# A Supportive-Educative Telephone Follow-Up for Post Coronary Artery Bypass Graft Patients

by

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## ABSTRACT

The purpose of this study was to describe the effects of a supportive-educative telephone program on the levels of anxiety and quality of life of patients' and their spouses undergoing coronary artery bypass graft surgery during the first 6 weeks after hospital discharge. Subjects were recruited from a western Canadian hospital following coronary artery bypass graft surgery. Prior to discharge from hospital, subjects (20 patients and their spouses) were assigned randomly to a control or experimental group. Both groups were pre-tested on state-trait anxiety levels and on quality of life measures. Following discharge from hospital, the experimental subjects were given the researchers pager number whom they could contact if they had questions or concerns related to their convalescence. As well, the researcher initiated weekly telephone contact with the experimental participants. The control subjects had no further contact with the researcher until post-testing. The research was unique in that it offered these two streams of nursing care to the experimental participants. Firstly, it was patient directed, the patient or spouse initiated telephone contact when they were ready and able. Secondly, it was nurse directed, the nurse initiated

weekly supportive-educative telephone follow-up. Both groups were post-tested on anxiety and quality of life at seven weeks post hospital discharge. Contrary to the hypothesis, data analysis with Analysis of Covariance did not reveal statistically significant differences ($p > .05$) on the State-Trait Anxiety Inventory or the Index of Well-Being. Lack of statistically significant differences between the groups may be explained by the significant morbidity and rehospitalization rates (50%) experienced by the experimental subjects. Additionally, the types of problems and concerns encountered at home by patients and their families following discharge from hospital are reported and described. The most frequently reported patient concerns were related to cardiovascular problems, medications and arrythmia's. These reports are closely aligned to previous research findings. From these findings, several implications and recommendations for nursing practice and research have been generated.

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# CHAPTER I

## INTRODUCTION

Despite recent declines in its morbidity and mortality, coronary artery disease (CAD) is the leading cause of death and disability in Canada. Forty-one percent of all Canadian deaths in 1988 were due to cardiovascular disease. Ischemic heart disease accounts for 25% of all deaths, of which over half are attributable to acute myocardial infarction. Stroke and other cardiovascular disease (i.e. rheumatic heart disease) are responsible for 7% and 9% of deaths respectively in Canada (Health & Welfare Canada, 1991).

In one year, an estimated 264 individuals per 100,000 in Canada will die from cardiovascular disease. For those individuals who survive myocardial infarct (MI), morbidity statistics remain discouraging, as more than one half of MI survivors will experience significant physiological, psychological, and social disabilities.

For individuals with extensive coronary artery disease, coronary artery bypass graft (CABG) surgery has become the mainstay of palliative treatment (Callaghan, 1986). A total of 13,618 coronary artery bypass graft surgical procedures (50 per 100,000 population) were performed in Canada between January 1, 1991 and December

31, 1991 (Higginson, Cairns & Smith, 1994). While coronary bypass grafting affords palliative treatment, it does not correct or alter the progression of arteriosclerosis. Management of this pathologic progression usually requires changes in the patient's lifestyle. The success of the treatment for any one individual is dependent, in part, on that person's degree of adherence to the prescribed dietary, exercise, and medication regimen.

Coronary artery disease is the greatest cause of permanent disability claims among individuals under age 65. In 1990, in a U.S. based study, the cost of CAD to society was estimated at $94.5 billion (Hiatt, Hoenshell-Nelson, & Zimmerman, 1990). In Canada, 26% of disability pensions paid through the Canada Pension Plan in 1986 were for cardiovascular disease (Heart and Stroke Foundation of Canada, 1991). Although people are living longer with CAD, there exists an imbalance between the advances made in medical and surgical treatments and the attention paid to the psychological and social adjustments to this chronic illness.

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## In-Hospital Vs. In-Home Rehabilitation Programs: Statement of the Problem

Rehabilitation of the person with cardiac problems is not a new area of nursing care, nor is it an emerging specialty; it is a well established field of advanced practice and research. Interventions aimed at the return of cardiac patients to health have been developed, described and refined. Clinical and research literature in nursing focuses on programs for cardiac rehabilitation and presents a host of interventions.

Rehabilitation of the patient after coronary artery bypass grafting involves many diverse interrelated factors. The goal of cardiac rehabilitation is the restoration and maintenance of the individual's optimal physical, psychological, social and vocational status. As well, cardiac rehabilitation is directed toward limiting or preventing the progression of the underlying disease. However, rehabilitation has tended to ignore the early home convalescent period.

During hospitalization for cardiac surgery or myocardial infarction, patients assume dependent roles while they recover. In-hospital pre-discharge cardiac rehabilitation programs are the norm and patient participation within a cardiac program is an expectation (Raleigh & Odtohan, 1987). It is believed that through participation in a pre-discharge rehabilitation program

individuals and their families progress into more independent functioning by the time of discharge.

Most in-hospital programs provide information on anatomy and physiology, pathophysiology, medications, diet, exercise and risk factor management. This information is often presented within 10 days of surgery or infarct. Although it is well recognized that patients who are provided with information and emotional support cope better during the recovery process (Blumenthal, 1985; Gillis, 1984; Oldenburg, Perkins, & Andrews, 1984) teaching is often done at a time of increased stress levels and decreased attention span. For this reason, some have questioned the accuracy of patients' interpretation of information and the retention of information during in-hospital education programs (Marshall, Penckofer, & Llewellyn, 1986; Newby, 1980; Tirrell & Hart, 1980).

At the time of discharge, the expectation of patients is that they will function independently at home while they continue their convalescence. However, frequently patients or their family question their understanding of their illness, the necessity of making life style changes, and their ability to cope effectively. Learning needs also change between hospitalized and outpatient settings as new concerns, problems, and questions arise that were not anticipated while the patient was hospitalized (Murray & Beller, 1983; Nicklin, 1986).

Commonly, patients and their spouses do not have access to information or assistance until they see their cardiologist or surgeon at approximately six to ten weeks post discharge. This six to ten week period is a significant gap in the health care system at a critical time for cardiac patients. This lack of contact with the patient and family makes it difficult to know how they are coping or to know how to support them in the convalescent period. As well, this lack of contact limits assessment and evaluation of the effectiveness of the in-hospital cardiac rehabilitation program.

## Purpose of the Study

The purpose of this study was to investigate the impact of a supportive-educative telephone program on the levels of anxiety and quality of life of patients and their spouses undergoing CABG during the first 6 weeks after hospital discharge. In order to better meet the needs of post CABG patients and their spouses during the home convalescent period, a supportive-educative telephone program was conducted and evaluated. The overall goal of the supportive-educative program was to assist participants in making the transition from a dependent role while hospitalized to a self-confident role within their home. It was anticipated that the shift in roles would be hallmarked by responsible and safe decision making. This goal would be reached by reinforcing

cognitive and affective information gained during in-hospital programs. The supportive-educative telephone program attempted to assist individuals and their spouses to understand their illness and the impact it has on their lives, provide supplementary information regarding concerns that accompany the home convalescent period, and assist in improving decision making and coping skills.

## Research Questions

Because research to date has tended to focus predominantly on the medical cardiac patient, there is a relative lack of research concerning the effects of post-discharge surgical cardiac education programs on both the patient and his or her spouse. The purpose of this study was to describe the effects of a 6 week post-discharge contact program on anxiety and quality of life on post coronary artery bypass graft patients and their spouses. Secondly, it was to describe the type and frequency of questions and concerns expressed by patients and their spouses.

Specifically, the investigation attempted to answer the following questions: 1) Does a 6 week supportive-educative telephone follow-up on post CABG patients and their spouses decrease levels of anxiety? 2) Does a 6 week supportive-educative telephone follow-up on post CABG patients and their spouses enhance quality of life? The final objective in this thesis was to report the type and

frequency of questions, concerns, and symptoms experienced by patients and their spouses in the early convalescence period of CABG surgery.

## General Procedures

The supportive-educative telephone program was an interactive program involving information exchange between the post CABG patients and their spouses and the cardiac nurse researcher. Prior to discharge from hospital, subjects were assigned randomly to a control or experimental group. Both groups were pre-tested on state-trait anxiety levels and on quality of life. Following discharge from hospital, the experimental subjects were given the telephone number of a cardiac nurse whom they could contact if they had questions or concerns related to their convalescence. In addition, the researcher initiated weekly telephone contact with the experimental participants. The research was unique in that it offered two streams of nursing care. Firstly, it was patient directed, the patient or spouse initiated telephone contact when they were ready and able. Secondly, it was nurse directed, the nurse initiated weekly supportive-educative telephone follow-up. The control subjects had no further contact with the researcher until post-testing. Both groups were post-tested on anxiety and quality of life approximately 7 weeks following discharge from hospital.

Summary

In summary the purpose of this study was to describe the effects of a 6 week post discharge telephone contact program on anxiety and quality of life on post CABG patients and their spouses. In addition, the frequency and types of questions and concerns expressed by participants are reported and described. From the research results, several implications and recommendations for nursing practice are generated.

Education and information transfer are key elements in the cardiac rehabilitative process. The underlying purpose of the following chapter is to discuss psychological and behavioral variables and their relationship to cardiac rehabilitation. These objectives will be accomplished by reviewing the extant literature. Paralleling the stages of rehabilitation from early convalescence of the individual to the later phases of recovery, the impact of knowledge, compliance, anxiety and postoperative stressors along with their implications for satisfactory adjustment are discussed.

# CHAPTER II

## LITERATIVE REVIEW

Before examining the nature of the rehabilitative process it is helpful to examine it in relation to health belief models generally employed in predicting health-related behaviour. The purpose of the first section of this chapter is to provide this contextual framework. Following this, five areas related to the process of rehabilitation of the cardiac surgical patient will be discussed and the results of previously conducted research will be briefly summarized.

