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AN EVALUATION OF PREOPERATIVE
INSTRUCTION

BY
ELAINE CARAGIANIS

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS
IN
EDUCATION

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ABSTRACT

The purpose of this study was to determine if open heart surgery patients and their spouses who receive additional preoperative teaching information exhibit less anxiety than those who receive the information without additional instruction. The sample consisted of 40 male open heart surgery candidates and their wives. Each couple was randomly assigned to one of two groups upon admission. Subjects in one group received the standard method of preoperative teaching by viewing a slide tape presentation. Subjects in the second group were required to view a picture book as well as the slide presentation. Data was collected immediately preceding the treatment and four days following surgery using, Spielberger's (1983) State-Trait Anxiety Inventory (STAI). To analyze the data the t-test was used to test for significant differences between the treatment and control groups. The results supported the first hypothesis indicating that the provision of the additional instructional information helped lessen the patient's anxiety. However, the results did not support the second hypothesis, indicating that the reinforcement treatment did not significantly lower the spouses anxiety.

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Chapter One

INTRODUCTION

Background

The past decade has evidenced a dramatic increase in the number of cardiac surgical procedures (Stanton, Jenkins, Savageau, Harken, and Aucion, 1984 & Loan, 1986). Cardiac surgery is often viewed by patients as an anxiety provoking event (Christopherson & Pfeiffer, 1980; Ridgeway & Mathews, 1982). The patient facing open-heart surgery fears the procedure itself; he fears death and pain; he fears dependency; he may fear the removal of a crutch; and he fears for his family (Weiler, 1968). Furthermore, a patient facing open-heart surgery may see it as a devastating blow to himself and his family (Rakoczy, 1977).

The Problem

The serious nature of open heart surgery, the increase in cardiac surgical procedures, and the potentially detrimental effects of postoperative anxiety illustrate the need for intervention.

This study examined the effects of additional information using two different methods on the postoperative anxiety levels of male open heart surgery patients and their spouses. Specifically, four groups of

subjects were studied, two groups of patients and two groups of their spouses. All four groups received preoperative instruction using an audiovisual method with, two of the groups, one group of patients and one group of their spouses receiving supplementary information using a picturebook. It was hypothesized that the two groups receiving the additional information would experience less postoperative anxiety as measured using Spielberger's (1983) State-Trait Anxiety Inventory (STAI). See Appendix A for a copy of this instrument.

Definition of Terms

There are a number of terms used frequently in this thesis that are defined here for clarity.

Additional information refers to supplemental educational content duplicated and given to subjects. In this study a picture book is used to supplement the content included in a slide tape presentation.

Open Heart Surgery refers to coronary artery bypass graft or valve replacement surgery.

Preoperatively refers to the day before surgery.

Postoperatively refers to four days after surgery.

Significance of the Problem

If not addressed, preoperative anxiety has been shown to be a serious problem. It may produce both a sympathetic and parasympathetic neurophysiological

response, producing a mixed reaction of cardiovascular excitement and increased gastrointestinal activity (Moss, 1981). Providing information about threatening procedures has been noted to lower this type of anxiety (Hartfield, Cason, & Cason, 1981; Scalzi, Burke, & Greenland, 1980).

Despite the abundance of literature supporting the anxiety reducing effects of preoperative education, research results with regard to inpatient cardiac education outcomes have been conflicting, emphasizing the need for further research (Steele & Ruzicki, 1987). As Rakoczy (1977) concludes, all patients do not require or desire a great deal of information in the preoperative period.

Other researchers have examined possible aids to the problems associated with preoperative anxiety. Marshall, Penckofer and Llewellyn (1986) looked at educational methods such as slide and sound presentations, group teaching for patients and their families, individualized teaching with the use of written methods, and self-instructional programs. They reported that while studies have shown an increase in knowledge with the use of structured teaching, this change in knowledge is not consistently associated with compliance with health promoting behaviors. Steele and Ruzicki (1987) studied the short term effects of different teaching methods; one to one, group, closed circuit television, booklets and various other visual aids in an evaluation of an inpatient

cardiac teaching program at Sacred Heart Medical Center in Spokane, Washington. This evaluation demonstrated that inpatient teaching programs can be effective for short term outcomes and that content should be related to immediate needs.

Providing information at varying intervals throughout the preoperative phase has also been examined (Quinless, Cassare, & Atherton, 1985 & Levesque, Grener, Keronac, & Reidy, 1984). Furthermore, reinforcement of teaching content at different times has been noted to produce beneficial effects (Marshall, Penckofer, Llewellyn, 1986 & Foster, 1986). They acknowledge the need for reinforcement of teaching content for reasons such as shorter hospital stays, more sophisticated medical care and the decreased time nurses have to devote to educating patients.

Finally, the role of family members in decreasing some of the detrimental effects of preoperative anxiety is further documented (Scalzi, Burke, & Greenland, 1980; Dziurbejko & Larkin, 1978; Chatham, 1978). And, it has been noted that the topic of preoperative family education has been largely overlooked (Moss, 1986).

The available literature examines many possible forms of intervention ranging from the provision of educational materials, to the use of family support systems. This study examined the use of additional information as a

means of intervening and possibly helping to allay anxiety.

Statement of Purpose

The purpose of this study was to examine the effects of using two different preoperative teaching methods as a means of supplementing instructional content and relieving postoperative anxiety. The decision to examine the spouse's response to preoperative teaching was made mainly because of the documented interrelationship of the family and the illness of a family member (Nicklin, 1986; Chavez, 1987; Hodovanic, Reardon, Reese, & Hedges, 1984; Leske, 1986).

Scope

The scope of this study was limited to male open heart surgery patients between the ages of forty and eighty admitted to Rhode Island Hospital between the months of January and March, 1988. Patient participants in the study were randomly assigned to a treatment or control group upon admission. Spouses were assigned to the treatment or control group upon arrival with the patient. The findings of this study, therefore are generalizable only to participants under similar conditions. However, certain inferences may be made to other groups within this population.

Objectives

There were two objectives to be achieved by conducting this study.

1. To determine the relationship that exists between the postoperative anxiety levels of certain male open heart surgery patients and the provision of additional information as measured using Spielberger's State-Trait Anxiety Inventory (STAI).
2. To determine the relationship that exists between the postoperative anxiety levels of the spouses of these patients and the provision of additional information as measured using Spielberger's State-Trait Anxiety Inventory (STAI).

Chapter Two

Related Research and Theory

There is an abundance of literature available that describes the individual topics of open heart surgery, patient education, preoperative teaching and anxiety. All four subjects relate to the hypothesis examined in this study. Therefore, literature from each area will be discussed separately as it relates to this research.

Open Heart Surgery

Coronary Artery Disease

Coronary artery disease (CAD) is the leading cause of death in the United States today. It is the progressive obstruction of blood flow through one or more coronary arteries, depriving the myocardium of an adequate blood supply (Loan, 1986). This ultimately can lead to a variety of physical effects ranging from shortness of breath to a heart attack (death of the tissue).

The serious nature and increased prevalence of CAD illustrate the need for research into the many aspects of patient care effected by this illness. Foster, Kloner and Stengrevics (1984) looked at cardiovascular nursing research : Past, present and future discussing some of the many areas of cardiology namely; myocardial infarction (heart attacks); cardiovascular procedures; such as blood pressure determinations and coronary precautions;

hypertension, pediatric cardiology, prevention of coronary heart disease, and cardiomyopathy. They concluded that many of the research studies conducted in these areas are largely content poor and have not contributed to theory development.

