences were ranked higher by the nurses than the patients.

Hypothesis Testing

The hypothesis of this study was: There will be no significant difference between the patients' and nurses' perceptions of patient identified stressors. Statistical analyses used in this study included rank order of perceived concerns related to individual stressors (Wilcoxon matched-pairs signed rank test) and comparison of total concern scores (paired t-tests). Significance was set at $p < 0.05$ for all tests.

Prior to computing overall stress scores for each group, the data were assessed for missing responses. There were no missing responses among the nurse sample, however, one patient participant did not respond to two of the 38 items (5% of items). After assessing the missing data it was considered random error and the statistical mean was used to replace the two missing responses.

Using the five point scale to rate the stressors on the EPS Stressor Scale the possible range of scores is 38 to 190. The patient stress total scores in this study ranged from 38 to 125. The nurse stress total scores ranged from 46 to 155. The paired sample t-test was used to compare the mean for patient stress total scores (mean = 80.28; SD = 25.9) matched to the nurses' mean total score (mean = 93.40; SD = 29.4). A significant difference was found between the two groups in the overall

Table 8

Difference in Rating of Concern for Individual Stressors Identified by Patient (n = 25)/Nurse Response (n = 25) Matched Pairs

Item	Number of Ranks Nurse < Patient (Mean Rank)	Number of Ranks Nurse > Patients (Mean Rank)	z	2-tailed p p = .05
Sharing a room with one or more patients	5 (6.5)	14 (11.25)	-2.52	0.012
Several nurses care for you	4 (8.00)	13 (9.31)	-2.11	0.035
Your sleep interrupted	5 (7.00)	15 (11.67)	-2.61	0.009
Discussing EPS concerns with doctor and nurse	6 (6.83)	12 (10.83)	-1.94	0.052
Having blood drawn	4 (5.5)	12 (9.5)	-2.38	0.017
IV in your arm	5 (8.9)	16 (11.66)	-2.47	0.014
Overhearing staff talking about other	4 (9.50)	15 (10.13)	-2.29	0.022

perception of stressors due to an EPS ($t = -2.13$; d.f. = 24; $p = .04$). According to these results, nurses perceived stressors to be of greater concern than the patients.

To further examine the differences in perceived concern, hospital related and illness related mean scores were compared for each group. The paired sample t test analyzed the patients' hospital related mean score (mean = 45.44; SD = 16.6) matched to nurses' mean hospital scores (mean = 52.68; SD = 17.4). The patients' illness mean score (mean = 34.84; SD = 11.0) was matched to the nurses' illness mean score (Mean= 40.72; SD = 12.6) using the paired sample t-test. A significant difference ($t = 2.24$; d.f. = 24; $p = .035$) was found between the two groups' perception of illness related stressors (Table 9). The mean total concern score for illness related stressors was higher for the nurses than the patients. Thus the research hypothesis that predicted there would be no difference in perceived stressors between patients and nurses was not supported by comparison of the overall total concern scores and the illness related total concern scores. The hypothesis was supported only in relation to the hospital related total concern scores.

Table 9

Comparison of Nurse and Patient Mean Concern Scores Using Paired t-Tests

Scale	Possible Score	Nurse Mean (SD)	Patient Mean (SD)	t	p
Total	38 - 190	93.40 (29.4)	80.28 (25.9)	-2.13	0.04
Hospital-related	21 - 105	52.68 (17.4)	45.44 (16.6)	-1.87	0.07
Illness-related	17 - 85	40.72 (12.6)	34.84 (11.0)	2.24	0.04

CHAPTER 5

DISCUSSION AND IMPLICATIONS

The hypothesis that there were no significant differences between the patients' and nurses' perceptions of potential patient stressors was not supported by comparison of mean concern scores for stressors as a whole nor for the illness related stressors subscale. The hypothesis was supported for the hospital related stressor subscale.

