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## The effect of preoperative intensive care orientation on postoperative anxiety levels in spouses of coronary artery bypass clients

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**Lenhart, Eva Marie, M.S.N.**

**University of Nevada, Las Vegas, 1993**

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THE EFFECT OF PREOPERATIVE INTENSIVE CARE  
ORIENTATION ON POSTOPERATIVE ANXIETY  
LEVELS IN SPOUSES OF CORONARY  
ARTERY BYPASS CLIENTS

by

Eva Marie Lenhart

A thesis submitted in partial fulfillment  
of the requirements for the degree of

Master of Science

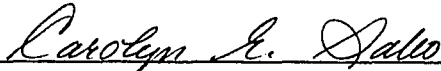
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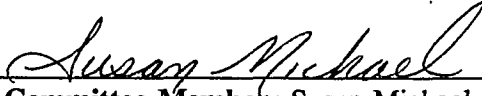
Department of Nursing  
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December, 1993

**Approval Page**

The Thesis of Eva Marie Lenhart for the degree of Master of Science in Nursing is approved.



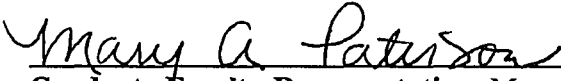
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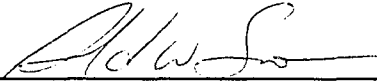
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## Abstract

The purpose of this study was to examine the effect of a preoperative intensive care unit (ICU) orientation program (primary prevention) on the anxiety levels (flexible line of defense) in spouses of coronary artery bypass graft (CABG) patients. Intensive care unit orientation included ICU visitor policy booklets and a standardized ICU tour. This study tested if primary prevention reduces stress as proposed by Neuman. Data was obtained with a quasi-experimental pretest-posttest design. A convenience sample of spouses of CABG patients was utilized (N=50). Tools used to gather data were the Demographic Data Sheet (DDS), and the State Trait Anxiety Inventory (STAI). The STAI is a Likert-type, self-report scale consisting of 40 items that measure state and trait anxiety. Reliability for the STAI was established with stability and internal consistency. Correlations for the Trait-Anxiety scale were .65 to .85, with the State-Scale being .33. Internal consistency was measured with the alpha coefficient, with both scales being .90 or greater. Subjects were met the evening prior to surgery during preoperative teaching. After teaching was completed, all subjects took the DDS and STAI. The experimental group was then given the ICU orientation. The S-Anxiety scale was then administered to both groups after the spouses first postoperative ICU visit. A Wilcoxon rank sum test indicated that there were no differences in trait anxiety and preoperative state anxiety between groups ( $p=.78$  and  $p=.74$ ,



respectively) and the experimental group exhibited lower postoperative state anxiety than the control group ( $p=.003$ ). Several of the demographic variables were tested to see if they had any outside influence on the postoperative state anxiety. Variables tested were: elective versus nonelective surgery; previous ICU exposure by the spouse; and previous ICU exposure by the patient. The ANOVA was used to examine the influence of elective or nonelective surgery, and previous ICU exposure by either the patient or the spouse on the group's postoperative state anxiety scores. These variables were found to exert no significant effect on the postoperative state anxiety of the groups. Therefore, this study found that only the ICU orientation caused any effect in the differences between the two groups.

## TABLE OF CONTENTS

	Page
Abstract.....	iii
List of Tables.....	vii
Acknowledgements.....	viii
 Chapter I	
Introduction.....	1
Problem Statement.....	3
Purpose of the Study.....	4
Significance of the Study.....	4
 Chapter II	
Review of the Literature & Conceptual Framework.....	6
Review of the Literature.....	6
Family Needs.....	6
Intensive Care Unit Visiting Hours.....	15
Preoperative Teaching.....	18
Conceptual Framework.....	20
Assumptions.....	24
Research Questions.....	24
Definition of Terms.....	25
Limitations of the Study.....	26
 Chapter III	
Methodology.....	28
Research Design.....	28
Research Setting.....	29
Sample.....	29
Human Subject Rights.....	30
Data Collection Methods.....	30
Techniques.....	31
Instrument.....	32
Data Analysis.....	34
 Chapter IV	
Results.....	36
Demographics.....	37
Relationship of State Anxiety Levels and ICU Orientation.....	40

Relationship of State Anxiety Levels and Subject Characteristics.....	42
Chapter V	
Discussion.....	46
Preoperative ICU Orientation for Spouses.....	46
Relationship of State Anxiety Levels and Subject Characteristics.....	48
Limitations.....	50
Implications for Nursing.....	52
Recommendations.....	53
Summary.....	55
Appendices.....	57
A. Neuman Systems Model.....	57
B. Demographic Data Sheet.....	59
C. Trait Anxiety Scale.....	61
D. State Anxiety Scale.....	63
E. Consent Form.....	65
F. Humana Hospital Sunrise Acceptance.....	68
G. Permission from Cardiovascular Surgery Associates.....	70
H. Human Subject Rights.....	72
References.....	81

## LIST OF TABLES

TABLE	PAGE
1. Characteristics of the Sample in Regards to Age, Sex, and Years of Marriage	38
2. Characteristics of the Sample in Regards to ICU Exposure, Type of Surgery, and Nevada Residency	39
3. Wilcoxon Rank Sum Scores for Trait Anxiety, Preoperative State Anxiety, and Postoperative State Anxiety	41
4. ANOVA Scores for the Relationships of Differences Between the Groups to Subject Characteristics	43

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## Chapter I

### INTRODUCTION

Admission to an intensive care unit is a stressful situation not only to the client, but also to his or her family. Established roles within the family are thrown into disequilibrium when one member is hospitalized. Disequilibrium forces the entire family system to reorganize. In addition to familial attempt for stabilization, stressors for the family may range from the usual abruptness of ICU admission, restricted visiting hours, high-technological monitoring systems, lack of knowledge regarding diagnosis, concern about the prognosis, and monetary concerns. Due to these many factors, family members may be unable to mobilize adequate coping mechanisms. Several studies have investigated what the family needs are while a member is critically ill. From these studies, families rated information needs most important, followed by needs for reassurance and convenience (Hickey, 1990). Few studies were found that investigated how meeting these needs affected the family.

Anxiety in family members can have a negative affect on the patient (Simpson, 1991). Associated anxiety is related to family coping mechanisms not being adequately utilized. In addition, not only does the patient relate to the family, but the nurse does also. Hickey and Lewandowski (1988) found that the nurses' subjective feelings (likes or dislikes) toward the patient and family were one of the strongest

influences on the involvement of the nurse with the family. Many nurses choose to focus only on the patient, and view families as an added stressor (Gardner and Stewart, 1978). Yet one of the family needs identified was "to feel accepted by the hospital staff," (Hickey, 1990). Perhaps the feeling of acceptance leads to formation of a trust relationship between the nurse and the family.

Nurses are in a perfect position to intervene with family units. Nursing staff are in constant contact with the patient, and can communicate with the family more than any other health care provider. However, it appears that nurses are only moderately accurate in their assessment of critical care family needs, (Forrester, Murphy, Price, and Monaghan, 1990). Empathy, on the nurses' behalf, was found to increase the nurses' ability to accurately assess family needs, but length of nursing experience actually had a negative affect on the nurses' assessment ability, (Murphy, Forrester, Price and Monaghan, 1992). Intensive care unit nurses need to be encouraged to incorporate the family in the plan of care for the patient, since all groups impact upon the other.

Walsh-Chavez and Faber (1987) studied how an education-orientation program effected families of critically ill patients. The program provided an orientation to the ICU environment, which included the physical environment, equipment, visiting policy, and the patient's physical condition. This study found that the orientation

program had a positive effect on family members. Also, the nursing staff felt positive about intervening with the sample families.

Since the ICU environment is viewed as stressful, it is believed that the better a family is oriented to it, the less the environment affects their anxiety level. Adequate ICU orientation should decrease the number of stressors a family faces. A brief visit to the ICU, by the family, as well as teaching may help reduce stressors. This, in turn, can affect not only the family, but the nurse and the patient, and may result in higher quality of care.

#### Problem Statement

To provide effective holistic care for a client, nurses should not only be concerned with all aspects of the client's being, but also include the family unit in nursing intervention. The abruptness of ICU admission and possibly the acute illness can inhibit the familys' coping mechanisms. Systems theory believes that a system is a composed set of interdependent parts. A change in one part of the system will effect change in other parts of the system, (Okun and Rappaport, 1980). Therefore, when one individual experiences crisis, the entire family system will also be affected because members are interdependent on one another. The family may be unable to offer support to the critically ill client, and may add stress to or seek support from the hospitalized member. This can also add stress to the nurse's plan of care.



Nurses are in the prime position to offer help for the family. Nursing practice, however, tends to focus only on the client's physiological status (Walsh-Chavez and Faber, 1987). Neuman (1989) believes that the earlier nursing intervention takes place in an identified problem, the better chance the client has at resolving the problem. The nurse can help the family understand what to expect in the ICU environment before the client is admitted to the unit.

#### Purpose Statement

The purpose of this study was to examine the effect of a preoperative ICU orientation program (primary prevention) on the anxiety levels in spouses (flexible line of defense) of coronary artery bypass surgery clients. Anxiety levels were measured the evening before surgery and immediately after the first post-operative visit.

#### Significance of this Study

Reactions to stressful life events, such as an admission to ICU, affect both the client and family. The individual's flexible line of defense acts as a buffer to combat any ill effects to that person. Nursing's plan of care should include working with the family's flexible line of defense while the spouse is in ICU. This can be accomplished in many ways through primary prevention. Studies show that families have numerous needs while a client is in ICU (Boykoff, 1986; Rukholm, Bailey, Coutu-Wakulczyk, and Bailey, 1991; O'Neill-Norris and Grove, 1986; Murphy, Forrester, Price, and Monaghan, 1990, 1992; Molter, 1979;

Daley, 1984; and Stillwell, 1984). However, very few of these studies have taken the next step to see what happens when nurses attempt to meet family needs. In addition, Neuman's Health Care Model was not utilized as the theoretical framework in any of the studies focusing on family needs in this literature review. For the purposes of this study, the family unit is defined as a husband and wife. Therefore, this study seeks to test Neuman's theory of primary prevention as a means of strengthening the flexible line of defense of the spouse of selected ICU clients.

## Chapter II

### REVIEW OF THE LITERATURE AND CONCEPTUAL FRAMEWORK

#### Review of the Literature

Several areas of previous research were considered for this particular study. Numerous recent studies have examined families of ICU patients, and what they considered as important needs to them while their family member was in ICU. It was also important to look at completed studies involving the timing of pre-operative teaching, and how this affected clients and their family members.