Coronary Artery Bypass Surgery

Coronary artery bypass surgery is often referred to as a promising form of treatment for relief of some of the symptoms of CAD (Clancy, Wey & Guinn, 1984). The number of coronary artery bypass surgeries performed has been noted to be on the rise. As Wright (1987) states, the use of coronary artery bypass surgery (CABS) has grown so rapidly over the last decade that last year approximately 200,000 bypass procedures were performed in the United States alone.

The issues of patient education and preoperative teaching before open heart surgery has subsequently gained a significant increase in recognition over the past years. As noted in Steele and Ruzicki's (1987) article, in total program numbers, cardiac education in hospitals ranks second only to diabetes education. As documented by Meserko in 1973, the Cleveland Clinic did about 40 to 45 thoracic surgery cases per week during the early 1970's, increasing the need for preoperative education especially, in recent years.

Patient Education

Many positive developments have occurred in patient education in the last decade. Programs are much more widespread in a variety of health care settings, such as inpatient, outpatient, private office, community clinic, health maintenance organizations(HMO), voluntary health, and governmental agency settings. In various forms, patient education has been on the scene for the greater part of a century. But, it was the demonstration projects and studies which began in the 1940's and the invitational conferences sponsored by the American Hospital Association that provided the theoretical framework on which many of today's patient education programs are modeled (Redmen, 1981).

Although the concept of patient teaching has been mentioned in the literature dated back into the early 1900's, the issue of education as preventative medicine is relatively new. Naigbitt (1982), illustrates this trend toward preventative medicine when he discusses the shift from short term to long term. This trend toward preventative medicine has influenced the need for patient education. As Redmen (1981) states, "the Presidential commission on Health Education in 1972 helped pave the way for the present unparalleled interest in disease prevention and health promotion on the part of the general public, business, industry, government, health care providers, and schools" (p.27). She also goes on to mention other recent

federal legislation that has either alluded to or called for health care educational services primarily: the Health Maintenance Organization Assistance Act of 1973 and the National Health Planning and Resource Development Act of 1974 (Redmen, 1981). Since the early 1970's, preventative medicine has steadily grown in popularity. It appears that there are a number of present issues and future trends that will make the concept of prevention the education focus of the future especially, in regard to coronary artery disease prevention.

The concept of preventative education as it relates to adult patient teaching will be discussed by referring to a number of John Naisbitt's "megatrends". Some of his megatrends seem to suggest the likelihood that preventative issues, namely coronary care, will become the focus of the future. For example, first he discusses the shift to an "information society". In regard to this, people are demanding to know more about their illness than ever before, primarily because there is so much more to be known. This influx of information has been put to great use through our research and technology. We have the ability to process and transmit information at unprecedented speeds. Spiegel states examples of this as including

. . .the hospital information systems now in fairly wide use; the more complex medical information systems still in the relative rudimentary stage of development; the transmission of electrocardiography data by telephone with

computer interpretation, and the use of closed circuit television to enable physicians to "see" and talk to patients in remote rural areas (Spiegel, 1981, p.98).

This high tech increased information trend tends to make adult patients aware that there are now more creative means and ways available to help themselves learn.

This ties in with other trends Naisbitt acknowledges mainly, the changes from "institutional help" to "self help" and from a "representative democracy" to a "participatory democracy". It seems that adult patients want to play a more active role in their care. They want a variety of educational services, and they want to have more input into the teaching process.

In view of this, there has been an obvious shift away from nearly total dependance on the physician as the possessor of unquestionable knowledge. This could be partly a result of the media's growing attention toward issues involving physician fraud and corruption. Legislative action and government committees designed to oversee physicians and aspects of their medical care are no longer unheard of. As Braverman states, "though still ranking high in popularity in the polls relative to other professions, the physician's popularity has slipped from an approval rate of 72 percent in the 1966 Harris poll, to a figure of 43 percent in a 1976 Harris poll (Braverman, 1978, p.33). Attitudes such as these, along with soaring health care costs and the high price of medical and liability insurance, are reasons why many health care

professionals are advocating patient's getting involved in the education process.

Changes in the prevalent illnesses and diseases has further prompted the advocacy of preventative medicine and patient education. Changes in our lifestyles including high stress levels, poor diets, and increased drug usage have left us more susceptible to such illnesses as heart disease and strokes. More recent research and technological advances have shown us that there are many preventative measures we can take to help decrease our likelihood of developing some of these illnesses. Awareness of many of these methods has become of great interest to patients and adults alike. Educational offerings centering on aspects of prevention such as nutritional alteration and stress management techniques have grown in popularity over the past twenty years. Examples of more recent topics of concern center on AIDS and the use of education as a means of preventing its spread.

Along with these major changes in health care attitudes, beliefs, and concerns is the implementation of the DRG's (diagnosis related groups). Newly implemented in the past ten years, this system has led to earlier discharge for patients and an increased strain on health care workers to prepare and educate them. Through this system, patients are discharged from the hospital based on set times that are established depending on the particular

illness for which the patient is being treated. For example, if a person comes into the hospital to have a gallbladder removed, the DRG's may say that ideally that person should be discharged in nine days. In view of this, the insurance company is set to reimburse the hospital for the nine days of treatment even if the patient is discharged earlier. The incentive then is to get the patient home within the set time frame, or sooner; consequentially, there seems to be a growing tendency to educate these adult patients quickly and inappropriately.

Community agencies have also felt the burden of this early discharge. Patients are leaving the hospital sooner and sicker than ever before. Hospitals now focus more on acute care, leaving chronically ill patients to the care of nursing homes, retirement homes, their family's home, or to themselves in their own homes. Intra-agency collaboration would seem to be more of a "trend" or "need" in terms of continuity of care for discharge education within the hospital setting to outpatient education within the community agency. The major social focus though, would seem to be toward the prevention of illness and of readmission into the hospital.

Preoperative Teaching

A review of the literature regarding preoperative teaching describes research dating back to the early 1960's (Healy, 1968). These studies provided valuable insight into more recent developments into this growing field. This can be noted in the following review of literature.

Weiler (1968), examined the question of what do patients who have just been through open-heart surgery think others should be told beforehand. By interviewing 100 patients, it appeared that the areas of instruction most important to the patient were

. . . deep breathing and coughing techniques; information about pain, oxygen, and chest tubes; information describing intensive care, information about seeing a minister, rabbi, or priest; and visiting hours and communication of information to relatives. (p. 1467)

Her most general conclusion was that preoperative instruction should be highly individualized.

The examination of preoperative teaching content has been reviewed by numerous other researchers since this time. Meyer and Latz (1979), determined from a survey they conducted that current teaching plans and tools need to be updated to include what the patient wants to know. Furthermore, as Boyd (1987) states, include what the patient wants to know as well as what they need to know.

The roles of patient knowledge, demographic information, general intelligence, problem solving

abilities, and dysfunctional behavioral parameters (i.e., motivation) were examined as potential predictors of compliance behavior of patients with ischemic heart disease recently discharged from a cardiac patient education program. Data was gathered on 342 patients. A measure of compliance with the prescribed treatment plan was obtained by telephone for all patients 4 weeks after discharge. A regression analysis of these scores indicated that motivation was highly correlated with compliance (Mills, Barnes, Rodell and Terry, 1985). The indication here is that providing the information is not always enough, factors such as a person's motivation to learn are extremely important.