Health belief models have been developed by social scientists to assist in the process of predicting health-related behaviour (Kenner, Guzzetta, & Dossey, 1985; Rosenstock, 1974). The health belief model serves as a conceptual core for many compliance studies (Marshall, Penckofer & Llewellyn 1986; McMahon, Miller, Wikoff, Garrett, & Ringel, 1986). This model emphasizes that beliefs held by an individual form the basis for that person's decisions regarding health care. Individuals are unlikely to undertake changes in health-related behaviour unless they perceive themselves to be susceptible to the disease in question, perceive the effects of the disease to be serious, perceive the benefits of health actions to

outweigh the barriers of taking these actions, possess a level of knowledge sufficient to understand the disease implications and actions, and receive cues for action (Rosenstock, 1974) Potentially, these perceptions, levels of knowledge, and cues can be altered through education and patients' health actions can then be influenced (McMahon et al., 1986; Marshall et al., 1986).

A key element of this motivation is the individual's state of readiness. Readiness arises from an individual's perception of his or her personal susceptibility to a health problem and his or her perception of the severity of the consequences of that problem. The individual's perception of the balance between the benefits of a particular health activity and the cost of that activity can be actual or anticipated physical, psychological, or economic expenditures which will be incurred by the recommended health activity (Marshall et al., 1986).

## The Early Recovery Period

The immediate home convalescent period is for many coronary artery bypass surgery and myocardial infarction patients an extremely anxiety producing period. In an evaluative study by Jenkins, Stanton, Savageau, Delinger, and Klein (1983) examining the physical, psychological, social, and economic outcomes following coronary artery bypass grafting, it was found that 51% of participants visited their physician at least once in the period

between discharge from hospital and the first scheduled follow-up appointment. Of these early visits to their physicians, approximately 40% of patients had questions related to their cardiac surgery or cardiac disease and 19% of these patients had other postoperative concerns. The results of this study lend credence to the hypothesis that patient interpretation and retention of information presented during in-hospital education programs may be of limited value.

In terms of subjective feelings, both physical and psychological, the improvements over the duration of the study were impressive. In the early post-operative phase of recovery, 40% of participants reported feelings of sadness, depression, or crying, and 38% of patients reported feelings of anxiety, worry, or fear. However, at six months after surgery patients reported no disturbing cardiac symptoms and postoperative scores on mood scales had improved markedly. Interestingly, it was found that levels of satisfaction regarding social life, family interactions, marriage, and sexual function were similar before and at six months after surgery (Jenkins et al. (1983).

Nicklin (1986) reported that the anxiety experienced in the early discharge period may be related to problems, questions, and concerns which occurred that were not anticipated or answered prior to discharge. In her study, the post-discharge concerns of cardiac patients were

examined by means of a telephone callback system. Of the 217 telephone calls received over three months, 55% of all the concerns arose within the first 2 weeks after discharge, 40% of which were within the first week. A substantial portion of these concerns (43.6%) were assessed by the nursing coordinator as significant enough to necessitate directing the patient to an emergency department or to contact his/her doctor. As suggested by the researchers, patients and or families sought advice at the appropriate time and that predischarge information equipped patients and families with some decision-making ability to assess a problem and thus to seek the assistance of a health professional.

Nicklin (1986) also reported that nearly one-third (31.3%) of the calls related to cardiopulmonary concerns. The second largest category of concern was related to medications. Concerns regarding medications were varied and individualized. Questions and concerns related to chest and leg incisions comprised a third large category (18.8%). Although these concerns are generally contained in a pre-discharge teaching program, Nicklin suggests that a number of these potential postdischarge problems could be emphasized in the predischarge class alleviating or mitigating some concerns.

Not all problems can be anticipated before discharge. Therefore, other supplementary means of obtaining information and guidance are indicated. There are

significant differences in learning needs between the outpatient and the inpatient phases of recovery. Nicklin's research findings suggests that the learning needs of the patient be considered as well as the stage of rehabilitation at which time information is most useful and meaningful.

Knowledge and Compliance

Education of the patient and spouse recovering from CABG surgery is an important nursing concern. To prepare for self-care after surgery, the patient who undergoes CABG requires specific information about medications, postoperative problems, activity progression, and nutrition. The operative success of coronary revascularization is limited unless the patient understands and adheres to the prescribed diet, exercise and medical regimen after surgery (Marshall et al., 1986).

Marshall et al., (1986) studied the effects of a structured teaching program on knowledge and compliance for patients recovering from coronary artery bypass surgery. A nonequivalent control group, quasi-experimental design was used, and participants were assigned randomly to an experimental or control group. The experimental group participated in a structured individualized teaching program; whereas the control group members received an informal unstructured program.

The results showed that there was a significant increase in knowledge between pretest and posttest for both control and experimental groups. The groups did not, however, show a significant difference in knowledge. The findings lead the researchers to suggest that nurses who are knowledgeable about postoperative recovery taught basically similar concepts with or without the use of a structured guide. Interestingly, it was found that patients who received the structured teaching program displayed significantly better compliance in a number of cardiac risk factor categories. The authors suggested the reason for the increased compliance in the experimental group can be attributed to the "tailoring" of the treatment regimen to the patient's lifestyle and modification of the patient-provider relationship.

Although the study by Marshal et al. showed significant results in an increase in compliance, research has also shown that a change in knowledge is not necessarily associated consistently with compliant health promoting behaviours. The relationship of spousal support and its influence on adherence to the medical regimen was not reported by Marshall (McMahan et al., 1986).

McMahon et al., (1986) followed 112 MI patients over a 6 to 9 month period. Their purpose was to investigate the intentions and adherence behaviours of the patient to a prescribed medical regimen. The intentions and adherence behaviours of subjects with MI were closely

related to their perceptions of significant others' expectations. Adherence and compliance of the patient to medical regimens were influenced by spousal or family support.

The effects of an educational program on knowledge and compliance was also researched by Scalzi, Burke, and Greenland (1980). They investigated the introduction of an organized educational program for patients with coronary disease and their families. Knowledge and compliance were measured over a two year period with a quasi-experimental time series design. An interesting result of the study was that posttest scores did not increase following introduction of the in-hospital education program. This finding suggested that knowledge retention is limited during the acute phase of illness. However, continued instruction after discharge improved knowledge and compliance in the following areas: medication, progression of physical activity, resumption of sexual activity, weight reduction, and treatment and reporting of chest pain and shortness of breath.

Although patients displayed limited retention, Scalzi et al. suggested that inpatient cardiac teaching programs created an atmosphere that encouraged patients and families to ask questions which provided an opportunity to offer specific information. The researchers suggested that once patients have received answers to their questions there appeared to be a reduction in anxiety.

They further noted that patients and families had more frequent questions and required more guidance than anticipated the first week after discharge. These results may indicate that this is a period when patients and families would be more receptive to further instruction.

Tirrell and Hart (1980) evaluated the effect of an exercise teaching program on post CABG patients long term compliance. They found that the in-hospital post-operative exercise training program helped less than one-third of their cardiac bypass patients to maintain long term compliance with the exercise regimen. Knowledge of the exercise regimen and the number of barriers to the regimen were the two factors that showed the strongest relationship to compliance levels. Individual perception of the efficacy of the exercise treatment was also strongly related to compliance. The researchers suggested that a program utilizing these three factors might enhance long-term compliance maintenance. As an example, it was posited that a comprehensive group exercise program could decrease barriers to the regimen by providing participants with a place for exercising and an exercise schedule. Individualized or group teaching during this contact time could clarify the exercise protocol and emphasize the efficacy of the treatment. In particular, it was suggested that efficacy could be reinforced by self-monitoring weekly progress, by verbal praise and

encouragement, and/or by vicariously viewing a peer engage in a similar activity.

Post-Operative Stressors

Many researchers (cf. Marshall et al., 1986; Nicklin, 1986) have indicated that while in hospital during the acute phase of an illness, many factors may interfere with cognitive functioning and thus make retention of information difficult. Some of the contributing factors which may interfere with knowledge retention include: unfamiliar surroundings, technological environments, hospital routines, medications, lack of trust, rapport, motivation, physiological conditions, and patient's other concerns (Nicklin, 1986; Wenger, 1986).

Gillis (1984) has suggested strategies for reducing stress which may influence knowledge retention, encourage compliance and foster recovery. Based on the results of her study, Gillis proposed a family focused program of care during hospitalization and post discharge. The purpose of the study was to examine the relationship of a patient's subjective stress to that of the spouse's subjective stress; to report the major sources of stress associated with coronary artery bypass surgery and recovery as described by patients and spouses; and, to explore the couple's social process of recovery as related to subjective stress.

The most frequently reported stressor identified by patients and their spouses was waiting for surgery. Another major stress reported by spouses was their lack of control of events. They often felt outcomes were uncontrollable despite their efforts. Both patients and spouses were distraught when uninformed. Patients wanted to know when they could go home, exercise, and return to work. Spouses wanted to know what they should do when the patient developed difficulties at home. Additionally, patients and spouses expressed frustration with the limited access to health care professionals.

For patients and spouses, discharge home was a mixed blessing. Spouses frequently expressed fear and concern over the responsibility of caring for their mates. Common concerns were related to limiting pain, anticipating needs, preparing new menus, becoming familiar with new medications and confusion over exercise and "acceptable" activities.

Additionally in the Gillis study, patients reported experiencing pain, discomfort and fatigue and they identified the early days of recovery as being both difficult and frightening. Patients who found it difficult or painful to accomplish an activity chosen as their own "test" often became discouraged or depressed. Some reported their fear that they would never be "normal" again. Others who did succeed in their self-imposed "test" continued to extend themselves in an attempt to

find their actual physical limitation. This in itself lent to increased concerns expressed by their spouse who believed it was their responsibility to protect the patient from himself or herself.

Gillis suggested that there seems to be a pattern to the interaction within couples as they resolve these conflicts. Patients attempt to test their physical limits and spouses attempt to accumulate proof that the patient is no longer fragile. To the spouse the successful completion of activities constitutes proof of recovery (e.g., watching the patient cut the grass without the aid of nitroglycerin indicated that he or she was "safe" to do it again).