#### Family Needs

Walsh-Chavez and Faber (1987) studied a convenience sample of 40 spouses and offspring who visited patients admitted to the intensive care unit. A pretest-posttest experimental design with random assignment of subjects to the control or experimental group was utilized. The null hypothesis for the control group was there would be no significant change in the blood pressure, heart rate or the Kerle and Bialek Subjective Stress Scale Score (SSS) before and after visiting. The null hypothesis for the experimental group was there would be no significant change in the blood pressure and heart rate before and after the education-orientation program and before and after visiting. The physiologic parameters of blood pressure and heart rate use ratio scales. The SSS is an ordinal scale that uses 25 descriptor terms

incorporated into two forms, each consisting of 15 words that range from "great" to "terrified" and "wonderful" to "scared stiff". Respondents choose only one word that describes best how they feel. The tool developers tested validity of the SSS based on studies of U.S. Army recruits in a stressful situation, and concluded that the SSS can differentiate between stress and nonstress. A replication study was done in a hospital setting and supported the tool's applicability. No statistics were presented for the tool's reliability and validity. Data was analyzed using paired t-test and repeated measures of analysis of variance. In the control group, no significant change in the dependent variables was noted before and after visiting. In the experimental group, the only statistically significant finding was that their heart rates decreased after the preoperative teaching, and again after the ICU visit. No statistically significant differences were found between the experimental and control groups.

Molter (1979) conducted a descriptive study of 40 relatives of critically ill patients who had various diagnoses. Research questions were directed at what the personal needs of the relatives were, how important these needs were, and if these needs were being met and by whom. Molter developed a structured interview that used a list of 45 "need" statements identified by the investigator through literature review and a survey of 23 graduate nursing students. Subjects were requested to rate needs on a scale of 1 (not important at all), to 4 (very

important). No reliability and validity was given for the new scale. Descriptive statistics were used to evaluate data, and no alpha level was identified. The top five needs were; to feel there is hope, to feel hospital personnel care about the patient, to have a waiting room near the patient, to be called at home about any changes, and to know the prognosis. Forty-one of the needs were met more than 50% of the time, and nurses helped with 20 of the needs.

Daley (1984) studied 40 family members of critically ill patients who were 18 years and older, with this being the patient's first ICU admission. Molter's (1979) scale was revised to 46 needs, and divided into six major categories of personal needs; need to decrease anxiety, need for support and ventilation, need for information, need to be with the patient, and the need to be helpful. Validity was established by review and edit by faculty members of a graduate nursing program. The instrument was also pretested prior to the study. No scores are given for reliability and validity. Objectives of the study were to determine what immediate family needs were based on the six categories, and who is perceived as the most likely person to meet these needs. Frequencies, distributions, and percentages were computed for the data. The need for relief of anxiety was the highest, followed by the need for information, and the need for support and ventilation. Personal needs ranked lowest. Needs were seen as being met by the physician and nurse, with the majority met by physicians.

Stillwell (1984) studied 30 family members of coronary care ICU patients, who had been admitted directly to ICU, and the family must have visited to ICU within the first 24 hours after admission. The objectives were to expand knowledge of family needs with a relative in ICU, and to assess the importance of visiting needs. The Hollingshead Four Factor Index of Social Status was used to determine socioeconomic data. Molter's (1979) scale was revised with eight visiting need statements taken out of the scale, and a ninth need statement concerning privacy added to them. Content validity of the revised scale was established by a review of a panel of experts in ICU nursing, and a nurse who had had a relative as a patient in ICU. No attempt was made to establish validity of the new instrument. Nonparametric tests were used to analyze data with a significance level of .05. Stillwell found that visiting needs were important, and compared with Molter's (1979) rankings of needs.

Leske (1986) studied 55 adult family members of 20 critically ill patients. Subjects were 16 to 83 years old, 20 males and 35 females, and with and without ICU experience. The purpose of the study was to identify reported needs of family members of critically ill patients. Molter's (1979) scale was used, with the order of need statements randomly changed, and an open-ended item added to identify any needs not previously reported. The new instrument was named the Critical Care Family Needs Inventory (CCFNI). Internal consistency for the tool

was 0.98. Families were interviewed within 72 hours after admission. Descriptive statistics were used for analysis. The top five needs found were; to feel there is hope, to have questions answered honestly, to know the prognosis, to know specific facts concerning patient progress, and to have explanations given in understandable terms.

Price, Forrester, Murphy, and Monaghan (1991) studied 213 family members of patients in the surgical-trauma and neurological ICU. Subjects were 18 years and older, and visited the patient in the first 24 to 72 hours of admission. The CCFNI was used with a combined reliability of 0.85, and an alpha coefficient of 0.94 being reported. No hypothesis was given, and parametric data was reported without a stated alpha level. Need statements ranked consistently with Molter (1979), and Leske (1986), except the need to feel hope was ranked significantly lower.

Forrester, Murphy, Price, and Monaghan (1990), studied 92 family members, and 49 ICU nurses who provided direct care. No hypothesis was stated, however the objectives were to determine: which needs are perceived as most and least important by family members; which needs are assessed as most and least important by the nurses; and whether significant differences exist between family members' perceptions and ICU nurses' assessments of needs. Again the CCFNI was given to all subjects, with the coefficient alpha reliability being 0.94. Paired t tests were calculated to find differences between the two groups, with the

alpha level being  $p < 0.05$ . Findings indicated that significant differences were detected between family members' perceptions and nurses' assessments on 50% of the critical care family needs studied. Of the needs that were assessed accurately by the nurses, none of these were perceived by family members as being among the most important.

Murphy, Forrester, Price, and Monaghan (1992), studied 92 pairs of family members of ICU patients and 60 ICU nurses providing direct care for these patients. The hypothesis tested was: the more empathetic ICU nurses are, the greater is their ability to assess ICU family members' needs accurately. The researchers also sought to answer the question of if a relationship exists between the length of experience of the nurse and the ability to assess family needs accurately. Empathy was measured by using La Monica's Empathy Construct Rating Scale (ECRS). This is a self-administered Likert-type scale. The coefficient alpha was reported at 0.96 for this study. The ECRS was given to the ICU nurses first, then all subjects completed the CCFNI. The combined coefficient alpha of the CCFNI for this study was 0.85 for both groups. Multiple regression analysis was performed to determine how empathy and nursing experience related to assessment of ICU family members. The researchers found that the more empathetic nurses were, the greater their ability to assess ICU family members' needs accurately for six of the family needs: to feel accepted by hospital staff; to have visiting hours start on time; to see patient frequently; to have a telephone near



the waiting room; to know the prognosis; and to have visiting hours changed for special conditions. Length of nursing experience negatively affected the nurses' ability to assess three of the ICU family members' needs: need to know how the patient was being treated; need to be assured that the best possible care is being given to the patient; and need to be told about others who could help with problems.

O'Neill-Norris, and Grove (1986) performed a descriptive study on 20 ICU family members and 20 ICU nurses. Intensive care unit clients came from six different ICUs, and had various diagnoses. Three research questions were asked: (1) What selected psychosocial needs of family members are perceived as most and least important by selected family members of adult ICU patients? (2) What selected psychosocial needs are most and least important for the family members as perceived by the ICU nurses?, (3) Is there a difference between selected psychosocial needs of family members, and those perceived by the nurses? After a pilot study was completed, Molter's (1979) needs scale was revised from 45 to 30 need statements with Q sort methodology. The reliability alpha for this 30-item questionnaire was then determined to be 0.85 for this study. Findings indicate that honest information, a caring attitude, and hope appeared to be of greatest importance to family members in this study. A difference was found between the perceptions of the two groups. Additional analysis of variances was performed on individual needs because of the difference in scores.

Nurses did not appear to perceive: the importance of the need of honest information, a caring attitude, or hope to the family; or that family members need to be accepted by nurses. Both groups saw informational needs as important, but families rated these needs as significantly more important than the nurses.

Koller (1991) studied a convenience sample of 30 family members of 20 critically ill patients. Patients were admitted to the ICU for a period of least 24 hours, and families had to be physically present. Research questions for this study included: What personal needs do families of ICU patients identify?; What do families use as effective coping behaviors to meet their needs?; What behaviors are evaluated as effective coping behaviors by the family?; What nursing measures do families see as a help for their coping?; and What relationship exists between coping behaviors and family needs? The CCFNI was used to measure family needs, with an alpha coefficient of 0.92. The Jalowiec Coping Scale (JCS) evaluated the families' coping strategies. The JCS is a Likert scale with a reported alpha coefficient of 0.64 to 0.96. Koller also used the Family Member Structured Interview Guide which consisted of seven open-ended questions about coping with critical illness. Rank ordering for frequency showed that the need to know the patient's prognosis was identified as most important to the family, and hope was most frequently used as a coping method. Confronting and optimistic coping styles were evaluated as most effective. Families described

nursing interventions that were most helpful as the provision of information, emotional support, and competence and manner of the nurse.

Rukholm, Coutu-Watulczyk, and Bailey (1991), studied a convenience sample of 166 adults visiting an adult family member in the ICU. Three different hospitals were utilized for data collection, with patients having various diagnoses, and lengths of admission. No hypothesis was stated, however the objectives for this study were to: describe the needs and situational and trait anxiety levels of adult family members of ICU patients; to examine the relationship between the needs and the situational and trait anxiety levels; and to determine the influence of certain sociodemographic factors on the expression of needs and anxiety levels. Families completed the CCFNI, in which four additional questions were added to reflect specific adaptation to the Sudbury, Ontario area where data was collected. The reliability coefficient for the CCFNI was calculated according to the Spearman-Brown (0.92) and the Guttman Split-Half (0.93). Internal consistency was reported as 0.93. Subjects were also asked to take the State and Trait Anxiety Scale (STAI), which is a Likert-type scale that contains 20 items that measure anxiety. Internal consistency for this scale was reported at 0.86 to 0.90. The State Anxiety Scale yielded a mean score of 45.24 and the Trait Anxiety Scale a mean score of 37.3. Analysis of variance found that family needs and situational anxiety were significantly related.

Multiple regression found that worries, trait anxiety, age, and family needs explained 38% of the variation of situational anxiety. Spiritual needs and situational anxiety explained 33% of the variation of family needs.

#### Intensive Care Unit Visiting Hours

Several researchers have specifically studied how visiting hours in the intensive care affects the family. Hickey and Lewandowski (1988) studied 266 critical care nurses from three different hospitals. Research questions for this study were: How do ICU nurses view family visiting and the role families should play in the ICU?; How do ICU nurses view their own roles with families of critically ill patients?; and what factors do ICU nurses believe most influence their involvement with families of critically ill patients? A questionnaire was developed by the researchers that looked at the areas of demographics, visiting practices, family role, and the critical care nurses role. Reliability and validity were not given for the tool. Only 39% agreed that the official visiting policy in their unit was followed, with little consensus in what the policy should be. There was consensus in the sample that families should play a supportive role by helping patients eat, offering encouragement, reading to the patient, keeping patient oriented, and helping the patient deal with his or her fears about the illness and environment. The factors that most influenced critical care nurses' involvement with families were situations relating to the patient's

actual or impending death and the nurses' subjective feelings (likes or dislikes) for the patient and family. No level of significance was reported.