Rank ordering of the ten stressors receiving the highest concern ratings as perceived by patients and nurses was one of the identified differences in this study. Of the ten highest stressors identified, the nurses and patients agreed on the perception of 5 items but with different ranks. This finding suggests that nurses recognize most of the stressors most concerning to the patients. The patients ranked being away from home as their top stressor while nurses ranked this stressor as tenth. This may be because the patient is concerned about their family members, while nurses are most concerned about their patients. The nurses ranked pain/discomfort and being cardioverted during the EPS as priority concerns. This suggests that nurses may be more aware that cardioversion was a possibility during the EPS. Dying because of illness was identified as second by patients but fourth by nurses with both groups, having a mean rating of 3.00. Other potential stressors receiving higher concern ratings by patients were resuming previous life style, having pain or discomfort, having to be cardioverted during the EPS, and the progress you are making. Other nurse identified concerns included resuming a previous life style, dying, and having sleep interrupted.

Resumption of a previous life style was ranked third by both groups. Patients ranked being cardioverted during an EPS as fourth while nurses ranked it second. The final item in common was the progress being made, ranked sixth by patients and eighth by nurses. Of these top ten concerns, 80% were illness related. A similarity between the patients' and nurses' rankings was that both groups scored illness related items higher than

hospital related items. This may suggest that both groups realize the gravity of the illness and its treatment.

Hospital related stressors make up 90% of the potential stressors which people are least concerned. The patients and nurses agree on five of these items (having items within easy reach, loss of income, care provided by multiple nurses, monitoring equipment being turned off, and visitors limited to visiting hours). Treatment options and severity of illness may be of such great concern that the patient perceives hospital related concerns as temporary and not of concern. The rank ordering was not consistent between the two groups. This may suggest that once patients adjust to the hospital, they find these potential stressors unimportant. Another possible reason may be that these patients have had multiple admissions to the hospital and have become accustomed to the hospital routine.

The results of this study identified seven stressors (having a roommate, having multiple health care providers care for you, sleep interruption, addressing EPS concerns with doctors and nurses, blood drawn, IV, and overhearing staff discussing other patients problems) that were perceived significantly different between nurses and patients. All seven stressors were rated of greater importance by the nurses. This may indicate that the nurses have a better understanding of potential complications. Patients may be processing concerns based on longer term issues while the nurses are focusing on the immediate situation. Four of the items were hospital related stressors and three were illness related. None of the items were in the patients' ten most stressful concerns. Two of the items (sleep interruption and IV) were in the nurses' ten most important stressors.

Relationship to Findings of Conceptual Framework

The results of this study identified a variation in the level of perceived concern associated with the EPS. Lazarus' Transactional Model of Stress (1984) identifies the importance of individual differences such as heredity, life experiences, and personality on how perceptions are formed. There were no stressors that had complete agreement by

patients or nurses on the degree of concern induced by any item. None of the nurses had any personal experience from the patient viewpoint with respect to potential stressors. These findings are consistent with Lazarus' Transactional Model of Stress.

Furthermore, King's Theory of Goal Attainment is based on the interpersonal system with two or more persons entering into a transaction and communicating their shared perceptions to set mutual goals. Perceptions as defined by King (1981) are each person's representation of reality. The research findings from this study showed that while nurses and patients did share similar perceptions of stressors, five of the top 10 concerns perceived by patients were identified with less priority by the nurses. Accurate and congruent perceptions are imperative to mutual goal setting.

Even though there was 50% congruency in perceived concerns identified by nurses and patients the rank ordering was significantly different. This may be attributed to lack of personal experience by the nurses or lack of time with the patient to accurately assess the patient's perceptions.

Relationship of Findings to Previous Research

Previous research done by Connelly (1992) using the EPS Stressor Scale indicated a similar pattern in perceived stressors as identified by the patients in this study. Where there were similarities in perceived stressors identified by nurses in the Connelly and Thurn studies, there were also inconsistencies noted. Both nurses and patients in the Davies and Peters (1983) study identified thinking of home as most stressful. There was a difference in the degree of perceived concern noted between nurse and patient groups in all three studies.