A second major source of evidence about recovery is provided by the appraisal of a third party, primarily the physician. Patients and their spouses commonly had no contact with a health care provider for approximately six weeks following discharge from hospital. Couples viewed this first visit as a milestone. Based on the physicians appraisal and their first contact with a health care provider, they approached this visit with high hopes and many questions. Most couples reported great dissatisfaction with this contact. Gillis (1984) reported that couples frequently felt that questions were not adequately answered, complaints were minimized as being "normal", and the amount of time the physician devoted to them was inadequate.

Gillis' study demonstrated that patients and spouses reported high levels of marital conflict, dissatisfaction, and discord during the first six months after surgery. Many indicated that they were unprepared for these experiences. Further, they found it difficult to maintain continuity with a provider who could answer their questions about recovery.

## Cardiac Rehabilitation Strategies

Education of patients recovering from CABG surgery is an important nursing concern. In order to maximally benefit from myocardial revascularization, reduce possibilities of further ischemic damage, and promote effective self-care activities it is imperative that patients understand and follow recommendations for diet, exercise, medical regimens, as well as other life-style changes (Marshall, 1985).

Education is one of the most important components of any cardiac rehabilitation program. Despite various difficulties encountered when trying to teach in a hospital environment, the health care team attempts to teach the patient and his or her family about the disease, the appropriate coping methods, and the importance of adherence to the prescribed medical regime. For the patient and the spouse, barriers to learning may include a noisy hospital environment, drug effects, sleep

deprivation, lack of energy, pain, and an inability to concentrate.

Researchers suggest that many in-hospital education programs do not consistently increase knowledge (Marshall et al., 1986; Scalzi et al., 1980). Even in studies that have shown an increase in knowledge from in-hospital education programs (Christopherson & Pfeiffer, 1980; Milazzo, 1980; Mills, Barnes, Rodell, & Terry, 1985; Raleigh, & Odtohan, 1987; Steele & Ruzicki, 1987), retention of this knowledge is not always maintained in the convalescent period. Researchers have repeatedly suggested that an increase in knowledge does not necessarily correlate with an increase in compliance.

Researchers have suggested that patients with increased information obtained through in-hospital education programs recover more quickly (Christopherson & Pfeiffer, 1980). However, with closer examination of the data, the subjects who were discharged earlier were younger, had the least number of coronary arteries bypassed, and had a shorter duration of cardiopulmonary bypass, thus, making it difficult to distinguish between the effects of changes in knowledge and the recovery variables. Notwithstanding these confounding findings, it is possible to tentatively extrapolate to the supportive-educative program of the post discharge CABG patient and hypothesize that increased knowledge and support may facilitate a faster recovery and rehabilitation.

Steele and Ruzicki (1987) demonstrated that inpatient teaching programs can be effective for short-term outcomes. In their evaluation of an existing in-hospital cardiac teaching program, patients readily learned information that prepared them to deal with postoperative experiences (e.g., ambulation, exercise, resumption of sexual activity and symptoms to report which indicate a lack of tolerance to such activities). Areas that showed limited knowledge gain were those which required long-term behavioral change, such as stress modification and dietary changes.

Numerous studies report that post CABG patients feel ill prepared for activities of daily living once discharged from hospital (Beckie, 1989; Christopherson & Pfeiffer, 1980; Marshallet al., 1986; Scalzi et al., 1980). Irrespective of research findings, an underpinning principle with respect to patient teaching is that teaching must be limited to what is possible and reasonable. As length of stay decreases and patient acuity increases, what is possible for the staff to teach during a shorter hospitalization, and what is reasonable for patients to learn given their acuity, must be considered (Steele & Ruzicki, 1987).

While the literature supports the need for follow-up during the convalescence period at home for cardiac disease patients, a lack of continuity between hospital and home has been identified. Again, this lack of

continuity may become more pronounced as duration of hospitalization shortens and patient acuity increases.

Gillis (1984) proposed a strategy for providing continuous care incorporating an in-hospital cardiac rehabilitation program and a follow-up telephone contact program with patient and spouse to provide an opportunity to seek information, to obtain validation, or to experience catharsis. Telephone contact programs according to Gillis should be provided by an experienced cardiac nurse who would be able to follow-up and to reinforce the hospital based cardiac teaching program. Gillis suggested that early detection of problems could be achieved by monitoring the patient's weight, breathing, symptoms, activity level, and the couples progress in solving problems.

To lend support to Gillis' strategy for providing continuous care, Beckie (1989) evaluated a supportive-educative telephone program implemented during the first 6 weeks of the home convalescent period post CABG. The goal of the telephone program was to reinforce cognitive and affective information that patients received during hospitalization and to supplement information about specific concerns accompanying the home convalescent period which may not have been covered by the hospital health care team. Beckie demonstrated an inverse relationship between knowledge and anxiety. As hypothesized, the supportive-educative telephone program

increased the patients' knowledge about coronary artery disease, diet, medications, physical activity restrictions, exercise, rest and related self-care measures and subsequently decreased their state anxiety levels. Although Beckie's research found a positive relationship between patient knowledge and a supportive-educative telephone contact program, knowledge does not necessarily equate with an increase in patient compliance.

Garding Kerr and Bay (1988) assessed the impact of a patient education follow-up by telephone on the knowledge of the postmyocardial infarction patient. Patients participated in a telephone teaching program for 6 to 8 weeks following discharge from hospital. It was postulated that a planned program of nursing support would increase patient knowledge in six content areas. The program covered physiological effects, medications, diet, exercise, rest and physical activity restrictions. Significant differences were found in the knowledge level of the telephone contact group in the areas of disease, its effects, related self-care measures, recommended exercises, and all teaching areas together. The researchers suggested that a telephone teaching program for MI patients 6 to 8 weeks after hospital discharge could be effective in increasing knowledge relative to the disease Although the investigators demonstrated an increase in knowledge level of the experimental group,

their study did not show any associated increase of patient compliance.

Knowledge and Anxiety

Anxiety is a common emotional reaction of myocardial infarct and coronary artery bypass graft patients. The concept of anxiety, as used in a number of cardiac research studies, is based on work by Spielberger (Spielberger, Gorsuch, & Lushene, 1970). If individuals perceive a situation as threatening, regardless of objective danger, they will respond with an elevation in "anxiety state", defined as a complex emotional reaction consisting of subjective feelings of tension, apprehension, nervousness, and worry. Spielberger distinguishes between this "transitory" emotional state and a relatively "stable" anxiety proneness called "anxiety trait" (Spielberger et al., 1970). Fear of death and perceived threats to financial security, family integrity, and life-style are predictable reactions that contribute to the anxiety state of the cardiac patient.

Psychosocial disability has increasingly been acknowledged to be a greater barrier to recovery than the physiological or cardiac impairment in patients with myocardial infarction (Wiklund & Welin, 1992). Further, psychological variables such as depression and anxiety have been found to predict mortality or morbidity after a myocardial infarct (Bohachiak, 1984; Wiklund & Welin,

1992). For some individuals, these psychological disturbances are particularly persistent over time.

The relationship between learning and heightened anxiety states in cardiac patients is unclear. Theorists suggest that the relationship between anxiety and learning is complex. Mild to moderate anxiety improves the use of a person's capacities and facilitates learning. Increasingly severe levels of anxiety, however, result in a reduced perceptual field and the inability to focus attention. Incidental learning is lost and behaviour becomes oriented toward avoidance. The learner loses the ability to search for relevant information, analyze, formulate meanings, and integrate and retrieve information.

Many studies have focused on the relationship between knowledge and anxiety. However, the results of these studies have been contradictory. For example, Barborowicz, Nelson, DeBusk, and Haskell (1980) evaluated the effects of knowledge, anxiety and health related behaviours on post CABG patients. Their results revealed no relationship of anxiety levels to knowledge levels. Anxiety scores decreased significantly by one month after discharge but decreases in anxiety were not related to patient's knowledge scores. The researchers suggest that these results are not surprising since anxiety following CABG is influenced by a variety of factors in addition to health knowledge.

A second finding of the study by Barborowicz and her colleagues revealed that more positive changes in health behaviours, other than physical activity, were not related to increases in knowledge. This is similar to the findings of others that increased health knowledge does not assure performances of more health-enhancing behaviours. While increased health knowledge alone is frequently insufficient in effecting changes in health behaviours, it has been shown to be an influential factor in increasing readiness to undertake recommended health behaviour.

In the supportive-educative telephone program implemented by Beckie (1989) the levels of knowledge were found to be correlated inversely with anxiety. As she hypothesized, the supportive educative telephone program increased participants' knowledge about coronary artery disease and related self-care measures, diet, medications, physical activity restrictions, exercise, and decreased their state anxiety levels.

Budan (1983) explored relationships between learning and selected variables such as anxiety, stress, age and education. After exposure to the cardiovascular education program, patients demonstrated significant increases in knowledge with an inversely associated decrease in anxiety. Advancing age did not hinder patient's ability to learn, but patients with a high school education or less did not demonstrate statistically significant

knowledge gains. Budan suggested that cardiac patients are able to learn in the hospital setting despite the presumably negative intervening effects of stress and anxiety.

Raleigh and Odtohan (1987) investigated the effects of a cardiac teaching program on patient rehabilitation. Specifically, they asked whether patients with myocardial infarct who receive structured education learn more and have better retention than patients who do not participate in such a program. The researchers also wanted to determine whether the patients who participated in a structured learning program were less anxious than non-participants and whether or not they reported a faster return to their prehospitalization activity level. The study findings suggested that a structured teaching program is effective in imparting knowledge about heart disease and its treatment to the experimental group. At the time of discharge, the anxiety level of the experimental group had decreased, while the anxiety level of the control group increased. At a two month post discharge home interview, the experimental group had resumed more of their prehospitalization activities than had the control group. These findings supported the researcher's hypothesis that with lack of information, patients tend to limit their activities more than is medically indicated.