Boykoff (1986) studied 20 patients and 11 family members that were admitted to a medical ICU. All patients were hospitalized with the diagnosis of rule out myocardial infarction. No hypothesis was stated, however the purpose was to explore the perceptions of visitation needs during the medical ICU (MICU) experience from both the patients' and the families' point of view. An open-ended interview and a self-administered questionnaire were utilized. The interview covered the topics of visitation policy and schedule, the physical MICU environment, and the roles of nurses, patients, and family members during visitation. The interview was reviewed by two cardiac nurses, suggesting some content validity. From these responses, 22 visitation themes were identified. The themes were then constructed into the self-administered Likert-type scale.. Again, content validity was determined by "several" cardiac nurses. Three themes were found to be important; nurse as a communicator of information, nurse as a gatekeeper to adjust visitation according to individual patient conditions, and nurse as the absolute care provider in opposition to having the family take over certain cares. No significance level was stated for the data.

Simpson (1991) studied visitation from the clients' perspective. Fifty coronary care patients and 50 surgical intensive care patients

were tested. No hypothesis was stated, but the relationships between CCU and SICU patients' preferences for visits, select personal and illness characteristics, and the perceived impact of visits were evaluated. Patients' perceptions of visits in critical care were evaluated by a questionnaire developed for this study that was derived from research and the investigator's experience. This Likert-type scale was reviewed by six nurse researchers, both with and without ICU experience. A pilot study was also completed to determine length of completion time and patient understanding. The modified version of the Eysenck Personality Inventory containing sociability dimension questions was selected for the current study to determine patients' usual preferences for being around other people. This scale requires a yes, no, or maybe response. Split half reliability correlation of the complete inventory was  $r=0.83$ . In addition, the Acute Physiologic and Chronic Health Evaluation scale was used to determine the illness severity. Content validity is referred to as being done in other studies. Pearson correlation coefficients were used to analyze relationships among patient preferences for visits, personal characteristics, and illness characteristics. Findings in this area include: patients who preferred longer visits also preferred more visitors; age was positively correlated with length of visits; the more extraverted the patient, the more frequently they preferred visits; and socioeconomic status was inversely related to the preferred length. Chi square and  $t$  tests, with a significance level of 0.05, were used to

compare the ICU and CCU groups. Several differences were found between the two groups. A greater proportion of SICU patients preferred visits any time, day or night, and CCU patients preferred longer visits.

### Preoperative Teaching

Effectiveness of preoperative teaching is another area of nursing research that is important to consider in helping meet family needs. Cupples (1991) studied the effects of timing and reinforcement of preoperative education on knowledge and recovery of 40 patients having an initial, elective coronary artery bypass graft (CABG) surgery. The experimental group received both preadmission and postadmission preoperative instruction; those in the control group received only postadmission preoperative instruction. Cupples hypothesized that subjects that received both preadmission and postadmission preoperative education would have higher preoperative knowledge levels, lower levels of postoperative anxiety, more favorable postoperative mood states, and more favorable physiologic recoveries. Four different scales were used to obtain information. First, the CABG Surgery Knowledge Questionnaire was developed by the researcher to measure patients' knowledge of CABG surgery. This scale contained 20 multiple choice questions, with the content validity being established by 12 master or doctorally prepared cardiovascular clinical specialists. The coefficient alpha for this scale was 0.71, with the 2-week test-retest

reliability being 0.87. The state anxiety scale of the STAI was used to assess perceived anxiety. Alpha reliability coefficients were reported as ranging from 0.83 to 0.92. The Profile of Mood States (POMS) , a 65-item adjective rating scale designed to measure affective states of intermediate duration, was used to assess postoperative mood state. The alpha reliability for this scale was reported as 0.96. Lastly, the Wolfer-Davis Recovery Inventory assessed physiologic recovery. This eight-item Likert-type scale has been used to measure postoperative recovery in patients that underwent a variety of surgical procedures. An alpha coefficient of 0.85 was reported. Findings indicated that although the experimental group had lower postoperative anxiety than the control group, there was no significant difference in scores and the experimental group had higher preoperative knowledge levels, more positive mood states, and a more favorable state of physiological recovery.

Lepczyk, Hunt-Raleigh, and Rowley (1990) studied 72 patients that attended preoperative instruction either as an inpatient that day before surgery or as an outpatient four to eight days before surgery. The researchers hypothesized that cardiac surgery patients who received a preoperative teaching program prior to admission would have less anxiety and greater knowledge preoperatively than patients who received preoperative teaching after admission. A Heart Surgery Questionnaire was developed by the researchers, and contained 14



multiple choice questions related to surgery. Content validity was determined by a panel of cardiovascular clinical specialists. Test-retest validity in a pilot study yielded a correlation coefficient of 0.68. The alpha coefficient was stated as 0.76. The STAI was used to rate anxiety levels in patients. Internal coefficient was reported as greater than 0.85. No difference was found in anxiety levels between the two groups. Knowledge gained with the preoperative class was significantly greater for the outpatient group than the inpatient group. However, results suggest that it makes little difference whether patients received information up to a week before surgery, or just the day before.

#### Conceptual Framework

Betty Neuman (1989) states "a system is considered holistic when any parts or subparts can be organized into an interrelating whole. Holistic organization is one of keeping parts whole or stable in their intimate relationships." The Betty Neuman Health Systems Model uses the concept of holism in treating a client as an open system. Man is viewed as a biopsychosocial being with a central core made up of survival factors. Five variables exist and include physiological, psychological, sociocultural, developmental, and spiritual. These variables are interrelated within the system, and occur and must be simultaneously within each client concentric circle. This core is surrounded by rings, or lines of defense, that protect the system's stability. Neuman views the environment as an open system consisting

of both internal and external forces surrounding man. The environment is continually influencing and being influenced by man. The internal environment are the forces contained within the boundaries of the client system, and are defined as intrapersonal. In the external environment are forces existing outside the defined client system and include interpersonal, (between clients), or extrapersonal, (coming from outside of any client system). The concepts of the lines of defense and of the environment will be defined in greater detail in the following pages. The relationship between these five variables, the lines of defense, and the environment impact how or to what degree a system reacts to a stressor. The client system is defined as open, and in total interface with the environment.

Around this core exists what Neuman describes as concentric rings. These rings retain, protect, and maintain system stability and integrity. Three rings identified are: The flexible line of defense; the normal line of defense; and lines of resistance. Internal lines of defense are those closest to the core and are termed as "internal protection factors activated when stressors have penetrated the normal line of defense causing a reaction or systemology," (Neuman, 1989). An example of this might be coping skills used by the individual. The flexible line of defense acts as a "protective, accordionlike mechanism that surrounds and protects the normal line of defense from invasion by stressors," (Neuman, 1989). The stronger the flexible line of defense,

the greater the protection. An example of this might be situational, such the ICU orientation program for the spouses of clients. Stability occurs when there is a state of harmony within the system, and it is able to adequately cope with stress. System stability is dynamic and can be rapidly altered over a short period of time. Reconstitution "represents the return and maintenance of system stability, following treatment of stressor reaction," (Neuman, 1989). Reconstitution may increase or decrease from the previous level of wellness.

Health is defined as a continuum, ranging from illness to wellness, and is dynamic in nature. Health is viewed as a "state of movement toward...evolution; it is a state of inertness free from disrupting needs," (Chin and Jacobs, 1987). Wellness refers to optimal system stability where the basic structural elements of the system are maintained, and needs are met. A reduction in this state of optimal stability indicates unmet needs of the system.

The environment, just like man, is an open system that constantly interfaces with man. Both systems form a reciprocal relationship that give and receive information from each other continuously. The environment has both internal and external forces, or stressors, around man. Interpersonal forces exist within the client's internal environment. These forces remain within the client/client system boundaries. Intrapersonal forces, (between client systems), and extrapersonal forces, (coming from outside client systems), exist in the

external environment, or outside of the client system. The ICU environment would be classified as an extrapersonal force or stressor.

Neuman (1989) defines nursing as " a unique profession concerned with all variables affecting clients in their environment", (p. 23). The focus of nursing concerns the variables that affect a person's response to stress, occurrence of stressors, and the state of the client. Nursing utilizes primary, secondary, and tertiary prevention to identify environmental stressors and to stabilize the client system. Primary prevention occurs before a reaction to stressors can occur. Secondary prevention is the treatment of symptoms following a reaction to stressors. Tertiary prevention is the maintenance of optimal wellness following treatment.

The Neuman model offers a solution to the identified problem statement. First, the goal is to strengthen the family's flexible line of defense in order to decrease the possibility of a reaction by the family system. Neuman defines this as a "dynamic, rapidly changing, protective buffer," (Neuman, 1989). An increase in strength of the families' flexible line of defense can hopefully be accomplished by using the primary prevention technique of a spouse orientation program to ICU, which in turn preserves the family system. The program is aimed to decrease the amount of stressors a family faces upon entering ICU to visit their husband or wife for the first time.

### Assumptions

The following assumptions, formulated from the literature and research, are fundamental to this study:

1. Clients and families are made up of systems defined by boundaries. A holistic, systems-based approach of viewing clients is valued as a comprehensive way of viewing clients.
2. Nursing intervention should occur before deviation from wellness, or as soon after as possible.
3. Environment is a source of stressors, which can have either a positive or negative impact.
4. Family members can assess their own needs.
5. Nursing interventions in the critical care unit should include the family members as well as the client.

### Research Questions

Since this study was exploratory in nature, the research questions were:

1. Is there a difference in state anxiety levels between the spouses that receive ICU orientation and spouses that do not receive ICU orientation?
2. What is the influence of variables from the demographic data on anxiety levels of the spouses?

### Definition of Terms

Client. Married male or female over the age of 18 years, undergoing coronary artery bypass surgery for the first time.

Spouse. Legal husband or wife of the client, who is also over the age of 18 years.

Coronary artery bypass surgery. A surgical procedure in which a section of a blood vessel is grafted onto one of the coronary arteries and connected to the ascending aorta, bypassing a narrowing or blockage in a coronary artery, (Urdang & Harding Swallow, 1983).

Preoperative period. The time period which begins when the client is admitted to the hospital the evening before surgery and ends when the client begins transport to the surgery department.

Postoperative period. The time which begins when the patient is transferred from the recovery room to the ICU after surgery and ends after the spouse has first visited the ICU.

ICU Orientation. A preoperative teaching program given by the researcher to the spouses immediately after routine preoperative teaching. Orientation will include a tour of the ICU waiting room, a tour of the cardiovascular ICU, explanation of the ICU rules and regulations regarding visitors, the ICU phone number, and the office phone number of the nurse educator/researcher.

Routine preoperative teaching. Teaching completed during the preoperative period by the nurse researcher and directed at the client

and family. Teaching includes: preoperative preparation; time and length of surgery; ICU equipment; length and progression of hospital stay.