The difference between the two studies specific to EPS patients may be due to the change in electrophysiology practice over the last ten years. Over the last several years the length of stay in the hospital has decreased dramatically. Finding an effective drug to treat the ventricular arrhythmias of a particular patient could take weeks. Because of the results of several major research studies (Moss et al., 1996 and Zipes et al., 1997) the

standard of care has become the implantation of cardioverter defibrillators for patients with sustained ventricular tachycardia or potential sudden cardiac death. Many of the supraventricular arrhythmias are now treated with radiofrequency ablation requiring only a one day stay in the hospital.

Connelly (1992) and Thurn (1999) found the nurses' mean total score to be higher than the patients' mean total score. The nurses tend to rate the stressors with higher concern than the patients. Davies and Peters (1983) found patients were conservative in their use of the rating scale used in their study, with patients seldom using very stressful or extremely stressful indicators, similar to the findings in this study.

Carr and Powers (1986) reported the nurses' stress ratings for both illness and hospital related factors were significantly higher than patients' stressfulness ratings in their study of coronary artery bypass graft patients. Cochran and Ganong (1989) found that for every comparison in their study nurses' ratings of the stressfulness of events were higher than the patients' ratings.

Limitations and Recommendations

The findings of this research study were from a small, nonrandom sample (patient: $n = 25$, nurse: $n = 24$), therefore, the findings cannot be generalized beyond the present sample. A larger sample and a random sampling plan, increases the potential to generalize to larger populations. The demographic data did not include the patients' perception of the severity of their illness or social support. Further studies should include these variables to determine their influence on the perception of stressors for patients to determine accurate group comparisons and findings that can be generalized. Patients that perceive their illness as severe may identify different stressors or degrees of concern than patients who perceive their illness as less severe. A strong social support system may influence the degree of concern identified regardless of the severity of illness.

In this study, males comprised the majority (68%) of the patient participants. The American Heart Association (1997) states that male gender is a major risk factor for heart

disease. Fifty two percent of the patient participants were 60 to 85 years old. This is consistent with the American Heart Association finding that report the majority of individuals with heart disease are over 65 years of age. Heart disease has been considered a disease mainly found in the male population, but as women become increasingly more afflicted by heart disease, it will be important to become aware of stressors identified by women.

The amount of time the nurse has to interact with the patient undergoing an EPS prior to the actual procedure could influence the perception of stressors by the nurse. The longer the contact time, the more familiar the nurse will be with the patient. This should result in a more accurate reflection of patient stressors. The nurse can be influenced by individual priorities and how they coincided with the patient's priorities.

Implications For Nursing

This study has several implications for nursing. The information obtained from this research could provide a framework for designing an educational program for nurses caring for patients requiring electrophysiology studies.

Educational sessions developed for nurses caring for patients with arrhythmia problems should address the illness related stressors identified by patients as most stressful. This will facilitate communication with patients to alleviate their stress. The nurse will be able to develop a plan of care with mutually set goals to deal with the patient's perceived stressors.

Nurses caring for the patients in the electrophysiology clinic must be aware of perceived stressors of patients to begin the patient education process. Patients being admitted for scheduled procedures receive little education preprocedure from the unit nurses due to changes in health care requiring patients to be admitted the morning of the procedure.

Nurse administrators must consider the needed time allocation to implement a plan of care that addresses stress factors when developing staffing patterns. When designing

environments for patient care, administrators should consider features that will address the primary stressor identified by patients (being away from home). Nurses must design the assessment forms to incorporate questions that will reveal what the patient is perceiving as stressful at the time of admission.

The variation in how patients and nurses rate stressors supports the concepts in Lazarus' (1984) and King's (1981) theories of the importance of individual perceptions. This data emphasizes the need for nurses to individualize assessments and develop a plan of care based on each patient's unique perceptions. When nurse educators teach nursing students assessment skills, it is important to instruct them on what influences patient perceptions. They must teach the students to validate their assessment of perceived patient concerns so as to develop mutual goals with the patient.

The continuation of liberal visiting hours is necessary to help alleviate the stressor of being away from home by allowing family and friends to be supportive greater lengths of time. Discharge planning needs to begin at admission to address any situation that may prolong the hospital stay.