Raleigh and Odtohans' research findings demonstrates the effectiveness of a structured education program for patients with myocardial infarct. The study findings suggest that a structured health education program for patients with myocardial infarct may be effective in reducing anxiety and increasing return to normal activity levels after discharge from the hospital. The results support the importance of patient education in influencing health outcomes for patients.

## Conclusion

Faced with complex behaviours which are often resistant to change, cardiac rehabilitation efforts are only minimally successful (Fleury, 1991). The conflicting reports of the relationship between knowledge and anxiety in the cardiac patient suggests further research is necessary. Research has identified conditions that may motivate the patient toward life style change, yet many individuals remain unmotivated to initiate such changes after a cardiac event.

The ultimate goal of rehabilitation for any individual is the maintenance or enhancement of quality of life. Quality of life involves subjective judgments about the relative individual or social worth, value, usefulness or quality of the lives of individuals. By shifting the focus from exclusively physiological determinants, patients and health care providers can measure the merits

of cardiac rehabilitation through the subjective indicators of increased life satisfaction, optimistic mood, resolution and fortitude and perceived health status. For this reason, a supportive-educative telephone follow up program of post CABG patients was conducted to investigate the relationship of support, knowledge, anxiety and quality of life. At the outset, it was hypothesized that a supportive-educative telephone program will improve knowledge, lower anxiety, and generally enhance quality of life in the rehabilitating coronary artery bypass graft patient and their spouse.

# CHAPTER III

## METHOD

### Setting

The study was conducted at the Royal Jubilee Hospital, a large urban acute care facility in Victoria, B.C. The Greater Victoria Hospital Society (GVHS) provides 1558 beds, 767 of which are acute care. Its catchment area includes specifically Vancouver Island, the Gulf Islands and some referrals and emergencies from the remainder of the Province of British Columbia. Open heart cardiac services are provided by the Royal Jubilee Hospital under the auspices of GVHS.

Patient selection for open heart surgery is provided by physician referral and a Provincial central registry. The total number of open heart surgeries performed in 1994 in the Royal Jubilee Hospital was 736. Of this number, 621 were coronary artery bypass grafts and 115 were valvular replacement. Approximately 46% (283) of all the coronary artery bypass graft patients were undergoing a second or third time re-operative surgery. In 1993, the average length of stay for the post graft patient was 10 days. Today (1995), the average length of stay for the post-op coronary artery bypass graft patient is 7 days (Statistics and Patient Costing, Royal Jubillee Hospital, 1994).

The setting for the supportive-educative telephone aspect of the study was the researcher's and participant's home.

Participants

Subjects for the study were recruited from the cardiac rehabilitation ward (4 Center) at the Royal Jubilee Hospital. Inclusion criteria included: 1) residency within the greater Victoria area, 2) first time, non-emergent, CABG surgery, 3) oriented to person, place, and time and no documented psychiatric history, 4) ability to read, write and speak English, 5) access to a telephone 6) willingness to complete post tests at approximately 6 weeks following discharge, 7) relationship with a co-habiting significant support person.

Demographic information and medical histories were obtained by reviewing patients' charts on the ward prior to patient contact. Of 47 charts reviewed, 34 patients met inclusion criteria. Of 34 patients approached to participate, six (17.6%) patients were discharged prior to completion of the tests, six (17.6%) patients refused, one (2.9%) patient was readmitted the evening of discharge with cardiac tamponade, and one (2.9%) patient withdrew at 6 weeks post intervention. Twenty patients and their spouses (58.8%) were formally entered into the study. Patients and their spouses were assigned equally to an

experimental or control group. Assignment was on a random basis.

Participants were recruited into the study through a staggered entry access. This procedure allowed for flexibility in accessing potential participants (related to the number and availability of post CABG patients who met inclusion criteria), in patients' and spouses' willingness to participate, and in the researcher's restrictions and capabilities. Prior to completing the pretest measures, subjects were asked to complete a demographic information sheet (Appendix A). Subjects were recruited from November 1, 1994 through to February 4, 1995.

Researcher

The nature and purpose of the study, demographic and biographical information and informed consent were provided to and obtained from the participants by the researcher. As well, both pre- and post-measures were administered by the researcher and all telephone contact, whether initiated by patient or nurse was fielded by the researcher. The researcher is a Registered Nurse with a Baccalaureate degree in Nursing (BSN), a Critical Care Registered Nurse (CCRN) with a specialty in cardiovascular nursing, and approximately ten years of cardiac nursing experience.

Treatment

The treatment used in this study was a supportive-educative telephone follow-up program. It was designed to allow experimental patients and their spouses, regular pre-arranged telephone access to a cardiac nurse who would be available to answer their questions and deal with ongoing concerns related to their recovery from coronary artery bypass grafting. The nurse initiated weekly telephone contact with either the patient and or their spouse for a period of 6 weeks. In addition, patients and spouses were encouraged to contact the nurse at times other than those pre-arranged if they had concerns. The hours of pager accessibility were from 0800 to 1700 daily, seven days a week. Participants within the control group had no further contact with the researcher for six weeks. At six weeks post discharge, telephone arrangements were made for post testing.

The specific content of the nurse initiated telephone contact consisted of questions related to the participant's cardiovascular illness, its effect and its related health care behaviours, diet, activity, medications, and rest. The content was consistent with the Royal Jubilee's in-hospital program and the recommendations included in the guidelines entitled "Moving Right Along After Open Heart Surgery". It was anticipated that nurse initiated contact would last for approximately ten to fifteen minutes per call but the

researcher recognized that contact would ultimately be directed by the needs of the participants.

By means of the weekly contact, the nurse attempted to establish a relationship which offered emotional support and allowed for expression of feelings. As it was recognized that the lack of nonverbal clues might have reduced the quality of the interaction, the researcher was particularly attentive to the participants' inflection and choice of language to assist in assessing the meanings of the conversation.

The supportive component of the telephone contact was an important element of the program. The participants were encouraged to express their feelings, problems, and concerns. As well, they were assisted to set realistic goals and priorities compatible with their heart disease, health care beliefs, and lifestyle.

In addition, it was recognized that situations could arise that were beyond the scope of the nurse's practice and these situations would be referred to the patient's general practitioner or dealt with in consultation with the participant's cardiologist or cardiothoracic surgeon.

## INSTRUMENTATION

Two instruments were selected to measure the effectiveness of the supportive-educative telephone follow-up program. A pretest posttest design was used to evaluate individual anxiety levels and quality of life prior to discharge from hospital and at six weeks following discharge. Anxiety was measured by the State-Trait Anxiety Inventory (Appendix B) developed by Spielberger, Gorsuch, Lushene, Vagg and Jacobs (1970). In addition, the Index of Well-Being, an instrument developed by Campbell, Converse and Rodgers (1976), was used to determine the patients quality of life.

### Spielberger State-Trait Inventory

In the present study, the State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1970) was used to measure participant anxiety. The STAI has been used extensively in research and clinical practice. It has been widely used in assessing clinical anxiety in medical, surgical, psychosomatic, and psychiatric patients. The inventory comprises separate self-report scales for measuring state and trait anxiety. The S-Anxiety scale (Form Y-1) consists of twenty statements that evaluate how respondents feel "right now", at this moment. The T-Anxiety scale (Form Y-2) consists of twenty statements

that assess how people generally feel. Both scales are reproduced in their entirety in Appendix B.

Each STAI item is given a weighted score of 1 to 4. A rating of 4 indicates the presence of a high level of anxiety for ten S-Anxiety items and eleven T-Anxiety items (e.g., "I feel frightened," "I feel upset"). A high rating indicates the absence of anxiety for the remaining ten S-Anxiety items and nine T-Anxiety items (e.g., "I feel calm," "I feel relaxed"). Scores for both the S-Anxiety and the T-Anxiety scales can vary from a minimum of 20 to a maximum of 80. Scores for the S-Anxiety and T-Anxiety scales are obtained by adding the weighted scores.

Given the transitory nature of anxiety states, internal consistency has been used as an index of reliability. State anxiety alpha-coefficients of .90 have been reported for samples of students, working adults, and military recruits (Spielberger et al., 1983). Construct and concurrent validity have also been established by Spielberger et al. (1983).

The STAI was administered as a pretest, 1 to 2 days prior to hospital discharge and as a posttest approximately 7 weeks following hospital discharge.

Index of Well-Being

The second instrument selected to measure the effectiveness of the supportive-educative telephone follow-up program was the Index of Well-Being (Appendix C). The Index of Well-Being was developed by Campbell, Converse, and Rodgers (1976) for a nation wide study of the quality of American life. This quality of life measure has been used in previous studies of cardiac patients (Molzahn, 1991). The Index of Well-Being consists of eleven items. The first ten items (Index of General Affect) relate to how individuals feel about their present life. These items are measured on a seven point semantic differential scale, ranging from a low of one (completely dissatisfied) to a high of seven (completely satisfied). The scale points indicate an endorsement of the negative or positive side of the scale (e.g., miserable vs. enjoyable). The last question is a similar bipolar question relating to overall satisfaction with life. This question is weighted 1.1 times the other questions in calculation of the Index of Well-Being. Scores can vary from a minimum of 11.1 to a maximum of 77.7. Campbell et al. (1976) determined that the internal consistency reliability score of the Index was .89.

Telephone log

In addition to the two self-evaluation instruments, a phone log was developed to categorize frequent questions or concerns asked by post CABG patients and their spouses. The procedure used to develop the log is described below as part of pre-treatment activities.

## PROCEDURES

Pretreatment Activities

Before conducting the supportive-educative telephone program several preliminary activities were completed. The first step was to field-test procedures that would be used in the final study and to evaluate the suitability of the chosen instruments. The field-testing allowed the researcher to become familiar with the introductory interview, scheduling of testing, arrangement of telephone follow-up, and a general fielding of questions and concerns related to the study. The amount of time required by the subjects to complete the instruments was determined and the language and instructions of the instruments was evaluated. This development stage offered the researcher the opportunity to experience the program, the participants, the methodology, and the research instruments. Data obtained from the two field-test subjects were not included in the final study.