This brings to light the issue of memory and retention. Considerable attention has been given to this topic in regard to preoperative education. Many factors have been noted to influence a persons ability to absorb information especially, during the preoperative period. Patient's reaction to illness including feelings of rage, guilt, depression, resentment, denial, and rejection have all been described as barriers to learning thereby, potentially hindering a patient or family member's retention of preoperative teaching information (MacMillian, 1981).

The characteristic of age has been described as a major factor influencing retention of information. Kaye, Stuen and Monk (1985), reported on the program efficacy and

teaching skills acquisition among older adult learners using, assessment questionnaires issued at different time intervals. Although limitations regarding the sample size were noted, data emphasized theories consistently noted in the literature;

1. older adult learners do not represent a homogeneous group. They enter the learning environment with an exceedingly diverse set of backgrounds and skills.

2. variables such as sex, age, teaching experience, education, and race/ethnicity may all play a role in differentiating the learning process. (p. 122)

Preoperative information was found to be viewed differently by various sectors of the population further emphasizing the need for careful assessment. Other important assessment characteristics include (1) existing level of and desire for information, (2) age, and (3) operative procedure (Leech, 1982).

Wright (1987), analyzed 20 patients between the ages of 20 and 75 undergoing elective CABS, (coronary artery bypass surgery), to examine individual self-perception alterations. A summary evaluation technique was used comparing and contrasting group means within demographic categories of items found to be significant by ANOVA computations. The following conclusions resulted from the study:

1. Self-perception alterations are experienced by patients undergoing elective CABS.
2. Different areas of self-perception are affected at different stages of the CABS experience.

3. Different types of people experience self-perception alterations during the CABS experience in different ways. (p. 489)

Although experimental problems such as the nonrandom selection of subjects were noted, the findings do illustrate consistent theories in the literature in reference to the importance of individual assessment.

Carol A. Linderman produced three research studies in the 1970's involving general surgical preoperative teaching. The studies illustrated three important aspects and theories of preoperative teaching that developed through the eighties.

Linderman's first study proposed to compare the effects of structured and unstructured preoperative teaching of deep breathing, coughing and bed exercises upon postoperative ventilatory function; length of hospital stay and postoperative need for analgesics using a static group pretest-posttest design on 261 general surgical patients 15 years of age and older. The data supported the following:

1. the ability of subjects to deep breathe and cough postoperatively was significantly improved by the structured preoperative teaching method;
2. the mean length of hospital stay was significantly reduced by the implementation of the structured preoperative teaching method; and
3. there was no differential effect upon postoperative need for analgesia (Linderman & Van Acrman, 1971 p. 332)

In a recent study conducted by Marshall, Penckofer and Llewellyn (1986), two comparable groups of coronary artery bypass surgery patients were examined to assess the effectiveness of a structured teaching guide versus an

unstructured method on postoperative knowledge and compliance with postoperative health behavior. An analysis of variance with repeated measures showed that both groups had higher total knowledge scores after surgery. However the overall results determined that although structured teaching may not have initially greatly affected patient's knowledge, it may have had an impact on other factors such as compliance with postoperative health behavior.

Since this time, the concept of structured and unstructured patient instruction has developed to include a variety of educational methods and teaching aids. Namely, audiovisual methods which have been highlighted throughout the most recent literature (McClurg, 1981; Peters, 1983; Abrams, 1987).

Patient teaching books and manuals are other valuable aids referred to throughout the literature. Christopherson and Pfeiffer (1980) concluded in their study involving 41 randomized coronary artery bypass patients that the two groups that read a preoperative teaching booklet 1 to 2 days preoperatively significantly increased their learning ($p < 0.05$), decreased their A-state anxiety scores ($p < 0.001$) from pre to the postoperative period, spent less time in the intensive care unit and were discharged earlier. However, it was noted that they were the youngest in age requiring the least amount of time on cardiopulmonary bypass and having the least number of coronary arteries bypassed.

Rice and Johnson (1983), conducted a 3x2 factorial designed study including 130 presurgical cholecystectomy and herniorrhaphy patients concluding that patients who received a specific self-instructional preadmission booklet required significantly less teaching time in the hospital and, they performed more of the exercise behaviors expected than did patients who received nonspecific exercise instruction.

Lamb (1984), interviewed 30 elective cardiac catheterization patients supporting his hypothesis that there would be a significant increase in the mean scores from the pretest to posttest as a result of a teaching manual issued to patients ($p < 0.001$). The score from pretest was interpreted as an increase in knowledge. Limitations such as, the Hawthorne effect and probability that patients could have received information from other sources were acknowledged.

Young and Brooks (1986) who conducted a study examining 18 randomized multiple sclerosis patients to determine whether a written booklet would result in greater retention of information concerning alternate-day steroids (a medication). Through a simple pretest posttest 2 group designed study, a significant ($p < .015$) difference was found to indicate that patients demonstrate better understanding of their medication when they are given a written informational booklet in addition to oral instruction.

Overall, the literature seemed to support the use of teaching aids primarily, in addition to oral instruction (Marshall et.al., 1986). This concept appears to be gaining recognition and seems to be a growing trend in patient education. Causes such as shorter hospital stays and more sophisticated care have been documented as reasons for additional teaching aids (Foster, 1986).

Marshall, et al. (1986) looked at other benefits of reinforcement teaching techniques. They examined sixty coronary bypass patients between the ages of 48 and 78 years old to assess the effectiveness of a structured teaching guide on patient health care compliance. An analysis of variance with repeated measures revealed that both groups receiving the structured and unstructured teaching had higher total knowledge scores after surgery. However, these patients who had structured preoperative teaching seemed to comply significantly ($p < 0.05$) better with postoperative health behavior such as walking after surgery. Although the results appeared to indicate that structured preoperative education using a manual helps patient compliance, it was noted that the impact of information might have been delayed which could have influenced the results of the study.

Also noted in Marshall et.al.'s article was the concept of self-care education in the management of health gaining increasing popularity as hospital costs rise. This idea of different forms of teaching including self,

individual and group orientations has been viewed more substantially in the literature.

In Linderman's (1972) second comparative study, she examined the effect of individual and group preoperative teaching on a postoperative ventilatory function, length of hospitalization, postoperative need for analgesia and length of learning time. By using a $2 \times 2 \times 3 \times 3$ factorial experiment and a randomized group design with 351 subjects fifteen years or older admitted for elective general surgery, it was found that group teaching was as effective and more efficient than individual teaching.

Schmitt and Wooldridge (1973), studied the impact of psychological preparation for surgery involving a group of 25 experimental patients participating in a small group session at which they discussed their concerns and fears and received information about what to expect and how they could aid in their recuperation. They were contrasted with a randomly selected matched control group of 25 patients who underwent similar procedures, but received only the routine care. Verbal, interactional, and physiological variables were measured.

Experimental patients reported that they slept better and experienced less anxiety the morning of the surgery; they recalled more facts about their experiences on the day of surgery, and their recollections less often involved fearful and unpleasant images; they experienced less operative urinary retention; required less anesthesia; they required less pain medication, returned more rapidly to oral intake, and were discharged sooner. (p. 108)

Although these results offer numerous implications for the use of group teaching, limitations to the study such as the possibility that favorable responses might reflect the patient's desire to please the nurse as much as show actual improvement resulting from the treatment were acknowledged.

Discussion about individual and group instructional settings has increased since the early 1970's. As Papatheodorou (1981) describes in his article entitled, The Use of Support Groups in Diabetes Education, group participation can be a valuable experience for people trying to cope with similar health problems.