Recommendations for further research include replicating the study using a larger sample size. Before use in further research, the EPS Stressor Scale needs to be revised to reduce redundancy and reflect changes in length of stay in the hospital. As electrophysiology studies become more widely used, more patients will be exposed to this aspect of care. Research done in this area should incorporate patients' perceptions of their illness. Nurse researchers should consider assessing stressors in patients with supraventricular arrhythmias versus ventricular arrhythmias. Supraventricular arrhythmias are rarely life threatening and may be viewed differently by patients.

Further research is needed in this area to determine if the perceived stressors are addressed and resolved during the nurse patient transactions. Continued research in this area will contribute to the existing body of nursing knowledge and facilitate a more comprehensive plan of care for patients requiring an electrophysiology study.

Appendices

APPENDIX A

Electrophysiology Stressor Scale

Appendix A

Code No. _____

Electrophysiology Stressor Scale

The following is a list of situations that sometimes are of concern to patients who have undergone electrophysiology studies. Please read over the list and circle the number which best indicates how concerned you have been about each item on the list while you were in the hospital.

1-not concerned

2-a little concerned

3-more than a little concerned

4-less than very concerned

5-very concerned

Thank you

How much have you been concerned about each of the following?

Item	Not Concerned	A Little Concerned	> A Little Concerned	< Very Concerned	Very Concerned
1. Increasing your activity	1	2	3	4	5
2. Paying hospital and medical bills	1	2	3	4	5
3. Having visitors only during visiting hours	1	2	3	4	5
4. Resuming your previous life style	1	2	3	4	5

Code No. _____

Item	Not Concerned	A Little Concerned	> A little Concerned	< Very Concerned	Very Concerned
5. Having to follow a hospital schedule	1	2	3	4	5
6. Losing income because of your illness	1	2	3	4	5
7. Not having things within easy reach, like call light, telephone, water pitcher	1	2	3	4	5
8. The progress you are making	1	2	3	4	5
9. Your call light being answered	1	2	3	4	5
10. Sleeping in a hospital bed	1	2	3	4	5
11. Receiving explanations of hospital routines and procedures	1	2	3	4	5
12. Sharing a room with one or more other patients	1	2	3	4	5
13. Needing assistance with various activities you used to do yourself (bathing, getting out of bed, using bedpan or urinal, etc)	1	2	3	4	5
14. Having several nurses care for you	1	2	3	4	5

Code No. _____

Item	Not Concerned	A Little Concerned	> A Little Concerned	< Very Concerned	Very Concerned
15. Resuming sexual activity	1	2	3	4	5
16. Having doctors or nurses discuss your condition in front of you	1	2	3	4	5
17. Having pain or discomfort	1	2	3	4	5
18. Having your sleep interrupted	1	2	3	4	5
19. Having your monitoring equipment turned off	1	2	3	4	5
20. Having pain medications	1	2	3	4	5
21. Having to have electrophysiology studies	1	2	3	4	5
22. Problems that other patients are having	1	2	3	4	5
23. Dying because of your illness	1	2	3	4	5
24. How your family is doing while you are in the hospital	1	2	3	4	5

Code No. _____

Item	Not Concerned	A Little Concerned	> A Little Concerned	< Very Concerned	Very Concerned
25. Discussing your concerns about electrophysiology studies with doctors or nurses	1	2	3	4	5
26. The amount of time spent in the hospital	1	2	3	4	5
27. Heart monitors and other equipment	1	2	3	4	5
28. The number of people involved in your care	1	2	3	4	5
29. Taking medications while in the hospital for your condition	1	2	3	4	5
30. Changing your diet and eating habits	1	2	3	4	5
31. Being away from home	1	2	3	4	5
32. Having blood drawn	1	2	3	4	5
33. Having an intravenous in your arm	1	2	3	4	5
34. Being away from your business	1	2	3	4	5

Code No. _____

Item	Not concerned	A Little concerned	> A Little concerned	< Very concerned	Very concerned
35. Overhearing hospital staff talking about other patients and their problems	1	2	3	4	5
36. Lack of personal privacy	1	2	3	4	5
37. Having to be shocked during an electrophysiology study	1	2	3	4	5
38. Having monitoring equipment connected to you	1	2	3	4	5

If there is anything that you have been concerned about during your hospitalization that is not on the list, please add it in the space provided at the end and circle the number which corresponds to the amount of concern it has caused you.