State anxiety. Feelings of apprehension to be measured by the state portion of the Spielberger State Trait Anxiety Inventory (STAI).

Trait Anxiety. A personality characteristic of anxiety-proneness measured by the Trait portion of the Spielberger STAI.

#### Limitations of the Study

Some limitations of this study were identified. First, a relatively small sample size was gathered, therefore both male and female spouses were included as subjects. This study included only spouses instead of all family members to help increase the strength of a small sample. Only one type of client, those having coronary artery bypass, limited the scope of the findings. Both elective and nonelective surgery clients were included. Elective surgery clients included those who had some choice as to when their surgery was scheduled, and were admitted to the hospital the evening prior to surgery. Nonelective surgery clients were those who were admitted to the hospital for a heart catheterization (the definitive diagnostic test for coronary artery disease), and then determined they required surgery before being discharged from the hospital. In addition to the sample, timing of the preoperative teaching could also be viewed as a limitation. Ideally, preoperative teaching should be done several days before surgery, and then reviewed the

evening prior to surgery. However, the majority of clients having coronary artery bypass surgery are not elective surgical candidates, and are scheduled for surgery while currently admitted to the hospital. Preoperative teaching and spouse ICU orientation will take place the evening before surgery for all clients and subjects. Also the Hawthorne Effect, which is a change in subjects' behavior because they are aware of being studied, was not viewed as a limitation since the researcher taught both sets of subjects. Review of the literature has revealed that there are numerous needs families have while a member is in intensive care. This study only focused on a defined area of informational needs and evaluated the effect of ICU orientation on those needs.



### Chapter III

#### METHODOLOGY

##### Research Design

A quasi-experimental design using a pretest and posttest was utilized to study the effects of a pre-operative ICU orientation program in reducing anxiety levels in spouses. The experimental type of design is appropriate to use with the Neuman Systems model. This study tested if primary prevention reduces the impact of stressors as proposed by Neuman. Therefore, Neuman's model is advanced enough to allow for hypothesis testing. The design is also appropriate to the identified nursing problem by studying the effects from this primary prevention through the use of a control group.

##### Research Setting

Research was conducted at a 678 bed hospital, in a southwestern state, owned by a major hospital chain. It contains five intensive care units, including two coronary care units, one cardiovascular surgery unit, one pulmonary unit, and a neuromedical unit. All units are located on the second floor, and share a waiting area on the first floor. The sample was drawn from the cardiovascular intensive care unit containing twelve beds.

### Sample

The population of interest for this study was all families of adult ICU patients. Even though the population of interest was all families of adult ICU patients, it was not feasible for this study to investigate all different types of patients and diagnoses. Therefore, this study focused on the spouses of patients undergoing coronary artery bypass graft surgery. Previous studies on ICU families contained a wide variance of diagnoses. It was hoped a more representative sample could be obtained if the type of ICU patient was narrowed. Therefore, the sampling unit consisted of spouses of patients admitted to the cardiovascular intensive care immediately after undergoing coronary artery bypass surgery. This was a convenience sample with certain criteria set for the subjects and spouses. All spouses had to: be over eighteen years of age; read and speak English; be the current, legal spouse of the patient; and must voluntarily agree to participate in the study. Patients had to be undergoing coronary artery bypass surgery for the first time, and have not been admitted to an intensive care unit during the current hospital stay. Patients were either admitted the night before surgery, or were currently admitted to a medical floor. However, all teaching was done the evening prior to surgery. The number of subjects for each group was 25.

### Human Subject Rights

Approval for the study was obtained from the Human Subject Rights Committee at the University of Nevada, Las Vegas as well as the Institutional Review Committee at the institution where the data collection took place.

Once a subject had been identified and verbally agreed to participate in the study, informed consent was obtained by the investigator. This was done the day prior to surgery before preoperative teaching was implemented by the nurse researcher. To protect confidentiality, subjects were assigned a code number to their data forms. The consent forms and questionnaire scores were then stored by the investigator in a locked file.

### Data Collection Methods

Subjects were obtained from a private group of cardiovascular physicians' client list. Families were contacted the afternoon prior to surgery during the routine preoperative teaching that would ordinarily be done by the researcher for patients of this group of cardiovascular surgeons. Routine preoperative teaching for this physicians' group of patients includes: preoperative preparation; time and length of surgery; review of the surgical procedure, both verbally and with instructional booklets given to the clients; equipment used in ICU postoperatively; ICU visiting policy; and the length and normal progression of the hospital stay. Before preoperative teaching was

conducted, informed consent was obtained and spouses were placed in the experimental or control group. Random placement was determined by tossing a coin for the first subject, and then alternating the assignment of each subsequent subject between the experimental and control groups.

After routine preoperative teaching was completed and spouses were randomly placed into experimental or control groups, they completed the Spielberger State-Trait Anxiety Scale. The experimental group then received the ICU orientation program. Immediately after the first postoperative visit to ICU was completed by subjects in both groups, the spouses again completed the State Anxiety Scale.

Resources needed were the cooperation of the surgeons' office in notifying the researcher of any clients having surgery the following day. No additional equipment was needed for this study.

### Techniques

Subjects were met the evening prior to surgery during preoperative teaching. After preoperative teaching was finished, the spouses completed the Spielberger's State Trait Anxiety Inventory (STAI). The experimental group then was given the ICU orientation. The orientation was controlled by giving all spouses a preprinted ICU visitor policy booklet and having a standardized ICU tour scheduled. The tour included how to get to the ICU, walking through the unit, and the ICU's telephone number. The State scale of the STAI was be administered

again to both groups after the spouses' first postoperative ICU visit. The ICU orientation and STAI were administered only by the researcher.

### Instrument

The measurement tool that was selected for this study is the Spielberger State Trait Inventory (STAI). This scale was developed in 1964 and available for research in 1970. The STAI was revised again in 1979 after major insights were gained from extensive research. The STAI is a Likert-type, self report scale consisting of 40 items that measure state and trait anxiety. Twenty statements are included on the S-Anxiety scale (State anxiety scale) that measure how respondents feel "right now, at this moment." Twenty statements on the T-Anxiety scale (Trait anxiety scale) measure how people generally feel.

Reliability of the STAI has been tested according to stability and internal consistency. Stability was evaluated by test-retest correlations on 500 high school and college students. Correlations for the T-Anxiety scale were reasonably high (.65 to .86) and somewhat lower for the S-Anxiety scale (.16 to .62, median of .33). Spielberger (1983) attributes these low stability coefficients on the S-Anxiety scale because "a valid measure of state anxiety should reflect the influence of unique situational factor that exist at the time of testing." Internal consistency was measured by using the alpha coefficient on 5,000 subjects. All alpha coefficients for both scales were .90 or greater. Item-remainder

correlations were also computed, with a median range from 55 to 65 for the S-Anxiety scale, and 49 to 60 for the T-Anxiety scale.

The STAI has been evaluated according to concurrent, convergent, divergent, and construct validity. Contrasted groups were used to test the construct validity of the T-Anxiety scale. Neuropsychiatric patients had scores of  $M=46.62$  ( $n=461$ ), as compared to normal patients with scores of  $M=34.57$  ( $n=1,838$ ). For the S-Anxiety scale, military recruits were tested shortly before they began a highly stressful training program ( $M=45.53$ ,  $n=1,969$ ), as compared to subjects in nonstressful situations ( $M=38.80$ ,  $n=1,279$ ). Also, students under examination conditions ( $M=57.75$ ,  $n=977$ ), were compared to those in normal classroom conditions ( $M=39.69$ ,  $n=977$ ) (Spielberger, 1983).

Correlations between the S-Anxiety scale and the T-Anxiety scale obtained correlations ranging from .59 to .75. Persons that tended to have higher T-Anxiety scores also tended to have higher S-Anxiety scores.

The T-Anxiety scale has been correlated to other anxiety scales, including the IPAT Anxiety scale, and the Taylor Manifest Anxiety Scale (TMAS). Reliability correlations ranged from .73 to .85. All are considered equivalent measures of trait anxiety, with the major advantage of the T-Anxiety scale being the short length.

The STAI has been correlated with other measures of personality to evaluate convergent and divergent validity. In general, measures of

emotional disturbance and psychopathology exhibited larger correlations.

Advantages of the STAI for this research is the relative quickness of completion, and anonymity of subjects' answers. A disadvantage of pencil and paper tools is that subjects may answer the way they feel the researcher desires.

#### Data Analysis

Descriptive statistics were initially used on the data, which provided information on the characteristics of the sample and the distribution of the groups' anxiety scores. It was revealed that the anxiety scores were not normally distributed, the within group means and medians were of differing values. Univariate statistics showed a skewed, or nonsymmetrical, distribution of data, especially of the experimental group's trait anxiety scores and postoperative state anxiety scores.

The first research question asked if there were a difference in state anxiety levels between the spouses that received ICU orientation and spouses that did not receive ICU orientation. The Wilcoxon rank sum test was used to analyze this first question. This is a nonparametric test that is used to investigate two independent groups, with a minimum of ordinal level data. It does not require a normal distribution. According to Chiang, Selvin, and Langhauser (1988, p. 14.12), "The two samples are combined and the observations ranked from smallest to largest without

regard to the sample populations. The quantity used to measure possible differences between samples is the sum of the ranks of the values from the treatment group. If the treatment group has an effect, then the sum of the treatment ranks has an increased likelihood of differing from the sum of the control ranks."

To look at the second research question regarding the influence of the demographic variables on the anxiety scores, the two-way analysis of variance, or ANOVA, was used. The ANOVA is a statistical test used to determine if samples come from populations with equal means by using a single metric dependent variable. Assumptions for the ANOVA include; the samples were randomly and independently selected, normal distribution of the dependent variable, and that variances are equal for all treatment groups (Hazard, Visintainer, and Page, 1986).



## Chapter 4

### RESULTS

Admission to an ICU is stressful to both the client and family. The individual's flexible line of defense acts as a buffer to combat any ill effects to that person. Primary prevention provides a way for nurses to work with the family's flexible line of defense while the spouse is in the ICU. This study chose to examine the effect of a preoperative ICU program (primary prevention) on the anxiety levels in spouses (flexible line of defense) of clients undergoing coronary artery bypass graft surgery.

The population of interest for this study was all families of adult ICU clients. The sampling unit contained spouses of clients admitted to the cardiovascular intensive care immediately after undergoing CABG surgery. This was a convenience sample with the following criteria of: all spouses must be over the age of eighteen; can read and speak English; be the current, legal spouse of the client; and must have voluntarily agreed to participate in this study. Patients had to have been undergoing CABG surgery for the first time, and were not admitted to an ICU prior to surgery during their current admission. Patients were either admitted the evening before, or were currently admitted to a medical floor in the hospital.