Patient teaching including family members has been a more current topic revealed in the literature. Documented in the later 1970's, it was noted to be an overlooked component of the patient's psychosocial entity possibly improving the psychosocial state of the open heart surgery patient (Chatham, 1978). As Leech (1982) indicates, the family should be included in preoperative interventions whenever possible.

More often now, the needs of the patient's family are being assessed and addressed. Hadovanic, Reardon, Reese and Hedges (1984) describe three recurring family member's needs involving patients admitted to the intensive care unit that were identified in the literature:

1. the family member's need to relive the critical incident that led to the patient's admission to the I.C.U.
2. a fear of criticizing staff and a compulsion to defend the quality of care given by the staff and

3. the desire for medical information and the uncertainty about obtaining it. (p. 243)

Stillwell (1984) conducted a 30 member study to investigate the relationship between the dependent variable of ranked importance of visiting needs and the independent variables of the family member's age, socioeconomic level, ethnic background, past experience in an I.C.U. setting, religion, attendance at church, relationship to the patient, major source of social support, perceived condition of the patient, and the diagnosis of the patient. The visiting needs of greatest importance were to see the patient frequently and to be able to visit the patient whenever the family member desired.

Leske (1986) also looked at the needs of the family, highlighting the interdependence of family members and the impact of family health on the patient in her study involving the needs of relatives of critically ill patients. After surveying 55 family members of 20 critically ill patients and comparing the results to other findings (Molter, 1983), the following needs were considered important by family members:

- 1) to feel there is hope, 2) to receive information about the patient once a day, 3) to be called at home about changes in the patient's condition, 4) to know why things were done for the patient, 5) to be assured that the best care possible is being given to the patient, 6) to know exactly what is being done for the patient, and 7) to know how the patient is being medically treated. (Leske, 1986, p. 193)

Norris and Grove (1986) conducted a similar study taking it a step further. They used a descriptive survey on 20 family members and 20 intensive care nurses to look at not only the needs as perceived by the family members but, also the needs as perceived by the nurses caring for the patients. The four most important needs identified by family members were:

- 1) to feel there was hope, 2) to have questions answered honestly, 3) to feel that hospital personnel cared about the patient, and 4) to be assured that the best possible care was being given to the patient. (p. 198)

The four most important needs identified by the nurses were:

- 1) to talk to the doctor every day, 2) to receive information about the patient once a day, 3) to feel that hospital personnel cared about the patient, and 4) to have explanations given in terms that are understandable. (p. 198)

The overall results of this study indicated that a significant difference at the 0.05 level existed between the perceptions of the patients versus those of the nurses. Generally the nurses ranked general information higher and they did not appear to perceive their importance for the family. Of utmost importance seems to be the need for nurses to understand that needs are subjective and that each patient should be considered individually when planning teaching.

Despite the increasing attention directed at family education, Moss (1986) notes in her recent review of literature regarding family education that

a) . . .there are a lack of studies that examine the effects of preoperative instruction on significant family members; b) an absence of studies that measure fear in significant family members; c) a lack of adequate tools to measure significant family member's psychological reactions to surgery; and d) a potential positive impact of including significant family members in preoperative instruction interventions on them, as well as the patient. (p. 1111)

The nurse's physical presence as a educator has been recognized to produce beneficial effects as described in Linderman & Stetzer's (1973) third research study in which 176 surgical patients were examined looking at the influence of preoperative visits by operating room nurses on effectiveness, efficiency, and safety of nursing care in the operating room; preoperative and postoperative anxiety; mode of emergence from anesthesia, number of analgesic agents administered in the recovery room and in the first 48 postoperative hours; number of postoperative physiological problems; and length of hospitalization. The study supported four conclusions regarding the preoperative visits by operating room nurses:

- 1) The visit was an efficacious means of increasing the effectiveness of nursing care in the operating and recovery rooms.
- 2) The visit which attempted to influence the emotional response of the patient was an ineffective approach to altering his adaptive responses during the postoperative period.
- 3) Patients who experienced minor surgical trauma experienced less anxiety postoperatively if they had been visited preoperatively by the operating room nurse, but other benefits of the visit were not altered by the degree of surgical trauma.

- 4) Benefits to the patient derived from the visit were not influenced by the age of the patient. (p. 4)

The results of this study and other research discussed, view the role of the nurses as a source of support for the patient and family. This has particularly been noted in regard to the concept of anxiety and open heart surgery. In the next portion of the review of literature, anxiety as it relates to preoperative teaching and open heart surgery will be discussed.

Anxiety

Several studies have been conducted to see how anxiety effects the patient and family pre and postoperatively. The concept of anxiety is noted to be difficult to define. It is generally referred to as, a state of uneasiness, tension, or apprehension based on perceived threats. Spielberger, Gorsuch, and Lushene describe it as a bidimensional variable. State-anxiety, a transitory emotional state, varies in intensity and fluctuates over time according to the situation. Trait-anxiety, a relatively stable characteristic, predisposes an individual to appraise a range of stimuli as either benign or threatening.

Anxiety has been noted to produce such a wide range of physical and psychological effects that it is often difficult to assess. Denial of it further adds to this problem. Noted in the literature is

. . .patient's often reluctance to trouble a busy professional with their minor aches and concerns (embarrassment, fear of being labeled hypochondrial, and the social distance between the profession and lay patient also play roles in encouraging reticence); nonetheless, these problems and symptoms continue to worry the patient. (Becker, 1985 p. 543)

The common theme when describing preoperative anxiety seems to be the numerous physical and psychological effects it can have on the patient. This has been studied as far back as in the mid 1960's by Kornfeld, Zinberg, and Malm in their study regarding psychiatric complications of open heart surgery. Here they mention patient anxiety as a potential contributing element involved in postcardiotomy psychosis.

Since then, others have observed the potential contributing effects of anxiety on this psychosis typically described as; a group of abnormal behavioral responses that have been found to occur during the immediate postoperative period in susceptible patients who had cardiac surgery (Quinless, Cassese & Atherton, 1985). Their review of research stressed the multivariationetiology of postcardiotomy psychosis and the potentially detrimental effects anxiety can have on the patient undergoing open heart surgery.

Hospitalization in general was frequently referred to in the literature as a major source of patient and family anxiety. As described in Volicer and Bohannon's (1975) hospital stress rating scale, many factors, including the unfamiliarity of surroundings, fear of serious illness,

loss of contact with family and friends have been noted to be possible sources of stress among hospitalized patients.

Along with the initial stress of hospitalization is the additional anxiety commonly associated with the preoperative period. As Carnevali (1971) suggests, the preoperative period is normally a stressful anxiety-ridden time in a patient's life when the activities of the nurse may be particularly important in providing support and comfort. Rakoczy outlines four distinct stages and responses in her descriptive study describing the thoughts and feelings of patients in the waiting period prior to cardiac surgery:

- 1) Confrontation- referring to the period wherein the patient comes face to face with the reality of the impending cardiac surgery. Common responses include disbelief, anxiety, and shock.
- 2) Self reflection- referring to the period when patients made statements revealing an effort to explain or justify the cause of the heart problem. Common responses include self pity or grieving, suffered feelings of guilt, and mourning of their loss of control.
- 3) Resolution- referring to the period in which patients make statements focusing upon the process of interrelating the meaning of the surgery and incorporating this into their self concept. Common responses include expression of hope of recovery, rebuilding of confidence and self esteem, and the decision to proceed with the surgery.
- 4) Countdown- referring to the day prior to cardiac surgery wherein the time remaining before surgery is counted off in fixed units. Common responses included the need for reassurance and confidence in their doctors.