APPENDIX B

Permission Letter

Appendix B

Permission Letter

I give my permission to Donna Thurn to use the The EPS Stressor Scale, a tool I developed, in the collection of data for her Master's of Nursing degree at Grand Valley State University. She also has my permission to publish The EPS Stressor Scale in her thesis for this degree.

Name: [REDACTED]

Date: 3/27/99

APPENDIX C

Patient Biographical Data Form

Appendix C

Code No. _____

Patient Biographical Data Form

Please provide the following information so I can generally describe the people who participate in the study .

1. Race or Ethnic Group:
 1. African American _____
 2. Asian _____
 3. Caucasian _____
 4. Hispanic _____
 5. Native American _____

2. Age:
 1. 20 - 33 _____
 2. 34 - 46 _____
 3. 47 - 59 _____
 4. 60 - 72 _____
 5. 72 - 85 _____

3. Sex:
 1. Male _____
 2. Female _____

4. Marital Status:
 1. Married _____
 2. Divorced _____
 3. Single _____
 4. Widowed _____
 5. Separated _____

5. What is the highest level of education completed?

1. Some elementary _____
2. Completed elementary _____
3. Some high school _____
4. Completed high school _____
5. Some college _____
6. Completed college _____
7. Some graduate school _____
8. Completed graduate degree _____

APPENDIX D

Nurse Biographical Data Form

Appendix D

Code No. _____

Nurse Biographical Data Form

Please provide the following information so I can generally describe the people who participate in the study.

1. Have you or anyone in your family had an electrophysiology study?

1. Yes _____

2. No _____

2. Age:

1. 20 - 33 _____

2. 34 - 46 _____

3. 47 - 59 _____

4. 60 - 72 _____

3. Years of Nursing Experience:

1. 0 - 5 yr _____

2. 6 - 15 yr _____

3. 16 - 25 yr _____

4. 26 - 35 yr _____

5. > 35 yr _____

4. Current Level of Education:

1. ADN _____

2. Diploma _____

3. Bachelor _____

4. Masters _____

5. Ph.D. _____

APPENDIX E

Script for Approaching Nurse Participants

Appendix E

Script for Approaching Nurse Participants

Most patients undergoing electrophysiology studies experience some stress. As a registered nurse, I am interested in identifying what is perceived as stressful for these patients so that we can design interventions to help decrease their stress and improve care. The perceptions of both nurses and patients are important; therefore, I would really appreciate your view of the sources of stress for these patients.

I am currently completing my MSN at Grand Valley State University. As part of my program I am conducting this research involving patients undergoing electrophysiology studies. You have been selected for participation because you are caring for these patients before and after their procedure.

Your participation would involve filling out a questionnaire that should take approximately 10 to 15 minutes to complete. The questionnaire lists situations that are sometimes of concern for patients undergoing electrophysiology studies. You are asked to indicate which situations you believe the patient would find stressful. Please do not discuss the questionnaire with other nurses as they may be asked to participate in the study at some future time. All information you share through the questionnaire will be strictly confidential and any reports of the study will reveal only grouped information. Do not put your name on the questionnaire so your response will be anonymous. This study is completely voluntary and will in no way jeopardize your employment status. You may withdraw at any time from the study without any change in your employment status.

Should you decide to participate, please complete the questionnaire and place it into the envelope provided. Place the sealed envelope in the large envelope labeled with my name located at the medication area of your unit. I will retrieve the envelope. If you would like a summary of the results of the study please place your name and address on

the attached index card and place it in the large envelope at the medication area. I will mail you a summary when I complete my research.

If you have any questions or concerns please call me at 616-226-8068. Thank you for considering my request.

Sincerely,

A solid black rectangular box used to redact the signature of Donna Thurn.

Donna Thurn RN

If you have any concerns or questions regarding your rights as a research participant, please contact Dr. Paul Huizenga (Chairman, Human Research Committee, Grand Valley State University, 616-895-2472).