The total accessible population for this study was 58 spouses of coronary artery bypass clients. Fifty eight spouses were asked to

participate in the study. Fifty four spouses agreed to participate. Two participants were eliminated from the study due to intra-operative complications causing extended operating times and prolonged recovery room stays. Two participants were eliminated due to incomplete information on their questionnaires. This resulted in actual data being obtained from 25 control subjects and 25 experimental subjects.

#### Demographics

The characteristics of the sample population (Tables 1 and 2) were obtained through use of the Demographic Data Sheet (DDS). Since these were nominal level data, descriptive statistics were used to organize information. The data from the DDS showed age ranges from 26 years to 76 and greater, for both groups. The most frequent age span for the experimental group was from 56 to 65 years (44%). The control group also contained the majority (44%) of subjects within this same age group.

The control group contained 8 males and 17 females. The majority had been married for over 40 years (36%) and 28% had been married 21 to 30 years. Eight of the subjects had been in an ICU before, and eight of the subjects' spouses had also been in an ICU before. Thirteen subjects had elective surgery and 12 were considered non-elective. Only three control subjects were not residents of Nevada.

Table 1

Characteristics of the Sample in Regards to Age, Sex,  
and Years of Marriage.

<u>Characteristics</u>	<u>Control N</u>	<u>Percent</u>	<u>Experimental N</u>	<u>Percent</u>
<u>Age in Years</u>				
18-25	0	0%	0	0%
26-35	0	0%	1	4%
36-45	2	8%	2	8%
46-55	2	8%	5	20%
56-65	11	44%	11	44%
66-75	6	24%	5	20%
76+	4	16%	1	4%
<u>Sex</u>				
Male	8	32%	6	24%
Female	17	68%	19	76%
<u>Years of Marriage</u>				
0-10	2	8%	2	8%
11-20	2	8%	6	24%
21-30	7	28%	9	36%
31-40	5	20%	2	8%
41+	9	36%	2%	8%

Table 2

Characteristics of the Sample in Regards to ICU Exposure, Patient ICU Exposure, Type of Surgery and Nevada Residency.

<u>Characteristics</u>	<u>Control N</u>	<u>Percent</u>	<u>Experimental N</u>	<u>Percent</u>
<u>ICU Exposure</u>				
Yes	8	32%	11	44%
No	17	68%	14	56%
<u>Patient ICU Exposure</u>				
Yes	8	32%	6	24%
No	17	68%	19	76%
<u>Type of Surgery</u>				
Elective	13	52%	12	48%
Nonelective	12	48%	13	52%
<u>Nevada Resident</u>				
Yes	22	88%	22	88%
No	3	12%	3	12%

The experimental group contained six males and 19 females. Thirty six percent of the couples were married 21 to 30 years. Thirteen subjects had never been in an ICU before (56%), and 19 patients had never been in an ICU (76%). Thirteen subjects were undergoing non-elective surgery (52%), and 22 subjects were Nevada residents (88%).

#### Relationship of State Anxiety Levels and ICU Orientation

To study the difference between state anxiety scores of spouses that received ICU orientation to spouses that do not, and thus answer the first research question, "Is there a difference in state anxiety levels between the spouses that receive ICU orientation and spouses that do not receive ICU orientation", the Wilcoxon rank sum test was used. Univariate statistics revealed a skewed distribution regarding the anxiety scores, especially for the experimental group's trait anxiety and postoperative state anxiety scores. Because of this, it was determined not to use a t-test. Assumptions for the t-test are that differences constitute a random sample from a population that is normally distributed. Therefore, the Wilcoxon rank sum test was utilized to examine the anxiety scores. This is a nonparametric test which does not require a normal distribution, and thus would be considered more robust than a t-test in this situation. The findings are reported in Table 3. Trait anxiety of spouses was analyzed first, in order to see if one group had a stronger tendency towards anxiety. The mean score for the experimental group was 24.9, and 26.0 for the control group. Therefore, there was no significant

Table 3

Wilcoxon Rank Sum Scores for Trait Anxiety, Preoperative State Anxiety, and Postoperative State Anxiety.

Group	N	Std Dev	Mean
<u>Trait Anxiety</u>			
Experimental	25	51.4	24.9
Control	25	51.4	26.1
			p=.78
<u>Preoperative State Anxiety</u>			
Experimental	25	51.5	26.2
Control	25	51.5	24.8
			p=.74
<u>Postoperative State Anxiety</u>			
Experimental	25	51.4	19.1
Control	25	51.4	31.9
			p=.003**

\*p<.05

\*\*p<.01

\*\*\*p<.001

difference between groups concerning trait anxiety ( $p=.78$ ).

Preoperative state anxiety scores were also reported with the mean scores for the experimental group being 26.2, and the control group being 24.8. Again, there was no significant difference between the two groups in regards to preoperative state anxiety ( $p=.74$ ). Since both of these scores were not significant, they can not account for any affect on the postoperative state anxiety score, which is truly the score of interest for this research question. The postoperative state anxiety mean scores for the experimental group were 19.1, with the control group being 31.9. The experimental group's anxiety score was significantly lower than the control group's anxiety score ( $p=.003$ ).

#### Relationship of State Anxiety Levels and Subject Characteristics

The second research question was, "What is the influence of variables from the demographic data on anxiety levels of the spouses." It is known that the data from this study was not normally distributed. Assumptions for the ANOVA include having a normal distribution of the dependent variable, and that variances are equal for all treatment groups. However, there is evidence that the ANOVA is a robust test even if these assumptions are violated, (Hair, Anderson, and Tatham, 1987). The ANOVA was also selected because the dependent variable was interval level data collected with the STAI. A nonparametric chi-square would also have been appropriate in this situation, and is a robust test. However, it would require the data to be split into groups on the

Table 4

ANOVA Scores for the Relationships of Differences Between the Groups to Subject Characteristics.

Source	DF	ANOVA SS	Mean Square	F	Pr>F
<u>Type of Surgery</u>					
Group	1	1436.48	1436.48	11.35	0.0015**
Surgery	1	134.48	134.48	1.06	0.30
<u>Previous ICU Exposure of Patient</u>					
Group	1	1436.48	1436.48	11.15	0.0017**
Patient	1	27.20	27.20	0.21	0.64
<u>Previous ICU Exposure of Spouse</u>					
Group	1	1436.48	1436.48	11.16	0.0016**
Spouse	1	1436.48	1436.48	0.26	0.61

\*p<.05

\*\*p<.01

\*\*\*p<.001



dependent variable rather than have a range of scores. Additionally, if chi-square were used, the postoperative state anxiety scores would have to be collapsed into categories, thereby diminishing the richness of the data. By comparison, the ANOVA combines the postoperative state anxiety scores of the groups and analyzes them against demographic variables to see if there is any influence. Since there were only 50 subjects, it was felt the more the data was divided to be analyzed, the more unreliable the findings would be. Because of the small sample size, not all of the demographics collected were surveyed.

Characteristics not tested were age, gender, length of marriage, and Nevada residency. The characteristics tested were the type of surgery (elective versus nonelective), and previous ICU exposure by either the spouse or the patient. The type of surgery was chosen to see if families dealt better with stress if surgery was a decision discussed and made over time, instead of being relatively unprepared. Inclusion of previous ICU exposure, of either the spouse or patient, centered on perhaps if a family had some prior experience, the past exposure would strengthen the flexible line of defense and the effect of anxiety would be lessened. The ANOVA was used to analyze this data, with the findings reported in Table 4. The F-statistic for the group was 11.35, with  $p=.0015$  to  $.0017$ . This means there is a very strong statistical difference between the groups. The F-statistic for the type of surgery was 1.06 with  $p=.30$ , which was not significant and can not account for the

difference among the group. Next, the patient's previous exposure to ICU was studied. This included if the patient had stayed in an ICU at any time other than the current admission. The F-statistic for the patient's ICU exposure was .21 with  $p=.64$ . This again was not statistically significant and can not explain any of the group differences. The last relationship studied was the subject's previous exposure to ICU at any point in time, and if it affected postoperative anxiety. The F-statistic for subject exposure was .26 with  $p=.61$ , which is not significant. Therefore, none of the characteristics tested were significant factors in the highly significant difference between two groups.

To summarize the findings, the following was identified from statistical analysis:

1. There were statistically lower postoperative state anxiety levels between the spouses that received ICU orientation as compared to spouses that did not receive ICU orientation.
2. None of the demographic variables tested had any influence on the postoperative state anxiety levels of the spouses. The demographic data that was tested included; elective versus nonelective surgery, previous ICU exposure of the spouse, and previous ICU exposure of the patient.

## Chapter V

### DISCUSSION

Health care in the United States is currently experiencing numerous changes that are aimed at decreasing cost to the client while maintaining quality care. Some of the results currently experienced are decreased preoperative preparation time, and shorter hospital stays. Clients and their families are forced to absorb an overwhelming amount of information in less time than ever before. It seems particularly relevant to provide education to these families to make their hospital stay less confusing and anxious. Therefore, it is important that nurses listen to what families truly need while in the hospital, particularly intensive or critical care units, and seek intervention techniques to meet them.

#### Preoperative ICU Orientation for Spouses

Molter (1979) started investigating family needs when working as a staff nurse in ICU. Since then, numerous studies have been done altering Molter's Critical Care Family Needs Inventory and following up on identifying family needs, (Boykoff, 1986; Rukholm, Bailey, Coutu-Wakulczyk, and Bailey, 1991; O'Neill-Norris and Grove, 1986; Murphy, Forrester, Price and Monaghan, 1990, 1992; Molter, 1979; Daley, 1984; and Stillwell, 1984). Hickey, (1990) completed a comprehensive literature review of studies focused on family needs and found that several needs were recurrently identified in these studies, including needs related to

information, reassurance that the patient was receiving the best possible care, and convenience in seeing the patient. The need for information was consistently rated the most important. It was discovered that limited research had been done to take these identified needs and try to meet them for the ICU families.

This study was designed to take the previously identified need for information, provide it for the families, and see if the intervention really made a difference for the families. Walsh-Chavez and Faber (1987) found that an education-orientation program had a positive effect on the family members. These researchers studied a convenience sample of 40 spouses and offspring who visited patients admitted to the ICU. A pretest-posttest design with random assignment of subjects to the control or experimental group was utilized. Their program provided information on the ICU physical environment, including the equipment and visiting policy, and the patient's condition. They tested the families' blood pressure, heart rate, and a Subjective Stress Score before and after both the teaching and the first postoperative ICU visit. They found that the blood pressure of the experimental group was significantly lower.