A second aspect of field testing was the development of a phone log. The development of a phone log, as a working tool, was necessary to categorize questions or concerns asked by post CABG patients and their spouses. An information sheet about the nature and purpose of the study and a request for assistance in developing the log was distributed to the nursing staff on the surgical cardiac rehabilitation ward (4 Center). The preliminary draft for the phone log was left at the nursing station, along with a request for comments and feedback. After obtaining feedback from the ward nursing staff, the final version of the log was developed. In its final form, the phone log was the result of the extant research literature, clinical expertise of the researcher and the assistance of the post cardiac surgery ward nurses. Once the study was in progress, the log was modified on the basis of participant calls.

Cardiologists and cardiothoracic surgeons were informed by letter and or verbally of their patients' potential participation within the study. Prior to the onset of the study, all cardiologists and cardiothoracic surgeons within the Royal Jubilee Hospital received an explanatory letter about the research (Appendix D). Explanatory letters were sent to the cardiac specialists as they would remain directly responsible for the ongoing care of their patients. As well, letters of explanation were sent to the Medical Advisory Committee Chairman ,

Vice President Patient Care, Assistant Vice President Patient Care, Nurse Manager (CVU/4C), and Clinical Teacher Surgical Cardiology.

Following approval from the Greater Victoria Hospital Society Research Review and Ethical Approval Committee, Committee on Research and Other Activities Involving Human Subjects at the University of Victoria, and cardiologists and cardiothoracic surgeons at the Royal Jubilee Hospital, the study was initiated.

Once inclusion criteria were met, the potential participants were interviewed on the ward by the primary researcher. Interviews were conducted one to two days prior to discharge. A general explanation as to the nature and purpose of the study was given. Potential participants were told the purpose was to investigate the effects of a post discharge 6 week follow-up telephone program on recovery from CABG surgery, and, that the results of this study would provide nurses with a better understanding of how to help patients and significant others cope with recovering from CABG surgery at home. Explanation of the study was given at the bedside which required approximately 10 minutes. Predischarge, prior to completion of the psychological instruments, participants were assigned randomly to either control or experimental groups. After group assignment and prior to discharge, patients and spouses signed a letter of consent (Appendix E) and completed a demographic profile (Appendix A) along

with the two psychological self-evaluation questionnaires (Appendix B & C). Questionnaires were completed simultaneously by patient and spouse. Given the numerous interruptions of a hospital environment, participants typically required approximately 30 to 40 minutes to complete the questionnaires.

Following completion of the instruments, a prearranged telephone contact time for the first week following discharge was established. Telephone contact was organized for only those participants within the experimental group. This prearranged contact time was nurse initiated and was formatted to address common concerns of post-operative CABG rehabilitation in both patient and spouse. Subsequent nurse initiated contact times were negotiated on a weekly basis. In addition, the participants were given the pager number of the cardiac nurse with whom they could initiate contact if required. Participants were encouraged to telephone the nurse as a means of providing follow-up care post CABG. Questions related to medications, diet, exercise, rest, physical activity restrictions, and the physiological and psychological effects of recovery from CABG were provided. The hours of pager accessibility were from 0800 inclusive to 1700, seven days a week.

Office telephone numbers of the patients cardiologist, cardiovascular surgeon, and general practitioner were provided to all participants prior to

discharge home. A tentative appointment was made for the six week, at home, follow-up and readministration of the measurement instruments.

Treatment Activities

Data collection started November 1, 1994 and was completed March 17, 1995. For the participants in the experimental group of the research study, telephone contact was made on a weekly basis for a duration of six weeks following hospital discharge. If participants were not available at the prearranged time the researcher attempted to contact them later in the same day. Weekly contact was made with all experimental patients, contact was not consistently made on a weekly basis with experimental spouses.

Following discharge from hospital and completion of the pretests, the control group participants had no further contact with the researcher for six weeks. After the six week duration telephone contact was made and arrangements for post testing were finalized.

# CHAPTER IV

## RESULTS

The results of this study are discussed in five sections. In the first section descriptive statistics are reported for the sample. In the second and third section pretest and posttest comparisons between groups are reported for the Spielberger State-Trait Anxiety Inventory (STAI) and the Index of Well-Being (IWB). In the fourth section a description of the results obtained from telephone interviews are reported and in the final section post discharge complications are discussed briefly.

### Characteristics of Participants

The overall sample consisted of 40 participants, 20 patients and their spouses, assigned randomly to a control or experimental group. All 20 patients were married males between the ages of 45 to 84 with a mean age of 61.7 years (*SD* = 9.65). The mean ages for the experimental and control patient groups were 61.8 (*SD* = 9.6) and 61.6 (*SD* = 10.9) years, respectively. The age of spouses ranged from 37 to 81 with a mean age of 58.6 years. The mean age for the experimental and control spousal population was 57.2 (*SD* = 11.1) and 59.9 (*SD* = 9.79) years, respectively. Thirty five percent of the patient sample was retired, 60%

of the retirees fell within the experimental group, 40% within the control group.

The average length of hospital stay for all participants was 6.7 days. For the experimental and control group the mean length of stay was 7.1 (SD = 1.52) and 6.3 (SD = 1.16) days, respectively. The average number of coronary artery bypass grafts for all participants was 3.5. For the experimental and control groups, the mean number of grafts was 3.9 (SD = 1.1) and 3.1 (SD = 1.1), respectively.

Inspection of group means across the demographic variables suggests that experimental and control groups were equivalent. There were no statistically significant differences between groups on number of coronary artery bypass grafts, length of hospital stay, patient age or spousal age.

## Group Comparisons

State-Trait Anxiety Inventory: Analysis of covariance (ANCOVA) was computed to examine group differences for patients on the STAI. Pretest scores were used as covariates. Checks on the assumptions of linearity and homogeneity of regression slopes indicated that all assumptions were met.

The ANCOVA on patient state anxiety did not detect differences at posttest between experimental and control groups ($F$ (1,17) = .28; $p$ > .05). Similar results were

obtained in comparisons on patient trait anxiety ($F$ (1,17) = .02; $p$ > .05). Table 1 includes means and standard deviations for these comparisons.

The assumption of homogeneity of regression slope was not met when conducting an ANCOVA on spousal state anxiety; therefore, two t-tests were computed on pretest and posttest anxiety scores. No differences were detected at pretest ($t$ = .48, $df$ = 18, $p$ > .05) or at posttest ($t$ = .03, $df$ = 18, $p$ > .05). Table 2 contains means and standard deviations for these comparisons.

An ANCOVA contrasting spousal trait anxiety reflected no statistically significant differences between groups ($F$ (1,17) = 3.2; $p$ > .05). Table 2 contains the means and standard deviations for the experimental and control groups.

A correlation matrix between spousal and patient anxiety across groups was also computed. These correlations are reported in Table 3. All correlations were small and statistically nonsignificant ($p$ > .05).

TABLE 1

Means and Standard Deviations for Patient Group on Pretest-Posttest STAI

| | Experimental Patients (n = 10) | | Control Patients (n = 10) | |
|---|---|---|---|---|
| Measures | M | SD | M | SD |
| Pretest State | 37.7 | 7.8 | 36.5 | 11.2 |
| Posttest State | 35.4 | 10.0 | 32.7 | 10.6 |
| Pretest Trait | 35.1 | 6.9 | 39.1 | 10.9 |
| Posttest Trait | 31.9 | 17.7 | 35.4 | 10.2 |

TABLE 2

Means and Standard Deviations for Spousal Group on Pretest-Posttest STAI

| | Experimental Spouse (n=10) | | Control Spouse (n=10) | |
|---|---|---|---|---|
| Measures | M | SD | M | SD |
| Pretest State | 39.8 | 15.4 | 36.9 | 11.5 |
| Posttest State | 32.9 | 10.7 | 33.1 | 12.5 |
| Pretest Trait | 31.3 | 10.2 | 35.8 | 12.0 |
| Posttest Trait | 32.4 | 10.6 | 33.7 | 14.4 |

TABLE 3

Correlations Between Patient and Spousal Anxiety

| Variable | Pretest | Posttest |
|---|---|---|
| State | .123 | .228 |
| Trait | .213 | .239 |

Note. All correlations are nonsignificant ($p > .05$)

INDEX OF WELL-BEING. Analysis of covariance (ANCOVA) was computed to examine group differences for patients on the IWB . Pretest scores were used as covariates. Checks on the assumptions of linearity and homogeneity of regression slopes indicated that all assumptions were met.

The ANCOVA on patients' Index of Well-Being did not detect differences at posttest between experimental and control groups ($F$ (1,16) = .240, $p$ > .05). Table 4 displays means and standard deviations for these comparisons.

An ANCOVA contrasting spousal Index of Well-Being reflected no statistically significant differences between groups ($F$ (1,16) = .376, $p$ > .05). Table 5 displays the means and standard deviations for the experimental and control groups.

Correlations were computed between spouses' and patients' Index of Well-Being at pretest and posttest. There was no significant correlation at pretest ($r$ = .129, $p$ > .05). At posttest, however, a significant correlation was obtained ($r$ = .458, $p$ > .05).

TABLE 4

Means and Standard Deviations for Patient Group on Pretest and Posttest Index of Well-Being

| | Experimental Patients (n = 10) | | Control Patients (n = 10) | |
|---|---|---|---|---|
| Measures | M | SD | M | SD |
| Pretest IWB | 63.1 | 9.8 | 58.7 | 12.3 |
| Posttest IWB | 62.6 | 10.4 | 64.4 | 10.7 |

TABLE 5

Means and Standard Deviations for Spousal Group on Pretest and Posttest Index of Well-Being

| | Experimental Spouse (n = 10) | | Control Spouse (n = 10) | |
|---|---|---|---|---|
| Measures | M | SD | M | SD |
| Pretest IWB | 71.7 | 5.3 | 60.7 | 11.7 |
| Posttest IWB | 61.0 | 11.4 | 56.3 | 17.6 |

QUALITATIVE RESULTS: The focus of treatment was a supportive-educative telephone follow-up program. During the period of November 17, 1994 to February 4, 1995, the total number of telephone interactions was 74.