The trend throughout the literature seemed to heavily indicate the need for thorough individual assessment.

Wolfer and Davis (1970), studied 76 female patients who underwent gynecologic surgery and 70 male patients who underwent major abdominal surgery using a variety of instruments designed to assess their preoperative fear and anxiety and postoperative recovery and adjustment. The major findings and conclusions were:

- 1) at least 15 per cent of the males and 30 per cent of the females reported a high degree of fear and anxiety the night before surgery; 2) female patients reported more fear and anxiety than male patients; and 3) there was no substantial relationship between patients' preoperative level of fear and anxiety and any aspect of their postoperative recovery. (p. 414)

Their results brought out some major issues related to preoperative teaching and anxiety namely; the different ways individuals experience anxiety, the differences between male and female anxiety and the question of whether preoperative teaching actually does help lower anxiety.

Patient education has been discussed in this review of literature as being a potentially effective means of decreasing postoperative anxiety by enhancing personal control (Walters, 1979). Other methods described, include the use of personal control intervention. Johnson, Christman and Stitt conducted a randomized 2x3x2 factorial designed study to evaluate the short and long-term effects of interventions that provided different means of exerting personal control over postoperative experiences in a sample of 121 black and 47 white hysterectomy patients. One variable was the presence or absence of the description of

the experience in concrete sensory terms; the second variable was instruction in a cognitive-coping strategy, instruction in a behavior-coping strategy, or no instruction; and the third variable was experimental or control information about the post hospital experience. The hypothesis that concrete sensory information preoperatively would help patients endure the postoperative experience was supported by self-report data on coping processes.

The concept of control has gained recent interest evidenced in the literature review. The internal-external locus of control construct is based on the social learning theory and emphasizes the concepts of expectancy and reinforcement value (Becker, 1985 p. 545). The concept has been described in an attempt to characterize individuals in terms of the extent to which they believe they can control events (as opposed to control by chance or fate). In Becker's article, Patient Adherence to Prescribed Therapies, he describes the Rotter conceptualization in which an individual will undertake goal-directed behavior only if he or she values the particular reinforcers in a particular situation.

For example, a person would be expected to seek information about a particular health threatening condition if the person both values the outcome (health) and believes that the behavior will influence the outcome. (p. 545)

The effects of sensation information about an impending threatening event was examined through a quasi-

experimental study conducted on twenty subjects using the State Trait Anxiety Inventory. Subjects receiving sensation information reported significantly less anxiety and expectations more congruent with their actual experiences than did subjects receiving procedural information. However it was noted that because procedural information provides a less certain basis for forming accurate expectations about the sensations to be encountered during an impending threatening event, coping activities selected by the individual are more likely to be inadequate (Hartfield, Cason and Cason, 1981).

The review of literature presented in this paper discusses the high incidence of coronary artery disease and preoperative anxiety emphasizing the need for intervention. This study describes an intervention and its subsequent evaluation.

Chapter Three

Methodology

Research Hypotheses

The purpose of this study was to examine the effects additional instructional content had on open heart surgery patients and their spouses. Based on the review of literature which suggests that providing additional preoperative information helps lessen anxiety, the following hypotheses were developed.

1. The postoperative anxiety levels of patients receiving additional information is significantly less than the postoperative anxiety levels of patients not receiving the additional information.
2. The postoperative anxiety levels of these patient's spouses receiving additional information is significantly less than the postoperative anxiety levels of these spouses not receiving the additional information.

Population and Sample

This study involved four groups, eighty (80) subjects with twenty (20) members in each group. Two groups were comprised of male coronary artery bypass candidates between the ages of fifty (50) and eighty (80) and the other two groups were the wives of these patients. The patients and their spouses were randomly assigned to one of two treatment groups after arriving at the hospital with every other couple receiving the additional information intervention.

Setting

The location of the study was Rhode Island Hospital, a seven hundred and nineteen (719) bed teaching hospital. The teaching took place in a classroom located within the hospital. The subjects were then followed during their recuperation on a twenty five (25) bed cardiovascular thoracic surgical floor within the hospital.

Research Design

All eighty subjects viewed an audiovisual slide show. This is the standard means of educating the coronary bypass graft patients and their family members at Rhode Island Hospital now. Forty (40) of the participants, twenty (20) patients and their spouses, received additional preoperative instruction with a picture book. The spouse was paired with the patient into a group. This book was simply a duplication of the information covered in the audiovisual slide show. See Appendix B for a copy of the content. The teaching session was held the day before the patient's scheduled surgery, the day of admission. At this time a description of the study was given and consent was solicited from the patient through signing of a consent form. See Appendix C for a copy of this form. The teaching was done as couples with every other couple receiving the additional information. The subjects received the instruction before they saw other members of the hospital staff. The state and trait

portions of the State-Trait Anxiety Inventory (STAI) were administered immediately preceding the teaching intervention. The state portion of the inventory was readministered four days following the surgery.

Approximately ten coronary bypass surgeries are performed per week at Rhode Island Hospital. Of these ten patients, some were excluded from the study for various reasons, specifically females, patient's admitted for emergency surgery, and those who were physically unable to participate. Also, withdrawal of consent, complications of surgery, the death of a participant or the inability to gather post test results were other reasons that resulted in a loss of sample members. Considering these exemptions, approximately five of the ten potential candidates were taught per week. Considering the limited number of available candidates for the study, it took approximately 12 weeks to gather data on 40 patients and their spouses.

Data Analysis Plan

The data for this project consisted of the scores obtained from the eighty (80) members in the sample on the State-Trait Anxiety Inventory (STAI). To analyze the data, the t-test was used to test for significant differences between the groups. Both the state and trait portions of the STAI were administered to subjects before the treatment. The pre state and pre trait scores were

used to determine homogeneity between groups. The post state scores were then computed to test the hypotheses.

Additional data related to the variables of age, educational level and past medical histories were also gathered through interviews with the subjects and by viewing their medical records.

Instrumentation

The State-Trait Anxiety Inventory (STAI) was selected as the instrument to measure anxiety in this study. It comprises separate self-report scales for measuring state and trait anxiety. The S-Anxiety scale (STAI form Y-1) consists of twenty statements that evaluate how respondents feel right now, at this moment. The T-Anxiety scale (STAI Form Y-2) consists of twenty statements that assess how people generally feel (Spielberger, 1983).

Over the last decade, the State-Trait Anxiety Inventory (STAI) was used more often in research than any other anxiety measure (Buros, 1978). It was introduced in 1968 and it was known as Form X. In 1979, a major revision of Form X was undertaken which produced Form Y. In Form Y, thirty percent of the Form X items were replaced, resulting in improved psychometric properties for both the S-Anxiety and T-Anxiety scales (Spielberger, 1983). Form Y will be used in this study.

In the construction and standardization of Form Y, more than 5,000 subjects were tested. The stability

coefficients for Form Y were based on two groups of high school students tested in classroom settings. Stability, as measured by test-retest reliability coefficients, is relatively high for the STAI T-Anxiety scale ranging from .65 to .75 and low for the S-Anxiety scale ranging from .16 to .62, as would be expected for a measure assessing changes in anxiety resulting from situational stress. Individual STAI items were required to meet validity criteria at each stage of the test development process in order to be retained for further evaluation and validation. The test construction and validation process is described by Spielberger, et.al. (1970), and in Appendices B, C, and D of the Manual for the State-Trait Anxiety Inventory STAI (Form Y).