APPENDIX F

Script for Approaching Patient Participants

Appendix F

Script for Approaching Patient Participants

My name is Donna Thurn. As a registered nurse, I am interested in finding out what makes an electrophysiology study stressful for patients so that nurses can better help you deal with the stress and improve the care we provide you.

I am a registered nurse doing graduate work for my Masters degree in Nursing at Grand Valley State University. As part of my program I am currently working on a research project involving patients undergoing electrophysiology studies. You have been selected for possible participation because you have just had an electrophysiology study.

Your participation is strictly voluntary and would involve filling out a questionnaire that should take approximately 10 to 15 minutes to complete. The questionnaire is a list of situations that are sometimes of concern for patients undergoing electrophysiology studies. I would like to know what you think.

All information you share through the questionnaire and information sheet will be strictly confidential and any reports of the study will reveal only grouped information. Do not put your name on the questionnaire so your responses will be anonymous. This is completely voluntary and your care will not be affected in any way regardless of your decision to participate or not. You may withdraw at any time from the study without any change in your care.

Should you decide to participate, please complete the questionnaire and place it into the envelope. Please give the sealed envelope to your nurse and she will place it in a central area where I will pick up completed surveys. If you have any concerns or questions about the questionnaire, I will return and address them.

If you have any questions or concerns, please call me at 616-226-8068. Thank you for considering my request. If you would like to have a summary of the research

results, please complete the provided index card with your name and address and give it to your nurse with the survey.

Sincerely,

A solid black rectangular box used to redact the signature of Donna Thurn.

Donna Thurn RN

If you have any concerns or questions regarding your rights as a research participant, please contact Dr. Paul Huizenga (Chairman, Human Research Committee, Grand Valley State University, 616-895-2472).

APPENDIX G

Table 10

Rank Order of Stressors Identified by Patients

Appendix G

Table 10

Rank Order of Stressors Identified by Patients

Item	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< A Very Concerned (%)	Very Concerned (%)	Mean
Being away from home	H	16	28	20	8	28	3.04
Dying because of your illness	I	24	16	24	8	28	3.00
Resuming your life style	I	24	16	28	8	24	2.92
Having pain or discomfort	I	24	20	24	24	8	2.72
Having to be shocked during EPS	I	24	32	12	16	16	2.68
Progress you are making	I	28	16	28	20	8	2.64
Amount of time spent in hospital	I	24	28	24	12	12	2.60
How your family is doing while you are in the hospital	H	32	24	16	12	16	2.56
Increasing your activity	I	28	20	32	12	8	2.52
Following hospital schedule rather than your own	H	28	32	24	4	12	2.40
Needing assistance with various activities	I	32	28	16	20	4	2.36
Having an EPS	I	28	40	12	12	8	2.32
Lack of personal privacy	H	36	36	12	8	8	2.16
Paying hospital and medical bills	H	52	28	0	8	16	2.12
Taking medication while in hospital	I	48	12	28	4	8	2.12

Appendix G (cont.)

Table 10

Rank Order of Stressors Identified by Patients

Item	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< A Very Concerned (%)	Very Concerned (%)	Mean
Receiving explanations of hospital routines	H	40	28	20	4	8	2.12
Having an IV in your arm	I	28	48	16	4	4	2.08
Sleeping in a hospital bed	H	44	24	8	20	4	2.04
Having blood drawn	I	36	40	16	0	8	2.04
Changing your diet and eating habits	I	44	24	20	8	4	2.04
Having your sleep interrupted	H	40	32	20	0	8	2.04
Discussing concerns about EPS with doctors and nurses	I	52	20	16	4	8	1.96
Having monitoring equipment connected to you	H	48	28	16	4	4	1.88
Your call light being answered	H	52	28	8	4	8	1.88
Problems other patients are having	H	52	28	8	4	8	1.88
Doctors and nurses discuss your condition in front of you	H	56	24	8	4	8	1.84
Resuming sexual activity	H	60	16	8	12	4	1.84

Appendix G (cont.)