Prearranged weekly contact of one call per patient and or spouses was responsible for 60 of the 62 nurse initiated calls. Two additional calls were made to follow-up a specific patient experiencing angina-like chest pain and to update the patient's spouse on her husband's progress in hospital following his recent MI.

The total number of patient or spouse initiated telephone calls was 12. The majority (8) of calls to the nurse were made during the first two weeks after participants' hospital discharge; 6 were made in the first week. Thirty-three percent of participant calls were made by the patient's spouse. Table 6 shows the distribution of the participant calls over time.

TABLE 6

TIME INTERVAL BETWEEN DISCHARGE AND PATIENT CALL

| After discharge | No. of calls | % |
|---|---|---|
| 0 - 7 days | 6 | 50.0 |
| 8 - 14 days | 2 | 16.6 |
| 15 - 21 days | 0 | 0 |
| 22 - 28 days | 2 | 16.6 |
| 29 - 35 days | 1 | 8.3 |
| 36 - 42 days | 1 | 8.3 |

Of the 12 patient or spouse initiated calls, 50% were related to chest pain. The remaining calls, equally distributed at 25% each, were related to arrythmias and medications. Table 7 contains the categories of concerns as presented by patient or spouse.

Of the 62 nurse initiated telephone calls, numerous individuals presented more than one concern, resulting in a total of 104 concerns for which advice or support was given. The data revealed that 37% of the concerns were cardiopulmonary in nature. Concerns related to medications (32.2%) resulted in the second largest category. Incisions, including chest incision, leg incision, and chest tube sites resulted in 24.1% of the participants concerns. Table 8 contains a summary of the categories of concerns as presented via nurse initiated telephone calls. It should be noted that since 104 concerns were presented by 62 calls, the totals of each category were calculated as a percentage of 62. Thus, multiple concerns were present in numerous calls.

TABLE 7

CATEGORIES OF CONCERNS DURING PATIENT OR SPOUSE INITIATED CALLS

| Concerns | n | % |
|---|---|---|
| Chest pain | 6 | 50 |
| Arrythmia | 3 | 25 |
| Medications | 3 | 25 |

Note: Total number of patient or spouse initiated calls was 12.

TABLE 8

CATEGORIES OF CONCERNS DURING NURSE INITIATED TELEPHONE CALLS

| Concerns | n | % |
|---|---|---|
| Cardiopulmonary | | |
| Chest / arm pain | 10 | 16.1 |
| Arrhythmias | 9 | 14.5 |
| Shortness of breath | 4 | 6.4 |
| Subtotal | 23 | 37.0 |
| Medication | 20 | 32.2 |
| Incision | | |
| Leg incision | 9 | 14.5 |
| Chest incision | 4 | 6.4 |
| Chest tube sites | 2 | 3.2 |
| Subtotal | 15 | 24.1 |
| Psychological | | |
| Fear | 5 | 8.0 |
| Depression | 4 | 6.4 |
| Anger | 3 | 4.8 |
| Subtotal | 12 | 19.3 |
| Activity | | |
| Activity tolerance | 6 | 9.6 |
| Rest / Sleep | 5 | 8.0 |
| Subtotal | 11 | 17.7 |
| Gastrointestinal | | |
| Diet | 4 | 6.4 |
| Constipation, diarrhea | 3 | 4.8 |
| Subtotal | 7 | 11.2 |
| Leg (sore, swollen, tensors) | 5 | 8.0 |
| Miscellaneous | | |
| Musculoskeletal | 6 | 9.6 |
| Community Resources | 2 | 3.2 |
| Other | 2 | 3.2 |
| Temperature | 1 | 1.6 |
| Subtotal | 11 | 17.7 |

Note: Total number of nurse initiated calls (N) was 62.

All advice given to the various callers by the nurse was based on her assessment and judgment of the problem. Frequently, two or more items of advice were given to the patient or spouse for each problem. For example, Mr. Smith presented a concern about his "angina like" chest and arm discomfort. After questioning by the nurse, it was apparent that the patient's chest discomfort was precipitated by activity and relieved by rest. Mr. Smith was instructed to use his nitroglycerine if his chest pain should reoccur and to contact his family doctor or present to the emergency department.

In another situation, Mr. Jones verbalized concerns that his leg incision was still oozing serous drainage. He had been discharged 4 days before the call. It was noted that the oozing was no worse since discharge from hospital and he was asymptomatic for signs and symptoms of infection. Mr. Jones was given advice on care of his leg incision, including warm saline compress, 20 minutes four times a day, betadine applied to the incision line and a dry dressing to cover. As well, he was reminded to keep legs elevated when sitting in a chair and to continue to use his tensor stockings.

In another situation, a participant telephoned complaining of a "fast heart rate" and wanted to know if he should take an extra digoxin. On questioning the patient, it was determined that his heart rate was not

overly fast (i.e., 94 beats per minute and regular), he had just come in from his walk, his resting heart rate was normally 70 beats per minute (BPM) and there was no shortness of breath associated with this increased rate. He was instructed not to take an extra digoxin and that doing so could potentially be harmful. Information was given regarding the normal response of the heart to increased physiological demand and if post activity heart rate was greater that 20 BPM to reduce activity.

Postdischarge Complications

The experimental and control groups differed significantly in the incidence of rehospitalization. Five experimental group (50%) participants were rehospitalized. One patient was readmitted twenty-four days postdischarge with a small (i.e., creatinine phosphokinase, CPK 480) myocardial infarct (i.e., occluded graft with an unsuccessful percutaneous transluminal coronary angioplasty, PTCA). One patient was readmitted ten days postdischarge with rapid atrial fibrillation which required cardioversion and a medication change. One patient experienced angina-like chest pain and presented to the Emergency Department. Following readmission, serial CPK bloodwork was drawn and a treadmill was performed, both were found to be negative. The fourth patient was admitted with an elevated white blood count and flu-like symptoms, he was treated with antibiotics and

discharged from hospital the following day. Unrelated to cardiopulmonary concerns, the fifth experimental patient to be rehospitalized was due to an insulin overdose.

The rehospitalization rate was markedly different in the control group. On review of the control subjects charts, only one subject (10%) was readmitted to hospital for epigastric pain and was discharged the following day.

# CHAPTER V

## GENERAL DISCUSSION

In this chapter the substantive findings of the present study will be discussed in relation to prior research on supportive educative telephone follow-up programs for post CABG patients in general. In the second section the results of the Spielberger State-Trait Anxiety Inventory and the Index of Well-Being are discussed. The results of the instruments are examined in light of limitations of the investigation. The third section provides a discussion of the qualitative data and draws recommendations for nursing practice in relation to rehabilitative care within the environs of the hospital and at home. In consideration of the limitations of the current study, the final section concludes with suggestions for future directions in nursing research of telephone follow-up programs for cardiac patients.

Several studies found in-hospital cardiovascular patient education programs effective in reducing patient anxiety (Barborowicz et al., 1980; Budan, 1983). However, other research results have found education programs ineffective in reducing patient anxiety (Christopherson & Pfeiffer, 1980; Raleigh & Odtohan, 1987).

In keeping with the above conflicting findings, the present study's results are substantially different from those of Beckie (1989). In Beckie's study, experimental subjects demonstrated lower state anxiety scores than the control subjects following a 6 week telephone intervention program. In the present study, no statistically significant differences were found between the experimental and control groups. The following discussion explores possible reasons for the difference in findings.

The information component of the telephone program may have been expected to reduce anxiety. As earlier alluded to, the research is conflicting with respect to knowledge and anxiety levels (c.f., Barborowicz et al., 1980; Budan, 1983; Christopherson & Pfeiffer, 1980; Raleigh & Odtohan, 1987). Beckie (1989) reported a statistically significant inverse relationship between participant's knowledge and anxiety levels. However, as Beckie used a posttest-only design, her claim of increased knowledge levels following telephone intervention has limited merit.

Other aspects of the program, such as the available psychological support might have been expected to reduce some anxiety. However, patients in the experimental group experienced significantly higher morbidity consequently a reduction in anxiety in this group may have proven to be more challenging. In other words, patients in the experimental group experienced substantially more anxiety

provoking events, thus, making state anxiety more resistant to change. The control group, in contrast, experienced a more stable postoperative recovery.

In addition, the sample size of each group is small (n = 10). Finding statistically significant differences with small sample size is difficult as the statistical power of tests is reduced. In contrast, Beckie's study had 37 participants in each group. Sample size is an important consideration in the interpretation of results for this study's instruments (i.e., STAI and the Index of Well-Being).

Some researchers (Christopherson & Pfeiffer, 1980) suggest that completing a lengthy pretest is difficult the first week after CABG because patients often have poor concentration and memory deficits. It has been suggested that cognitive function of post CABG patients has decreased. It is likely that the physical environment of the hospital further influences the patients ability to complete tests and questionnaires. At the time of discharge patients and spouses are typically bombarded with information and instructions. Frequently, the ward itself is active with numerous interruptions and at times crisis. Raleigh and Odtohan (1987) have suggested that the patient's ability to integrate information with all the extraneous variables present may well be limited, and thus, have a negative impact on testing. Accordingly, in the present study, pretesting may have been negatively

influenced by environmental and psychological factors. Beckie's study which utilized a posttest-only control group design circumvented these variables.

As earlier outlined, there were significant differences in rehospitalization between the experimental and the control group. In Beckie's (1989) study only two (5.4%) of the experimental subjects were rehospitalized. The two participants were hospitalized for ulnar nerve compression and mild pulmonary edema, respectively. However, nine control participants (24.3%) were rehospitalized during their convalescent period. Five control subjects were unable to diagnose their chest pain, two required medication adjustments, and two were investigated for shortness of breath later diagnosed as anxiety. Beckie's findings displayed significantly higher state anxiety scores for the control group as compared to the experimental group, probably as a result of the increased hospitalization.