The STAI was designed to be self-administered, either individually or to groups. In this study, the test was administered individually to the patient and his spouse. The directions as stated on the self-evaluation questionnaire were read to the individuals and any questions were addressed. Although the inventory has no time limit, it took five to ten minutes for subjects to complete. The scoring was done by the author using the scoring key for STAI, Form Y-1.

CHAPTER FOUR

Data Analysis and Findings

This study was conducted to examine the effects of additional information using two different methods on the postoperative anxiety levels of male open heart surgery patients and their spouses. A random sampling of patients was used. Only male patients were eligible to participate and they had to be within the ages of forty and eighty. The spouses were the wives of these patients. They were selected for participation in the study upon admission with their husbands, therefore, their ages and other traits were not controlled variables.

Two hypotheses were tested in this study using the t test. One hypothesis was formulated for patient groups and one for spouse groups. Although the teaching took place in couples, patients and spouses were analyzed independently. Four separate groups of data were gathered for patient and spouses', treatment and control groups.

To test the hypotheses Spielberger's State-Trait Anxiety Inventory (STAI) was used. Both the state and trait portions of this inventory were administered to all four groups preoperatively and a t test was used to check for any significant differences between the patient and spouse group's anxiety levels. An alpha level of $p < .05$ was indicated as a level of significance. Tables 1-4 show the results of these analysis.

TABLE 1
RESULTS OF PATIENTS' PRE STATE SCORES BY GROUP

GROUP	N	x	SD	t	p
treatment	20	44.05	12.205	1.09	0.29
control	20	39.55	10.516		

TABLE 2
RESULTS OF SPOUSES' PRE STATE SCORES BY GROUP

GROUP	N	x	SD	t	p
treatment	20	51.40	9.355	0.06	0.96
control	20	51.25	9.781		

TABLE 3
RESULTS OF PATIENTS' TRAIT SCORES BY GROUP

GROUP	N	x	SD	t	p
treatment	20	36.20	8.452	0.23	0.82
control	20	35.50	9.086		

TABLE 4
RESULTS OF SPOUSES' TRAIT SCORES BY GROUP

GROUP	N	x	SD	t	p
treatment	20	38.15	10.464	-0.14	0.89
control	20	38.65	11.108		

The results of tables 1-4 indicate no significant differences between treatment and control groups for both the patient and the spouse groups. Therefore, it can be assumed that the anxiety levels of the control and treatment groups were similar at the start of the study.

The state portion of the inventory, which measures the anxiety level of a person at that moment, was administered again postoperatively to evaluate whether or not the treatment group's anxiety was less than the control group's level. The t test was again used to test for any significant differences. Table 5 illustrates the results of these findings for patient groups.

TABLE 5
RESULTS OF PATIENTS' POST STATE SCORES BY GROUP

GROUP	N	x	SD	t	p
treatment	20	36.75	7.933	1.94	.034*
control	20	41.45	7.253		

* significant at the $p < 0.05$ level

The results of table 5 show a significant difference at the $p < .05$ level, between the anxiety levels of the treatment and control groups. Computation of the means of the two groups indicate that postoperatively, the treatment group's anxiety level is less than that of the control group. These findings suggest that the treatment was

effective in lowering the patient's anxiety. These results support the first hypothesis indicating that the provision of the additional instructional treatment helps lessen the patient's anxiety.

Table 6 delineates the analyzed post state data results for the spouse groups.

TABLE 6
RESULTS OF SPOUSES' POST STATE SCORES BY GROUP

GROUP	N	x	SD	t	p
treatment	20	42.00	10.214	-0.31	0.76
control	20	40.85	13.060		

A review of the findings in this table show that the t values obtained from the comparison between the treatment and control groups are not statistically significant at the $p < .05$ level of significance. These findings suggest that the treatment was not significantly effective in lowering the anxiety levels of the spouses. These results do not support the second hypothesis, indicating that the additional treatment information did not significantly lower the spouses anxiety.

CHAPTER 5

Summary, Conclusions and Recommendations

There are three parts of this chapter. The first part includes a brief review of this study's purpose, hypothesis, objectives, procedures and major findings. The second portion draws on the results of the data collected as it has been interpreted. And, the final segment describes implications of the findings and considerations for future related studies.

Purpose of the Study

The overall purpose of this study was:

(1) To examine the effects of using two different preoperative teaching methods as a means of reinforcing instructional content and relieving postoperative anxiety.

Research Hypothesis

The following statement of the hypothesis was proposed after reviewing the literature which suggested the use of additional teaching content as a means of helping to relieve postoperative anxiety.

1. The postoperative anxiety level of male open heart surgery patients and their spouses receiving additional information is significantly lower than the anxiety levels of subjects not receiving the added instruction.

Objectives

Specifically, one major objective was proposed considering the open heart surgery patient and their spouses independently:

1. To determine the relationship that exists between the postoperative anxiety levels of these 2 groups of subjects and the provision of additional information as measured using Spielberger's State-Trait Anxiety Inventory (STAI).

It was believed that both the patients and their spouses would experience a decrease in anxiety as a result of additional preoperative teaching content.

Procedure

The study examined eighty (80) subjects, forty (40) male open heart surgery patients and forty (40) female spouses of these patients. The patients and their spouses were randomly assigned to one of two teaching groups upon admission to the hospital. The instruction took place in couples with every couple receiving the standard means of preoperative teaching involving the viewing of an audiovisual slide presentation. Every other couple comprised the treatment group and they received additional teaching with a picture book to review at that time. Although the instruction occurred in couples, both patient and spouses data were analyzed independently.

Instrumentation

The independent variable of anxiety was measured using Spielberger's State-Trait Anxiety Inventory (STAI). Data from both the state and trait portions of the instrument was collected initially, immediately prior to preoperative instruction, to assess the homogeneity of the groups at the start of the study. The state anxiety scale was then repeated 4 days following surgery to compare the anxiety levels between the treatment and control groups. It was anticipated that the groups receiving the additional instruction preoperatively would reflect less anxiety at this time.

Analysis of Data

The data acquired through the administration of the state and trait portions of the State-Trait Anxiety Inventory were hand scored using template keys. The significance level established for this study was $p < .05$. To analyze the data, the t-test was used to test for significant differences between treatment and control groups.

Major Findings

The preoperative state and trait anxiety results showed no significant differences between the patient and spouse groups at the beginning of the study. This indicated that both the treatment and control groups for

the patients and the treatment and control groups for the spouses were similar at the start of the project.

The postoperative state anxiety scores were then analyzed supporting only one of the research hypotheses as indicated below:

1. There is a significant decrease in the anxiety level of male open heart surgery patients as a result of supplementing preoperative teaching.
2. There is not a significant decrease in the anxiety level of the spouses of male open heart surgery patients as a result of supplementing preoperative teaching.

Conclusions

The findings of this study supported the use of additional information in preoperative instruction with open heart surgery patients but not with their spouses. These results along with the findings discussed in the review of literature suggest the following major conclusions:

(1) The fact that coronary artery disease is the number one cause of death in the United States today and that open heart surgery has been described as a major treatment modality emphasizes its importance for research study. Discussion of its serious nature and anxiety provoking effects further suggests the need for intervention.