This researcher's study looked specifically at the anxiety levels between the experimental and control groups and revealed that the anxiety levels of spouses did decrease significantly when they were provided additional information about the ICU environment. Using the State Trait Anxiety Inventory, spouses that had received additional

environmental information about ICU had significantly lower anxiety levels after their first postoperative visit. This study also took into account that there were no significant differences between the two groups, (control and experimental), in relationship to their trait anxiety and preoperative state anxiety. A possible reason for this decreased anxiety in the experimental group might be best explained by the Neuman Systems Model (1989). The goal of this study was to increase the family's flexible line of defense by using the primary prevention of ICU orientation. If this line of defense is flexible and protective of the normal line of defense, then it is theorized that the flexible line of defense would become stronger and even more protective when a family need is met. Therefore, system stability was enhanced because the client was able to cope with the situational stress. Stability was exhibited in this study by a decrease in postoperative state anxiety levels of the experimental group. In addition, the control groups' postoperative state anxiety was actually higher than their preoperative state anxiety. Under this study's circumstances, the ICU environment and orientation to the environment appears to be a factor in maintaining client system stability.

#### Relationship of State Anxiety Levels and Subject Characteristics

The second research question asking if the demographic variables had any effect on anxiety was included to rule out any extraneous variables upon the findings. It would be important to know if anything

else contributed to the lowered postoperative anxiety, outside of the ICU orientation. Rukholm et al. (1991), using a multiple regression analysis found that worries, trait anxiety, age, and family needs explained 38% of the variation of situational anxiety. Due to the small sample size of this study, only two demographic areas were explored; the type of surgery and previous ICU exposure. A statistically significant difference was found between the experimental and control groups. Therefore, the ANOVA sought to find if these demographics were an influence on the group differences. Neither the type of surgery or previous ICU exposure by the spouse or patient demonstrated any effect on the differences. The only variable found to have any influence was the preoperative ICU orientation.

It was surprising to find that the timing of surgery experienced by the patient had no effect on the subjects' postoperative state anxiety. It was thought that patients having elective surgery might exhibit lower levels of anxiety, because the decision and scheduling for surgery was a choice given to the families, which might allow for a greater feeling of control. Perhaps the anxiety levels were the same for these families because coronary artery bypass graft surgery might come as an unwanted solution for their coronary artery disease. Although families can choose when surgery is the most convenient, usually they are encouraged to have the procedure completed as soon as possible because of the risk of myocardial infarction in the interim.

Previous ICU exposure also had no effect on the two groups. Exposure was studied to see if a familiarity to the ICU environment helped to reduce anxiety. For the purposes of this study, exposure by either the spouse or patient had to have been during any hospitalization other than the current admission. It is not known when the ICU exposure occurred, and any of the circumstances surrounding the situation. So the lack of a correlation could be due to many different reasons. For example, previous exposure might have occurred in the distant past, so it was difficult to remember. The ICU environments themselves could have been very different from one another; containing different types of equipment, layout, visiting hours, accessibility, etc. Further varied feelings about previous exposure might have influenced anxiety-related reactions of family members. These are but a few possibilities that might have influenced this finding.

#### Limitations

One limitation of the study was the use of a convenience sample. These types of samples carry a high rate of bias, which makes it more difficult to generalize findings to the larger population. By using one hospital, one ICU, one nurse educator, and one type of surgery, it was hoped that homogeneity of the study would minimize the risk of bias.

Another limitation of the study was the small sample size. The number of subjects was adequate for nonparametric statistics, but

questionable for the ANOVA. The reasoning for using the ANOVA over the nonparametric chi-square was discussed earlier. The small sample size also limited the use of demographics in the statistics. Since data could not be divided for analysis of some characteristics, it was impossible to determine if there were any differences in anxiety related to age, sex, length of marriage, or Nevada residency.

The sample was limited to spouses instead of including all family members. This limitation was included to aid in sample homogeneity, but makes it impossible to generalize to the rest of the family. Previous studies addressing critical care family needs have included all family members, not just spouses.

The type of surgery was limited to patients undergoing coronary artery bypass for the first time. This placed an additional limitation on the findings of this study. Findings can only be generalized to families undergoing the same type of surgery.

The final limitation was the sample population being gathered from one facility. There was not a private place to implement preoperative teaching and for the completion of the questionnaires. This might have affected the subjects' ability to internalize and answer the questions on the tools. The hospital's surgical waiting area could have also been stress-producing in that it usually appeared overcrowded, noisy, and uncomfortable.



### Implications for Nursing

Several implications for nursing can be made from this study. First, this study helped to strengthen previous research addressing the needs of families of patients in the critical care setting. Past research in this area identified informational needs as very important to family members. This identified need can be broken down in several ways since types of information and its delivery can vary. This study chose to provide environmental information in the preoperative phase. Therefore, it might be beneficial to include the ICU orientation with the preoperative teaching on a standard basis. The ICU pamphlet given to spouses in the experimental group received many positive comments from the subjects. The written material appeared to reinforce the teaching.

Another implication is that anxiety levels were not affected by previous ICU exposure in this study. As discussed previously, there can be numerous possibilities why this might be. The lack of response to previous exposure seems to lend even more support to the need to help families orient to the ICU, no matter what their past experience has been. There are many variables that could influence their feelings including; the hospital, staff, type of surgery, positive or negative past experiences, etc. If the family feels more at ease after the surgery, it would be hoped they could be more supportive of one another and of the patient.

An implication for nurse educators is that they must assist nurses in becoming aware of the families' need for information about the ICU. O'Neill Norris, and Grove (1986), found that families rated informational needs as significantly more important than the nurses. Forrester et al (1990), found that nurses had difficulty accurately assessing family needs. All hospitals are required to provide preoperative teaching, but the minority include environmental orientation to the ICU. It does take extra time and effort on the part of the nursing staff, but it appears to provide families with the enormous benefit of decreased anxiety.

### Recommendations

Recommendations derived from this study are:

1. To duplicate this study among a larger randomized sample of families, with the sample being drawn from more than one institution. A larger study may have findings that are more statistically significant and more applicable to the general target population. It would be valuable to include several types of surgeries in addition to CABG surgery, and all family members in addition to the spouse. Demographics could then be evaluated in how they play a role in affecting the family's anxiety. Previous research using the Critical Care Family Needs Inventory (Molter, 1979), was done with many different types of surgeries, and included all family members.
2. A study be done to monitor the nurses' reactions between families that receive ICU orientation and families that do not. Hickey

and Lewandowski (1988) found that the nurses' subjective feelings toward the patient and family were one of the strongest influences on the involvement of the nurse with the family. The same research design could be used as this study, but keeping the ICU nurses blind to the subject population of each group. The nurses' perceptions and actions toward the families could then be collected and evaluated. The preoperative teaching would hopefully affect the nurse-family relationship in a positive way. With less anxiety exhibited by the families, perhaps a trusting relationship with nursing would be easier to develop.

3. It may benefit to study the same population by using different techniques to provide information. Techniques could include video, lecture and discussion, written material, one on one teaching, tours, and any combination of the above. Knowing that informational needs are important is not enough, it is wise to know what families will react to the most positively. This, in turn, makes the most effective use of nursing time.

4. To duplicate this study with a focus on determining if preoperative teaching with the family has any affect on the patient's hospitalization and anxiety level. Simpson (1991) found that family anxiety can have a negative affect on the patient. Statistics on length of ICU stay, length of admission, and total hospital costs could be included. This study would first look at if the patient exhibits lower

anxiety as a result of the family receiving preoperative information. Next, evaluate if decreased patient anxiety resulted in decreased hospitalization time and decreased costs. Is this program cost-effective for hospitals and possibly insurance carriers? If it is cost-effective, it would give hospitals a greater incentive to provide this service and expand and enhance the nurse educator's role.

### Summary

The intensive care unit is a stressful environment for families. During the ICU stay, families are forced to reorganize by using their coping skills. Previous research has identified many needs of families while a member is in ICU, with the need for information consistently rated as one of the most important. Nurses are in the perfect position to provide interventions to help meet this need. The nursing staff has the closest, most consistent contact with families.

This study demonstrated that a preoperative ICU orientation does decrease postoperative anxiety in spouses of CABG patients. This supports Neuman's Health Systems Model in that primary prevention (education) does increase the strength of the spouses' flexible line of defense, by decreasing the number of environmental stressors faced upon entering the ICU for the first time. Not only were the postoperative state anxiety scores significantly different between groups, but the experimental group's scores were lower than their own preoperative state anxiety scores. A decrease in state anxiety scores was

not true of the control group, whose state anxiety scores actually increased after surgery. What was interesting was that whether the surgery was elective (planned for ahead of time by the family and their doctor), or not (not planned for prior to the current admission), had no influence on test scores. Previous ICU exposure by either the spouse or the patient also had no affect on anxiety. Though the researcher was unable to clearly identify how these and other demographics influenced anxiety and the effectiveness of teaching, other investigators are encouraged to continue to search for relationships among these variables.

Neuman (1989) defines the focus of nursing as concern with the variables that affect a person's response to stress, occurrence of stressors, and the state of the client. Preoperative ICU orientation was designed to decrease stress on the client system. The demonstrated response was greater system stability because spouse informational needs were assessed and appropriate educational interventions were implemented.

## Appendix A

### Neuman Systems Model

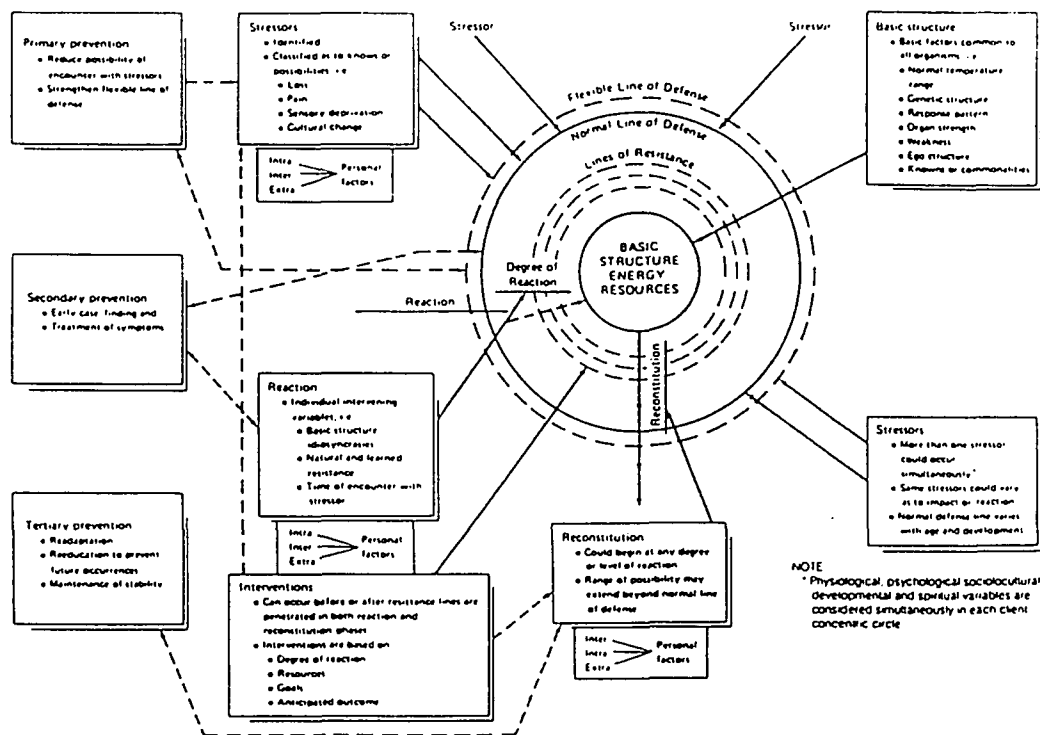


Figure 1-3. The Neuman Systems Model. Original diagram copyright © 1970 by Betty Neuman.