In contrast, in this study, the rate of rehospitalization was reversed for the groups. Fifty percent (n = 5) of experimental subjects were rehospitalized as compared to 10% (n = 1) of the control subjects. It is unlikely that the telephone intervention had a negative effect on state anxiety levels; differences in the rates of rehopitalization may, however, account for the lack of group differences in anxiety.

For the patient, anxiety may not have been associated with group assignment but rather, anxiety may have been associated with morbidity. In the current study, it was the experimental patients and not the control patients who experienced higher morbidity. Therefore, it may be reasonable to suggest that there is a stronger relationship between morbidity and anxiety than between anxiety and participation in a telephone support program. In other words, as morbidity increases so does anxiety.

Anxiety is likely influenced by a variety of factors. Perhaps, as individuals perceive events (i.e. morbidity) as uncontrollable, levels of anxiety increase. Irrespective of group assignment or intervention, it is the individual's perception and interpretation of events that drives levels of anxiety.

Although findings for the spousal groups are not statistically significant, there appears to be a trend of less anxiety post telephone intervention for the experimental spouses. Raleigh and Odtohan's (1987) research findings suggest that the wife usually is eager to care for her husband correctly, however, they further suggest that lack of information makes this a stressful experience. That the supportive-educative telephone program displayed a trend in lowering spousal anxiety may reflect the combination of supportive interaction with the cardiac nurse, meaningful and timely content and a program

tailored to meet the unique needs and individual concerns of the spouse.

Index of Well-Being

The second instrument used in the current research was the Index of Well-Being. Well-being was not statistically different between the groups. Although findings for the patient's quality of life was not statistically significant, the data suggested a trend in an enhanced quality of life for the control subjects. As earlier proposed, the increased morbidity experienced by the experimental patients may have made their perception of quality of life more resistant to change. In contrast, the control patients experienced a more stable postoperative recovery and displayed a trend in enhanced quality of life. Spousal quality of life did not appear to be affected by the experimental intervention.

The present study was similar to that of Gillis (1993) in a serial measurement of quality of life. Gillis measured quality of life of post CABG patients at 4, 12 and 24 weeks during a telephone contact period. Gillis (1993) reports that at 4 weeks the quality of life of the control group was substantially (10%) below that of the experimental group. By 12 weeks, the control group had caught up with the experimental group (1% higher at 12 weeks and 3% higher at 24 weeks). Both groups showed improvement with time. Quality of life measure in this

research was taken at 7 weeks post discharge. Perhaps, in the current research as with Gillis et al's (1993), the duration of time resulted in both groups being equivalent in quality of life measures.

Qualitative Findings

The qualitative findings are particularly useful in tailoring in-hospital and postdischarge programs. In this section, the nature and incidence of patient and spousal concerns are presented and implications for practice provided.

In the current study, the majority (66.6%) of calls to the nurse were made during the first two weeks after participants' hospital discharge, 50% of which were within the first week. These findings are similar to those reported by Nicklin (1986) in her study of postdischarge concerns of cardiac patients as presented via a telephone callback system. Nicklin reported that 55% of all the concerns arose within the first 2 weeks after discharge, 40% of which were within the first week. Nicklin further reported that nearly one-third (31.3%) of the calls were related to cardiopulmonary concerns; 20% of calls were related to medications and 10% of calls were related to arrythmias. Closely aligned to Nicklin's study, in the current research, 50% of patient initiated calls were cardiopulmonary in nature, 25% of calls were related to medications, and 25% of calls were related to arrythmias.

A substantial portion (43.6%) of the calls in Nicklin's (1986) study were assessed by the nursing researcher as significant enough to necessitate directing the patient to an emergency department or to contact his or her doctor. Approximately, 24% of Nicklin's patients were advised to go to an emergency department and another 20% were directed to contact their family doctor or cardiac physician, however, in this research, only 16.6% of patient initiated calls were advised to contact their family doctor. Although no patients were directed to an emergency department, it should be noted that the experimental subjects experienced significant morbidity. In this research, subjects who presented to an emergency department, presented without prior nursing contact. It appears, based on these results, that patients or spouses sought advice or medical intervention at the appropriate time. As Nicklin (1986) suggested, this finding may indicate that predischarge information equipped patients and spouses with some decision making ability to assess a problem and thus to seek the assistance of a health professional.

In this study, on examination of concerns during nurse initiated telephone contact, the trend was similar to Nicklin's reports. Thirty seven percent of nurse initiated calls expressed concerns that were cardiovascular in nature. Thirty two percent of concerns were related to medications and 24.1% of concerns were

related incisions. Nicklin (1986) reports 18.8% of call back concerns were related to incisions.

Not reported by Nicklin (1986), but of significance in the current research, is the number of psychological concerns (19.3%) expressed during the nurse initiated contact. In the present study, participant's reported feelings of sadness and depression. One participant in particular, reported crying when he viewed animal commercials. He expressed concerns that he was "not sure what was happening to him" but was relieved that "someone out there understands." In addition, spouses would report that their husband's "were down in the dumps." One participant frequently used the expression that his days fluctuated between "diamonds and stones."

Although not always explicitly expressed, there was frequently an undertone of fear or worry for many of the participants. Even despite the "normal" worries and fears of the convalescing post CABG patient and spouse, the incidence of high morbidity in the experimental group would understandibly escalate those fears.

Jenkins et al. (1983) report that in the early postoperative phase of recovery, 40% of participants reported feelings of sadness, depression or crying, and 38% of patients reported feelings of anxiety, worry or fear. Research supports the suggestion that cardiac events have a powerful impact on the psychological and

emotional well-being of the patient and their family (Bluementhal, 1985; Gillis, 1984; Jenkins et al., 1983).

Based on the similarity of results of previously published research, some recommendations for nursing practice for post CABG patients and families can be suggested. Since a large majority (66.6%) of the concerns arose within the first two weeks at home, some of these potential postdischarge problems should be emphasized in the predischarge teaching. Although in-hospital cardiac teaching programs address common concerns of patients and families, evidently, as supported by the research, once the patient is discharged, these concerns resurface. Withdrawal of existing predischarge cardiac teaching programs would not be prudent, but perhaps, "emphasis" of common problems will help mitigate these post discharge concerns.

Consistently in the studies reviewed, cardiopulmonary concerns were paramount. Emphasizing the distinguishing characteristics between postoperative sternal discomfort and angina-like symptoms may assist patients assess the problem, equip them with some decision-making ability, and determine an appropriate solution. Arrythmias and medications were the second largest category in patient initiated calls. Prior to discharge, individuals should be advised about the management of an irregular heart rate.

Concerns regarding medication were quite varied. Prior to discharge, written and verbal information should be given based on the individual's prescription. Recognizing that offering information does not necessarily result in patients understanding or compliance, other suggestions for medication information may be necessary. The community pharmacist is a valuable resource and questions related to medications may be addressed to them. Information would be provided at a time when the patient is ready and able to learn.

Activity, rest and sleep concerns were raised in 17.7% of the nurse intitiated calls. In most cases, symptomatic advice was given, and patients were advised to contact their doctor if the problem persisted. Gastrointestinal disturbances resulted in 11.2% of concerns It would be appropriate to discuss methods of dealing with these problems at the predischarge bedside teaching class.

Not all problems can be anticipated before discharge. There are significant differences in learning needs between the outpatient and the inpatient phases of recovery. Fardy, Bennett, Reitz & Williams (1980, cited in Nicklin, 1986) support the need for postdischarge education: "Some information will not be retained after discharge because of the high anxiety levels coupled with the tremendous amount of new information given to the patient during hospitalization," and "reinforcement and

follow-up are important to continued motivation" (pp.271). The qualitative results in this study support this suggestion, that the learning needs of the patient should be considered as well as the stage of rehabilitation. Given these considerations, information becomes useful and meaningful.

Implications For Future Research

Based on the findings of this study, several implications and recommendations for nursing practice and research can be generated. This study should be replicated with minor alterations. Similarly designed studies have shown statistically significant results; perhaps, in part, due to larger sample size. Future studies should be designed with less restrictive inclusion criteria. Frequently (46% of all patients within GVHS) today, patients are receiving their second or third time re-operative surgery. The current study along with others (Beckie, 1989; Gillis et al., 1987) restricted subject participation because of re-operative surgery. Restrictions based on re-operative surgery significantly limits generalizability.

In this study, patients and spouses whom received telephone follow-up following CABG surgery did not show any statistically significant differences from the control group when tested for anxiety and quality of life. These results may have been influenced by high morbidity of the

experimental subjects and small sample size. Duration of intervention, may be another consideration for the lack of statistically significant results. Given that the intervention lasted only 6 weeks, and the experimental participants experienced significant morbidity within that time frame, the intervention may not have been long enough to display any measurable differences, perhaps too, the strength of the intervention was not sufficient to warrant changes in anxiety or quality of life. In any case, given the results of this study, the question was not answered completely: Is supportive telephone follow-up for post CABG patients and spouses effective in reducing state anxiety and enhancing quality of life?

Although this study is limited by small sample size and restricted by generalizability, the qualitative results indicated some of the patient-spouse concerns that arise after discharge. The richness of the telephone interactions may suggest a qualitative approach for future follow-up studies. The qualitative data supports the need for a method of follow-up after discharge. Some of the concerns can be anticipated and coping strategies provided in advance. Others cannot be foreseen. After discharge, alternative ways for the patient and spouse to obtain advice and support are essential to ensure that the quality of care received while in the hospital is not negated by the inappropriate management of problems after discharge. Despite the lack of statistically significant

results, participants frequently voiced relief and comfort that they had someone to share their worries and concerns with. They expressed the viewpoint that the information given to them was helpful and timely. Participants felt that contact with a cardiac nurse following discharge, assisted them to a better understanding of the disease process, allowed them to develop some degree of acceptance of the disease process, and encouraged them to gain independence on the road to recovery. It is in these implicit qualities that the strength of this intervention lies. Participants enacted control over their lives by directing their own learning needs, this in turn, enhanced their sense of being empowered. Through the telephone interactions they expressed the viewpoint that they felt better informed and therefore made better decisions. Ultimately, it is this that the health care provider in participation with the patient strive for.