(2) The fact that additional information was effective in lowering the anxiety levels of the open heart surgery patients supports the majority of the literature's findings

regarding the overall benefit of it as a useful intervention. However, it is necessary to examine other possible explanations for this decrease in anxiety.

(3) The possibility that factors other than the additional instruction might have acted to help alleviate the patients anxiety and not the spouses are stated as identified in the literature review:

a. The increased relevance of the information to the patient because he actually experienced much of the discussed subject matter.

b. The increased motivation of the patient to learn because he was undergoing the surgery.

c. The possibility of gaining knowledge from sources other than the preoperative instruction while in the hospital (i.e. acquisition of information from staff members and other patients).

(4) The possibility of an interaction between patient and spouse because the teaching occurred in couples should be considered. As the literature suggests, often family members act as reinforcers for patients helping to support them and lessen their anxiety whereas seeing the patient after surgery often provokes anxiety reactions in spouses.

(5) Gender should also be considered as a characteristic that might have contributed to the patient's significant decrease in anxiety postoperatively. This study's findings tended to support much of the literature that differentiates men's responses to illness from that of

women. Furthermore, the possibility that men would deny their anxiety in an attempt to appear in control of the situation should be acknowledged.

(6) Worthy of note is the fact that patients were selected randomly for participation into the study and characteristics such as age were controlled for. The spouses were not truly randomly selected because they were paired with their spouse upon admission to the hospital. Controlling for some traits primarily age, could not be done. As revealed in the review of literature, a person's age can highly influence his learning capacity. Those older subjects would be more apt to have difficulty retaining information presented to them.

(7) The fact that the additional information was not effective in relieving the spouse's anxiety supports the notion that family education should be more thoroughly examined. Considerations unique to spouses should be addressed taking into account the following possible documented reasons why the additional instruction failed to significantly lower their anxiety levels:

1. The problem of retaining the information after leaving the hospital and recalling it when visiting the patient after surgery.

2. The fact that other concerns such as financial and social obligations distract the spouses while they are away from the hospital

3. The fact that the spouses did not actually experience the surgery making it difficult for them to relate to the instructional content.

4. The initial stress associated with entering the hospital is a consideration for spouses upon each patient visit.

5. The concerns of spouses regarding the patient's discharge from the hospital, return home, and their role in helping him recuperate.

Considering these conclusions, the following section will discuss some recommendations and implications for future research.

Recommendations

In the opinion of this researcher, preoperative teaching and reinforcement of the content can be an effective means of decreasing anxiety. However, careful consideration needs to be given to a number of factors and the following suggestions should be noted:

(1) With the increased incidence of heart related illnesses in society today, more studies should examine the effects of self help and prevention types of intervention. The field of patient education should be expanded catering more to the needs of patient and family members. Services should be increased to include:

1. More teaching sessions for patient and family members as needed to reflect lifestyle differences.

2. A variety of methods by which to teach i.e. audiovisual aids and booklets, based on the unique characteristics of the learner.

3. Varied structured teaching sessions with individual, couples, or group meetings available to the learner as desired.

4. The use of more creative means of helping people learn about health care problems such as support group meetings, sessions held outside of the hospital and educational aids to use at home.

(2) Individual assessment is key when trying to determine the best type of teaching to employ. Personal traits such as the subjects age, gender and motivation to learn will need to be examined before deciding on the most effective form of education.

(3) Reasons why patient education is often overlooked such as rising health care costs, increased patient acuity and the shortage of nurses should be studied further, to validate the need for more nontraditional types of patient teaching services. The overall effect of these concerns is the nurse's decrease in time available to educate patients. This researcher suggests the provision of additional types of information as one means of helping to alleviate this problem.

(4) Evaluation of any intervention employed should not be overlooked. Advantages versus disadvantages need to be

examined. Benefits including decreasing patient anxiety, complications, discharge time and increasing motivation, compliance and satisfaction should be assessed when reviewing educational methods.

(5) This research looked at the concept of anxiety and the effect of additional instruction on anxiety. It was described as a prevalent response to illness and an inevitable behavior exhibited by those awaiting open heart surgery. When attempting to determine a persons anxiety level, individual assessment was indicated because of the numerous physical and psychological effects anxiety can have. Consequently, it is recommended that a variety of methods be used to help measure it. This study employed a self report instrument, the State-Trait Anxiety Inventory. Other measures might be considered for future use. Physical indicators such as blood pressure devices were described in the literature review. More than one instrument might be useful to help evaluate future educational interventions.

(6) Finally, this researcher highly stresses the need for future studies directed toward family education. Spouses of open heart surgery patients were included in this study because of the documented need for family teaching. The same concerns discussed in regard to patient education, need to be addressed in reference to family instruction. Moreover, particular attention needs to be

given to the following areas described in the review of literature:

1. Content directed toward the specific needs and concerns of family members.
2. Educational programs sensitive to the unique responses family members tend to display such as, helplessness and fear of taking care of the patient after discharge.
3. Additional types of information for family members to use at home while away from the stressful hospital environment.

This study produced valuable findings regarding preoperative teaching contributing to the growing field of patient and family education. Numerous issues and concerns were discussed highlighting the necessity of future research.

APPENDIX A

SPIELBERGER'S STATE-TRAIT ANXIETY INVENTORY

SELF-EVALUATION QUESTIONNAIRE

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

STAI Form Y-1

Name _____ Date _____ S _____
Age _____ Sex: M _____ F _____ T _____

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
SOMEWHAT
MODERATELY SO
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

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Appendix B

Preoperative Teaching Content

This picture book presentation is for you, the patient and your family. You are going to have heart surgery and this has probably raised many questions and perhaps some fears in your mind. We hope this book will help to answer many of your questions and relieve many of your fears about heart surgery.

You will be at Rhode Island Hospital for your surgery. Rhode Island is a 719 bed Brown Affiliated Teaching Hospital.

The day you are admitted to the Hospital will be a busy one. Most people are admitted to the Hospital the day before surgery is scheduled.

You will have many visitors from the Hospital staff. The anesthesiologist who will anesthetize you and monitor your vital function will visit you to discuss operating room procedure. He will ask for information about your medical and surgical history.

You will have blood tests, an EKG, chest X-ray,

and visits by a resident doctor. The resident doctor is a member of your doctors surgical team and will be examining you and asking many questions. This information is necessary to ensure the doctors have all the information necessary to provide the best care for you before, during and after your surgery.

A social worker will meet with you and your family during your hospital stay. He or she will provide support and will be available to help with any personal or family issues that may be causing stress. The social worker has information about community resources you may need after leaving the hospital.

Your nurse will greet you when you arrive in your room.

Because you will be returning to a different room after your I.C.U. stay we urge you to send all personal belongings home the night before surgery.

Your nurse will be recording your blood pressure,

temperature,

and weight.

She/He will ask many questions again to ensure that all your needs are met during your hospitalization.

Many patients like to visit with their clergy the day before surgery. Clergy of all faiths are available to you at R.I.H.

The evening before surgery, after your visitors leave, you will be asked to shower using a special red soap called Hibiclens. This red soap will not stain your skin but is an antiseptic soap that will make your skin extra clean.

After surgery, coughing & deep breathing are extremely important. You will be shown how to effectively deep breathe using your abdominal muscles.

You will be shown how to effectively cough using a small "cough pillow" to splint the chest incision you will have after surgery.

You will also be asked to use an incentive spirometer.

By drawing on the mouth piece of the incentive spirometer an indicator measures how deeply you can breathe.