Table 10

Rank Order of Stressors Identified by Patients

Item	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< A Very Concerned (%)	Very Concerned (%)	Mean
Number of people involved in your care	I	52	20	20	8	0	1.84
Sharing a room with one or more people	H	44	40	8	4	4	1.84
Heart monitor and other equipment	H	48	28	12	4	4	1.83
Needing pain medication	I	52	24	16	8	0	1.80
Not having things within easy reach	H	56	20	12	12	0	1.80
Losing income because of your illness	I	64	20	8	4	4	1.64
Being away from your business	H	68	16	8	4	4	1.60
Having several nurses care for you	H	56	28	16	0	0	1.60
Having monitor equipment turned off	H	60	24	16	0	0	1.56
Visitors only during visiting hours	H	64	20	12	4	0	1.56
Overhearing staff talking about other patients and their problems	H	72	16	8	4	0	1.44

Note. * I = Illness-related and H = Hospital-related

APPENDIX H

Table 11

Rank Order of Stressors Identified by Nurses

Appendix H

Table 11

Rank Order of Stressors Identified by Nurses

Item	Sub Scale*	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< A Very Concerned (%)	Very Concerned (%)	Mean
Having pain or discomfort	I	8	16	32	32	12	3.24
Being shocked during an EPS	I	12	12	32	28	16	3.24
Resuming your previous life style	I	12	28	12	44	4	3.00
Dying because of your illness	I	20	20	24	12	24	3.00
Having your sleep interrupted	H	8	28	28	32	4	2.96
Having an EPS	I	16	20	28	28	8	2.92
Having an IV	I	16	28	24	16	16	2.88
Progress you are making	I	20	20	28	24	8	2.80
Lack of personal privacy	H	16	28	28	20	8	2.76
Being away from home	H	20	20	32	24	4	2.72
Having blood drawn	I	24	20	32	12	12	2.68
Explanations of hospital routines	H	16	24	36	24	0	2.68
Amount of time spent in hospital	I	24	20	28	20	8	2.68
Sharing a room with one or more people	H	28	20	28	8	16	2.64
How your family is doing while you are in the hospital	H	20	36	20	16	8	2.56

Appendix H (cont)

Table 11

Rank Order of Stressors Identified by Nurses

Item	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< A Very Concerned (%)	Very Concerned (%)	Mean
Needing assistance with activities	I	20	32	28	12	8	2.56
Increasing your activities	I	24	24	24	28	0	2.56
Discussing concerns about EPS with doctors/nurses	I	16	28	44	12	0	2.52
Needing pain medication	I	12	44	32	8	4	2.48
Changing your diet and eating habits	I	24	32	24	16	4	2.44
Monitor equipment connected to you	H	28	24	36	8	4	2.36
Call light being answered	H	20	28	48	4	0	2.36
Taking medication while in hospital	I	16	44	32	4	4	2.36
Overhearing staff talking about other patients and their problems	H	32	32	20	16	0	2.20
Number of people involved in care	H	24	40	32	0	4	2.20
Sleeping in a hospital	H	28	32	32	8	0	2.20
Being away from your business	H	44	20	20	8	8	2.16
Heart monitor and other equipment	H	28	36	32	0	4	2.16
Several nurses caring for you	H	36	24	28	12	0	2.16

Appendix H (cont)

Table 11

Rank Order of Stressors Identified by Nurses

Item	Sub Scale *	Not Concerned (%)	A Little Concerned (%)	> A Little Concerned (%)	< A Very Concerned (%)	Very concerned (%)	Mean
Following hospital schedule	H	28	32	36	4	0	2.16
Problems other patients are having	H	36	24	32	8	0	2.12
Doctors/nurses discuss your condition in front of you	H	32	28	36	4	0	2.12
Monitor equipment turned off	H	48	16	16	16	4	2.12
Resuming sexual activity	H	44	32	8	8	8	2.04
Not having things within easy reach	H	32	36	28	4	0	2.04
Losing income because of your illness	I	48	24	8	16	4	2.04
Paying hospital/medical bills	H	48	28	20	0	4	1.84
Visitors only during visiting hours	H	68	20	12	0	0	1.44

Note. * I = Illness-related and H = Hospital-related

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