Keeping in mind the limitations of this study, but also the findings of previous research, it is suggested that nurses continue to develop and refine teaching and support programs for patients and spouses following coronary artery bypass grafting.

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# Appendix A

Inclusion Criteria

(1) Do you live within Greater Victoria? Yes ( ) No ( )
(2) Do you have access to a telephone within your home? Yes ( ) No ( )
(3) Are you willing to complete 2 questionnaires within your home at approximately 6 weeks following discharge? Yes ( ) No ( )
(4) Do you have a spouse? Yes ( ) No ( )
(5) Was this your first time non-emergency CABG surgery? Yes ( ) No ( )
(5) Are you able to read, write and speak English? Yes ( ) No ( )
(6) Oriented to person, place, time and no documented psychiatric history? Yes ( ) No ( )

BIOGRAPHICAL DEMOGRAPHIC INFORMATION

Name: _____ Gender: M ( ) F ( )

Address: _____

_____ Age: _____

Phone: _____ Marital Status: _____

Level of Education:

some high school _____
completion Gr. 12 _____
some University/college __
undergraduate degree _____
graduate degree _____

Income:

less than $20,000/yr. ___
$21,000 - $40,000/yr. ___
$41,000 - $60,000/yr. ___
$61,000 - $80,000/yr. ___
$80,000. + ___

.....

Cardiologist: _____ Surgeon _____
G.P. _____Meds @ discharge: _____
Date of Surgery: _____Date of Discharge: _____
Previous MI: _____Ht: _____Wt: _____

Attendance of in-hospital rehab programs.
physio:_____
dietary:_____
video:_____ (please identify)
bedside nurse instruction & teaching: _____

# APPENDIX B

## Spielberger State-Trait Anxiety Inventory Scale (STAI Y-1)

Example:

The S-Anxiety scale consists of twenty statements that evaluate how respondents feel "right now, at this moment."

1 = NOT AT ALL
2 = SOMEWHAT
3 = MODERATELY SO
4 = VERY MUCH SO

A. I feel at ease ..... 1 2 3 4

B. I feel upset ..... 1 2 3 4

C. I am tense ..... 1 2 3 4

D. I am jittery ..... 1 2 3 4

# APPENDIX B

## Spielberger State-Trait Anxiety Inventory Scale (STAI Y-2)

Example:

The T-Anxiety scale consists of twenty statements that assess how respondents feel "generally"

1 - NOT AT ALL
2 - SOMEWHAT
3 - MODERATELY SO
4 - VERY MUCH SO

A. I am a steady person .....1 2 3 4

B. I lack self-confidence .....1 2 3 4

C. I make decisions easily .....1 2 3 4

D. I feel inadequate .....1 2 3 4

# APPENDIX C

## INDEX OF WELL-BEING

Here are some words and phrases which we would like you to use to describe how you feel about your present life. For example, if you think your present life is very "boring" put an X in the box right next to the word "boring". If you think it is very "interesting", put an X in the box right next to the word "interesting". If you think it is somewhere in between, put an X where you think it belongs. Put an X in one box on every line.

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Boring | ___ | ___ | ___ | ___ | ___ | ___ | ___ Interesting |
| Enjoyable | ___ | ___ | ___ | ___ | ___ | ___ | ___ Miserable |
| Easy | ___ | ___ | ___ | ___ | ___ | ___ | ___ Hard |
| Useless | ___ | ___ | ___ | ___ | ___ | ___ | ___ Worthwhile |
| Friendly | ___ | ___ | ___ | ___ | ___ | ___ | ___ Lonely |
| Full | ___ | ___ | ___ | ___ | ___ | ___ | ___ Empty |
| Discouraging | ___ | ___ | ___ | ___ | ___ | ___ | ___ Hopeful |
| Tied down | ___ | ___ | ___ | ___ | ___ | ___ | ___ Free |
| Disappointing | __ | __ | ___ | ___ | ___ | ___ | ___ Rewarding |
| Brings out the best in me | ___ | ___ | ___ | __ | ___ | ___ | ___ Doesn't give me much chance |

How satisfied are you with your life as a whole these days?

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Not at all satisfied | ___ | ___ | ___ | ___ | __ | ___ | ___ Very satisfied |

Source: Campbell, Converse, and Rodgers, 1976, p. 50, p. 528.

Appendix D

Judy Nevett
1173 Schram Drive,
Victoria, B.C.
V8P 2K1

TO: CARDIOLOGISTS AND CARDIOVASCULAR SURGEONS

RE: ROYAL JUBILEE COMPARISON STUDY ON A SUPPORTIVE EDUCATIVE TELEPHONE FOLLOW-UP PROGRAM FOR POST ARTERY BYPASS SURGERY PATIENTS.

INVESTIGATOR: J. Nevett

.....

PURPOSE: To investigate the use of a telephone program as a method of decreasing the level of the patient and their spouses anxiety and enhancing quality of life during the first 6 weeks following coronary artery bypass surgery. It is expected that the results of this study will provide nurses with a better understanding of how to help patient and spouses cope with recovering from coronary artery bypass surgery at home.

PROCEDURE: Post CABG patients will participate in the existing cardiac rehabilitation program offered within RJH. Patients and their spouses will be randomly assigned to an experimental (telephone contact group) or a control group. Prior to discharge, both groups will be pretested on psychological and emotional measures.

Following discharge, the intervention group will have a mutually arranged, weekly telephone contact with a cardiology nurse. Additionally, the intervention group will have the option of initiating telephone contact with the nurse to address any questions or concerns regarding their convalescence during the 6 week study period. The control group will not have any telephone contact with the nurse.

After completion of the intervention phase, both groups will be posttested on the same measures. It is hypothesized that those patients with telephone access to a cardiology nurse will experience less anxiety, have a better understanding of their illness and its treatment regimens, and an enhanced quality of life.

STUDY DURATION AND PATIENT ENROLLMENT: There will be a maximum number of 30 post CABG patients recruited from the Royal Jubilee's open heart program. The study is expected to start in September and be approximately 4 months in duration.

Thanking you in advance for your support.

cc. Dr. J.W. Dutton - Head of Cardiovascular Surgery
Dr. M.B. Williams - Medical Advisory Committee Chairman
P. Coward - Vice President Patient Care
L. Stevenson - Assistant Vice President Patient Care
M. Walker - Nurse Manager CVU, 4C, PAR, SDC.
D. Morris - Clinical Teacher Surgical Cardiology

# APPENDIX E

## INFORMED CONSENT FORM

PROJECT TITLE: A SUPPORTIVE EDUCATIVE TELEPHONE FOLLOW UP FOR POST CORONARY ARTERY BYPASS PATIENTS

INVESTIGATOR: JUDY NEVETT R.N. BSN. CCRN., M.A. (Candidate)

PURPOSE OF THE STUDY: The purpose of this study is to investigate the effects of a post discharge 6 week follow-up telephone program on recovery from coronary artery bypass graft surgery. It is expected that the results of this study will provide nurses with a better understanding of how to help patients and spouses cope with recovering from coronary artery bypass surgery at home.

CONSENT: This is to certify that I, _____ consent to participate in the study outlined above. I understand that I may be contacted by telephone. I understand that telephone contact with the investigator will be related to expressing my feelings, questions and concerns regarding recovery from coronary artery bypass graft surgery. I further agree to participate in completing two questionnaires prior to discharge from hospital and at approximately six weeks after discharge.

I UNDERSTAND THAT:

1. Information obtained from all sources will be used solely for the purpose of this study.
2. All information including that obtained from my hospital chart pertinent to the study, will be held in a locked file cabinet by the investigator, Ms. Judy Nevett, for 5 years after which time it will be destroyed. No one other than the investigator will have access to this information.
3. I have been provided with the telephone numbers of various health care providers whom I may call should I have any questions or concerns. If I have further questions regarding the study, I may contact Ms. Nevett at _____ (pager number to be provided).
4. My name will not appear on any documents or reports.
5. I am free to withdraw my consent and terminate participation at any time without affecting any medical or nursing care.
6. I may not benefit directly from participating in the study, which it is hoped will contribute to a greater understanding of the nursing needs of patients.

7. It is recognized that situations may arise that are beyond the scope of the investigator and these situations will be referred to the patient cardiologist or cardiovascular surgeon.
8. There are no costs related to this study.
9. The investigator will use all reasonable means to protect my anonymity and that my name will not in any way be attached to any published results.

I HAVE BEEN GIVEN THE OPPORTUNITY TO ASK WHATEVER QUESTIONS I DESIRE AND ALL SUCH QUESTIONS HAVE BEEN ANSWERED TO MY
SATISFACTION.

I ACKNOWLEDGE RECEIVING A COPY OF THIS CONSENT FORM

_____ _____

(Signature) (Date)

_____ _____

(Signature) (Date)

# VITA

Surname: Nevett

Given Names: Judy Ann

Place of Birth: Whiterock, B.C.

Date of Birth: Nov. 9, 1955

## Educational Institutions Attended:

| | |
|---|---|
| Camosun College | 1982-1984 |
| University of Victoria | 1983-1987 |
| British Columbia Institute of Technology | 1989-1990 |

## Degrees Awarded:

| | |
|---|---|
| R.N. | 1984 |
| B.S.N. | 1987 |
| C.C.R.N. | 1992 |

## Honours and Awards:

| | |
|---|---|
| Nursing Aggregate Award | 1984 |

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Title of Thesis: A Supportive-Educative Telephone Follow-Up for Post Coronary Artery Bypass Graft Patients

Author: [redacted]
(Signature)

JUDY ANN NEVETT

December 20, 1995
(Date)