Remember, the most important way you can help yourself after surgery is by coughing. This and the use of the incentive spirometer will keep your lungs properly cleared. This will reduce the chance of pneumonia which can be a serious complication.

Since your surgery is scheduled for the next day you will be allowed to eat and drink until midnight. At midnight you will be given medication to help you sleep soundly. The morning of surgery after you are awakened you may be given your cardiac medications (with sips of water) and sedation to calm any anxieties. Shortly before you leave for surgery you will be given an injection which will make you quite sleepy and could make your mouth feel dry.

When your surgeon is ready you will be taken on a stretcher to the holding area. In the holding area the nurse will check your arm band and IV fluids will be started. The IV is placed in your neck with minimal discomfort to you because you will be relaxed and sleepy.

Soon after you will be moved into the operating room.

This is the OR waiting room located in the Davol Building. This is where the surgeon will meet with family members after the operation is over. Families are not required to

be at the hospital. However, please leave a phone number with your nurse or surgeon if you choose to wait at home or at work. Your social workers will provide support and information to family members the day of surgery.

When the operation is over and you wake-up you will be in the I.C.U. This area is designed to give you constant specialized care and monitoring.

This is the safest and most secure environment you can have at this important time.

Doctors, nurses, and other highly skilled people work together toward the goal of a smooth recovery.

There will be many people around your bed when you wake up. Do not be alarmed they are there to help you. You will not be able to speak because of the breathing tube. The ICU nurses have taken care of many heart surgery patients so your needs are anticipated and will be met. You will be able to speak when the tube is removed. You will have a heart monitor to show your heart rate and rhythm.

A ventilator which moves air in & out of your lungs will assist your breathing. The ventilator is attached to the tube in your windpipe. The ventilator assists you in

breathing deeply and helps to restore the normal expanded state of your lungs.

A small tube in your wrist artery will enable the nurse to directly monitor your blood pressure and draw blood for various tests without discomfort to you.

One or more drainage tubes are placed in your chest at the end of the operation. These tubes remove air & fluid and are connected to a vacuum container at the side of your bed. They will make a constant bubbling noise you will be able to hear. These tubes are usually removed within 48 hours after surgery.

You will have a tube in your bladder so urine and kidney function can be constantly measured. This tube is usually removed before you are transferred to the general floor.

There will be a tube thru your nose into your stomach. This tube drains your stomach to keep it empty and thus prevents you from vomiting.

You will have IV fluids.

During your stay in ICU you will be closely observed by ICU personnel. You will have your own nurse for the first 24 hours.

The average length of stay in ICU is two days.

Each day you will have a chest X-ray, an EKG, and blood tests.

You will sit on the edge of the bed the day after surgery and you will be assisted out of bed to the chair the day after surgery.

By the time you are transferred from the ICU to the surgical post operative unit most of your tubes will be removed. It is not uncommon for patients to still have a Foley, chest tubes, and the temporary pacer attached.

You will be given medication for pain.

You will be using your cough pillow so you can cough and deep breathe.

The use of the incentive spirometer will be encouraged. You should use the incentive spirometer every hour while you're awake.

You will continue to have chest x-rays, EKG's, & blood tests but not as frequently as you had in the ICU.

You will be able to bathe yourself every day and will be able to shower by the time you are ready for discharge.

You will have access to a telephone and television. You will begin to feel more in touch with the outside world.

For at least the first 24 hours you will be on telemetry so the nurses and doctors can continuously monitor your heart rate and rhythm. The telemetry will not limit your activity in any way and will be discontinued before you go home.

Emotions may vary at this time. Sometimes you may feel sad. If these feelings become overwhelming you should discuss them with your doctor, social worker, or nurse.

You will experience aches and pains from your incision and the stretching of muscles and ligaments during surgery. You will be medicated for this discomfort.

The length of time you remain in the hospital depends on many factors, the type of surgery, occurrence of

complications, the need for regulating medications and other factors.

Most open heart patients must recuperate at home from 3 - 6 weeks. After surgery your nurse will give you a book entitled Moving Right Along After Open Heart Surgery.

She will ask you and your family to read this book, and write down any questions you have.

Before you go home your nurse will review this book with you and answer any questions. She will discuss with you our hospital's cardiac rehabilitation program "Bouncing Back".

She will review the brochure, Going Home After Cardiac Surgery,

and discuss your medications and the medication schedule you will follow when you go home.

As is true for most people some days will be better than other days.

The long term outlook for most heart surgery patients is very favorable and you can look forward to enjoying a more normal lifestyle.

APPENDIX C
Consent Form

RHODE ISLAND HOSPITAL
Providence, R.I. 02902

RIH Project Number

Name of Patient

AGREEMENT TO PARTICIPATE IN CLINICAL INVESTIGATION

You are being asked to participate in a research project as described in this form below. All such research projects carried out in this Hospital are covered by the rules of both the Federal Government and the Rhode Island Hospital. These rules require that you give your signed agreement to participate in this project.

The researcher will explain to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks of participation. You may ask him/her any questions you may have to help you understand the project. A basic explanation of the project is written below. Please read this explanation and discuss with the researcher any questions you might have.

If you then decide to participate in the project, please sign this form on the line below in the presence of a witness and the person who explained the project to you. You should be given a copy of this form to keep.

1. NATURE AND PURPOSE OF THE PROJECT

The purpose of this study is to determine the effects of preoperative teaching on the anxiety levels of open heart surgery patients and their spouses.

2. EXPLANATION OF PROCEDURES

If you agree to participate in the project, you will be assigned by chance to one of two groups. Persons in one group will receive the standard method of education by viewing a slide tape presentation. Persons in the other group will be required to view a picturebook as well as the slide presentation. You and your spouse will be in the same group.

Upon agreeing to participate in the project and four days after surgery, you will be asked to complete a short questionnaire that asks about your mood. This questionnaire will take about 10 minutes to complete.

3. DISCOMFORT AND RISKS

The only potential discomfort is that which may occur from filling out the questionnaire and being asked to focus on your feelings.

4. BENEFITS

There are no known direct benefits to participants in this project.

5. CONFIDENTIALITY

All records relating to this project will be handled and safeguarded according to standard Hospital policy for all medical records. Your medical record will always be handled in conformity with the Rhode Island Act relating to the confidentiality of health care information.

6. REFUSAL/WITHDRAWAL

Participation in this study is voluntary. You have the opportunity to refuse to participate or withdraw at any time. Your decision about participating in the project will in no way effect the treatment or care you receive at Rhode Island Hospital.

7. We do not expect any unusual risks as a direct result of this project. However, should an unforeseen physical injury occur, appropriate medical care, as determined by the Hospital, will be provided but no financial compensation will be given. Further information in regard to this provision can be obtained from the Research and Sponsored Projects Administration Office.

I ACKNOWLEDGE THAT I HAVE READ AND FULLY UNDERSTAND THE
ABOVE CONSENT, THAT ALL OF MY QUESTIONS HAVE BEEN
SATISFACTORILY ANSWERED, AND I AGREE TO PARTICIPATE IN THIS
PROJECT.

_____
Signature of Witness

_____
Signature of Subject

_____
Date

ICERTIFY THAT I HAVE EXPLAINED FULLY TO THE ABOVE PATIENT
THE NATURE AND PURPOSE, PROCEDURES AND THE POSSIBLE RISK AND
POTENTIAL BENEFITS OF THIS RESEARCH PROJECT.

_____
Signature of Researcher

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