Appendix B  
Demographic Data Sheet



## DEMOGRAPHIC DATA SHEET

60

Please check one correct answer for each question.

### 1. Age

- |   |   |
|---|---|
| <input type="checkbox"/> a. 18-25 years | <input type="checkbox"/> b. 26-35 years |
| <input type="checkbox"/> c. 36-45 years | <input type="checkbox"/> d. 46-55 years |
| <input type="checkbox"/> e. 56-65 years | <input type="checkbox"/> f. 66-75 years |
| <input type="checkbox"/> g. 76- + years |   |

### 2. Sex

- ☐ a. Male
- ☐ b. Female

### 3. Length of Marriage

- |   |   |
|---|---|
| <input type="checkbox"/> a. 0-10 years  | <input type="checkbox"/> b. 11-20 years |
| <input type="checkbox"/> c. 21-30 years | <input type="checkbox"/> d. 31-40 years |
| <input type="checkbox"/> e. 41- + years |   |

4. Is this your first visit to an Intensive Care Unit? (Either as a visitor or as a patient).

- ☐ a. Yes ☐ b. No

5. Has your spouse ever been in intensive care before?

- ☐ a. Yes ☐ b. No

6. This surgery is considered

- ☐ a. Elective-planned for ahead of time by your family and your doctor.
- ☐ b. Non-elective-not planned for ahead of time and determined to be necessary during current hospital admission.

7. Are you a resident of Nevada?

- ☐ a. Yes ☐ b. No

Appendix C  
Trait Anxiety Scale

# SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

62

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

ALMOST NEVER  
SOMETIMES  
OFTEN  
ALMOST ALWAYS

- |  |                         |                         |                         |                         |
|--|-------------------------|-------------------------|-------------------------|-------------------------|
| 21. I feel pleasant .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 22. I feel nervous and restless .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 23. I feel satisfied with myself .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 24. I wish I could be as happy as others seem to be .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 25. I feel like a failure .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 26. I feel rested .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 27. I am "calm, cool, and collected" .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 28. I feel that difficulties are piling up so that I cannot overcome them                            | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 29. I worry too much over something that really doesn't matter .....                                 | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 30. I am happy .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 31. I have disturbing thoughts .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 32. I lack self-confidence .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 33. I feel secure .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 34. I make decisions easily .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 35. I feel inadequate .....  | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 36. I am content .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 37. Some unimportant thought runs through my mind and bothers me                                     | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 38. I take disappointments so keenly that I can't put them out of my<br>mind .....                   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 39. I am a steady person .....   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |
| 40. I get in a state of tension or turmoil as I think over my recent concerns<br>and interests ..... | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 |

**Appendix D**  
**State Anxiety Scale**

# SELF-EVALUATION QUESTIONNAIRE

64

Developed by Charles D. Spielberger  
in collaboration with  
R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs  
STAI Form Y-1

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

NOT AT ALL  
SLIGHTLY  
MODERATELY  
VERY MUCH SO

- |  |     |     |     |     |
|--|-----|-----|-----|-----|
| 1. I feel calm .....                                       | (1) | (2) | (3) | (4) |
| 2. I feel secure .....                                     | (1) | (2) | (3) | (4) |
| 3. I am tense .....  | (1) | (2) | (3) | (4) |
| 4. I feel strained .....                                   | (1) | (2) | (3) | (4) |
| 5. I feel at ease .....                                    | (1) | (2) | (3) | (4) |
| 6. I feel upset .....                                      | (1) | (2) | (3) | (4) |
| 7. I am presently worrying over possible misfortunes ..... | (1) | (2) | (3) | (4) |
| 8. I feel satisfied .....                                  | (1) | (2) | (3) | (4) |
| 9. I feel frightened .....                                 | (1) | (2) | (3) | (4) |
| 10. I feel comfortable .....                               | (1) | (2) | (3) | (4) |
| 11. I feel self-confident .....                            | (1) | (2) | (3) | (4) |
| 12. I feel nervous .....                                   | (1) | (2) | (3) | (4) |
| 13. I am jittery .....                                     | (1) | (2) | (3) | (4) |
| 14. I feel indecisive .....                                | (1) | (2) | (3) | (4) |
| 15. I am relaxed .....                                     | (1) | (2) | (3) | (4) |
| 16. I feel content .....                                   | (1) | (2) | (3) | (4) |
| 17. I am worried .....                                     | (1) | (2) | (3) | (4) |
| 18. I feel confused .....                                  | (1) | (2) | (3) | (4) |
| 19. I feel steady .....                                    | (1) | (2) | (3) | (4) |
| 20. I feel pleasant .....                                  | (1) | (2) | (3) | (4) |

**Appendix E**  
**Consent Form**

HUMANA HOSPITAL-SUNRISE  
INFORMED CONSENT

January 10, 1993

66

Dear Family Member of Hospitalized Spouse,

My name is Eva Adams. I am a registered nurse currently pursuing a Master of Science degree in Nursing at the University of Nevada, Las Vegas. My thesis involves studying how supplying informational needs to you before surgery affects your anxiety level immediately after your spouse is admitted to the intensive care.

Title and Sponsor of Study

The title of this study is "The Effect of Preoperative Intensive Care Orientation on Postoperative Anxiety Levels in Spouses of Coronary Artery Bypass Clients." There is no sponsor for this study, rather this study is being conducted as part of my course requirements to complete my Masters of Science in Nursing.

Purpose

Reactions to stressful life events, such as an admission to the intensive care unit (ICU), affect both the client and family. Family members may experience stress due to the usual abruptness of ICU admission, restricted visiting hours, advanced patient monitoring equipment found in the ICU, lack of knowledge regarding diagnosis, and monetary concerns. Several studies have investigated what the family needs are while a member is critically ill. Few studies were found that looked at how meeting these needs affected the family.

To effectively care for a client, nurses should not only be concerned with all aspects of the client's being, but also include the family unit as well. The purpose of this research study is to examine the effect of how supplying informational needs to you before surgery, affects your anxiety level immediately after your spouse is admitted to the intensive care unit. Participation in this study will take approximately 30 minutes the evening before surgery, and 10 minutes after your first postoperative visit to the ICU to see your spouse the following day. Fifty spouses will be involved in this study at this hospital.

Procedure

After routine preoperative teaching is completed today, I will ask you to complete a short questionnaire that measures anxiety. After you have finished, you will place the questionnaire in the attached envelope, seal it, and place it in the large response envelope. By completing the questionnaire, you agree to participate. Then I will take you on a tour of the intensive care unit where your spouse will be admitted after surgery tomorrow. I will also explain the ICU visiting policies and procedures, and give you my office number at which you can contact me during regular office hours. I will contact you again after your first visit to see your spouse in the ICU after surgery tomorrow. I will then have you fill out the same questionnaire and seal it.

Risks

Risks to participants in this study will be minimal. One potential risk may be instigating added anxiety for the spouses by focusing on the intensive care environment. All subjects receive the standard preoperative teaching, so no information will be withheld.

Benefits

Benefits to the subjects is anticipated to be great. Many studies that were found in the literature review investigated what families of critically ill patients viewed as their needs. However, little research was found that looked at the effect of nursing trying to meet some of these needs. This study will: evaluate how meeting some identified needs of spouses affects their anxiety levels; and provide information on how to effectively incorporate family members into the nursing plan of care.

IRB Approved 01/06/93  
172

#### Alternatives

No alternative procedures or course of treatment is identified.

67

#### Confidentiality

To protect your confidentiality, participants will be assigned a code number to their data forms. The consent forms and questionnaire scores will be stored by the investigator in a locked file. I will be the only person with access to these files. All responses to this survey will be reported only as group data.

#### Voluntary Participation

Participation in this study is strictly voluntary. You may refuse to participate in this study, and are free to withdraw at any time. If you do decide to withdraw from the study after agreeing to participate, you will not be penalized or lose any benefits to which you are entitled. If you do decide to terminate your participation, please notify me at the number provided. By signing this consent form, you are agreeing to participate in this study.

#### Compensation

No medical costs will be incurred as a research participant. Humana Hospital Sunrise will not provide compensation or free medical treatment to a person who is injured while participating as a subject in this study. No costs to subjects will result from their participation in this study, and no monetary compensation will be received. None of the above is intended to waive any rights the participant may otherwise have under applicable law.

#### Further Instructions

If you have any questions, or concerns regarding research-related injury, you may contact any of the following people for answers:

Eva Adams, R.N., B.S.N.  
1090 East Desert Inn Rd. St.200, Las Vegas, NV. 89109  
735-1454

J. Daniel Wilkes, M.D., Chairman of Institutional Review Board  
Humana Hospital Sunrise  
3186 South Maryland Parkway, Las Vegas, NV 89109  
731-8211

Joan Ryan, Secretary of Institutional Review Board  
Humana Hospital Sunrise  
3186 South Maryland Parkway, Las Vegas, NV 89109  
731-8211

During off hours contact:  
Administrator on call  
731-8000

Thank you for agreeing to participate in this study. You will receive a copy of this informed consent form.

\_\_\_\_\_  
Eva Adams, R.N., B.S.N.-Investigator

\_\_\_\_\_  
Signature of Spouse

IRB Approved 01/26/93  
2012



**Appendix F**  
**Humana Hospital Sunrise Acceptance**

MEDICAL STAFF OF HUMA HOSPITAL . SUNRISE

69

Box 98530/ Las Vegas, Nevada 89193/ 702/731-8211

ALBERT H. CAPANNA, M.D.  
Chief of Staff

FRANK NEMEC, M.D.  
Vice Chief of Staff

MITCH KEAMY, M.D.  
Secretary

January 13, 1993

Eva Adams, R.N.  
Cardiovascular Associates  
1090 E. Desert Inn, Suite #200  
Las Vegas, NV 89109

Dear Ms. Adams:

The Informed Consent for Protocol: EFFECT OF PREOPERATIVE INTENSIVE CARE ORIENTATION ON POSTOPERATIVE ANXIETY LEVELS IN SPOUSES OF CORONARY ARTERY BYPASS CLIENTS incorporating the required changes has been received as has the letter of authorization from the Medical Director and Unit Director of the Cardiovascular ICU. Approval of this study is granted for one year. Enclosed is a Progress Report form on which to report to the Board in January of 1994. The identification number for the study is 93-101. Please include this number when corresponding with the Board concerning this Protocol. Also enclosed is a copy of the Informed Consent with the IRB Approval stamp on it. Please make sure that it is a copy of this form that is signed by each participant in the study.

If I can be of any assistance during the coming year, feel free to contact me or the Secretary to the Board.

Sincerely,



J. Daniel Wilkes, M.D., Chairman  
Institutional Review Board

JDW:jlr

3:IRBAP4

## Appendix G

Permission from Cardiovascular Surgery Associates

We hereby give permission to Eva M. Adams, R.N. to contact our clients to study the effect of preoperative intensive care orientation on postoperative anxiety in the spouses of coronary artery bypass candidates. We understand our clients will be informed of all risks prior to their participation in this research study, and this research study is being conducted as part of her Master of Science in Nursing Program.

James B. Daugharthy, M.D.

Jesse E. Perry, M.D.

John G. Jacobson, M.D.

**Appendix H**  
**Human Subject Rights**



December 04, 1992

Eva Glover Adams, RN BSN  
Las Vegas NV

Dear Eva:

The Department of Nursing Human Subjects Rights Committee met on your proposal "The effect of preoperative intensive care orientation on postoperative anxiety levels in spouses of coronary artery bypass clients". The Committee approved your proposal as presented.

If you have any questions or if there are any changes in your plan please inform the Committee.

Sincerely,

A handwritten signature in cursive script, appearing to read "Margaret Louis", is written over the printed name.

Margaret Louis, RN PhD  
Chairperson

Department of Nursing Human Subjects Rights Committee



ASSOCIATE VICE PRESIDENT FOR RESEARCH

UNIVERSITY OF NEVADA, LAS VEGAS  
4505 MARYLAND PARKWAY • LAS VEGAS, NEVADA 89154-1002 • (702) 597-4240 • FAX (702) 597-4242

DATE: December 11, 1992  
TO: Eva M. Adams, R.N.  
FROM: Dr. William E. Schulze, Director of Research Administration  
IRB Institutional Representative  
SUBJECT: Approval of Human Subjects Protocol Project  
Entitled : "EFFECT OF PREOPERATIVE INTENSIVE CARE ORIENTATION"

---

This memorandum is official notification that protocol for the project referenced above has been approved.

If you have any questions or require any assistance, please give us a call.

SUBMIT TO OFFICE OF THE GRADUATE DEAN: Original and 11 copies of the Protocol Form (pp. 1-3) plus one copy of the entire research proposal.

## APPENDIX C

DATE RECEIVED \_\_\_\_\_

LOG # \_\_\_\_\_

TYPE OF REVIEW

☒ Expedited☐ Regular

FUNDING SOURCE:

☐ University☐ State☐ Federal☒ Other/None

UNIVERSITY OF NEVADA, LAS VEGAS

## PROTOCOL FORM

FOR RESEARCH INVOLVING HUMAN SUBJECTS

INVESTIGATORS: List person principally responsible for the investigation on line a). If principal investigator is a student, list faculty advisor on line b).

Investigator	Department	Phone
a) Eva M. Adams, R.N., B.S.N.	Nursing	896-7433
b) Carolyn Sabo, R.N., Ed.D	Nursing	739-3342
c)		
d)		

UNLV status of Principal Investigator (circle): Faculty/Post-doctoral/Graduate  
/Undergraduate/Other \_\_\_\_\_

TITLE OF PROJECT: ~~The Effect of Preoperative Intensive Care Orientation on Postoperative Anxiety Levels in Spouses of Coronary Artery Bypass Clients~~

NAME AND ADDRESS of sponsoring agency or foundation (if other than UNLV) \_\_\_\_\_

CONTRACT OR GRANT NUMBER (if known) \_\_\_\_\_

DURATION OF STUDY (Protocols must be renewed annually) 12/92 Start 12/93 Conclude

TYPE OF SUBMISSION ☒ New ☐ Continuation ☐ Renewal (attach progress report)  
☐ Modification ☐ Previous Log # (if any)

LOCATION(S) OR FACILITIES where study will take place Humana Hospital Sunrise-  
Las Vegas, Nevada

Date \_\_\_\_\_

Principal Investigator's Signature \_\_\_\_\_

Date \_\_\_\_\_

Department Chair or Unit Head's  
Signature

Date \_\_\_\_\_

*Carolyn E. Sabo*  
Faculty Advisor's Signature  
(if warranted)



## SUBJECTS: (Please estimate numbers)

<u>25</u>	Patients as experimental subjects	<u>      </u>	Prisoners, incarcerated subjects
<u>25</u>	Patients as controls	<u>      </u>	Normal adult volunteers
<u>      </u>	Minors (under 18)	<u>      </u>	Persons whose first language is not English.
<u>      </u>	INIV students	<u>      </u>	Other (please specify)
<u>      </u>	Pregnant women or fetuses	<u>      </u>	
<u>      </u>	Mentally disabled	<u>50</u>	TOTAL ANTICIPATED SUBJECTS

## PROCEDURES: (ATTACH relevant materials, such as questionnaires, interview schedules, written test instruments, etc.)

<u>X</u>	Survey, questionnaire(s)	<u>      </u>	Investigational Drug*
<u>      </u>	Interview: phone/in-person	<u>      </u>	Approved Drug, New Use*
<u>      </u>	Medical or other personal records	<u>      </u>	Investigational Device (attach relevant info)
<u>      </u>	Filming, taping, recording	<u>      </u>	Placebo
<u>      </u>	Observation	<u>      </u>	Ionizing Radiation (attach CURRENT approval)
<u>      </u>	Participant observation	<u>      </u>	Surgery
<u>      </u>	Anthropological fieldwork	<u>      </u>	In vitro fertilization
<u>      </u>	Psychological intervention	<u>      </u>	Venipuncture
<u>      </u>	Incomplete disclosure of purpose	<u>      </u>	Other body fluids, excreta
<u>      </u>	Payment of subjects	<u>      </u>	Abortus, placenta, excess tissue
<u>      </u>	Costs to subject/third parties	<u>      </u>	Other (please specify)
<u>      </u>	Brief Explanation of Procedures:	<u>      </u>	
<u>      </u>		<u>      </u>	
<u>      </u>		<u>      </u>	
<u>      </u>		<u>      </u>	
<u>      </u>		<u>      </u>	

UNIVERSITY OF NEVADA, LAS VEGAS  
PROTOCOL FORM APPROVAL SHEET  
FOR RESEARCH INVOLVING HUMAN SUBJECTS

77

Log Number: \_\_\_\_\_

Title of Project: The Effect of Preoperative Intensive Care Orientation on Postoperative Anxiety Levels in Spouses of Coronary Artery Bypass Clients.

Investigator: Eva M. Adams, R.N., B.S.N.

After reviewing this proposal, the members of the \_\_\_\_\_  
Review Committee have indicated below their approval/disapproval of this proposal.

Signature of Committee Members

Approve

Disapprove

_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

The above named project is hereby approved/disapproved (circle one)

Date: \_\_\_\_\_

\_\_\_\_\_  
Committee Chairman's Signature

The Effect of Preoperative Intensive Care  
Orientation on Postoperative Anxiety  
Levels in Spouses of Coronary  
Artery Bypass Clients  
by  
Eva Marie Adams RN, BSN

Admission to an intensive care unit is a stressful situation not only to the client, but also to his or her family. Established roles within the family are thrown into disequilibrium when one member is hospitalized. This forces the entire family system to reorganize. In addition to this attempt for stabilization, stressors for the family may range from the usual abruptness of ICU admission, restricted visiting hours, high-technological monitoring systems, lack of knowledge regarding diagnosis, and monetary concerns. Due to these many factors, family members may be unable to mobilize adequate coping mechanisms. Several studies have investigated what the family needs are while a member is critically ill. Few studies were found that looked at how meeting these needs affected the family.

Sample

Previous studies on ICU families contained a wide variance of diagnoses. It is hoped a more representative sample can be obtained if the type of ICU patient is narrowed. Therefore, the sampling unit will be spouses of patients admitted to the cardiovascular intensive care immediately after undergoing coronary artery bypass surgery. This will be a convenience sample with certain criteria set for the subjects and spouses. All spouses must be: over eighteen years of age; read and speak English; be the current, legal spouse of the patient; and must voluntarily agree to participate in the study. Patients must be undergoing coronary artery bypass surgery for the first time, and have not been admitted to an intensive care unit during the current hospital stay. Patients can either be admitted the night before for surgery, or are currently admitted to a medical floor.

### Purpose, Methods, Procedures

The purpose of this study is to examine the effect of a preoperative ICU orientation program (primary prevention) on the anxiety levels in spouses (flexible line of defense) of coronary artery bypass surgery clients. Anxiety levels will be measured the evening before surgery and immediately after the first post-operative visit.

Subjects will be obtained from a private group of cardiovascular physicians' client list. Families will then be contacted the afternoon prior surgery during the routine preoperative teaching done by the researcher. Routine preoperative teaching for this physicians' group of patients includes: preoperative preparation; time and length of surgery; review of the surgical procedure, both verbally and with instructional booklets given to the clients; equipment used in ICU postoperatively; ICU visiting policy; and the length and normal progression of the hospital stay. Before preoperative teaching is conducted, informed consent will be obtained and spouses will be placed in the experimental or control group. Random placement will be determined by tossing a coin for the first subject, and then alternating the assignment of each subsequent subject between the experimental and control groups.

After routine preoperative teaching the evening before surgery, the spouses will be given the Spielberger State-Trait Anxiety Scale (STAI) and the demographic questionnaire, then randomly assigned to the control or experimental group. The experimental group will then receive the ICU orientation program. Immediately after the first postoperative visit to ICU is completed, the spouses will take the Trait Anxiety Scale. The ICU orientation, STAI, and demographic questionnaire will be administered only by the investigator.

### Risks

Risks to the subjects will be minimal. One potential risk may be instigating added anxiety for the spouses by focusing on the intensive care environment. All subjects

receive the standard preoperative teaching, so no information will be withheld.

#### Benefits

Benefits to the subjects is anticipated to be great. Many studies that were found in the literature review investigated what families of critically ill patients viewed as their needs. However, little research was found that looked at the effect of nursing trying to meet some of these needs. This study will: evaluate how meeting some identified needs of spouses affects their anxiety levels; and provide information on how to effectively incorporate family members into the nursing plan of care.

#### Risk-Benefit Ratio

The risk of causing added anxiety for the spouses is certainly a potential, but it must also be considered an unknown possibility. Benefits should far outweigh this risk. By providing informational needs to the spouses, their anxiety level could very well decrease. The benefit of this decreased spousal anxiety will hopefully help them cope more effectively with the surgery experience.

#### Costs to Subjects

There will be no cost to the subjects.

#### Informed Consent

Once a subject has been identified and verbally agrees to participate in the study, and informed consent will be obtained by the investigator. This will be done the day prior to surgery after routine preoperative teaching is done. To protect confidentiality, subjects will be assigned a code number to their data forms. The consent forms and questionnaire scores will be stored by the investigator in a locked file.

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